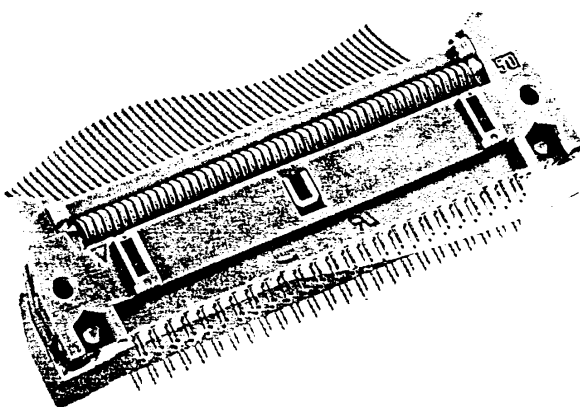


# Flat Cable Connector System



Certified according to DIN ISO 9001  
in design/development, production,  
installation and servicing



## The best connections world-wide - connect with quality - specify HARTING

HARTING Elektronik GmbH was founded in 1945 and is 100 % privately owned.

Approximately 1,600 people are employed worldwide including 150 engineers and more than 100 sales engineers who provide the daily interface with our customers.

HARTING with its 15 subsidiaries in Europe, North America and Asia is today one of the world's leading connector manufacturers.

All the company's manufacturing plants, with the exception of Plant 1 in Espelkamp, have been built within the last ten years.

State of the art CAD-Systems are used both in the R & D department and the tool making department in order to bring new products to the market in the most efficient way.

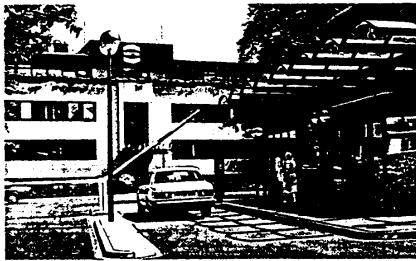
It is HARTING's philosophy that the target of permanent zero defect production is only achievable by the integration of fully automatic in-line inspection processes.

The implementation of the above quality philosophy and associated processes are documented according to DIN ISO 9001 in the Quality Assurance Manual.

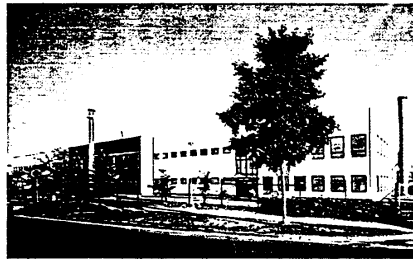
In total approximately 60 quality control personnel are employed. The majority of these engineers and technicians are trained and certified by the German (DCQ) or Swiss (SAQ) quality organisations. The divisions electronic connectors, heavy duty connectors Han® and solenoids are certified according to DIN ISO 9001 for design/R & D, production, assembly and customer service.

The dedication to quality and the ability to deliver on a "Just in Time" basis have led to the development of strong relationships with leading original equipment manufacturers on the world market.

HARTING is the market leader in several of its product ranges.



Germany - Plant 1      Espelkamp



Germany - Plant 2      Espelkamp



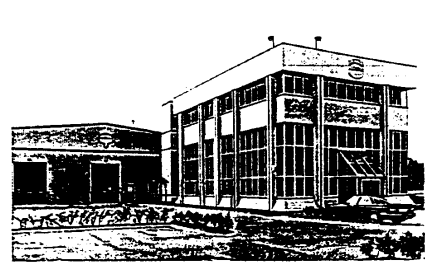
Germany - Plant 3      Espelkamp



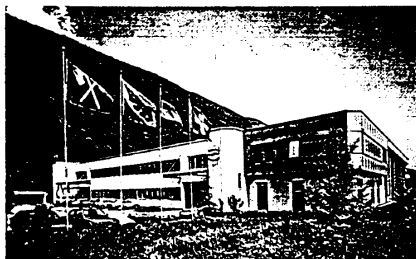
France - Sales and marketing



Espelkamp - Staff Cafeteria



United Kingdom - Production, sales and marketing






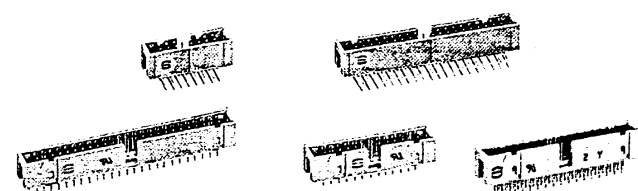

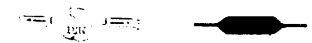


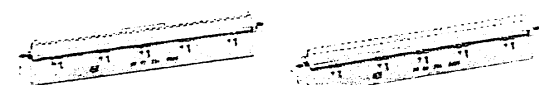


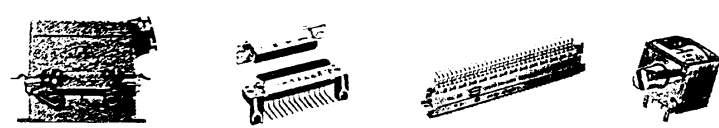
2      Switzerland - Production plant



Hong Kong - Production, sales and marketing



Italy - Sales and marketing

Series	Number of contacts		Page
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	26		
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	20		
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# The HARTING Insulation Displacement Technique



## Economic and Reliable Connections

The flat cable and connector can be preassembled and used as a component with predetermined functional characteristics.

The HARTING insulation displacement contacts pierce the insulation on the flat cable to provide a durable gastight connection with the wire.

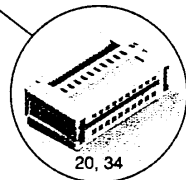
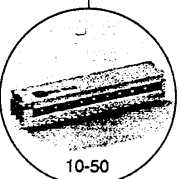
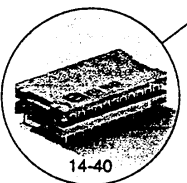
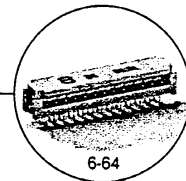
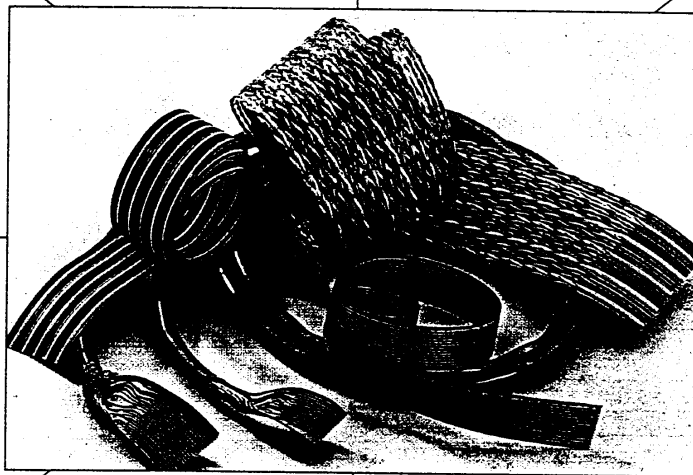
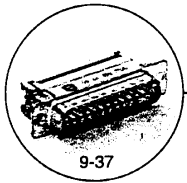
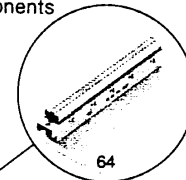
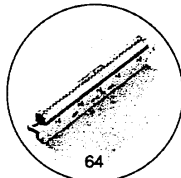
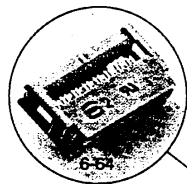
The HARTING<sup>®</sup> insulation displacement technique constitutes the ideal solution to your wiring problems.

<sup>®</sup>The HARTING insulation displacement system meets all the characteristics, specifications and test conditions of DIN 41 611/part 6.

For "non standard applications" we can manufacture designs to match your requirements. Please discuss requirements with us.

HARTING SEK connectors incorporate the latest design features and provide the assurance of high quality and reliability with economy.

Sales Department  
HARTING-Components



### Cable assemblies

- HARTING can supply cable assemblies to customer specifications.
- A wide range of connector types available with various contact arrangements constitute the ideal solution to your wiring problems.
- Cables of all types in economic reel lengths are available.

### Quality

- Cables professionally assembled on HARTING work stations ensure reliable connections.
- Finished harnesses are subject to 100% quality checks on a HARTING test device.
- 1 kV insulation test.
- Contact resistance test.

### Economy

- The tested assembly of connectors and flat cables from one manufacturer guarantees a high degree of economy and reliability.
- Investment for work stations and test devices are not required.
- Stocks of piece parts are reduced.

### General Information

It is the user's responsibility to check whether the components illustrated in this catalogue comply with different regulations from those stated in special fields of application which we are unable to foresee.

We reserve the right to modify designs in order to improve quality, keep pace with technological advancement or meet particular requirements in production.

This catalogue must not be used in any form or manner without our prior approval in writing (Copyright Law, Fair Trading Law, Civil Code).  
We are bound by the French version only.

# Technical Characteristics



Number of contacts 6, 9, 10, 14, 15, 16, 20, 24, 25, 26, 28, 34, 37, 40, 50, 60, 64  
Series SEK 18  
UL/CSA-approved

Pitch (mm)

Male header 2.54 mm

Insulation displacement contacts on the flat cable connector 1.27 mm

Working current 1 A

Test voltage  $U_{r.m.s.}$  1 kV  
SEK 17, SEK 19 : 500 V

Contact resistance  $\leq 20 \text{ m}\Omega$

Insulation resistance  $\geq 10^9 \Omega$

Temperature range  $-55 \text{ }^\circ\text{C} + 125 \text{ }^\circ\text{C}$

The maximum temperature includes heating of contacts and ambient temperature.

