

NORD SOFTWARE LIBRARY DISKETTE

CONTAINING : TEST-PROGRAMS NO.2 FOR  
ND-10, ND-12 AND ND-100.

DIRECTORY NAME : ND-10325B  
USER NAME : FLOPPY-USER

FILE 0 : (ND-10325B:FLOPPY-USER)100-ERRCOR-2339B:BFUN;1  
FILE 1 : (ND-10325B:FLOPPY-USER)CACHE-2063D:BFUN;1  
FILE 2 : (ND-10325B:FLOPPY-USER)CARDR-1642A:BFUN;1  
FILE 3 : (ND-10325B:FLOPPY-USER)CHATA-1832A:BFUN;1  
FILE 4 : (ND-10325B:FLOPPY-USER)DS1172-2282B:BFUN;1  
FILE 5 : (ND-10325B:FLOPPY-USER)DSERV-1395A:BFUN;1  
FILE 6 : (ND-10325B:FLOPPY-USER)ECCTEST-2224B:BFUN;1  
FILE 7 : (ND-10325B:FLOPPY-USER)ERRCOR-2112A:BFUN;1  
FILE 8 : (ND-10325B:FLOPPY-USER)FLOATING-1529D:BFUN;1  
FILE 9 : (ND-10325B:FLOPPY-USER)FLOPPY-FU-1986F:BFUN;1  
FILE 10 : (ND-10325B:FLOPPY-USER)FOUR-CH-1418E:BFUN;1  
FILE 11 : (ND-10325B:FLOPPY-USER)ONE-CHECK-1192A:BFUN;1  
FILE 12 : (ND-10325B:FLOPPY-USER)PAGING-B:BFUN;1  
FILE 13 : (ND-10325B:FLOPPY-USER)PARAL-BYTE-1942C:BFUN;1  
FILE 14 : (ND-10325B:FLOPPY-USER)PFAIL-1355G:BFUN;1  
FILE 15 : (ND-10325B:FLOPPY-USER)PFAIL-12-1940B:BFUN;1  
FILE 16 : (ND-10325B:FLOPPY-USER)PROCES-PAN-1865A:BFUN;1  
FILE 17 : (ND-10325B:FLOPPY-USER)RGCHK-1543D:BFUN;1  
FILE 18 : (ND-10325B:FLOPPY-USER)RTC-12-1902B:BFUN;1  
FILE 19 : (ND-10325B:FLOPPY-USER)SMALL-RAND-2448A:BFUN;1  
FILE 20 : (ND-10325B:FLOPPY-USER)T-32B-FLOA-1860B:BFUN;1  
FILE 23 : (ND-10325B:FLOPPY-USER)TECOD-1451E:BFUN;1  
FILE 24 : (ND-10325B:FLOPPY-USER)TERMBUF-1751A:BFUN;1  
FILE 25 : (ND-10325B:FLOPPY-USER)THREE-CH-1528D:BFUN;1  
FILE 26 : (ND-10325B:FLOPPY-USER)TLINE-1541B:BFUN;1  
FILE 27 : (ND-10325B:FLOPPY-USER)TREFU-1269C:BFUN;1  
FILE 28 : (ND-10325B:FLOPPY-USER)TWO-CHECK-1190A:BFUN;1

