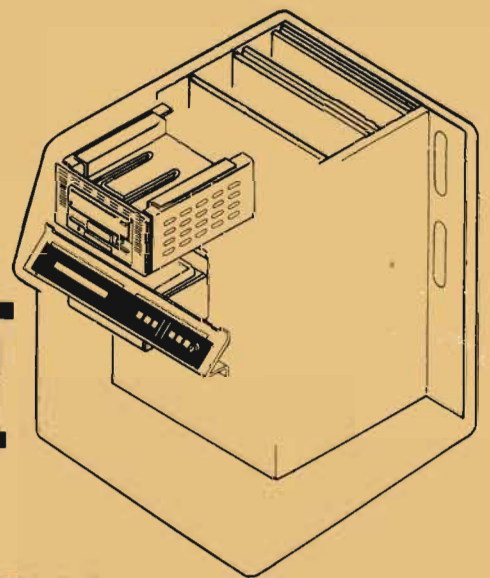


ND-100 COMPACT MODELS 11, 12, 13, 14



Illustrated Parts Catalogue

ND-13.024.1 EN

Preface

The reader

This catalogue is intended for all ND personnel involved in requisitioning parts for maintenance purposes on the ND-100 Compact series.

The manual

The catalogue is divided into two sections: Illustrated Parts List and Cross Reference List.

Illustrated Parts List:

This list is divided into five columns as follows:

- *Reference designation:* The reference designation refers to the figures where the parts are shown. The first part of the number (before the hyphen) indicates which assembly the parts belong to.
- *Item name - description:* This column provides the descriptive name and main characteristics of the part. The basic name is entered first, followed by subname(s) or colloquial name(s). Colloquial name(s) and description(s) are placed within brackets.
- *Article number:* This column contains the ND article numbers. These should be used when ordering spare parts.
- *Quantity:* This column indicates how many times the described part appears within the assembly.
- *Status:* The letter **S** in this column indicates that the part will often be needed, and should be kept in stock if possible. The letter **R** indicates that the part is repairable, and should not be discarded.

Cross Reference List

This list provides a reference between ND article numbers and reference designations. It is sorted by article number in descending order.

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Abbreviations

AC	Alternating Current	Mb	Megabyte (octal)
ASSY	Assembly	MM	Millimeter
BW	Backwiring	MMS	Memory Management System
CCA	Circuit Card Assembly (see PCB)	MOS	Metal Oxide Semiconductor
CONN	Connector	OP	Operator
CTRL	Control	PCB	Printed Circuit Board
CPU	Central Processing Unit	POZI	Pozidrive
CYL	Cylinder	PROM	Programmable Read Only Memory
DC	Direct Current	PS	Power Supply
DISTR	Distribution	RAM	Random Access Memory
ECC	Error Correction Code	SMD	Storage Module Drive
EXCL	Exclusive	SUPA	Supadrive
FL	Floppy	TF	Thread Forming
HD	Head	QTY	Quantity
HEX	Hexagonal	w/	With
Kb	Kilobyte (octal)		
M	Meter		

The information in this manual is subject to change without notice. Norsk Data A.S. assumes no responsibility for any errors that may appear in this manual, or for the use or reliability of its software on equipment that is not furnished or supported by Norsk Data A.S.

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Norsk Data ND-13.024.1 EN

Safety Precautions

The following safety precautions **must** be obeyed **at all times** to avoid personal injury and damage to the equipment.

1.

Learn how to apply mouth-to-mouth resuscitation, external cardiac massage and other techniques for treatment of electrical shock.

2.

Do not work on any equipment until you have attended the ND "Hardware Maintenance and Operation" course, and have studied this manual and all relevant reference manuals.

3.

Do not work alone when servicing live equipment. If you are the only serviceman on the site, arrange for a second person to be present.

4.

Always leave the equipment in a **safe** condition with **all** covers and panels in place. Use a warning notice to advise that the equipment is under repair.

5.

Obey the instructions in the boxed paragraphs marked **WARNING!** and **CAUTION!** throughout this manual and the reference manuals. **WARNING!** is used when there is a risk of personal injury. **CAUTION!** is used when there is a risk of damage to the equipment.



WARNING!

The equipment operates from a 115V or 220V mains supply at currents that can cause

DEATH ON CONTACT!

Get familiar with the mains supply wiring and take extreme care when working near places where the mains voltage is exposed. When disassembling a unit, first disconnect it from the mains supply and discharge it. When reassembling, make sure that **all** ground connections are made and that **all** covers/panels are in place before reconnecting the supply.

WARNING!

Remove your wristwatch and all jewellery, including gold rings, before starting to work on the equipment. Rings heat up very rapidly if shorted across a high current supply, and can cause severe burns.



WARNING!

Do not wear any loose clothing (such as a necktie) which can get caught in moving machinery. Long hair may present a similar hazard.

Caution!

Power supplies: To avoid shorting local power supplies, be sure to keep all conductive objects (e.g. tools and aluminium foil) away from contacts and busbars.

Removing printed cards: Always use an insulated card extractor when removing cards from live equipment. Note that some cards must **not** be removed when the system is on.

Electrostatic discharge: Electronic components may be damaged if subjected to electrostatic discharge through contact with fingers or electrostatically charged objects. The danger is particularly high for MOS circuits in a dry environment, but the risk is considerable, even with other components and in other climates.

To protect your equipment, always touch a ground cable or grounded part of the machine before handling the cards. Also use as many as possible of the following aids:

- antistatic spray
- grounded handcuffs (**not** when servicing live equipment)
- conductive tabletops and floor mats
- ionized airblower
- protective pouches for spare components

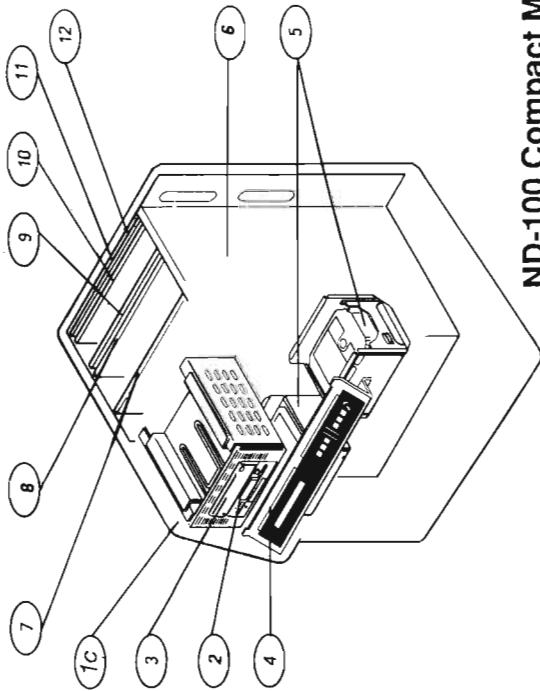


Disk pack damage: If you suspect disk pack damage, *do not move the disk pack to another drive*, as a faulty disk pack will ruin the read/write heads. For the same reason, *do not insert another disk pack in the suspect drive*, as the new disk pack may then be damaged as well.