## Terminations

SEK 18 female connector transition connector Insulation displacement connection  
Wire AWG 28 (7 x 0.127) 0.09 mm<sup>2</sup>

SEK 18 male header Wrap posts 0.6 x 0.6 mm  
Diagonal 0.79-0.86 mm  
Solder pins for PC.B. hole  $\varnothing$  0.9 mm, DIN IEC 52 141

SEK 18 Card edge Compliant press-in termination for  $\varnothing$  0.94 - 1.06 mm  
Insulation displacement connection  
Wire AWG 28 (7 x 0.127) 0.09 mm<sup>2</sup>

SEK 17 and 19 Insulation displacement connection  
Wire AWG 28 (7 x 0.127) 0.09 mm<sup>2</sup>  
Solder pins 0.45 x 0.35 mm for PC.B. hole  $\varnothing$  0.8 mm

Gds A-B · Gds A-C D-Sub Insulation displacement connection  
Wire AWG 28 (7 x 0.127) 0.09 mm<sup>2</sup>

Mouldings Thermoplastic resin (PBTP)  
UL 94-V 0

## Contact surface

SEK 18 Contact zone: gold-plated according to Performance Level<sup>1)</sup>  
Termination zone: tinned

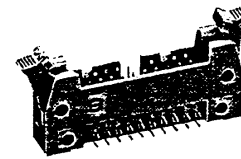
SEK 17 and 19 Tinned

Gds A-B · Gds A-C D-Sub Contact zone: gold-plated according to Performance Level<sup>1)</sup>  
Termination zone: tinned

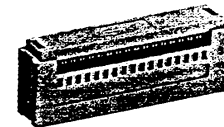
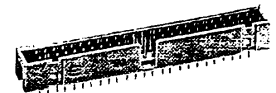
<sup>1)</sup>Performance Level 3 as per DIN 41 651, Part 2  
50 mating cycles  
No gas test

<sup>1)</sup>Performance Level 2 as per DIN 41 651, Part 2  
200 mating cycles  
4 days gas test

<sup>1)</sup>Performance Level as per MIL-C 83 503  
> 0.76  $\mu\text{m}$  Au (30  $\mu$  inch) on request  
Different contact surfaces on request



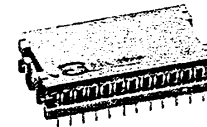
SEK 18



SEK 18



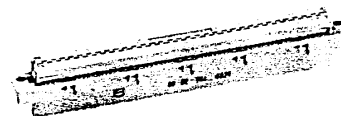
SEK 18



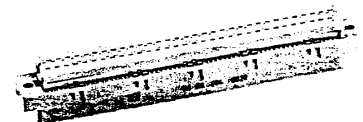
SEK 17



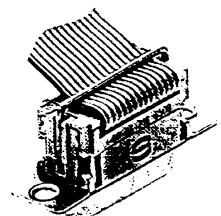
SEK 19



Gds A-B



Gds A-C

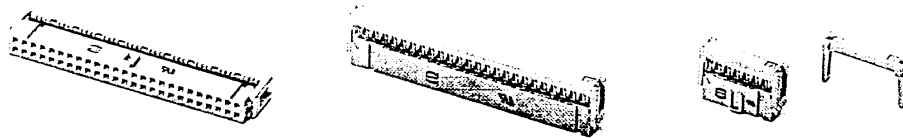


D-Sub


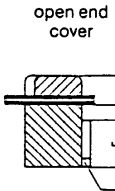
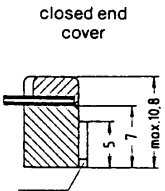
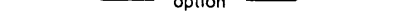



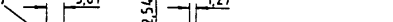
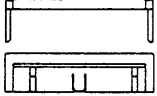
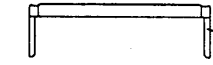

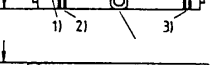
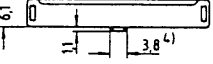
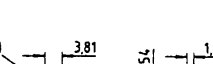
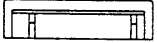
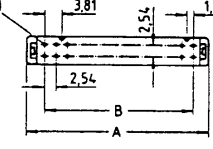
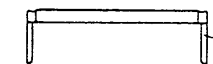
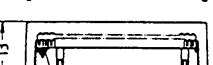
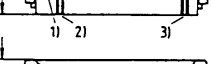
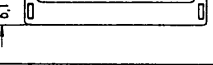
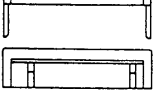
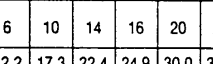


Number of contacts

6-64



Female connector

Identification	No. of contacts	Part No.		Drawing	Dimensions in mm	
		open end cover	closed end cover			
Female connector with central polarization without strain relief clamp 	6	09 18 506 803	09 18 506 804			
	10	09 18 510 803	09 18 510 804			
	14	09 18 514 803	09 18 514 804			
	16	09 18 516 803	09 18 516 804			
	20	09 18 520 803	09 18 520 804			
	26	09 18 526 803	09 18 526 804			
	34	09 18 534 803	09 18 534 804			
	40	09 18 540 803	09 18 540 804			
	50	09 18 550 803	09 18 550 804			
	60	09 18 560 803	09 18 560 804			
	64	09 18 564 803	09 18 564 804			
	6	09 18 506 813	09 18 506 814*			
	with strain relief clamp 	10	09 18 510 813	09 18 510 814*		Strain relief clamp option
		14	09 18 514 813	09 18 514 814*		
		16	09 18 516 813	09 18 516 814*		
		20	09 18 520 813	09 18 520 814*		
26		09 18 526 813	09 18 526 814*			
34		09 18 534 813	09 18 534 814*			
40		09 18 540 813	09 18 540 814*			
50		09 18 550 813	09 18 550 814*			
60		09 18 560 813	09 18 560 814*			
64		09 18 564 813	09 18 564 814*			
Female connector without central polarization without strain relief clamp 		10	09 18 510 805	09 18 510 806*		Strain relief clamp option
		14	09 18 514 805	09 18 514 806*		
		16	09 18 516 805	09 18 516 806*		
		20	09 18 520 805	09 18 520 806*		
		26	09 18 526 805	09 18 526 806*		
		34	09 18 534 805	09 18 534 806*		
	40	09 18 540 805	09 18 540 806*			
	50	09 18 550 805	09 18 550 806*			
	60	09 18 560 805	09 18 560 806*			
	64	09 18 564 805	09 18 564 806*			
	with strain relief clamp 	10	09 18 510 815*	09 18 510 816*		
		14	09 18 514 815*	09 18 514 816*		
		16	09 18 516 815*	09 18 516 816*		
		20	09 18 520 815*	09 18 520 816*		
		26	09 18 526 815*	09 18 526 816*		
		34	09 18 534 815*	09 18 534 816*		
40		09 18 540 815*	09 18 540 816*			
50		09 18 550 815*	09 18 550 816*			
60	09 18 560 815*	09 18 560 816*				
64	09 18 564 815*	09 18 564 816*				

No. of contacts	6	10	14	16	20	26	34	40	50	60	64
A	12,2	17,3	22,4	24,9	30,0	37,6	47,8	55,4	68,1	80,8	85,9
B	5,08	10,16	15,24	17,78	22,86	30,48	40,64	48,26	60,96	73,66	78,74

- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14way female connector
- 3) No polarization slot for 6way female connector
- 4) 6way: 2.0 mm

For Performance Level 3 please specify digit 7 \*  
 For Performance Level 2 please specify digit 6 \*  
 > 0.76 μm Au (30 μ inch) on request 5 \*

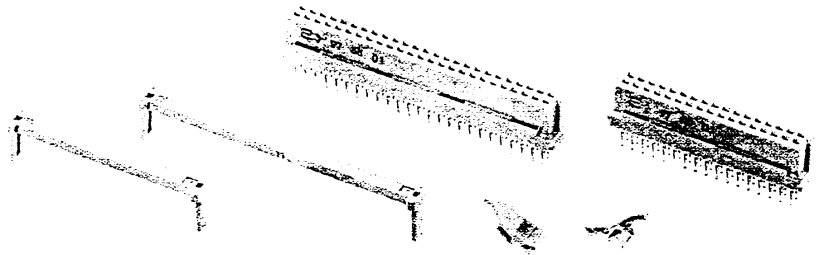
\* Not kept in stock

# SEK



Number of contacts

**6-64** SEK 18  
**26-64** SEK 24



Strain relief clamp/Locking lever

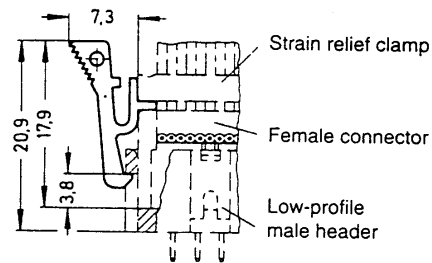
Press in female connector SEK 24

Identification	No. of contacts	Part No.	Drawing		Dimensions in mm
			No. of contacts	A	
Strain relief clamp	6	09 18 506 9002	6	12.2	
	10	09 18 510 9002	10	17.3	
	14	09 18 514 9002	14	22.4	
	16	09 18 516 9002	16	24.9	
	20	09 18 520 9002	20	30.0	
	26	09 18 526 9002	26	37.6	
	34	09 18 534 9002	34	47.8	
	40	09 18 540 9002	40	55.4	
	50	09 18 550 9002	50	68.1	
	60	09 18 560 9002	60	80.8	
	64	09 18 564 9002	64	85.9	

Locking lever for female connector

Only in conjunction with low-profile male header and strain relief

09 18 000 9905<sup>1)</sup>



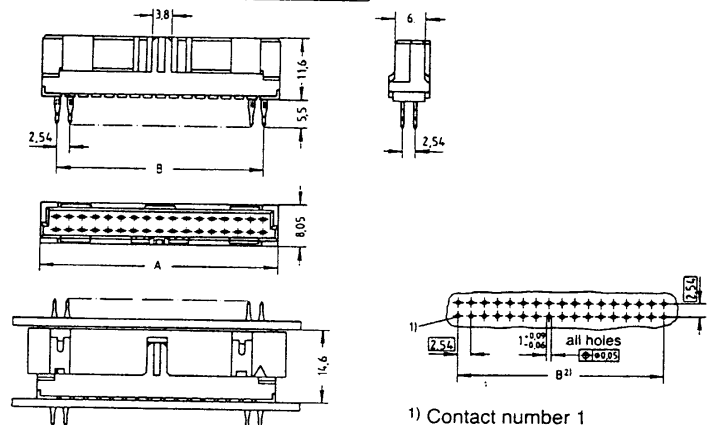
<sup>1)</sup> Order 2 per female connector

Female connector SEK 24

with straight press-in terminations and central polarization

09 24 126 — 801  
 09 24 134 — 801  
 09 24 140 — 801  
 09 24 150 — 801  
 09 24 164 — 801

