

Article-No.	Description		
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Engraved Markers

- 11 10500
- 11 10501
- 11 10504
- 11 10507
- 11 10510

Set of Letters A - Z
 Set of Numbers 0 - 9
 Height 4 mm
 Height 7.5 mm
 Height 10 mm
 Made of yellow, non-breakable plastic, only 2 –2.5 mm thick.
 A tungsten putty is embedded permanently into the engraved outlines of the symbol. The upper edge has a slot worked in (0.4 mm) to accept the carrier strip.
 Following symbols are available in three different character heights: Numbers 0-9, letters A-Z, stop, oblique, hyphen, multiplication sign, arrows.



- 11 10511

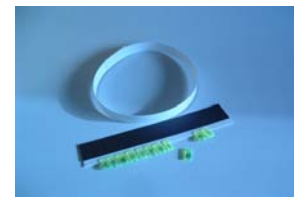
Arrow marker
 slotted on four sides, may be lined up to point in four different directions.

- 11 11502

Firms name or symbol.
 per piece there will be a tool charge for customers own design of name or symbol

- 11 11510

Carrier strip for engraved markers
 In flexible plastic 20 x 500 mm, thickness will fit into slots of markers.



- 11 11610

Carrier strip, magnetic
 In flexible plastic combined 0.1 - 0.5 m length

- 11 11520

Clasp for engraved marker
 Clasp for 10 engraved markers, 7.5 mm, the clasp may be mounted on a marker type between decimals.



- 11 11997

Metal Box; 36 Divisions
 For storing exposure accessories in two tiers
 Size: 340 x 245 x 70 mm, 2.1 kg

- 11 10650

Complete Set for Film Marking
 Consisting of:
 1x Box for engraved markers (11997)
 100x Engraved numbers, ten each 0 - 9
 78x Engraved letters, three each A - Z
 25x Engraved signs, 5 each hyphen, multiply, arrow up
 5x Arrows slotted on four sides
 2x Magnets for IQI´s and markers (11021)
 2x Carrier strips 0.5 m (11510)
 5x Carrier strips magnet (11610)
 3x Metal clasps for markers (11520)



Size : 340 x 245 x 70 cm
 Weight : 2,6 kg

Article-No.	Description		
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Lead Marker, Cast

- 11 10100 Set of Letters A - Z
- 11 10101 Set of Numbers 0 - 9
- 11 10106 Height 6 mm
- 11 10108 Height 8 mm
- 11 10110 Height 10 mm
- 11 10113 Height 13 mm



Letters, numbers and arrows conical character size measured front, per piece

11 10997 **Box for Cast Markers, Wood**

Fitted with 48 compartment
Size: 400 x 300 x 75 mm, 950 g

11 10161 **Marking Tape for Press Ident**

Rolls of self adhesive tape with lead lining for the quick production of identification-marking strips for radiography.
1 roll, ca. 2 m long, width of tape 12 mm

11 10855 **Zero-Punch Steel**

Stamps zero and arrow into steel by impact, symbol 6 mm high. To indicate date line and eventual direction of product flow through a pipeline. No sharp edges.



11 10800 **NISSEN Marking Paint**

Tube dispenser with ball point valve gives permanent white lines 3.2 mm wide. Specimens will keep their markings up to 950° C. Nor trace of sulphur or chlorides. Weight: 130 g



11 10850 **Marking Crayon, Yellow**

Weatherproof and wipe proof. 12 pcs. in a box



11 10950 **Stop Watch**

To control exposure times 360° C circle for 15 minutes and small round 30 seconds..
Size: 60 mm ø x 20 mm, 150 g



11 10960 **Countdown Timer**

Digital countdown timer with alarm. Accepts any setting of time spans between 1 second to 99.99 minutes. Clips on to pocket or may stand on desk.
Size: 70 x 60 x 20 mm, 50 g



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Lead Marker Tape

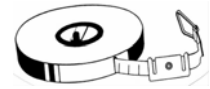
- 11 10911 Spaced at 25 cm per 10 cm
- 11 10912 Spaced at 20 cm per 10 cm
- 11 10913 Spaced at 10 cm per 10 cm
- 11 10914 Spaced at 5 cm per 10 cm



Lead numbers built into a double sided thick hardwearing cloth tape measure; with a plastic buckle. Available in any length. Priced in multiples of 10 cm

Dispensing Reel for Marker Tapes

- 11 10921 for marker tapes up to 3 m length
- 11 10922 for marker tapes up to 6 m length
- 11 10923 for marker tapes up to 12 m length
- 11 10924 for marker tapes up to 15 m length
- 11 10925 for marker tapes up to 20 m length.