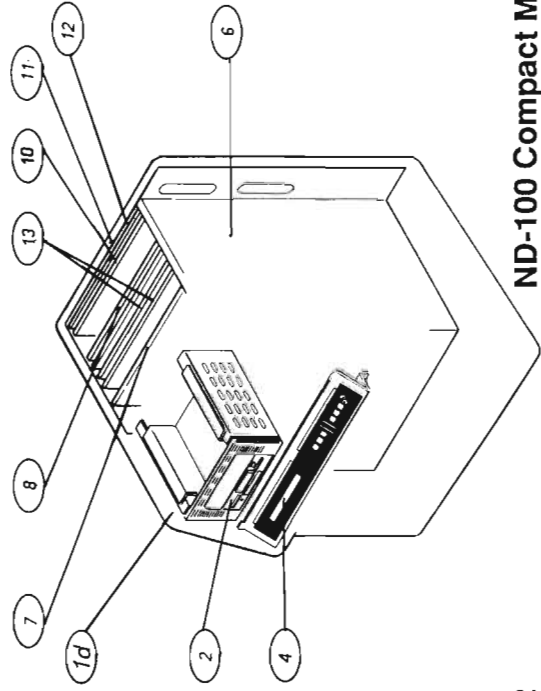
Overheating: Inspect and service the electric ventilation equipment regularly, to avoid computer downtime due to ventilation failure. Never place objects on or near ventilation grills.

Illustrated Parts List

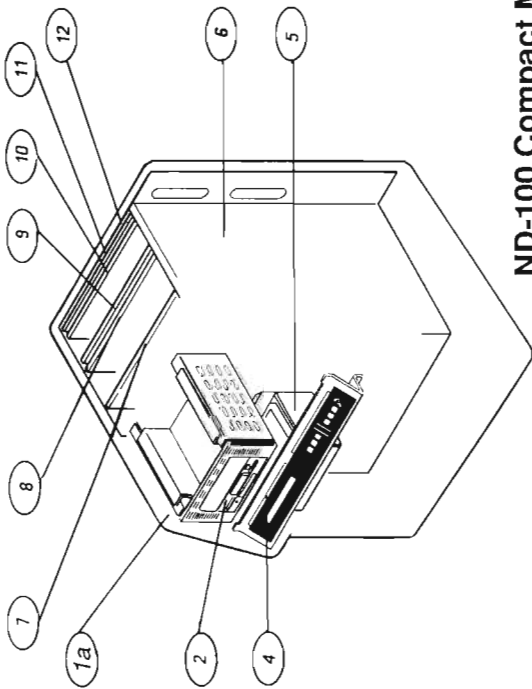
Specify this when ordering		Specify this when ordering	
Ref. desig.	Item name - description	Article number	Qty
Main Parts, Compact Model 11			
1a	ND-100 COMPACT MOD 11 CABINET	003291	1
2	FLOPPY DISK DRIVE 5.25"	106570	1
3	STREAMER 5.25"	103161	1
4	OPERATOR PANEL W/DISPLAY	100941	1
5	DISK MICROPOLIS 1325 74.5 MB	106280	1
6	CARD CRATE ND-100 COMPACT	100930	1
7	1 MB MEMORY	103700	1
8	FLOPPY/STREAMER INTERFACE 5.25"	103170	1
9	DISK CONTROLLER, FIXED WINCHESTER	106310	1
10	MEMORY MANAGEMENT SYSTEM II, EXCLUSIVE CACHE	100311	1
11	ND-100 STANDARD CPU 48-BIT CX	101000	1
12	PROM KIT (2 KB PROM ND-100)	100361	1
Main Parts, Compact Model 12			
1b	ND-100 COMPACT MOD 12 CABINET	003292	1
2	FLOPPY DISK DRIVE 5.25"	106571	1
3	STREAMER 5.25"	103161	1
4	OPERATOR PANEL W/DISPLAY	106270	1
5	DISK MICROPOLIS 1325 74.5 MB	100941	1
6	CARD CRATE ND-100 COMPACT	106280	1
7	1 MB MEMORY	100930	1
8	FLOPPY/STREAMER INTERFACE 5.25"	103700	1
9	DISK CONTROLLER, FIXED WINCHESTER	103170	1
10	MEMORY MANAGEMENT SYSTEM II, EXCLUSIVE CACHE	106310	1
11	ND-100 STANDARD CPU 48-BIT CX	100311	1
12	PROM KIT (2 KB PROM ND-100)	101000	1
		100361	1
Main Parts, Compact Model 13			
	ND-100 COMPACT MOD 13 CABINET	003293	1
	FLOPPY DISK DRIVE 5.25"	106572	1
	STREAMER 5.25"	103161	1
	OPERATOR PANEL W/DISPLAY	106270	1
	DISK MICROPOLIS 1325 74.5 MB	100941	1
	CARD CRATE ND-100 COMPACT	106280	2
	1 MB MEMORY	100930	1
	FLOPPY/STREAMER INTERFACE 5.25"	103700	1
	DISK CONTROLLER, FIXED WINCHESTER	103170	1
	MEMORY MANAGEMENT SYSTEM II, EXCLUSIVE CACHE	106310	1
	ND-100 STANDARD CPU 48-BIT CX	100311	1
	PROM KIT (2 KB PROM ND-100)	101000	1
		100361	1
Main Parts, Compact Model 14			
	ND-100 COMPACT MOD 14 CABINET	003294	1
	FLOPPY DISK DRIVE 5.25"	106573	1
	OPERATOR PANEL W/DISPLAY	103410	1
	CARD CRATE ND-100 COMPACT	100941	1
	1 MB MEMORY	100930	1
	FLOPPY/STREAMER INTERFACE 5.25"	103700	1
	DISK CONTROLLER, FIXED WINCHESTER	103170	1
	MEMORY MANAGEMENT SYSTEM II, EXCLUSIVE CACHE	106310	1
	ND-100 STANDARD CPU 48-BIT CX	100311	1
	PROM KIT (2 KB PROM ND-100)	101000	1
	SMD DISK INTERFACE 15 MHZ	100361	1
		106320	1