No. of contacts	A	B
26	36.70	2.54 x 12 = 30.48
34	46.90	2.54 x 16 = 40.64
40	54.50	2.54 x 19 = 48.26
50	67.20	2.54 x 24 = 60.96
64	85.00	2.54 x 31 = 78.74



<sup>1)</sup> Contact number 1  
<sup>2)</sup> Pitch tolerance: ± 0.1

For Performance Level 3 please specify digit 7  
 For Performance Level 2 please specify digit 6  
 > 0.76 µm Au (30 µ inch) on request 5\*

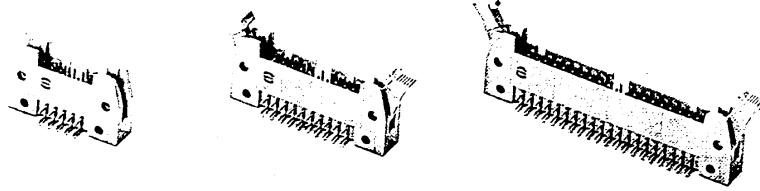
\* Not kept in stock

For coding see page 15



Number of contacts

**6-64**



Male header with angled pins

Identification/pins

Male header with angled solder pins

Length: 2.9 mm

Male header with angled solder pins

Length: 4.5 mm

Male header with angled wrap posts

Length: 15 mm  
□ 0.6 mm

No. of contacts	Part No.		
	Without levers	With short levers	With long levers
6	09 18 506 ⊔ 923	09 18 506 ⊔ 913	09 18 506 ⊔ 903
10	09 18 510 ⊔ 923	09 18 510 ⊔ 913	09 18 510 ⊔ 903
14	09 18 514 ⊔ 923	09 18 514 ⊔ 913	09 18 514 ⊔ 903
16	09 18 516 ⊔ 923	09 18 516 ⊔ 913	09 18 516 ⊔ 903
20	09 18 520 ⊔ 923	09 18 520 ⊔ 913	09 18 520 ⊔ 903
26	09 18 526 ⊔ 923	09 18 526 ⊔ 913	09 18 526 ⊔ 903
34	09 18 534 ⊔ 923	09 18 534 ⊔ 913	09 18 534 ⊔ 903
40	09 18 540 ⊔ 923	09 18 540 ⊔ 913	09 18 540 ⊔ 903
50	09 18 550 ⊔ 923	09 18 550 ⊔ 913	09 18 550 ⊔ 903
60	09 18 560 ⊔ 923	09 18 560 ⊔ 913	09 18 560 ⊔ 903
64	09 18 564 ⊔ 923	09 18 564 ⊔ 913	09 18 564 ⊔ 903
6	09 18 506 ⊔ 921*	09 18 506 ⊔ 911*	09 18 506 ⊔ 901*
10	09 18 510 ⊔ 921*	09 18 510 ⊔ 911*	09 18 510 ⊔ 901*
14	09 18 514 ⊔ 921*	09 18 514 ⊔ 911*	09 18 514 ⊔ 901*
16	09 18 516 ⊔ 921*	09 18 516 ⊔ 911*	09 18 516 ⊔ 901*
20	09 18 520 ⊔ 921*	09 18 520 ⊔ 911*	09 18 520 ⊔ 901*
26	09 18 526 ⊔ 921*	09 18 526 ⊔ 911*	09 18 526 ⊔ 901*
34	09 18 534 ⊔ 921*	09 18 534 ⊔ 911*	09 18 534 ⊔ 901*
40	09 18 540 ⊔ 921*	09 18 540 ⊔ 911*	09 18 540 ⊔ 901*
50	09 18 550 ⊔ 921*	09 18 550 ⊔ 911*	09 18 550 ⊔ 901*
60	09 18 560 ⊔ 921*	09 18 560 ⊔ 911*	09 18 560 ⊔ 901*
64	09 18 564 ⊔ 921*	09 18 564 ⊔ 911*	09 18 564 ⊔ 901*
6	09 18 506 ⊔ 926*	09 18 506 ⊔ 916*	09 18 506 ⊔ 906*
10	09 18 510 ⊔ 926*	09 18 510 ⊔ 916*	09 18 510 ⊔ 906*
14	09 18 514 ⊔ 926*	09 18 514 ⊔ 916*	09 18 514 ⊔ 906*
16	09 18 516 ⊔ 926*	09 18 516 ⊔ 916*	09 18 516 ⊔ 906*
20	09 18 520 ⊔ 926*	09 18 520 ⊔ 916*	09 18 520 ⊔ 906*
26	09 18 526 ⊔ 926*	09 18 526 ⊔ 916*	09 18 526 ⊔ 906*
34	09 18 534 ⊔ 926*	09 18 534 ⊔ 916*	09 18 534 ⊔ 906*
40	09 18 540 ⊔ 926*	09 18 540 ⊔ 916*	09 18 540 ⊔ 906*
50	09 18 550 ⊔ 926*	09 18 550 ⊔ 916*	09 18 550 ⊔ 906*
60	09 18 560 ⊔ 926*	09 18 560 ⊔ 916*	09 18 560 ⊔ 906*
64	09 18 564 ⊔ 926*	09 18 564 ⊔ 916*	09 18 564 ⊔ 906*

\*Not kept in stock

For Performance Level 3 please specify digit 7\*

For Performance Level 2 please specify digit 6

> 0.76 μm Au (30 μ inch) on request 5\*

7

6

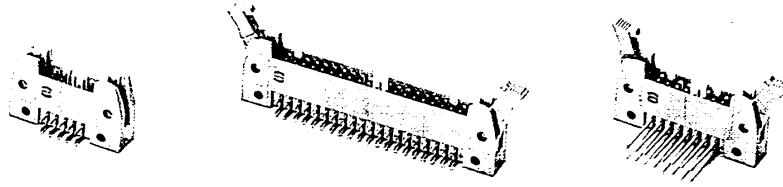
5\*

7

6

5\*



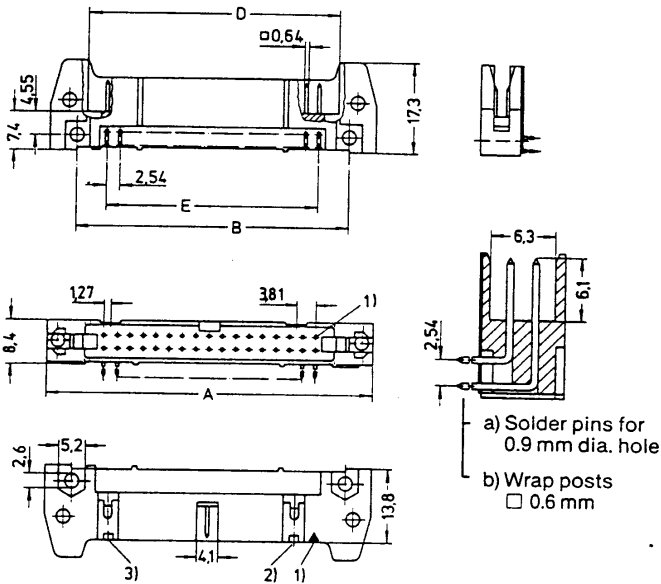
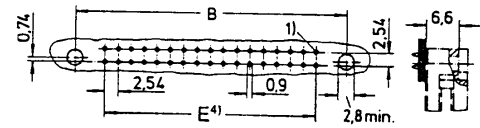


Drawing

No. of contacts	A	B	D	E	F	G
6	26.9	16.76	12.45	2.54 x 2 = 5.08	36.9	40.3
10	32.0	21.84	17.53	2.54 x 4 = 10.16	42.0	45.4
14	37.1	26.92	22.61	2.54 x 6 = 15.24	47.1	50.4
16	39.6	29.46	25.15	2.54 x 7 = 17.78	49.6	53.0
20	44.7	34.54	30.23	2.54 x 9 = 22.86	54.7	58.1
26	52.3	42.16	37.85	2.54 x 12 = 30.48	62.3	65.7
34	62.5	52.32	48.01	2.54 x 16 = 40.64	72.5	75.8
40	70.1	59.94	55.63	2.54 x 19 = 48.26	80.1	83.5
50	82.8	72.64	68.33	2.54 x 24 = 60.96	92.8	96.2
60	95.5	85.34	81.03	2.54 x 29 = 73.66	105.5	108.9
64	100.6	90.42	86.11	2.54 x 31 = 78.74	110.6	113.9

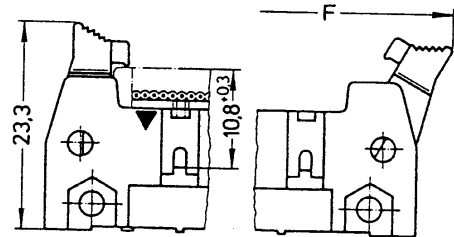
Dimensions in mm

PC. board layout

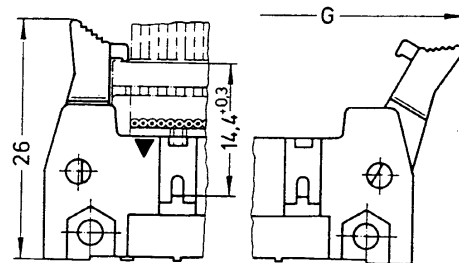


- a) Solder pins for 0.9 mm dia. hole
- b) Wrap posts  $\square$  0.6 mm

Short levers  
for use with female connector  
without strain relief clamp



Long levers  
for use with female connector  
with strain relief clamp



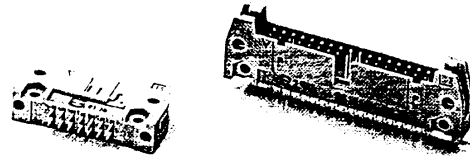
- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance:  $\pm$  0.1