11 10490 **Lead Marker Tape for Co-60 Radiography**

For heavy wall thickness to 130 mm FE.
Marked every 10 cm with one or two lead markers
16 mm high an 2-3 mm thick. Available in lengths
from 1 m upwards, priced in multiples of 10 cm length.

Lead Marker Tape Narrow

- 11 10491 Spaced at 5 cm per 10 cm
- 11 10492 Spaced at 2 cm per 10 cm
- 11 10493 Spaced at 1 cm per 10 cm



With a GRP tape only 9 mm. Built in cloth tape with visible cm divisions. Every 1, 2, or 5 cm a built-in lead figure 4 mm high. Available in lengths to 1.5 m, priced in multiples of 10 cm length

Textile rubber belt

- 11 11950 Standard length 1.5 m.
- 11 11951 per each additional meter

For securing cassettes and readypack films to circumferential welds. 19 mm wide with a buckle,



Film Fastening Tape, Roll 50 m Long

- 11 10141 Black, 50 mm wide
- 11 10142 Black, 25 mm wide

Strong cloth tape for fastening films or cassettes up to 50° C. May be torn both along and across the roll.

Magnetic Wallets for EN Wire IQIs

- 11 11310 for EN wire IQI's, 25 mm long
- 11 11350 for EN wire IQI's, 50 mm long



Article-No.	Description		
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Film Marking Frames

- 11 11010 for film areas to 10 x 48 cm
- 11 11020 for film areas to 10 x 24 cm



Flexible steel frames with magnets on four corners for positioning engraved markers and wire type penetrameters on test specimens.

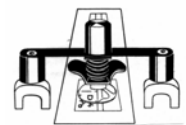
- 11 11021 **Magnet for IQI's**
Ø 20 mm, 40 x 30 x 25 mm, 110 g



- 11 11050 **Bridge type clamping magnet**
With 2 permanent magnets and a flexible bridge.
Distance between magnets is 160 mm.
Size: 21 x 35 x 240 mm, 220 g



- 11 11210 **Magnetic film cassette and holder**
With 2 routable horse-shoe magnets and a spring-loaded pressure cup for holding films and cassettes up to 10 cm wide.
Distance between the magnets: 130 mm.
Size: : 220 x 30 x 110 mm, 820 g

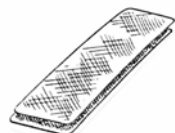


- 11 11211 **Suction pad holder**
For non magnetic surfaces. Spring loaded pressure cup.
Distance between the two suction pads is 130 mm.
Size: 210 x 30 x 110 mm, 500 g



Anti-scatter filter Pb

- 11 12710 10 x 24 cm, Pb 0.5 mm
- 11 12718 10 x 40 cm, Pb 0.5 mm
- 11 12711 10 x 48 cm, Pb 0.5 mm
- 11 12719 15 x 40 cm, Pb 0.5 mm
- 11 12720 30 x 40 cm, Pb 0.5 mm
- 11 12722 10 x 24 cm, Pb 1.0 mm
- 11 12725 10 x 40 cm, Pb 1.0 mm
- 11 12727 10 x 48 cm, Pb 1.0 mm
- 11 12728 15 x 40 cm, Pb 1.0 mm
- 11 12729 30 x 40 cm, Pb 1.0 mm



To keep scattered radiation away from the rear of the X-Ray film.
Sealed in a welded polythene wallet.

Anti-Scatter filter Sn

- 11 12810 10 x 24 cm, Sn 0.5 mm
- 11 12811 10 x 48 cm, Sn 0.5 mm
- 11 12820 30 x 40 cm, Sn 0.5 mm
- 11 12830 30 x 40 cm, Sn 1.0 mm

Article-No.	Description		
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System for attaching C P tube-heads

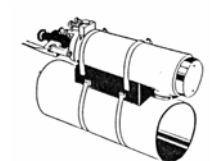
For fixing CO tube heads on pipes eg. MCN 101, 160, 165, 166, 167, 225 or other tube heads diam. 70, 100 or 120 mm.