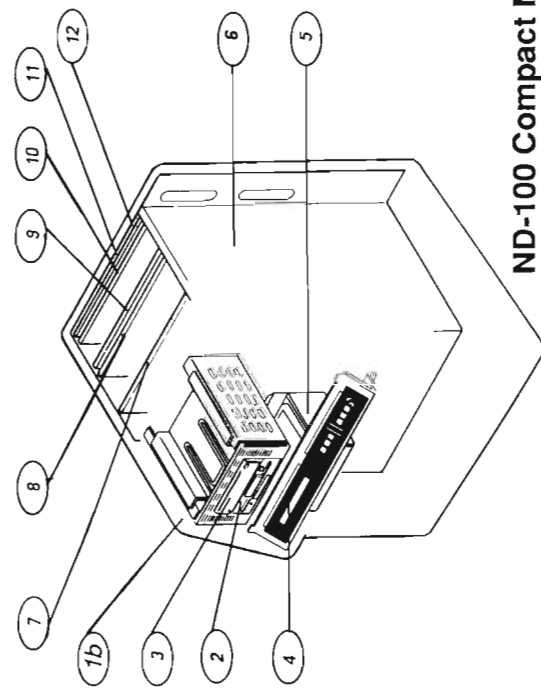
ND-100 Compact Model 13



ND-100 Compact Model 14



ND-100 Compact Model 11

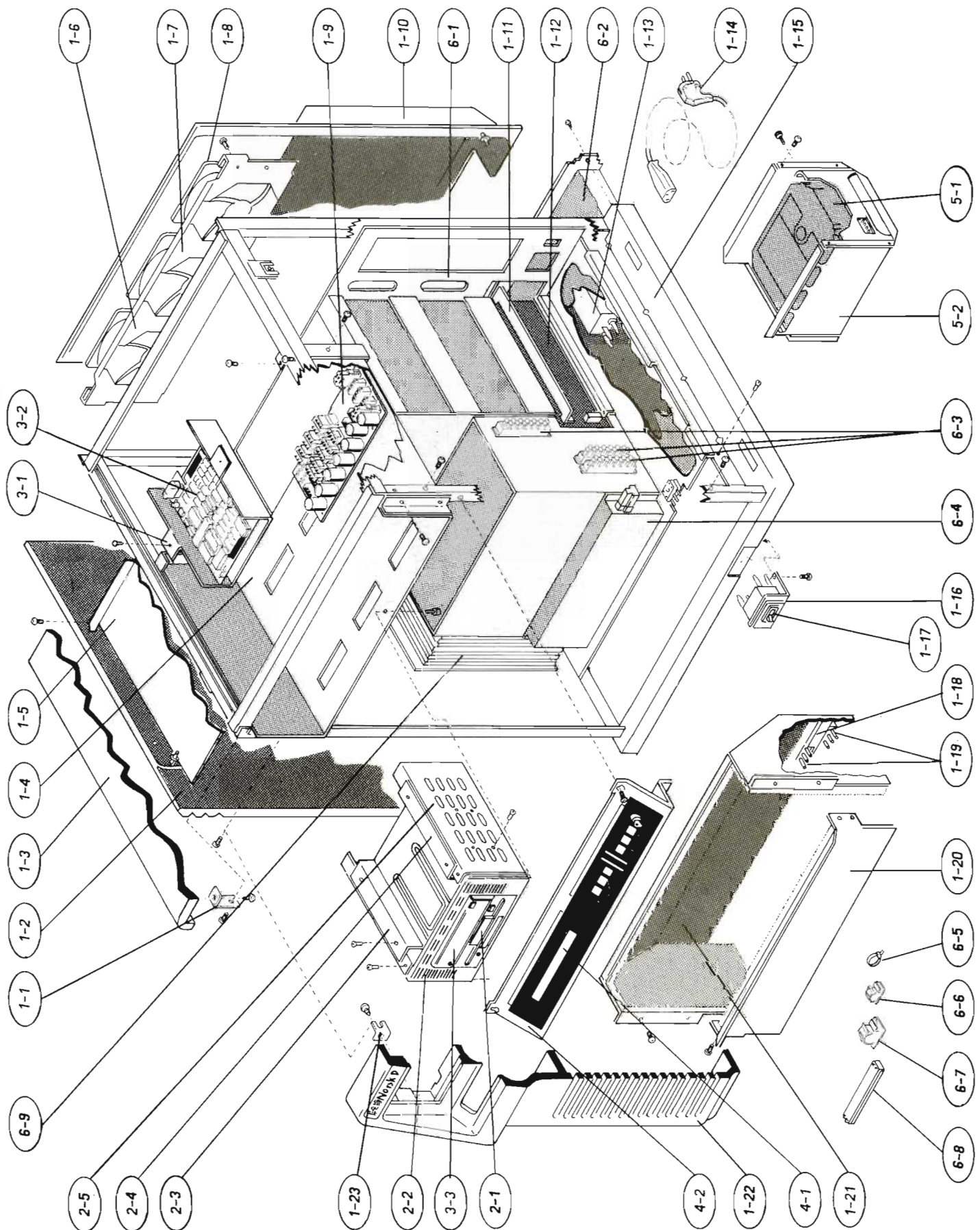


ND-100 Compact Model 12

Ref. desig.	Item name - description	Article number	Qty	Stat- tus	Ref. desig.	Item name - description	Article number	Qty	Stat- tus
1	Cabinet	106571	1		3	Streamer 5.25"	106270	1	R/S
1-1	BRACKET, PANEL (TOP)	519571	4		3-1	BRACKET FOR FORMATTER BOARD	519635	1	
1-2	PANEL, CABINET (LEFT/RIGHT)	509048	1		3-2	FORMATTER BOARD FOR STREAMER 5.25"	528045	1	R/S
1-3	PANEL, CABINET (TOP)	509049	1		3-3	STREAMER 5.25"	528043	1	
1-4	DRIVE RACK	519567	1						
1-5	COVER	519846	1		4	Operator Panel w/ Display	100941	1	
1-6	FAN UNIT (TOP)	322794	1		4-1	OPERATOR PANEL W/DISPLAY	323163	1	R/S
1-7	FAN PAPT	510007	3	S	4-2	BRACKET FOR OPERATOR PANEL	519555	1	
1-8	FAN PAPT GUARD (TOP)	510006	1	S					
1-9	PCB 1851 BB AC/DC DISTR.	324581	1		5	Disk Micropolis 1325 74.4 Mb	106280	1	R/S
1-10	PANEL, CABINET (REAR)	509050	1		5-1	5.25" DISK HOUSING	519565	1	
1-11	RAIL 5V	519601	1		5-2	DISK MICROPOLIS 1325 74.5 MB	525034	1	
1-12	PCB 6036 BB BACKWIRING	324409	1		6	Card Crate ND-100 Compact	100930	1	
1-13	MAINS FILTER FS 2235-6-06	503318	1		6-1	CARD CRATE	505012	1	