For accessories see page 15



Number of contacts

**6-64**



Male header with straight pins

Identification/pins

Male header with straight solder pins

Length: 2.9 mm

Male header with straight solder pins

Length: 4.5 mm

Male header with straight wrap posts

Length: 15 mm

□ 0.6 mm

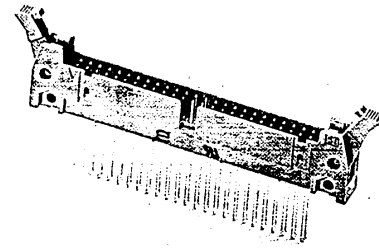
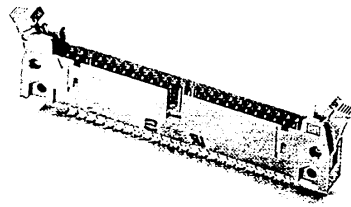
No. of contacts	Part No.		
	Without levers	With short levers	With long levers
3	09 18 506 □ 924	09 18 506 □ 914	09 18 506 □ 904
10	09 18 510 □ 924	09 18 510 □ 914	09 18 510 □ 904
14	09 18 514 □ 924	09 18 514 □ 914	09 18 514 □ 904
16	09 18 516 □ 924	09 18 516 □ 914	09 18 516 □ 904
20	09 18 520 □ 924	09 18 520 □ 914	09 18 520 □ 904
26	09 18 526 □ 924	09 18 526 □ 914	09 18 526 □ 904
34	09 18 534 □ 924	09 18 534 □ 914	09 18 534 □ 904
40	09 18 540 □ 924	09 18 540 □ 914	09 18 540 □ 904
50	09 18 550 □ 924	09 18 550 □ 914	09 18 550 □ 904
60	09 18 560 □ 924	09 18 560 □ 914	09 18 560 □ 904
64	09 18 564 □ 924	09 18 564 □ 914	09 18 564 □ 904
3	09 18 506 □ 922*	09 18 506 □ 912*	09 18 506 □ 902*
10	09 18 510 □ 922*	09 18 510 □ 912*	09 18 510 □ 902*
14	09 18 514 □ 922*	09 18 514 □ 912*	09 18 514 □ 902*
16	09 18 516 □ 922*	09 18 516 □ 912*	09 18 516 □ 902*
20	09 18 520 □ 922*	09 18 520 □ 912*	09 18 520 □ 902*
26	09 18 526 □ 922*	09 18 526 □ 912*	09 18 526 □ 902*
34	09 18 534 □ 922*	09 18 534 □ 912*	09 18 534 □ 902*
40	09 18 540 □ 922*	09 18 540 □ 912*	09 18 540 □ 902*
50	09 18 550 □ 922*	09 18 550 □ 912*	09 18 550 □ 902*
60	09 18 560 □ 922*	09 18 560 □ 912*	09 18 560 □ 902*
64	09 18 564 □ 922*	09 18 564 □ 912*	09 18 564 □ 902*
3	09 18 506 □ 927*	09 18 506 □ 917*	09 18 506 □ 907*
10	09 18 510 □ 927*	09 18 510 □ 917*	09 18 510 □ 907*
14	09 18 514 □ 927*	09 18 514 □ 917*	09 18 514 □ 907*
16	09 18 516 □ 927*	09 18 516 □ 917*	09 18 516 □ 907*
20	09 18 520 □ 927*	09 18 520 □ 917*	09 18 520 □ 907*
26	09 18 526 □ 927*	09 18 526 □ 917*	09 18 526 □ 907*
34	09 18 534 □ 927*	09 18 534 □ 917*	09 18 534 □ 907*
40	09 18 540 □ 927*	09 18 540 □ 917*	09 18 540 □ 907*
50	09 18 550 □ 927*	09 18 550 □ 917*	09 18 550 □ 907*
60	09 18 560 □ 927*	09 18 560 □ 917*	09 18 560 □ 907*
64	09 18 564 □ 927*	09 18 564 □ 917*	09 18 564 □ 907*

For Performance Level 3 please specify digit 7\*  
 For Performance Level 2 please specify digit 6,  
 > 0.76 μm Au (30 μ inch) on request 5.\*

7  
6,  
5.\*

\*Not kept in stock

# SEK 18 DIN 41 651

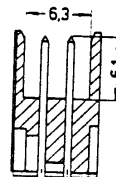
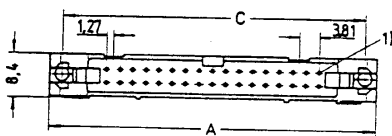
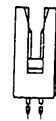
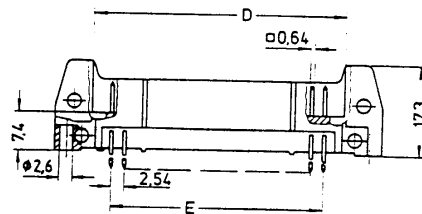
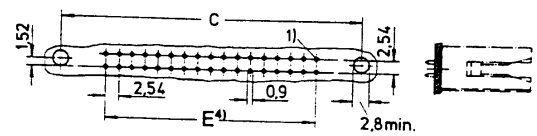


Drawing

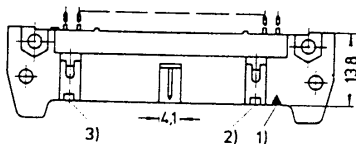
No. of contacts	A	C	D	E	F	G
6	26.9	22.86	12.45	2.54x 2 = 5.08	36.9	40.3
10	32.0	27.94	17.53	2.54x 4 = 10.16	42.0	45.4
14	37.1	33.02	22.61	2.54x 6 = 15.24	47.1	50.4
16	39.6	35.56	25.15	2.54x 7 = 17.78	49.6	53.0
20	44.7	40.64	30.23	2.54x 9 = 22.86	54.7	58.1
26	52.3	48.26	37.85	2.54x12 = 30.48	62.3	65.7
34	62.5	58.42	48.01	2.54x16 = 40.64	72.5	75.8
40	70.1	66.04	55.63	2.54x19 = 48.26	80.1	83.5
50	82.8	78.74	68.33	2.54x24 = 60.96	92.8	96.2
60	95.5	91.44	81.03	2.54x29 = 73.66	105.5	108.9
64	100.6	96.52	86.11	2.54x31 = 78.74	110.6	113.9

Dimensions in mm

PC. board layout

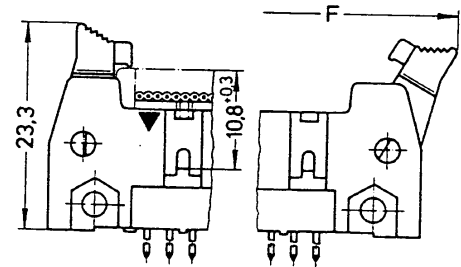


- a) Solder pins for 0.9 mm dia. hole
- b) Wrap posts 0.6 mm



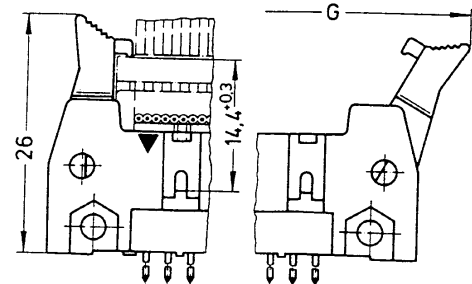
Short levers

for use with female connector without strain relief clamp



Long levers

for use with female connector with strain relief clamp



- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

For accessories see page 15

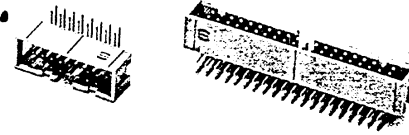
SEK 18



864 780  
864 766  
864-791.  
864-821

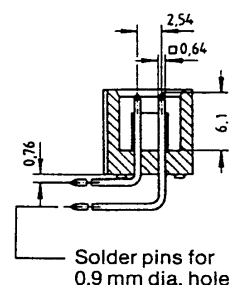
Number of contacts

6-64



Low-profile male header, angled pins

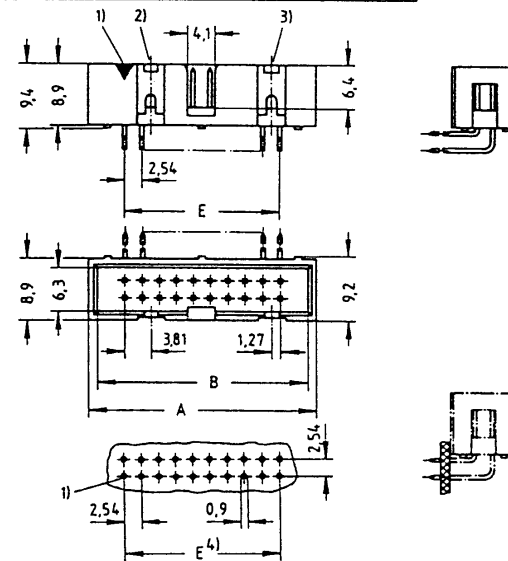
Identification/pins	No. of contacts	Part No.	Drawing	Dimensions in mm			
				No. of contacts	A	B	E
Male header with angled solder pins	6	09 18 506	323	6	15.2	12.78	2.54 x 2 = 5.08
Length: 2.9 mm	10	09 18 510	323	10	20.3	17.86	2.54 x 4 = 10.16
	14	09 18 514	323	14	25.4	22.94	2.54 x 6 = 15.24
	16	09 18 516	323	16	27.9	25.48	2.54 x 7 = 17.78
	20	09 18 520	323	20	33.0	30.56	2.54 x 9 = 22.86
	26	09 18 526	323	26	40.6	38.18	2.54 x 12 = 30.48
	34	09 18 534	323	34	50.8	48.34	2.54 x 16 = 40.64
	40	09 18 540	323	40	58.4	55.96	2.54 x 19 = 48.26
	50	09 18 550	323	50	71.3	68.66	2.54 x 24 = 60.96
	60	09 18 560	323	60	84.0	81.36	2.54 x 29 = 73.66
	64	09 18 564	323	64	89.1	86.44	2.54 x 31 = 78.74



Male header with angled solder pins

Length: 4.5 mm

6	09 18 506	321*
10	09 18 510	321*
14	09 18 514	321*
16	09 18 516	321*
20	09 18 520	321*
26	09 18 526	321*
34	09 18 534	321*
40	09 18 540	321*
50	09 18 550	321*
60	09 18 560	321*
64	09 18 564	321*

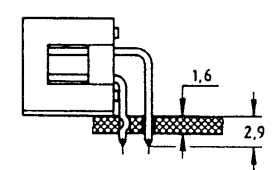


- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

Male header with angled solder pins for prelocking on P.C.B 1.6 mm

Length: 2.9 mm

on request



max. 6 specially formed soldered pins provide retention of the male header before soldering process