18 JANUARY 1982

PRODUCT	NAME	ND-NUMBER	CATEGORY
	TEST-PROGRAMS No. 2 for ND-10, ND-12 and ND-100.	10325B	T
		ND-NUMBER FOR SOURCE	10328B
ISSUED	DATE: 15 JANUARY 1982	BY (INITIALS) DG	
COMPUTERS	X 10 ! X 12 ! 50 ! X 100!	500!	
INSTR.SET	48 BIT FL.!	32 BIT FL.!	COMMERCIAL!
OP.SYSTEM	SIN III VS!	SIN III RT!	X ALONE
DOCUMEN- TATION	NUMBER: ND-30.015 TITLE: Testprogram description. Vol. 2.		
PURPOSE	Testprograms for CPU, memory, discs and peripherals.		
PROGRAMS (FILES)	PROG.NUMB NAME	TYPE	CONTAINING
	HAR-2339B 100-ERRCOR	BPUN	Error correction ND-100
	HAR-2063D CACHE	BPUN	Hardware test for cache
	HAR-1642A CARDR	BPUN	Card reader test program
	HAR-1832A CHATA	BPUN	Check acknowledge
	HAR-2282B DS1172	BPUN	Univ. DMA interf. S1172
	HUT-1395A DSERV	BPUN	Utility for CDC discs.
	HAR-2224B ECCTEST	BPUN	Test ECC controller
	HAR-2112A ERRCOR	BPUN	Error correction logic.
	HAR-1529D FLOATING	BPUN	Floating instructions
	HAR-1986F FLOPPY-FU	BPUN	Test interface, functions.
	HAR-1418E FOUR-CHECK	BPUN	Check Internal interrupts.
	HAR-1192A ONE-CHECK	BPUN	Instruction check ND-10.
	203098B PAGING	BPUN	Paging test program
	HAR-1942C PARAL-BYTE	BPUN	Tests interface ND-653
	HAR-1355G PFAIL	BPUN	Check powerfail-restart
	HAR-1940B PFAIL-12	BPUN	Tests power fail on ND-12
	HAR-1865A PROCES-PAN	BPUN	Check process panel
	HAR-1543D RGCHK	BPUN	Check the register block
	HAR-1902B RTC-12	BPUN	Test real time clock
	HAR-2448A SMALL-RAND	BPUN	Random test on 10 Mb disc
	HAR-1860B T-32B-FLOA	BPUN	32 bit floating instr.
	HAR-1451E TECOD	BPUN	Test 10 Mbyte disc.
	HAR-1751A TERMBUF	BPUN	Terminal buffer interface
	HAR-1528D THREE-CHECK	BPUN	Test programmed interrupt
	HAR-1541B TLINE	BPUN	Synch. modem interface.
	HAR-1269C TREPU	BPUN	Tape reader and punch
	HAR-1190A TWO-CHECK	BPUN	Instruction check

## LOADING PROCEDURE:

Place floppy in Floppy Disc Controller 1, Unit 0.  
Press Master Clear, Type 1560& and LOAD <program>.

PRODUCT	NAME	ND-NUMBER
	TEST-PROGRAMS No. 2	10325B
	for ND-10, ND-12 and ND-100.	

100-ERRCOR           Date: 79.05.15       (PVDV)       Boundaries: 0<21354  
                       Start address:       670           Restart address: 20

See appendix.  
 Note that patches mentioned in test 3 must be done according to version of program.

CACHE                Date: 81.02.01       (PVDV)       Boundaries: 0<45656  
                       Start address:       0             Restart address: 20

HELP lists all commands available

CARDR                Date: 75.04.17       (SUP)        Boundaries: 20<2736  
                       Start address:       20           Restart address: 20

CHATA                Date: 75.04.16       (SUP)        Boundaries: 20<1407  
                       Start address:       20           Restart address: 20

To check ack-to-ack transfer between two computers.  
 The program asks for a data input device no. If the ack-to-ack link is on Terminal 2, answer 310 CR. When asked for a data output device no., answer 314 cr. (if Terminal 2.)  
 The program asks "Receive or Transmit first". Answer R on the receiving computer first, and then T on the transmitting computer which will now send 256 characters, print T on Terminal 1, and enter receive mode. The receiving computer will receive 256 characters, check the characters, print error messages if necessary, print R on Terminal 1 and enter transmit mode. This will continue forever.  
 Be sure that the terminal interfaces on both computers have the same speed.

DS1172               Date: 79.03.27       (DG)         Boundaries: 0<17000  
                       Start address:       43           Restart address: 20

Device numbers and ident codes are asked for and must be set according to switch setting on the cards.

PRODUCT	NAME	ND-NUMBER
	TEST-PROGRAMS No. 2	10325B
	for ND-10, ND-12 and ND-100.	

HELP lists all commands available.

DSERV                      Date: 74.04.16           (DG)                      Boundaries: 0<2555  
Start address:           20                       Restart address: 20

Use restricted to Norsk Data service personnel.

ECCTEST                   Date: 79.12.05           (DG)                      Boundaries: 0<15404  
Start address:           20                       Restart address: 20

Program is self-explanatory.

ERRCOR                    Date: 77.06.09           (DG)                      Boundaries: 1000<7000  
Start address:           2200                     Restart address: 20

FLOATING                  Date: 79.05.15           (PVDV)                    Boundaries: 0<3474  
Start address:           3000                     Restart address: 20

FLOPPY-FU                  Date: 80.10.08           (SUP)                     Boundaries: 0<6143  
Start address:           0                         Restart address: 20

Tests floppy disc interface and drive functions.

FOUR-CHECK                Date: 80.12.15           (PVDV)                    Boundaries: 0<2265  
Start address:           0                         Restart address: 20

The program may be controlled by typing commands on the console:

- S - Stop the program.
- G - Continue the program (after S).
- I - Initialize (restart) (after S).