1-14	CONNECTOR OTTO 4260B/3020 CABLE	518892	1		6-2	FAN UNIT (UNDER CARD CRATE)	322797	1	
1-15	SOCKET	509047	1		6-3	RAIL POWER/CARD CRATE	509154	1	
1-16	BRACKET, CIRCUIT BREAKER	519562	1		6-4	BATTERY EBU-13, 1 AMPERE/HOUR	511017	1	S
1-17	CIRCUIT BREAKER	518939	1		6-5	STRAP PANDUIT SST 1.5 MM 12 CM	518262	5	
1-18	PLUG BRACKET	519564	1		6-6	CLIP ZT 375 S	518272	9	
1-19	TERMINAL BOARD 8006V/3B KR	517012	2		6-7	CLIP ZT 500 S	518278	6	
1-20	FRONT PLATE AIR INLET	519568	1		6-8	RC-CLAMP 3 M 3486-3	517362	14	
1-21	AIR INLET	519569	1		6-9	POWER EMSP-445 220V (110V : 511018 AM)	511016	1	R/S
1-22	PANEL, CABINET (FRONT)	509046	1						
1-23	BRACKET, PANEL (FRONT)	519570	4						
2	Floppy Disk Drive 5.25"	103161	1	R/S					
2-1	FLOPPY DISK DRIVE 5.25"	529022	1						
2-2	FRONT PANEL	519630	2						
2-3	BRACKET LEFT, 5.25" DRIVE	519631	2						
2-4	BRACKET RIGHT, 5.25" DRIVE	519632	2						
2-5	DRIVE HOUSING, 5.25" DRIVE	519629	2						
*	DUMMY FRONT	528044	2						

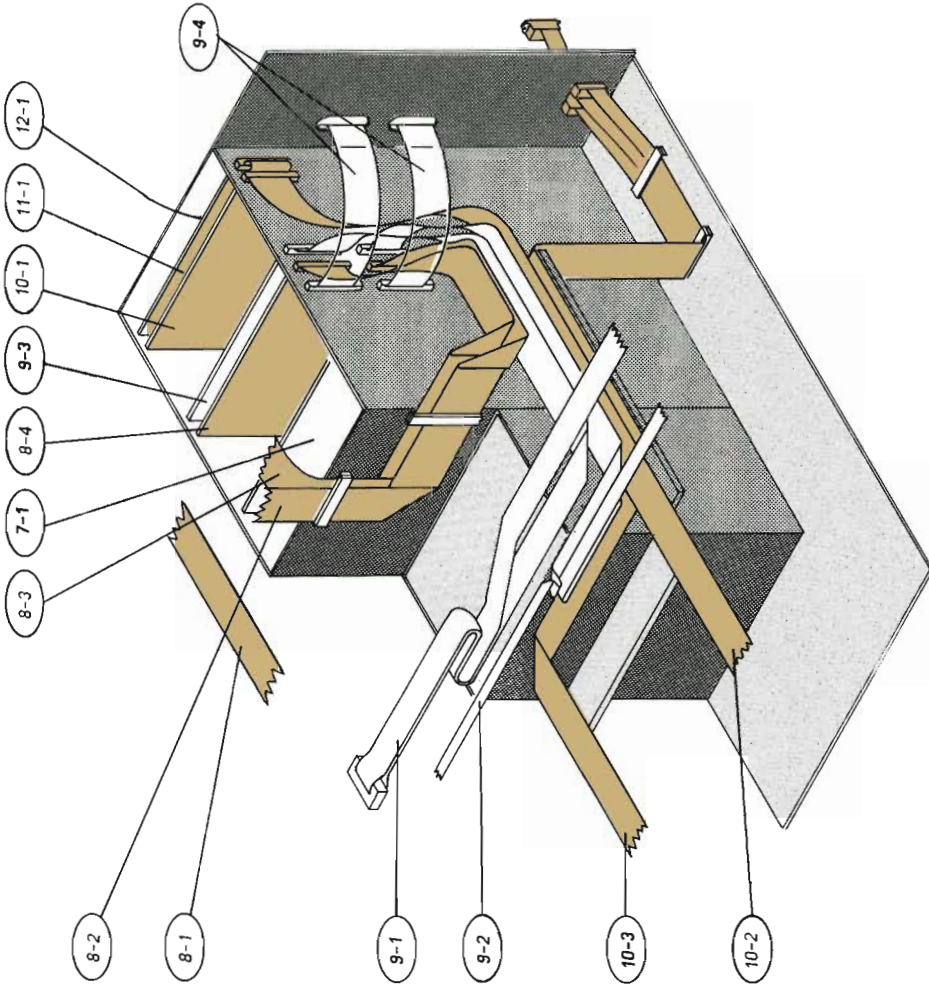
NOTE!

The part (dummy front) marked with an asterisk (*) is used instead of floppy/streamer in the second drive housing.



Ref. Item name - description Article number Qty Status
 Specify this when ordering design.