864-754

SEK 18



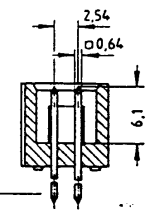
Number of contacts

6-64



Low-profile male header, straight pins

Identification/pins	No. of contacts	Part No.	Drawing	Dimensions in mm		
				A	B	E
Male header with straight solder pins Length: 2.9 mm	6	09 18 506 L 324		15.2	12.78	2.54 x 2 = 5.08
	10	09 18 510 L 324		20.3	17.86	2.54 x 4 = 10.16
	14	09 18 514 L 324		25.4	22.94	2.54 x 6 = 15.24
	16	09 18 516 L 324		27.9	25.48	2.54 x 7 = 17.78
	20	09 18 520 L 324		33.0	30.56	2.54 x 9 = 22.86
	26	09 18 526 L 324		40.6	38.18	2.54 x 12 = 30.48
	34	09 18 534 L 324		50.8	48.34	2.54 x 16 = 40.64
	40	09 18 540 L 324		58.4	55.96	2.54 x 19 = 48.26
	50	09 18 550 L 324		71.3	68.66	2.54 x 24 = 60.96
	60	09 18 560 L 324		84.0	81.36	2.54 x 29 = 73.66
	64	09 18 564 L 324		89.1	86.44	2.54 x 31 = 78.74

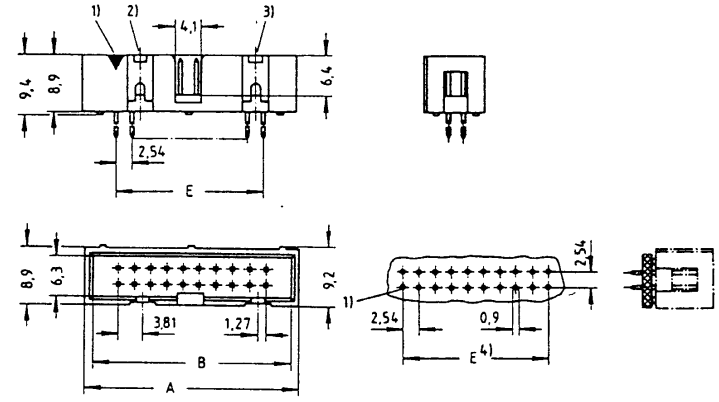


- a) Solder pins for 0.9 mm dia. hole
- b) Press-in pins for 1.0 mm dia. hole

Male header with straight solder pins

Length: 4.5 mm

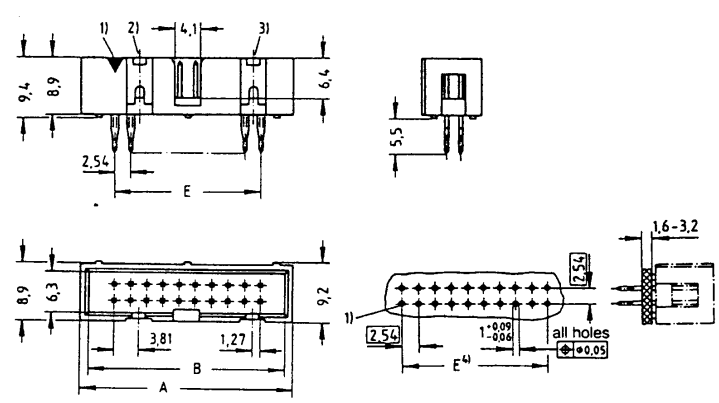
No. of contacts	Part No.
6	09 18 506 L 322*
10	09 18 510 L 322*
14	09 18 514 L 322*
16	09 18 516 L 322*
20	09 18 520 L 322*
26	09 18 526 L 322*
34	09 18 534 L 322*
40	09 18 540 L 322*
50	09 18 550 L 322*
60	09 18 560 L 322*
64	09 18 564 L 322*



Male header with straight press-in terminations

Length: 5.5 mm

No. of contacts	Part No.
6	09 18 506 L 329
10	09 18 510 L 329
14	09 18 514 L 329
16	09 18 516 L 329
20	09 18 520 L 329
26	09 18 526 L 329
34	09 18 534 L 329
40	09 18 540 L 329
50	09 18 550 L 329
60	09 18 560 L 329
64	09 18 564 L 329



- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

Tools page 14

For Performance Level 3 please specify digit 7  
 For Performance Level 2 please specify digit 6  
 > 0.76 μm Au (30 μ inch) on request 5\*

\*Not kept in stock

For accessories see page 15

# Tools for press-in technique



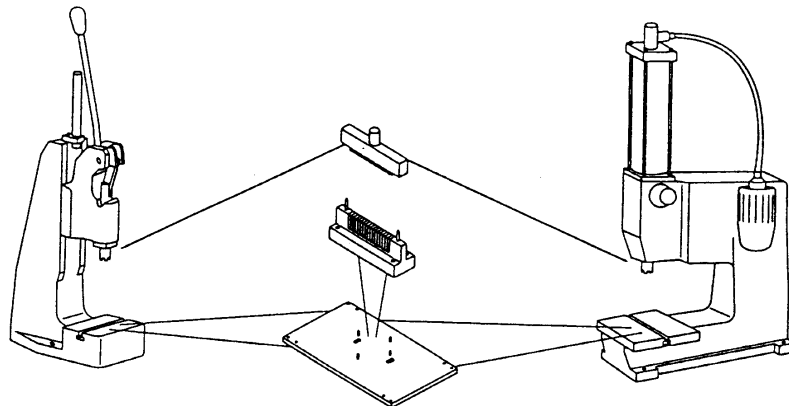
Identification                      Part No.                      Drawing                      Dimensions in mm

Hand bench press                      09 99 000 0201

Pneumatic press                      09 99 000 0258

Base plate                      09 99 000 0255

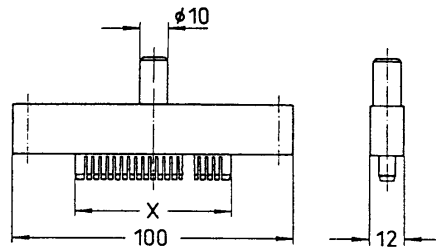
Bottom tool  
narrow                      09 99 000 0256



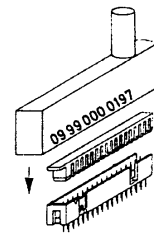
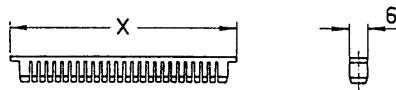
## Tools

for male connectors	6	09 99 000 0 06
	10	09 99 000 0 10
	14	09 99 000 0 14
	16	09 99 000 0 16
	20	09 99 000 0 20
	26	09 99 000 0 26
	34	09 99 000 0 34
	40	09 99 000 0 40
	50	09 99 000 0 50
	60	09 99 000 0 60
	64	09 99 000 0 64

Top Tool  
including insert ▶ 4  
Modular insert ▶ 5

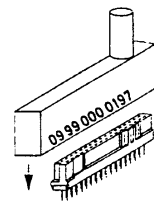
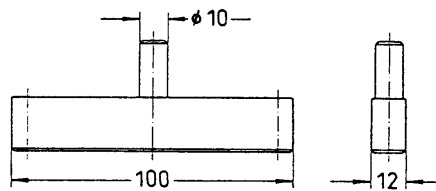


x Length depends on number of contacts



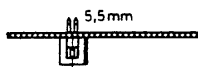
Top Tool  
for SEK 24 female  
connectors and male  
connectors with modular  
insert

09 99 000 0197

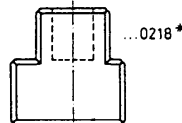


Press-out tool  
for complete  
male connectors

for 5.5 mm terminations                      09 99 000 0220



Support block                      09 99 000 0218

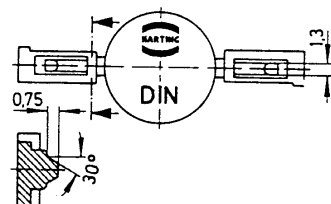


\* Further versions on request

Identification                      Part No.                      Drawing                      Dimensions in mm

Polarization key

09 18 500 9902<sup>1)</sup>

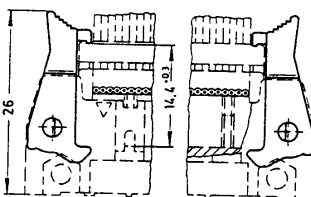


<sup>1)</sup> Part No. comprises 2 keys

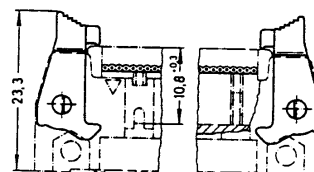
Locking lever  
(snaps into place, can be fitted whenever required)

Long:  
09 18 000 9903<sup>2)</sup>

Long



Short



Short:  
09 18 000 9904<sup>2)</sup>

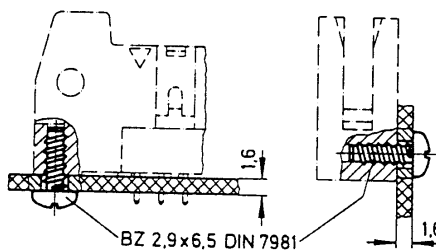
For use with female connector with strain relief clamp

For use with female connector without strain relief clamp

<sup>2)</sup> Order 2 per male header

Fixing screws  
for 1.6 mm PC. board

09 18 000 9906<sup>3)</sup>

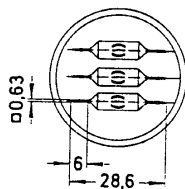


<sup>3)</sup> Part No. comprises 50 pieces  
(Order 50 or multiples of 50)

Coding system with loss of contact

Code pin  
09 18 000 9901<sup>4)</sup>

To avoid cross-plugging adjacent connectors a coding system is required. A code pin is inserted into the appropriate cavity in the female connector. The corresponding male contact is removed by a special removal tool.