If stop after each test is wanted, patch something different from 0 into loaction 17.  
(17/000000 1).

The program will now stop after each test as if S has been pressed, to continue press G.

PRODUCT	NAME	ND-NUMBER
	TEST-PROGRAMS No. 2	10325B
	for ND-10, ND-12 and ND-100.	

ONE-CHECK           Date: 73.08.01           (PVDV)           Boundaries: 20<3672  
                       Start address:           1700           Restart address: 20

(1720 will skip WAIT 1-3)

This program goes into different stops, after each stop some registers must be inspected. (On ND-10 P=R2, A=R5)

1. P/001701
2. P/001703        A/125252
3. P/001710        A/052525
4. P/001713        A/000000

5. The machine will run until an error occurs. If so type P/ , subtract 1 from the answer, and type this number followed by slash(/). The answer will be a wait with a wait number (151000 -151377). Look in manual for informations.

PAGING              Date: 82.01.15           (PVDV)           Boundaries: 0<30453  
                       Start address:           0           Restart address: 20

Includes the TEST-MONITOR-2441E.

ARAL-BYTE           Date: 79.11.06           (SUP)           Boundaries: 0<5416  
                       Start address:           12           Restart address: 20

PFAIL               Date: 82.01.15           (PVDV)           Boundaries: 0<2366  
                       Start address:           0           Restart address: 20

PFAIL-12            Date: 77.05.77           (PVDV)           Boundaries: 0<1602  
                       Start address:           0           Restart address: None

When the program asks for start or restart, type S. The program is now waiting for powerfail interrupt. Pull out the power cable, and put it back again. Press master-clear, restart. The program now asks for start or restart, type R. The program cannot be restarted. If you wish to run it once more, load it again.

PRODUCT	NAME	ND-NUMBER
	TEST-PROGRAMS No. 2 for ND-10, ND-12 and ND-100.	10325B

PROCES-PAN           Date: 75.10.16       (SUP)       Boundaries: 20<4241  
Start address:       127           Restart address: 127

RGCHK                Date: 82.01.15       (PVDV)      Boundaries: 0<1175  
Start address:       20           Restart address: 20

No. of the register under test is in addr. 121.  
No. of the test cycles is in B-reg. level 0.  
One complete test cycle takes approx. 25 seconds.

RTC-12              Date: 79.05.15       (PVDV)      Boundaries: 0<1567  
Start address:       20           Restart address: 20

SMALL-RAND          Date: 81.02.01       (DG)        Boundaries: 0<17715  
Start address:       0           Restart address: 20

Includes the TEST-MONITOR-2441C.

I-32B-FLOA          Date: 80.02.28       (PVDV)      Boundaries: 0<3177  
Start address:       0           Restart address: 20

Testprogram for 32 bit floating operation,  
NLZ, DNZ, FMU, FDV, FAD and FSB.  
3 different operations modes are available when  
failing:

- a) Repeat error continuously.
- b) Continue with next data-pattern.
- c) Continue with next operation (DNZ, FMU,  
FDV etc.)

Data is set up in tables, NLZT, DNZT etc. for  
each instruction.

Format of table is:

Word 1,2: Accumulator operand.

Word 3,4: Memory operand.

Word 5,6: Correct result for A, D registers.

PRODUCT	NAME	ND-NUMBER
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TECOD                   Date: 80.07.03           (DG)                   Boundaries: 0<6365  
Start address:           0                       Restart address: 20

Works for discs with 404 tracks. The protect test will not work for Hawk discs. If nothing is answered to the question that protect test asks, the test will be bypassed after approx. 90s. Disc addresses may be seen by displaying the U-reg.

TERMBUF                Date: 75.08.12           (SUP)                  Boundaries: 0<2514  
Start address:           20                      Restart address: 20

TERMBUF first tests the interface in testmode without a terminal. When that is done, connect the terminal, press ESC. The speed that the terminal is set for (using the switch on the back) will be written on the terminal, using that speed to write the message. If a new speed is to be tested, change the switch on the back of the terminal and press BREAK. The progr. will then write the message using the new speed. The last test is of the character set.