7	1 Mb Memory	103700	1	
7-1	N-100 1 MB MEMORY	324113	1	R/S
8	Floppy/Streamer Interface 5.25"	103170	1	
8-1	CABLE INT FROM FORMATTER TO STREAMER 5.25"	327512	1	
8-2	CABLE INT CARD CRATE TO FLOPPY 5.25"	327643	1	
8-3	CABLE INT CARD CRATE FORMATTER	327535	1	
8-4	N-100 8" + 5.25" FLOPPY + STREAMER INTERFACE 324012		1	R/S
9	Disk Controller Fixed Winchester	106310	1	
9-1	CABLE INT 5.25" DISK A-CABLE	327534	1	
9-2	CABLE INT 5.25" DISK B-CABLE	327533	1	
9-3	N-100 ST 506 DISK CONTROLLER	322671	1	R/S
9-4	CABLE INT 4/8 TERMINAL	327532	1	
10*	Memory Management System II exclusive CACHE	100311	1	
10-1	N-100 MMS II EXCL. CACHE	324107	1	R/S
10-2	CABLE INT CPU/MMS TO OPERATOR PANEL	327524	1	
10-3	CABLE INT TELEFIX CONSOLE TPRI	327526	1	
11*	ND-100 Standard CPU 48 bit CX	101000	1	
11-1	N-100 CPU 48-BIT CX VERSION	322663	48CX	1 R/S
12	PROM Kit (2 kb PROM ND-100)	100361	1	
12-1	KIT PROM 48-BIT CX VERSION	700611	1	S



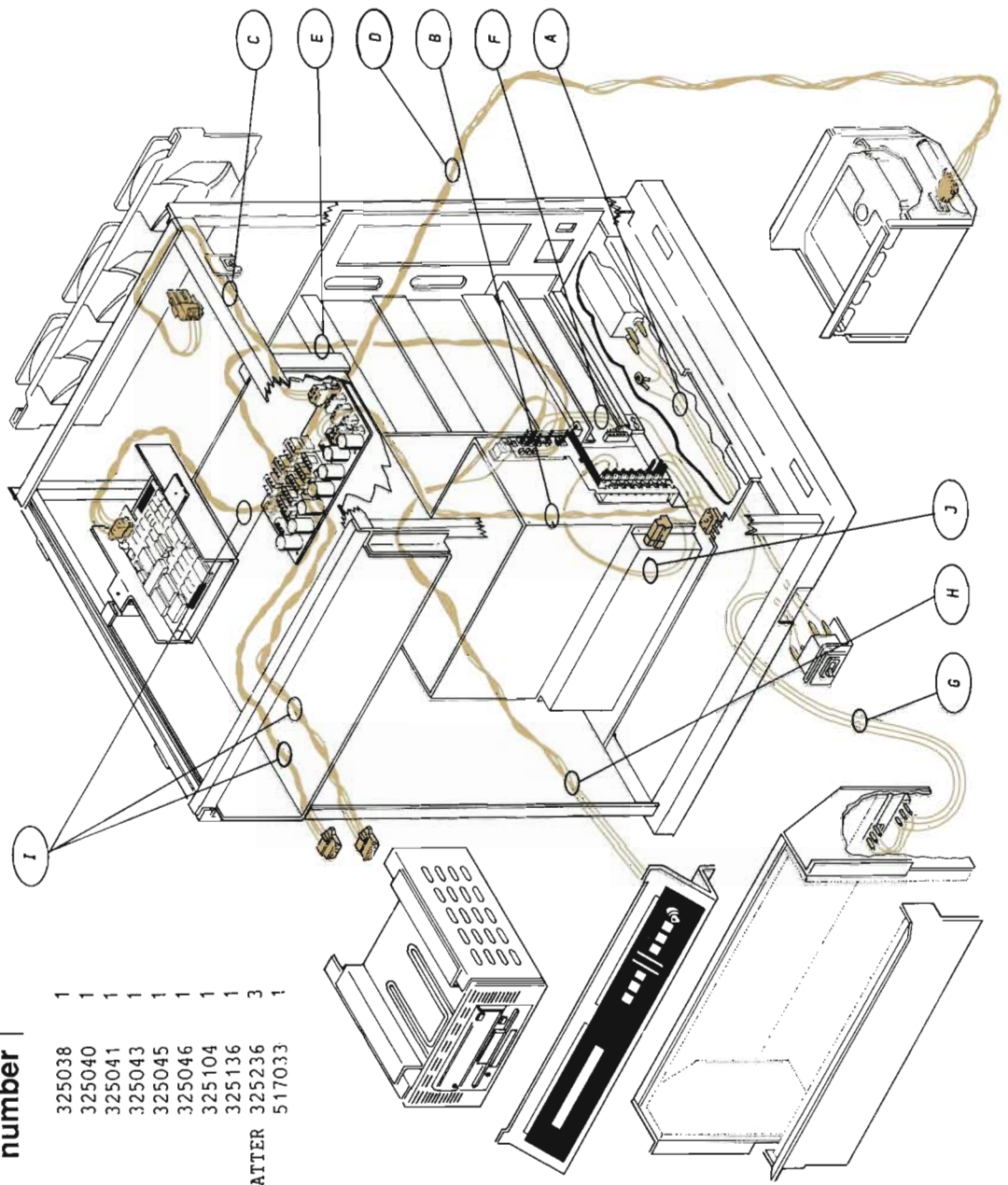
NOTE!

In the ND-110 Compact version, the two cards (ND-100 CPU and MMS marked with an asterisk (*)) are replaced by the ND-110 CX CPU & MMS (324530). The new card must be put in the "old" MMS's location.