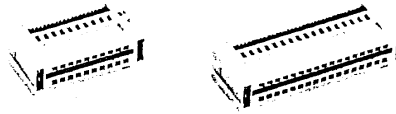
Removal tool  
for  
male contacts  
09 99 000 0133



<sup>4)</sup> Part No. comprises 6 code pins

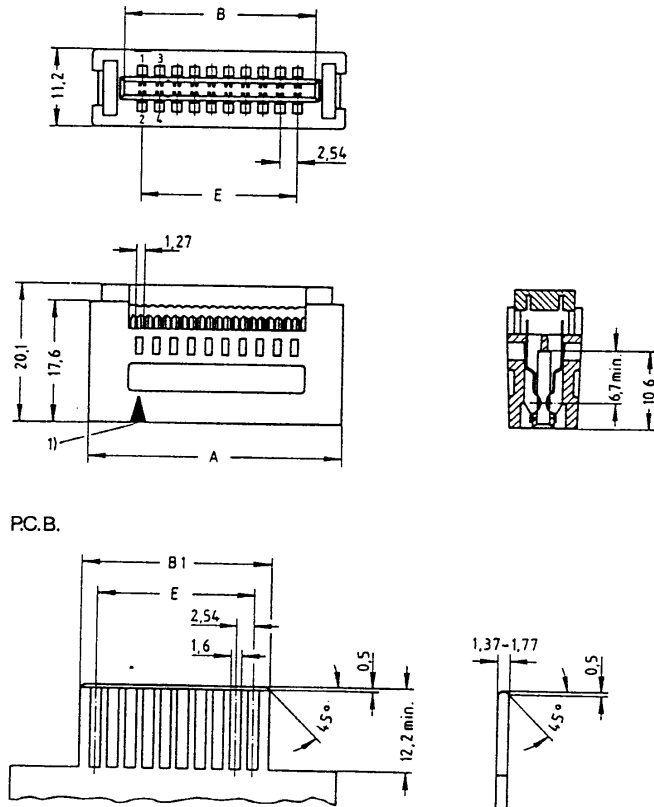
Number of contacts

20, 34



Card edge connectors for insulation displacement

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm				
				No. of contacts	A	B	B <sub>1</sub> ±0,1	E
Card edge connectors for insulation displacement for P.C.B. thickness 1.6 mm	20	09 18 620 — 803		20	37.30	28.20	27.80	2.54 x 9 = 22.86
	34	09 18 634 — 803		34	55.10	46	45.60	2.54 x 16 = 40.64



1) Contact number 1



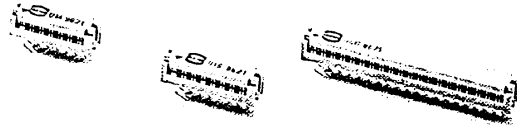
SEK 18

864900  
 864 845  
 864 882  
 864912, 864 857



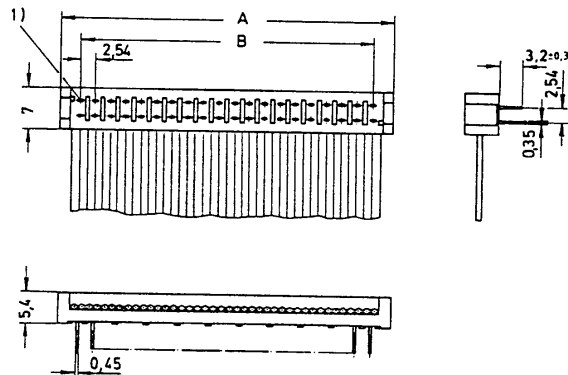
Number of contacts

6-64

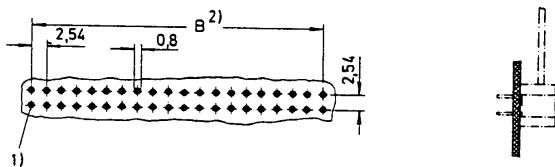


PC.B. transition connector, 2 rows

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm	
				A	B
PC.B. transition connector	6	09 18 106 9621	6	11.9	2.54 x 2 = 5.08
	10	09 18 110 9621	10	17.0	2.54 x 4 = 10.16
	14	09 18 114 9621	14	22.1	2.54 x 6 = 15.24
	16	09 18 116 9621	16	24.6	2.54 x 7 = 17.78
	20	09 18 120 9621	20	29.7	2.54 x 9 = 22.86
	26	09 18 126 9621	26	37.3	2.54 x 12 = 30.48
	34	09 18 134 9621	34	47.5	2.54 x 16 = 40.64
	40	09 18 140 9621	40	55.1	2.54 x 19 = 48.26
	50	09 18 150 9621	50	67.8	2.54 x 24 = 60.96
	60	09 18 160 9621	60	80.5	2.54 x 29 = 73.66
2 rows	64	09 18 164 9621	64	85.6	2.54 x 31 = 78.74



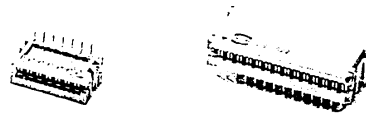
PC. board layout



1) Lead number 1  
 2) Pitch  
 tolerance: ± 0.1

Number of contacts

14-40



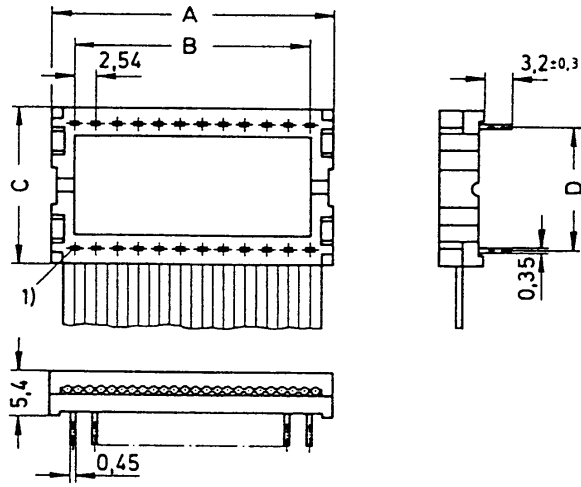
DIP connector for IC base or for soldering into PC. boards

Identification      No. of contacts      Part No.      Drawing      Dimensions in mm  
 DIP connector

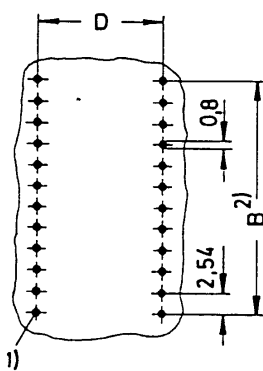


09 17 014 9622	14
09 17 016 9622	16
09 17 024 9622	24
09 17 028 9622	28
09 17 040 9622	40

No. of contacts	A	B	C	D
14	20.5	2.54 x 6 = 15.24	11	7.62
16	23.0	2.54 x 7 = 17.78	11	7.62
24	33.0	2.54 x 11 = 27.94	18.7	15.24
28	38.1	2.54 x 13 = 33.02	18.7	15.24
40	53.3	2.54 x 19 = 48.26	18.7	15.24



PC. board layout



1) Lead number 1  
 2) Pitch tolerance: ± 0.1

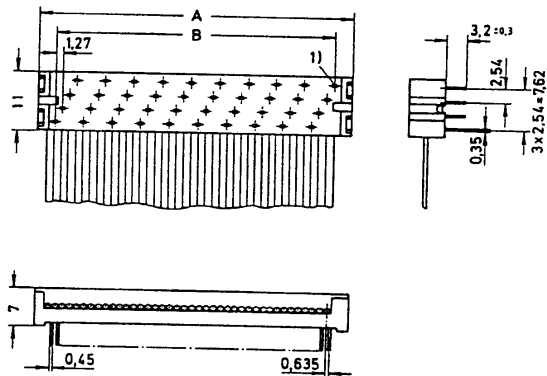
Number of contacts

10-50

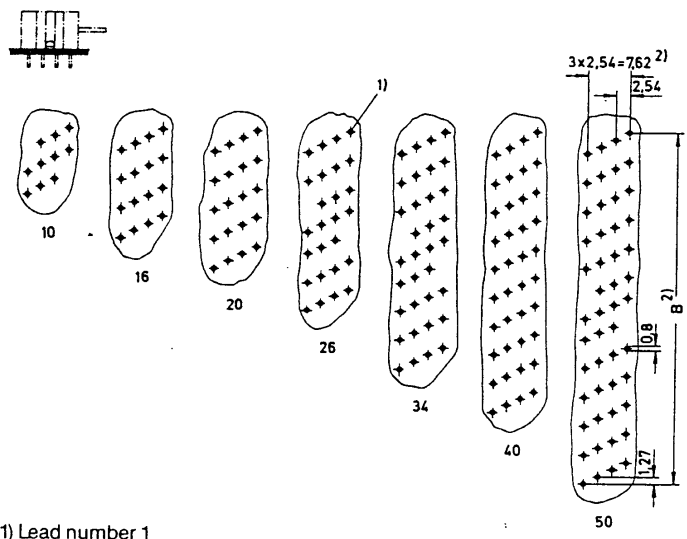


PC.B. transition connector, 4 rows

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
PC.B. transition connector			No. of contacts	A B
4 rows	10	09 19 010 9643	10	17.78 1.27 x 9 = 11.43
	16	09 19 016 9643	16	25.40 1.27 x 15 = 19.05
	20	09 19 020 9643	20	30.48 1.27 x 19 = 24.13
	26	09 19 026 9643	26	38.10 1.27 x 25 = 31.75
	34	09 19 034 9643	34	48.26 1.27 x 33 = 41.91
	40	09 19 040 9643	40	55.88 1.27 x 39 = 49.53
	50	09 19 050 9643	50	68.58 1.27 x 49 = 62.23



PC. board layout



1) Lead number 1  
 2) Pitch tolerance: ± 0.1

Number of contacts

64



Female connectors for insulation displacement

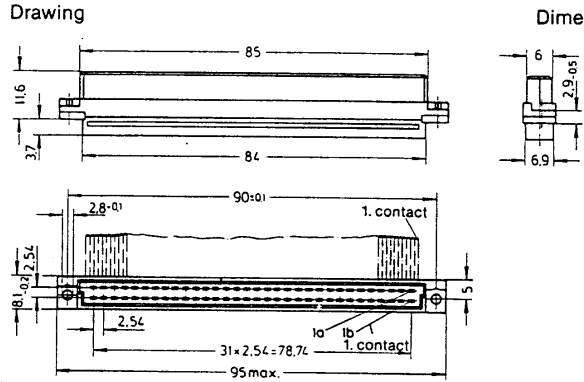
Identification      No. of contacts      Part No.      Drawing      Dimensions in mm

Female connector for insulation displacement

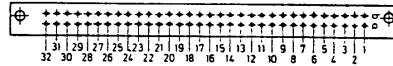
Gds A-B



Performance Level 2  
09 02 264 6828

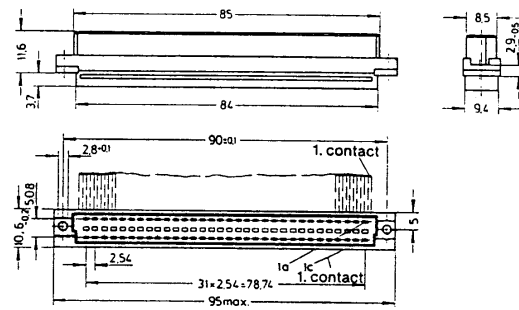


Lead number 1 of flat cable on contact 1 b  
Contact arrangement View from wiring side



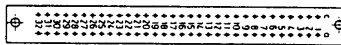
Gds A-C

Performance Level 2  
09 03 264 6828



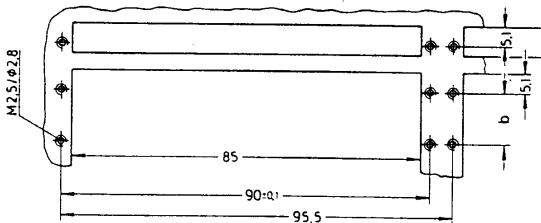
Lead number 1 of flat cable on contact 1 c

Contact arrangement View from wiring side



Mateable with 3-row male connector Gds A-C.  
No female contact in middle row.