THREE-CHECK           Date: 80.10.08           (PVDV)                 Boundaries: 0<460  
Start address:           20                      Restart address: 20

TLINE                   Date: 75.10.16           (SUP)                  Boundaries: 20<1624  
Start address:           20                      Restart address: 20

If the sync. modem interface is run in test mode, the program is self-documenting. If not, two computers with sync. modem interfaces, modems and telephone connection are necessary. Start one of the computers in transmit mode (T on the Console). Start the other in receive mode (R and then S or F). Call the transmitting computer from the receiving one. When the transmitting computer answers, turn the modem switch to "DATA". The two computers will now send blocks of 253 (0375) characters back and forth on the telephone line. The blocks consist of all 8-bit characters except 0, 26 (sync.) and 377. After a block has been sent, BELL is printed on console.

PRODUCT	NAME	ND-NUMBER
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	for ND-10, ND-12 and ND-100.	

After a block has been received and checked, OK or ER is printed. The modem status may be inspected in the D-reg. The no. of received characters is in address 0151. It should be 375. The received characters are in 1624-2220.

Recommended patch:  
 161/0            177777  
 164/2004        2204  
 165/100004     2204

TREPU            Date: 79.11.08       (SUP)        Boundaries: 20<1770  
 Start address:    20                      Restart address: 20

TWO-CHECK        Date: 73.08.01       (PVDV)       Boundaries: 20<770  
 Start address:    20                      Restart address: 20

After the program has been loaded, it stops, and following registers/locations can be inspected:  
 (On ND-10 P-reg.=R2)  
 P/000743  
 742/151377  
 Then type 0 CR, next location contains 125001.  
 Type ! and the program will run until an error occurs.  
 If stop: Type P/ , subtract one from the answer, and type this new address followed by slash(/). The answer will be a wait with a wait number (151000-151377)



! NORSK DATA A/S		! NORD SOFTWARE LIBRARY		! PAGE 1 OF 1	
		! REVISION LOG			
! PRODUCT	! NAME	! ND-NUMBER			
	! TEST PROGRAM NO. 2	! ND-10325B			
! ISSUED	! DATE 15 JAN 1982	! BY (INITIALS) DG			
! REASON	! ERROR CORRECTION	! DIFFERENT ENVIRONMENT			
	! * CHANGE/ADDITION				
! FILES	! PROG.NUMB. NAME				
! CHANGED	! HAR-1355G PFAIL				
! OR NEW	! HAR-1986F FLOPPY-FU				
! FILES	!				

PFAIL and FLOPPY-FU have been moved from TEST PROGRAM NO. 1 (ND-10324).

T4KMOS and T8KMOS have been suppressed (replaced by MEMORY-A).

! NORSK DATA A/S		! NORD SOFTWARE LIBRARY		! PAGE 1 OF 1	
! REVISION LOG					
! PRODUCT	! NAME			! ND-NUMBER	
	! PAGING			! 10325B	
! ISSUED	! DATE 15 JAN 1982	! BY (INITIALS)	! PVDV		
! REASON	! * ERROR CORRECTION			! DIFFERENT ENVIRONMENT	
	! CHANGE/ADDITION				
! FILES	! PROG. NUMB.	! NAME			
! CHANGED	! 203098B	! PAGING			
! OR NEW	!	!			
! FILES	!	!			

Sometimes the program thinks that the machine it runs on does not have paging when it has. This has been corrected.

The program now runs with the E-version of the Test Program Monitor.

! NORSK DATA A/S		! NORD SOFTWARE LIBRARY		! PAGE 1 OF 1	
! REVISION LOG					
! PRODUCT ! NAME ! ND-NUMBER					
! PFAIL ! 10325B					
! ISSUED ! DATE 15 JAN 1982 ! BY (INITIALS) PVDV					
! REASON ! * ERROR CORRECTION ! DIFFERENT ENVIRONMENT					
! CHANGE/ADDITION !					
! FILES ! PROG.NUMB. NAME					
! CHANGED ! HAR-1355G PFAIL					
! OR NEW !					
! FILES !					

The program would give an error message concerning the PES-register on a ND-100 with less than 64K memory. This has been corrected.

! NORSK DATA A/S		! NORD SOFTWARE LIBRARY		! PAGE 1 OF 1	
! REVISION LOG					
! PRODUCT	! NAME			! ND-NUMBER	
	! RGCHK			! 10325B	
! ISSUED	! DATE 15 JAN 1982	! BY (INITIALS)	! PVDV		
! REASON	! ERROR CORRECTION	! DIFFERENT ENVIRONMENT			
	! * CHANGE/ADDITION				
! FILES	! PROG.NUMB.	! NAME			
! CHANGED	! HAR-1543D	! RGCHK			
! OR NEW	!				
! FILES	!				

An unnecessary delay has been removed from the program.