Cables, Rails, Capacitor, Screws

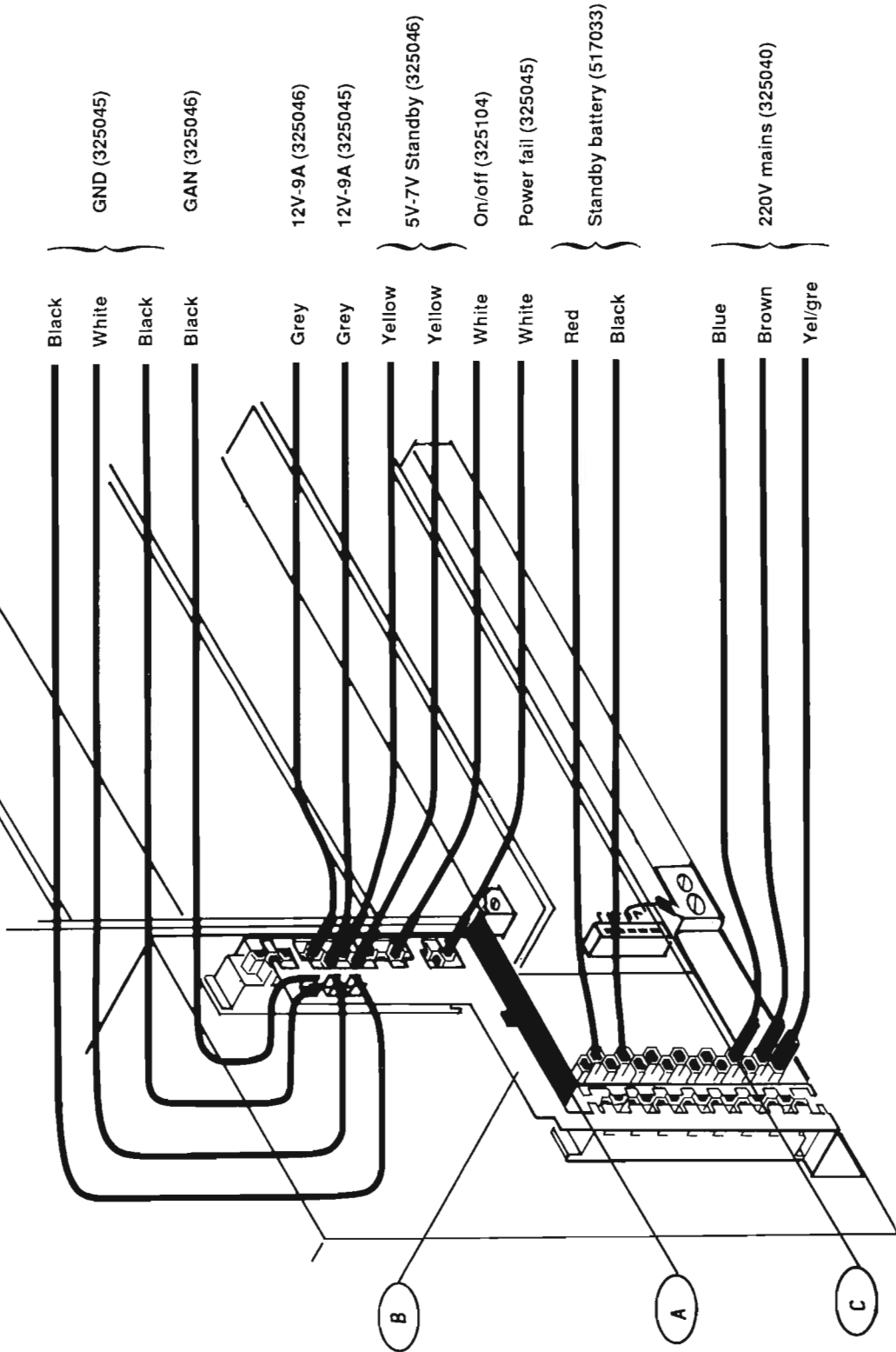
Ref. desig.	Item name - description	Article number	Qty
A	CABLE INT FILTER TO FUSE	325038	1
B	CABLE INT 230V POWER SUPPLY, AC-DC	325040	1
C	CABLE INT 230V DISTR TO FAN UNIT (TOP)	325041	1
D	CABLE INT DISTR TO DISK.	325043	1
E	CABLE INT DISTR TO POWER SUPPLY	325045	1
F	CABLE INT BACKWIRING TO POWER SUPPLY	325046	1
G	CABLE INT ON/OFF SWITCH TO POWER SUPPLY	325104	1
H	CABLE INT 230V CB TO CB COMPACT	325136	1
I	CABLE INT DISTR TO FLOPPY/STREAMER 5.25"FORMATTER	325236	3
J	CHARGER CABEL. FOR COMPACT POWER	517033	1

Specify this when ordering



Specify this when ordering
Ref. Item name - description Article number Qty

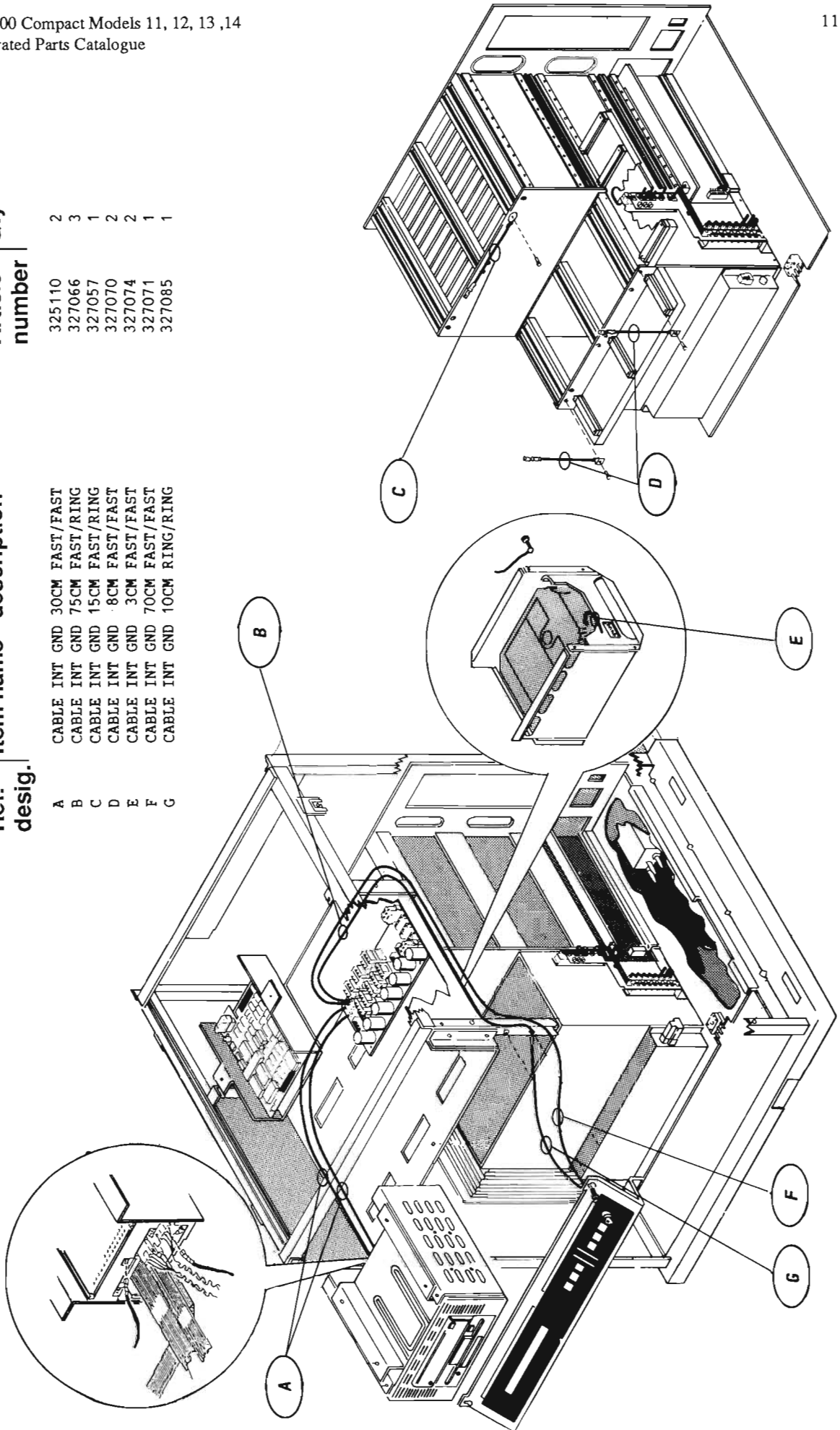
A	RAIL SINGLE, POWER CARD CRATE	509154	1
B	RAIL DOUBLE, POWER CARD CRATE	509155	1
C	CAPACITOR CERAMIC 100 nF	503261	1