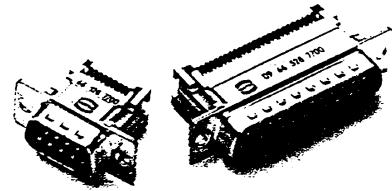
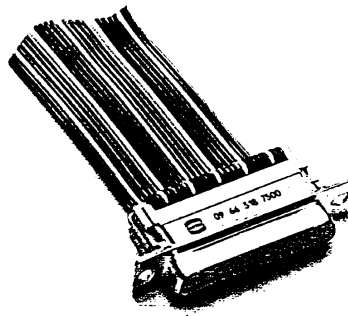
Panel cut out



	a	b
Gds A-B	8,3	10,16
Gds A-C	10,8	12,7

Number of contacts

9-37

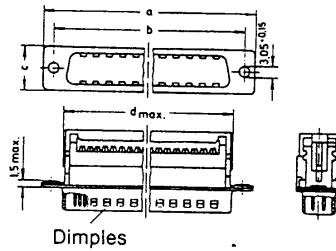


Male and female connectors

Identification	No. of contacts	Performance Level	Part No.	Performance Level
Performance Levels as per DIN 41652 Other contact surfaces on request		3		2
Male connector				
- insulation displacement termination	9	09 66 128 7700		09 66 128 6700
pitch 1.27 mm	15	09 66 228 7700		09 66 228 6700
tinned metal shell	25	09 66 328 7700		09 66 328 6700
	37	09 66 428 7700		09 66 428 6700
Female connector				
- insulation displacement termination	9	09 66 118 7500		09 66 118 6500
pitch 1.27 mm	15	09 66 218 7500		09 66 218 6500
tinned metal shell	25	09 66 318 7500		09 66 318 6500
	37	09 66 418 7500		09 66 418 6500
Strain relief clamp				
corrosion resistant steel for male and female connectors	9	09 66 108 0000		09 66 108 0000
	15	09 66 208 0000		09 66 208 0000
	25	09 66 308 0000		09 66 308 0000
	37	09 66 408 0000		09 66 408 0000

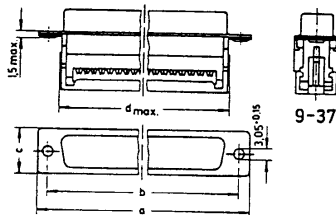
Dimensions

Male connector



Dimensions in mm

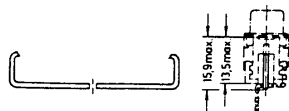
Female connector



a-0.76	b	c-0.76	d
9 31.19	25 12.93	18.6	
15 39.52	33.3 12.93	26.9	
25 53.42	47 12.93	40.6	
37 69.7	63.5 12.93	57.1	

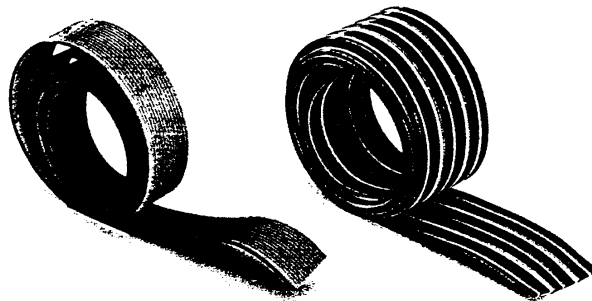
Specified conductors  
stranded wires AWG 28/7  
AWG 26/7

Strain relief clamp



Other terminations, hoods and accessories see "Subminiature D Connectors" catalogue

# Flat cable AWG 28/7



Important:  
always store reels vertically.

Identification      No. of contacts      Part No.      Drawing      Dimensions in mm

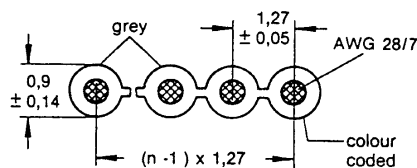
## Flat cable

grey  
UL 2651  
IEC 918

- 8
- 9
- 10
- 13
- 15
- 16
- 20
- 24
- 25
- 26
- 28
- 34
- 37
- 40
- 50
- 60
- 64

- 09 18 006 700
- 09 18 009 700
- 09 18 010 700
- 09 18 014 700
- 09 18 015 700
- 09 18 016 700
- 09 18 020 700
- 09 18 024 700
- 09 18 025 700
- 09 18 026 700
- 09 18 028 700
- 09 18 034 700
- 09 18 037 700
- 09 18 040 700
- 09 18 050 700
- 09 18 060 700
- 09 18 064 700

Drawing



**NEW**  
Grey 7001 = Metric packaging of 50 m  
Grey 7004 = Metric packaging of 150 m

Length per reel

- 50 m (164 feet) 1
- 150 m (492 feet) 4

- Wire (tinned) \_\_\_\_\_ Cu
- Gauge \_\_\_\_\_ AWG 28/7 0.089 mm<sup>2</sup>
- Conductor resistance \_\_\_\_\_ 230 mΩ/m
- Capacity \_\_\_\_\_ 60 pF/m
- Characteristic impedance \_\_\_\_\_ 110 Ω
- Signal delay \_\_\_\_\_ 5 ns/m
- Insulation material \_\_\_\_\_ PVC
- Temperature rating \_\_\_\_\_ -20 °C + 105 °C
- Insulation resistance \_\_\_\_\_ 10<sup>4</sup> MΩ / km

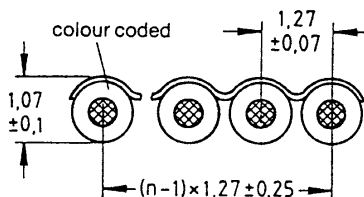
## Flat cable colour coded

Length per reel  
30.48 m (100 feet)

UL 2884

- 10
- 14
- 16
- 20
- 24
- 25
- 26
- 34
- 37
- 40
- 50
- 60
- 64

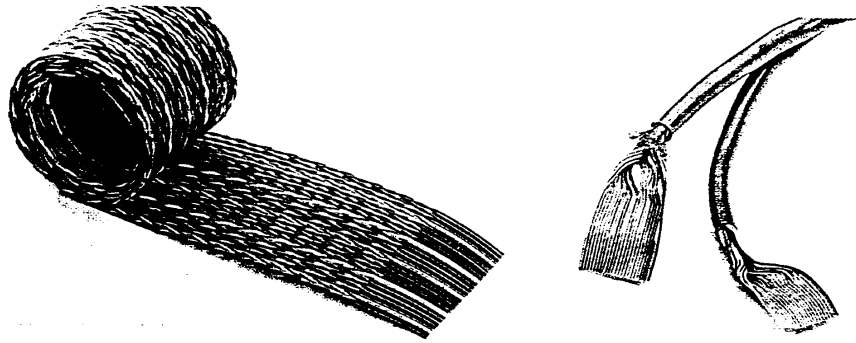
- 09 18 010 7005
- 09 18 014 7005
- 09 18 016 7005
- 09 18 020 7005
- 09 18 024 7005
- 09 18 025 7005
- 09 18 026 7005
- 09 18 034 7005
- 09 18 037 7005
- 09 18 040 7005
- 09 18 050 7005
- 09 18 060 7005
- 09 18 064 7005



Colour code sequence (in 10 steps)  
brown, red, orange, yellow,  
green, blue, violet, grey,  
white, black

- Wire (tinned) \_\_\_\_\_ Cu
- Gauge \_\_\_\_\_ AWG 28/7 0.089 mm<sup>2</sup>
- Conductor resistance \_\_\_\_\_ 230 mΩ/m
- Capacity \_\_\_\_\_ 49 pF/m
- Characteristic impedance \_\_\_\_\_ 105 Ω
- Signal delay \_\_\_\_\_ 4.6 ns/m
- Insulation material \_\_\_\_\_ PVC
- Temperature rating \_\_\_\_\_ -20 °C + 105 °C
- Insulation resistance \_\_\_\_\_ 10<sup>3</sup> MΩ / km

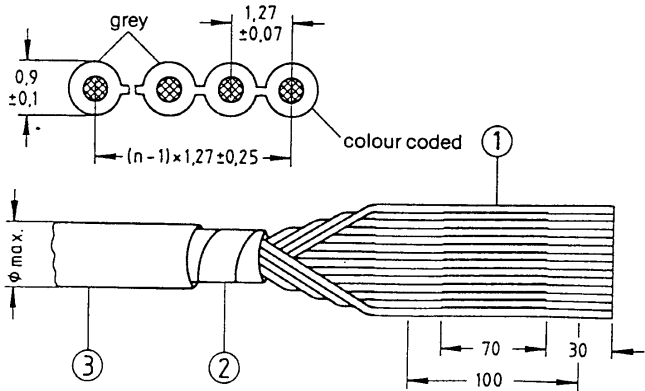
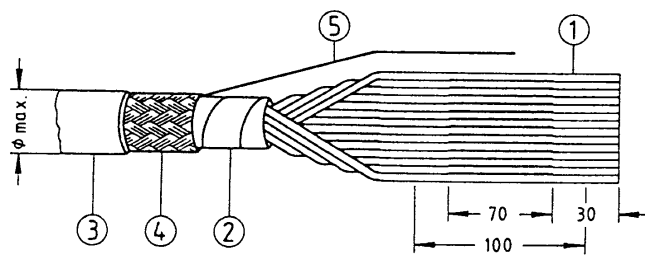
# Flat cable AWG 28/7



Important:  
always store reels vertically.