The five available modular PE elements may be fitted with hooks or clips to join 2 - 3 elements together

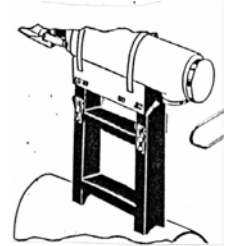
Basic and double wall element

- 11 11090 Basic element for Heads 100 mm Ø
- 11 11091 Basic element for Heads 70 mm Ø
- 11 11092 Basic element for Heads 120 mm Ø

The concave surface maybe fastened to tube housing with two metal straps 25 mm wide. The prismatic surface fastens to pipe under test with pipe strap, Code 11105, for double wall exposures. May also be fixed to the spacers Code 11095 or 11100. Size: 100 x 180 x 60 mm, 700 g



- 11 11095 **Spacer for 350 mm FFD**
Upper surface formed to take prismatic surface of basic element. Lower prismatic surface may be fastened to pipe under test with the pipe strap, Code 11105. Together with a basic element the FFD will be appr. 350 mm. Size: 100 x 180 x 275 mm, 2.1 kg



- 11 11100 **Spacer for loop shot position**
The lower prismatic surface may be fastened to pipe under test with pipe strap. The upper surface is angled at 30 degrees to take prismatic surface of basic plates, and is fitted with 4 clips for quick coupling. Together with the right basic element the FFD will be fine for loop shots of welds in small pipes. Size: 100 x 155 x 165 mm, 1.7 kg



- 11 11105 **X-Ray pipe strap with ratchet**
For the safe and quick fastening of X-Ray tube heads, basic elements or spacer elements to pipes.
Length of strap: 4 m
Width of strap: 36 mm
Size: 160 x 80 x 70 mm
Weight: 0.65 kg

Article-No.	Description		
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IQI acc. to EN 462-2; Step / Hole

	Description	for Image Quality
11 00114	IQI EN 462-H 1-FE	H 1 to H 6
11 00113	IQI EN 462-H 5-FE	H 5 to H 10
11 00112	IQI EN 462-H 9-FE	H 9 to H 14
11 00111	IQI EN 462-H13-FE	H13 to H 18
11 00124	IQI EN 462-H 1-CU	H 1 to H 6
11 00123	IQI EN 462-H 5-CU	H 5 to H 10
11 00122	IQI EN 462-H 9-CU	H 9 to H 14
11 00134	IQI EN 462-H 1-AL	H 1 to H 6
11 00133	IQI EN 462-H 5-AL	H 5 to H 10
11 00132	IQI EN 462-H 9-AL	H 9 to H 14
11 00144	IQI EN 462-H 1-TI	H 1 to H 6
11 00143	BPK EN 462-H 5-TI	H 5 to H 10



These IQIs consist of six steps with one or two holes of the same diameter as the thickness. The individual plaques are welded into a PVC pouch which also contains the lead identification. Each IQI is numbered and is supplied with a declaration of conformity within a storage wallet.

11 00151 **Image Quality Indicator acc. to EN 462-5**

For measuring image unsharpness. The IQI consists of 13 wire pairs embedded in rigid plastic. The wires of platinum and tungsten and are exactly spaced to correspond to the diameter of each pair. Each IQI is engraved with a serial number and is supplied with a declaration of conformity in a storage box

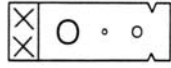


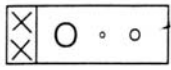
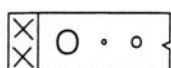
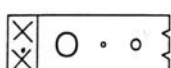

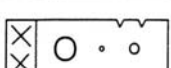


11 00750 **ASTM 801 -91 Penetrameter**

According to ASTM E 801 they consist of a set of 8 IQI ´s about radiographically equivalent to diodes, PCB ´s or larger hybrid circuit devices. Each IQI consists of a number of wires, which vary in diameter and are arranged on a shim in a grid pattern. Next to them are lead particles of different sizes and an identification number. Complete set in storage box

Article-No.	Description		
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Penetrameter acc. to ASTM E-1025-98