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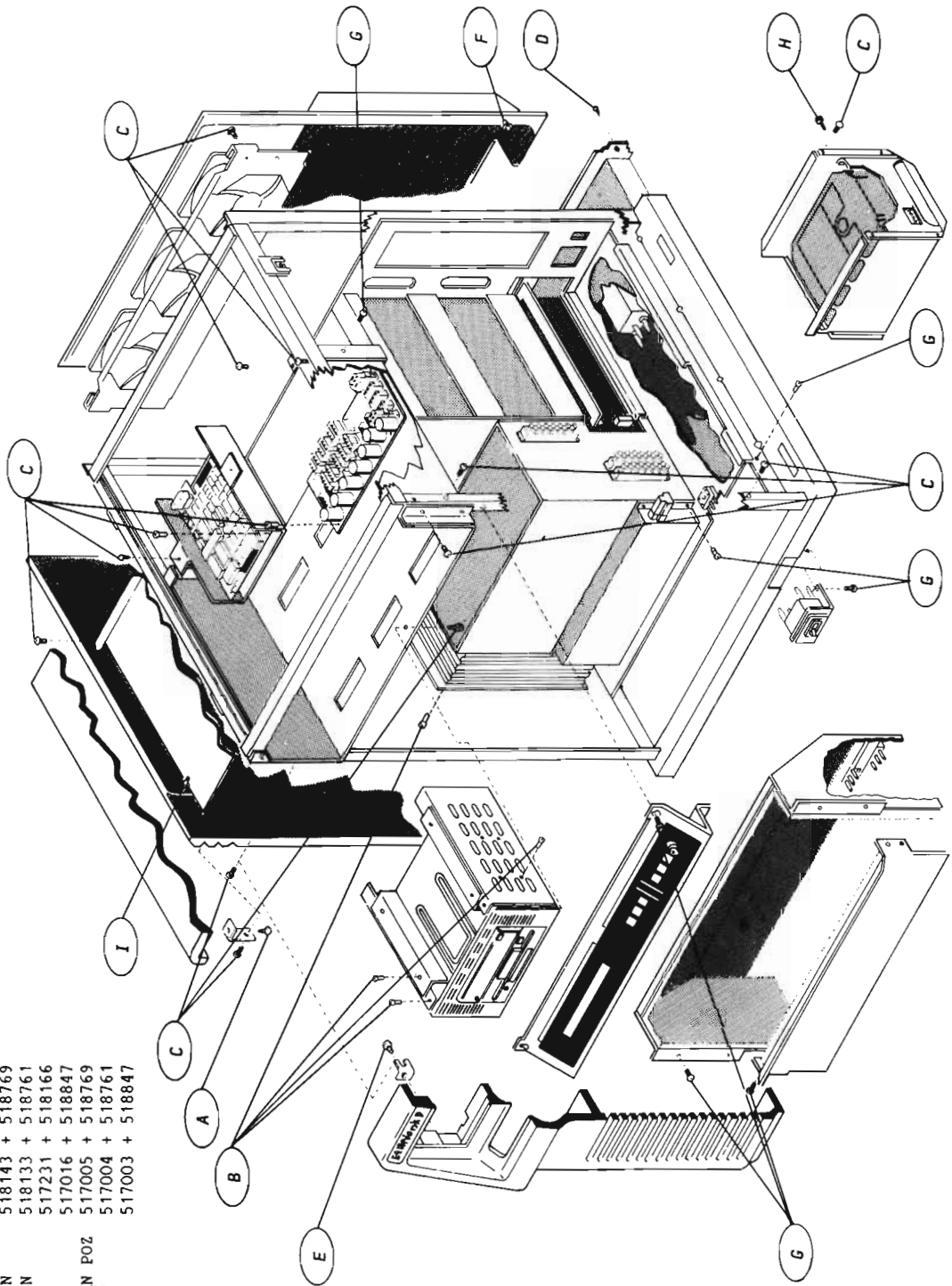
Ref. desig.	Item name - description	Article number	Qty
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A	CABLE INT GND 30CM FAST/FAST	325110	2
B	CABLE INT GND 75CM FAST/RING	327066	3
C	CABLE INT GND 15CM FAST/RING	327057	1
D	CABLE INT GND 8CM FAST/FAST	327070	2
E	CABLE INT GND 3CM FAST/FAST	327074	2
F	CABLE INT GND 70CM FAST/FAST	327071	1
G	CABLE INT GND 10CM RING/RING	327085	1



Specify this when ordering
Ref. Item name - description Article number
desig.