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm	
<b>Flat cable twisted pair</b>					
Length per reel	10	09 18 010 7006			
30.48 m (100 feet)	14	09 18 014 7006			
	16	09 18 016 7006			
UL 2693	20	09 18 020 7006			
	26	09 18 026 7006			
	34	09 18 034 7006			
	40	09 18 040 7006			
	50	09 18 050 7006			
	60	09 18 060 7006			
	64	09 18 064 7006			
<b>Round flat cable</b>					
Length per reel					
30.48 m (100 feet)					
with screening	9	09 18 009 7007			8.3
	10	09 18 010 7007			8.3
UL 2464	13	09 18 014 7007			9.1
	15	09 18 015 7007			9.1
	16	09 18 016 7007			9.1
	20	09 18 020 7007			10.2
	25	09 18 025 7007			10.2
	26	09 18 026 7007			10.2
	34	09 18 034 7007			11.2
	37	09 18 037 7007			12.4
	40	09 18 040 7007			12.4
	50	09 18 050 7007			13.4
	60	09 18 060 7007			14.3
	64	09 18 064 7007			14.3
without screening	9	09 18 009 7008			7.7
	10	09 18 010 7008			7.7
UL 2464	13	09 18 014 7008			8.6
	15	09 18 015 7008			8.6
	16	09 18 016 7008	8.6		
	20	09 18 020 7008	9.7		
	25	09 18 025 7008	9.7		
	26	09 18 026 7008	9.7		
	34	09 18 034 7008	10.6		
	37	09 18 037 7008	11.6		
	40	09 18 040 7008	11.6		
	50	09 18 050 7008	12.8		
	60	09 18 060 7008	13.7		
	64	09 18 064 7008	13.7		

	Flat cable twisted pair	Round flat cable with screening	Round flat cable without screening
Wire (tinned)		Cu	
Gauge		AWG 28/7 0.089 mm <sup>2</sup>	
Conductor resistance	230 mΩ/m	< 225 mΩ/m	
Capacity	52 pF/m	95 pF/m	65 pF/m
Characteristic impedance	100 Ω	73 Ω	90 Ω
Signal delay	5.3 ns/m	5.0 ns/m	
Insulation material	PVC	PVC	
Temperature rating	-20 °C + 105 °C	-20 °C + 80 °C	
Insulation resistance	10 <sup>3</sup> MΩ/km	> 50 MΩ/km	

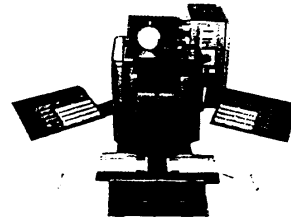


- ① Flat cable, grey AWG 28/7
- ② Barrier tape
- ③ Outer insulation PVC, grey
- ④ Tinned copper screen (shielded version)
- ⑤ Drain Wire AWG 28 (shielded version)

# Tools for termination of flat cables



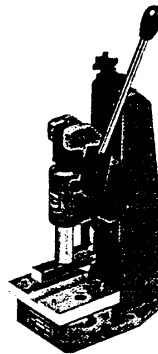
Identification Part No.  
 SEK Harnessing Work-station on request



Bench press for termination of insulation displacement connectors 09 99 000 0114

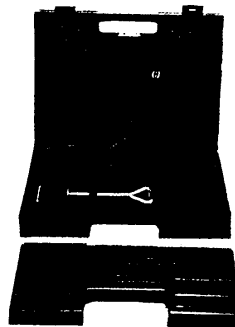
Base plate for termination of flat cables

SEK 18	09 99 000 0115
SEK 18 Card edge	09 99 000 0268
SEK 17	09 99 000 0134
SEK 18 2 rows	09 99 000 0131
SEK 19 4 rows	09 99 000 0130
Gds A-B, Gds A-C	09 99 000 0150
D-Sub	09 99 000 0135



Hand tool with base plates (included in tool kit) for termination of insulation displacement connectors

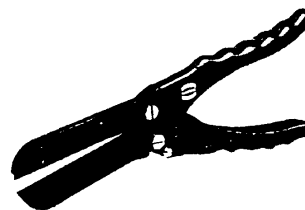
SEK 18	09 99 000 0149
SEK 18 Card edge	
SEK 17	
SEK 18 2 rows	
Gds A-B	
Gds A-C	
D-Sub	



Cable cutter for flat cables 09 99 000 0116

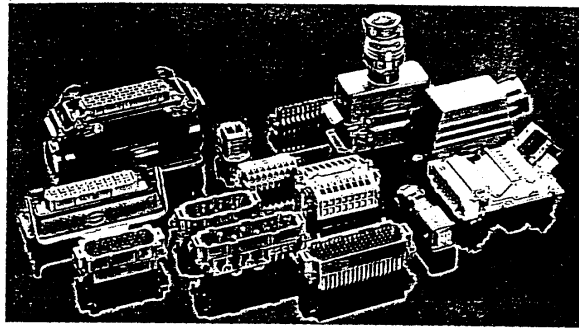
Spare parts

Blade	09 99 000 0179
Cutting plate	09 99 000 0180

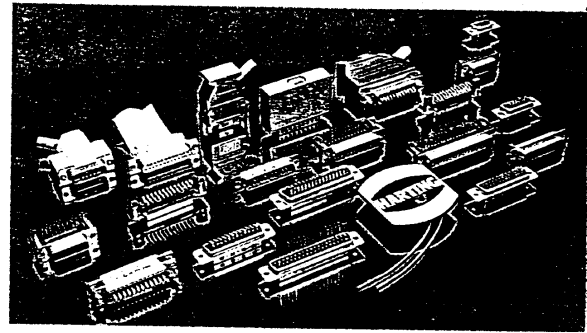




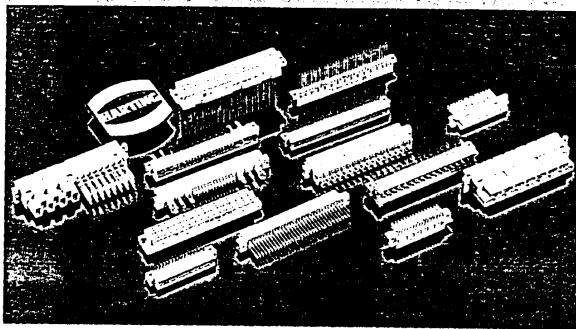




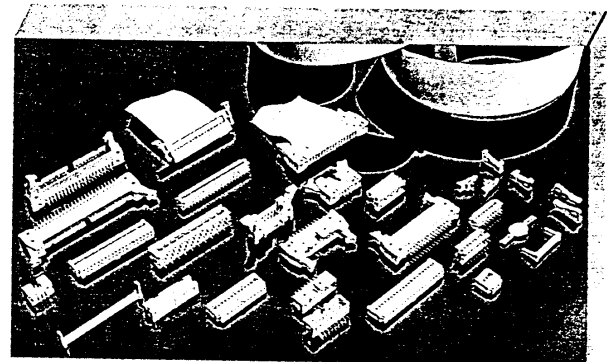
Heavy Duty Connectors  
for industrial engineering



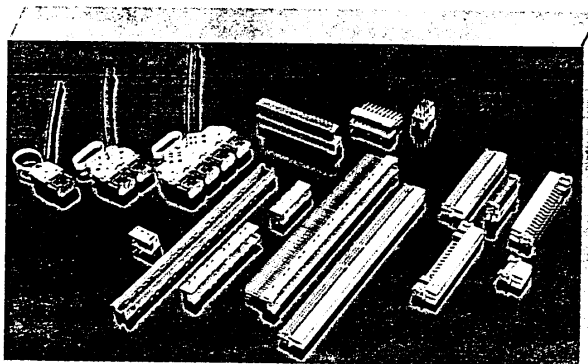
Subminiature D-Connectors  
DIN 41 652



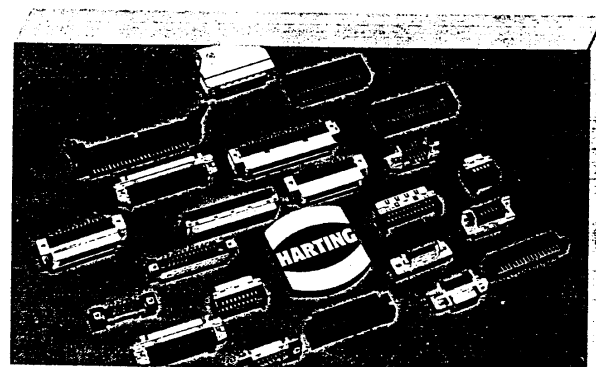
Printed Circuit Connectors  
DIN 41 612 · DIN 41 617



Flat Cable Connector System  
DIN 41 651



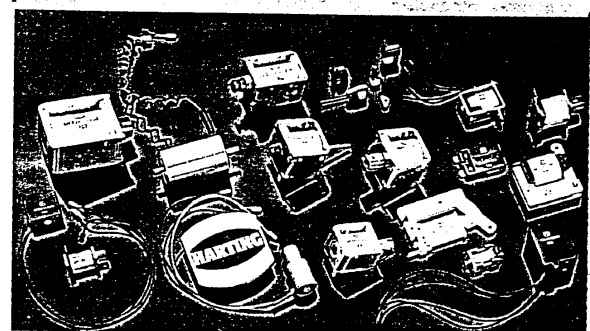
High Density Connector System  
Modular · Metric · DIN 41 642



Micro-Electronic-Connectors  
Contact spacing 1.27 mm



26 Fiber Optic Data Link  
Systems and components



Solenoids

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## Production plants

Espelkamp plant 1, plant 2, plant 3  
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MO/31.3.95/8.0 98 21 007 0201

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