Type		Thickness in mm and inch			
11 00671	No. 5	6,3 mm	(- 1/4")	Group 03 IQI for Magnesium	
11 00672	No. 7	9,5 mm	(- 3/8")		
11 00673	No. 10	12,7 mm	(- 1/2")	Group 02 IQI for Aluminum	
11 00674	No. 12	15,9 mm	(- 5/8")		
11 00675	No. 15	19,1 mm	(- 3/4")	Group 01 IQI for Titanium	
11 00676	No. 17	22,2 mm	(- 7/8")		
11 00677	No. 20	25,4 mm	(- 1")		
11 00678	No. 25	31,8 mm	(- 1 1/4")	Group 1 IQI for Carbon Alloy and Stainless Steel	
11 00679	No. 30	38,1 mm	(- 1 1/2")		
11 00680	No. 35	50,8 mm	(- 2")		
11 00681	No. 40	63,5 mm	(- 2 1/2")	Group 2 IQI for Aluminum Bronze	
11 00682	No. 45	76,2 mm	(- 3")		
11 00683	No. 50	101,6 mm	(- 4")		
11 00684	No. 60	152,4 mm	(- 6")	Group 3 IQI for Nickel-Chromium-Iron	
11 00685	No. 80	203,2 mm	(- 8")		
11 00686	No. 100	254,0 mm	(- 10")		
11 00687	No. 120	304,8 mm	(- 12")	Group 4 IQI for Nickel-Copper (70-30)	
11 00688	No. 160	406,4 mm	(- 16")		
11 00689	No. 200	508,0 mm	(- 20")	Group 5 IQI for Tin Bronze	

These conform to the American standards, ASTM-E 142, ASME-section III(post 1973) ASME-section V, API 1104. They have three holes 1 x. 2 x and 4 x the penetrameter thickness, with minimum diameters of 0.01", 0.02" and 0.04". Therefore the hole diameters only differ in size from No. 12 upwards. The numbers tell the thickness of the shim in thousands of an inch. The stainless material may be used on mild steel an vice versa.

11 13810 **Exposure Calculator, Ir-192**
 For calculating gamma exposure with Ir-192, constant for film D5 and density 3.5, in an easy slide rule design. Supplied in a leather wallet.
 Size: 55 x 170 x 2 mm, 20 g



11 13850 **Exposure Calculator, Universal**
 For calculating exposures with Ir-192, Co-60, Cs-137 and Th-170. For all films and film densities with an easy to work slide rule design. On the back a thickness conversion scale gives the steel equivalent for a number of frequently encountered materials. Complete with instructions, film speed tables and a leather wallet. All source to film distance are given in metric units.
 Size: : 65 x 185 x 12 mm, 80 g

Article-No.	Description		
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ASTM E 747-98 Wire IQI

11 00711	Typ 1 A 01 FE Mat. thickness	4- 12,5 mm
11 00712	Typ 1 B 03 FE Mat. thickness	10- 40,5 mm
11 00713	Typ 1 C 10 FE Mat. thickness	32-125 mm
11 00714	Typ 1 D 32 FE Mat. thickness	102-400 mm
11 00721	Typ 02 A 01 AL Mat. thickness	4- 12,5 mm
11 00722	Typ 02 B 03 AL Mat. thickness	10- 40,5 mm
11 00723	Typ 02 C 10 AL Mat. thickness	32-125 mm
11 00731	Typ 4 A 01 CU Mat. thickness	4- 12,5 mm
11 00732	Typ 4 B 03 CU Mat. thickness	10- 40,5 mm
11 00733	Typ 4 C 10 CU Mat. thickness	32 -125 mm
11 00741	Typ 01 A 01 TI Mat. thickness	4- 12,5 mm
11 00742	Typ 01 B 03 TI Mat. thickness	10- 40,5 mm



Each IQI consists of 6 wires differing in diameter and a lead identification. With declaration of conformity.

ASTM Penetrameter acc. to E 1742 (form. MIL-STD 453)

Type number	Penetrameter thickness (")	Min. thickness specimen mm / inch
11 00871	0.25	0.005 6,35 1/4
11 00872	0.37	0.0075 9,53 3/8
11 00873	0.50	0.01 12,7 1/2
11 00874	0.62	0.0125 15,87 5/8
11 00875	0.75	0.015 19,05 3/4
11 00876	0.87	0.0175 22,22 7/8
11 00877	1.0	0.02 25,4 1
11 00878	1.2	0.025 31,75 1 1/4
11 00879	1.5	0.03 37,5 1 1/2
11 00880	1.7	0.035 44,45 1 3/4
11 00881	2.0	0.04 50,8 2
11 00882	2.2	0.045 57,15 2 1/4
11 00883	2.5	0.05 63,5 2 1/2
11 00884	3.0	0.06 76,2 3
11 00885	4.0	0.08 101,6 4



These Penetrameters are very similar to the other ASTM/ASME variety and follow the same hole to thickness pattern with three holes. The number on a ASTM E 1742 penetrameter refers to the minimum specimen thickness at 2 % sensitivity. Therefore the number is 50x the penetrameter thickness. Fractions of an inch in the identifying number are expressed as decimals.