- A SCREW 3/8" NO. 10 POZI 518678 + 518166
- B SCREW 3.0 X 8.0 MM DIN7985 PAN 518185 + 518761
- C SCREW 4.0 X 10.0 MM DIN7985 PAN 518143 + 518769
- D SCREW 3.0 X 16.0 MM DIN7985 PAN 518133 + 518761
- E SCREW 3.0 X 8.0 MM DIN7985 POZ 517231 + 518166
- F SCREW DZUS 314 111 190 517016 + 518847
- G SCREW 4.0 X10.0 MM TAPTIGHT PAN POZ 517005 + 518769
- H SCREW UNC 6-32 X 5/16" PAN POT 517004 + 518761
- I SCREW DZUS 314 118 190 517003 + 518847



Cross Reference List

1 MB MEMORY	11	103700	FAN PAPST	1-6	510007
5.25" DISK HOUSING	5-1	519565	FAN PAPST GUARD (TOP)	1-7	510006
AIR INLET	1-20	519569	FAN PAPST GUARD (UNDER CARDCRATE)	7-2	510003
BATTERY EBU-13, 1 AMPERE/HOUR	7-4	511017	FAN UNIT (TOP)	1-6	322794
BRACKET FOR FORMATTER, STREAMER 5.25"	3-2	519635	FAN UNIT (UNDER CARDCRATE)	7-2	322797
BRACKET FOR OPERATOR PANEL	4-2	519555	FLOPPY DISK DRIVE 5.25"	2-1	529022
BRACKET LEFT, 5.25" DRIVE	2-3	519631	FLOPPY DISK DRIVE 5.25"	2	103161
BRACKET RIGHT, 5.25" DRIVE	2-4	519632	FLOPPY/STREAMER INTERFACE 5.25"	8	103170
BRACKET, CIRCUIT BREAKER	1-15	519562	FORMATTER BOARD FOR STREAMER 5.25"	3-3	528045
BRACKET, PANEL (FRONT)	1-22	519570	FRONT PANEL FOR 5.25" FLOPPY	2-2	519630
BRACKET, PANEL (TOP)	1-1	519571	FRONT PLATE AIR INLET	1-19	519568
CABLE INT 230V CB TO CB COMPACT	1-26	325136	KIT PROM 48 BIT CX VERSION	13-1	700611
CABLE INT 230V DISTR TO FAN UNIT (TOP)	1-23	325041	MAINS FILTER FS 2235-6-06	1-12	503318
CABLE INT 230V POWER SUPPLY, AC-DC	7-13	325040	MEMORY MANAGEMENT SYSTEM II, EXCLUSIVE CACHE	9	100311
CABLE INT 4/8 TERMINAL	10-4	327532	N-100 CPU 48 BIT CX VERSION	12-1	322663 48CX
CABLE INT 5.25" DISK A-CABLE	10-1	327534	N-100 ST 506 DISK CONTROLLER	10-3	322671
CABLE INT 5.25" DISK B-CABLE	10-2	327533	N-100 1 MB MEMORY	11-1	324113
CABLE INT 5V-80A DISTRIBUTION	7-12	325039	N-100 MMS II EXCL. CACHE	9-1	324107
CABLE INT BACKWIRING TO POWER SUPPLY	7-11	325046	N-100 8" + 5.25" FLOPPY + STREAMER INTERFACE	8-4	324012
CABLE INT CARD CRATE FORMATTER	8-3	327535	NO-100 COMPACT MOD 11 CABINET	1a	106570
CABLE INT CARD CRATE TO FLOPPY 5.25"	8-2	327643	NO-100 COMPACT MOD 12 CABINET	1b	106571
CABLE INT CPU/MMS TO OPERATOR PANEL	9-2	327524	NO-100 COMPACT MOD 13 CABINET	1c	106572
CABLE-INT DISTR TO FLOPPY/STREAMER 5.25" /FORMATTER	3-4	325236	NO-100 COMPACT MOD 14 CABINET	1d	106573
CABLE INT DISTR TO MICROP. COMPACT	5-3	325043	NO-100 STANDARD CPU 48 BIT CX	12	101000
CABLE INT DISTR TO POWER SUPPLY	7-10	325045	OPERATOR PANEL W/DISPLAY	4-1	323163
CABLE INT FILTER TO FUSE	1-25	325038	OPERATOR PANEL W/DISPLAY	4	100941
CABLE INT FROM FORMATTER TO STREAMER 5.25"	8-1	327512	PANEL, CABINET (FRONT)	1-21	509046
CABLE INT GND, 15CM RING/RING	1-24	327068	PANEL, CABINET (LEFT/RIGHT)	1-2	509048
CABLE INT ON/OFF SWITCH TO POWER SUPPLY	4-3	325104	PANEL, CABINET (REAR)	1-9	509050
CABLE INT TELEFEX CONSOLE TPRI	9-3	327526	PANEL, CABINET (TOP)	1-3	509049
CARD CRATE	7-1	505012	PCB 1851 BB AC/DC DISTR.	1-8	324581
CARD CRATE NO-100 COMPACT	7	100930	PCB 6036 BB BACKWIRING	1-11	324409
CHARGER CABLE FOR COMPACT POWER	7-14	517033	PLUG BRACKET	1-17	519564
CIRCUIT BREAKER	1-16	518939	PROM EMSP-445 220V (110V : 511018 AM)	7-9	511016
CLIP ZT 375 S	7-6	518272	PROM KIT (2 KB PROM NO-100)	13	100361
CLIP ZT 500 S	7-7	518278	RAIL 5V	1-10	519601
COMPACT MODEL 11		003291	RC-CLAMP 3 M 3486-3	7-8	517362
COMPACT MODEL 12		003292	SCREW 3.0 X 16.0 MM DIN7985 PAN	0	518133
COMPACT MODEL 13		003293	SCREW 3.0 X 8.0 MM DIN7985 PAN	B	518185
COMPACT MODEL 14		003294	SCREW 3.0 X 8.0 MM DIN7985 POZ	E	517231
CONNECTOR OTTO 42608/3020 CABLE	1-13	518892	SCREW 3/8" NO. 10 POZI	A	518678
CONNECTOR, HART 09060152811 15P	7-3	518037	SCREW 4.0 X 10.0 MM DIN7985 PAN	C	518143
COVER	1-5	519846	SCREW 4.0 X 10.0 MM TAP TIGHT PAN POZ	G	517005
DISK CONTROLLER, FIXED WINCHESTER	10	106310	SCREW DZUS 314 111 190	F	517016
DISK MICROPOLIS 1325 74.5 MB	5	106280	SCREW DZUS 314 118 190	I	517003
DISK MICROPOLIS 1325 74.5 MB	5-2	525034	SCREW UNC 6-32 X 5/16" PAN POT	H	517004
DRIVE HOUSING FOR 5.25" FLOPPY	2-5	519629	SMD DISK INTERFACE 15 MHZ	6	106320
DRIVE RACK	1-4	519567	SOCKET	1-14	509047
DUMMY FRONT	2-6	528044	STRAP PANDUIT SST 1.5 MM 12 CM	7-5	518262
			STREAMER 5.25"	3	106270
			STREAMER 5.25"	3-1	528043
			TERMINAL BOARD 8006V/3B KR	1-18	517012