Article-No.	Description		
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EN 462-1 Image Quality Indicator

11 00411	IQI EN 462- W 1 FE, 50 mm
11 00412	IQI EN 462- W 6 FE, 50 mm
11 00414	IQI EN 462- W 6 FE, 25 mm
11 00413	IQI EN 462- W10 FE, 50 mm
11 00415	IQI EN 462- W10 FE, 25 mm
11 00416	IQI EN 462- W10 FE, 10 mm
11 00441	IQI EN 462- W13 FE, 50 mm
11 00442	IQI EN 462- W13 FE, 25 mm
11 00443	IQI EN 462- W13 FE, 10 mm
11 00421	IQI EN 462- W 1 AL, 50 mm
11 00422	IQI EN 462- W 6 AL, 50 mm
11 00424	IQI EN 462- W 6 AL, 25 mm
11 00423	IQI EN 462- W10 AL, 50 mm
11 00425	IQI EN 462- W10 AL, 25 mm
11 00426	IQI EN 462- W10 AL, 10 mm
11 00461	IQI EN 462- W13 AL, 50 mm
11 00462	IQI EN 462- W13 AL, 25 mm
11 00463	IQI EN 462- W13 AL, 10 mm
11 00431	IQI EN 462- W 1 CU, 50 mm
11 00432	IQI EN 462- W 6 CU, 50 mm
11 00434	IQI EN 462- W 6 CU, 25 mm
11 00433	IQI EN 462- W10 CU, 50 mm
11 00435	IQI EN 462- W10 CU, 25 mm
11 00436	IQI EN 462- W10 CU, 10 mm
11 00481	IQI EN 462- W13 CU, 50 mm
11 00493	IQI EN 462- W10 TI, 50 mm
11 00495	IQI EN 462- W10 TI, 25 mm
11 00497	IQI EN 462- W13 TI, 50 mm
11 00498	IQI EN 462- W13 TI, 25 mm



Wire type penetrameters, acc. to the European standard EN 462, 1994 issue. Number, arrangement, radius and material of each wire in this IQI correspond to the previous known DIN Image Quality Indicators (IQI) acc. to 54109, 1987 issue.

Enclosed is certification of conformity for each BPK and the radiographic inscription at the top e.g. 10 FE EN. The letter "W" stand for "Wire". The thickest wire and with it the lowest Image Quality Class is W1.

Article-No.	Description		
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EN Image Quality Indicators

Acc. the European Standard EN 462, 1994 issue.
 Mounted in a transparent plastic pocket with one line of identification markers. The IQIs are fully comply with the international standard ISO 1027-83. The available types vary acc. to the sequence of the seven parallelly embedded wires (1, 6, 10, 13) - as their numbers goes up, their diameter goes down. They vary in material (FE, AL, CU, TI) and in the length of wires (50, 25, 10 mm).

Number and diameter of wires:

1 FE EN	as before	FE 1 - 7
6 FE EN	as before	FE 6 - 12
10 FE EN	as before	FE 10 - 16
13 FE EN	as before	FE 13 - 16

Material of wires:

<u>Type</u>	<u>Material</u>	<u>For radiography of specimen made of</u>
FE	clear steel	iron, stainless & alloys
AL	aluminium	aluminium, magnesium & alloys
CU	copper	copper, zink, tin & alloys
TI	titanium	titanium

Four sequences of 7 wires each are available, their choice depending on specimen thickness:

Seq. Code	No. Of wire	For specimen thickness	
		mm	inches
1	1 - 7	160 - 40	6.3 - 1.575
6	6 - 12	50 - 12.5	1.97 - 0.49
10	10 - 16	20 - 5	0.78 - 0.2
13	13 - 19	10 - 2.5	0.39 - 0.1

The letter "W" stand for "Wire". The thickest wire and with it the lowest Image Quality Class is W1.