

CARDIAC STIMULATION

DEVICES & ACCESSORIES



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Every product included in this catalogue comply with regulation 93/42/CEE

The product information included in this catalogue do not replace the contents of correspondent technical data sheets.
FIAB recommends to consult technical data sheets in order to get every data and instructions for each device.

ELECTROPHYSIOLOGY AND TEMPORARY PACING

Leads

FIAB develops, manufactures and markets leads with fixed curvature for temporary cardiac stimulation and electrophysiology, with a particular attention to the choice of materials along with accuracy in manufacture.

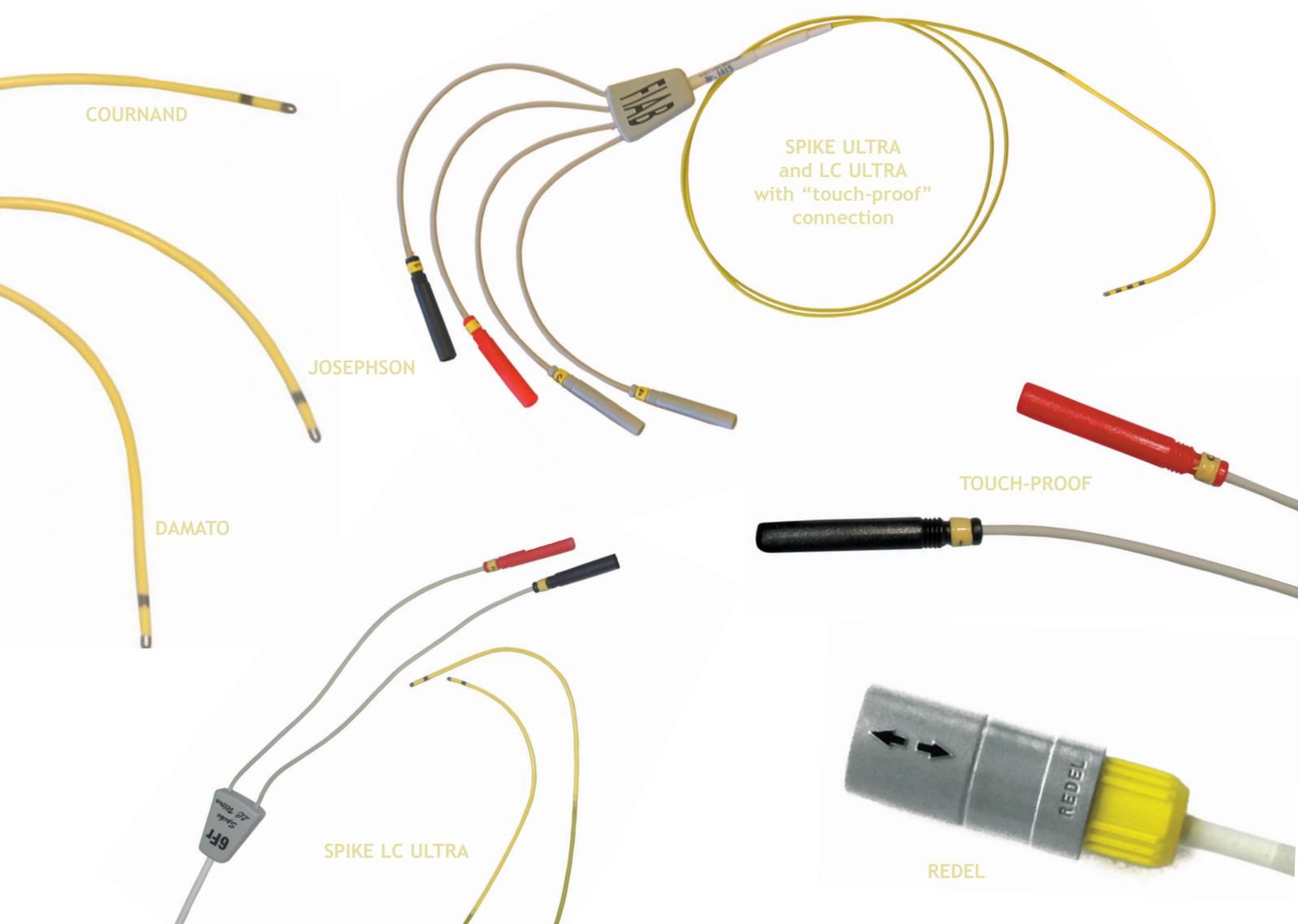
The range of intravenous temporary pacing and diagnostic leads are made up of four families:

- SPIKE ULTRA: Pebax®, braided shaft and soft tip, for EP studies
- SPIKE EASY: Pebax®, braided shaft and tip, for EP study
- SPIKE LC S: Pebax®, not braided, for temporary pacing
- SPIKE FLOW: Balloon lead, for temporary emergency pacing

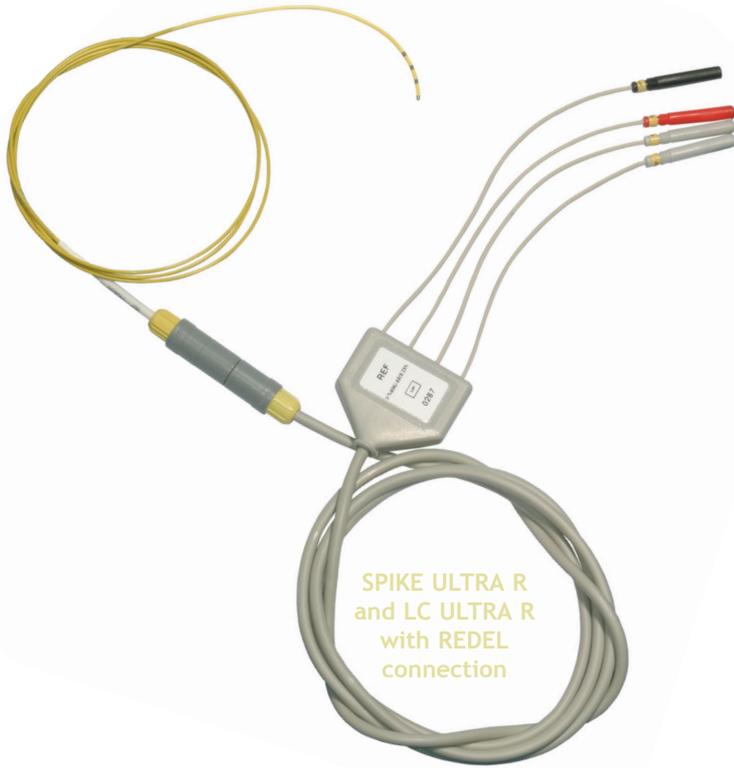
Each family includes a wide range of models, different for material of electrodes, inter electrode distance, curvature, size and connection.

The choice of Pebax® material arises from the evaluation of the unique chemical and physical characteristics of this peculiar thermoplastic polymer and from the resulting performance that can be obtained. Pebax® in fact allows a high flexibility along an high resistance and with an outstanding mechanical behavior.

The electrodes are in platinum Iridium or in Stainless Steel: both materials ensure an excellent quality of the sensing and pacing signals.



Diagnostic leads with braided shaft (and soft tip) SPIKE ULTRA



SPIKE ULTRA R and LC ULTRA R with REDEL connection

Spike ULTRA has unique characteristics that make it a diagnostic lead particularly indicated for EP studies. The body is in braided Pebax® (70 shoer) up to the distal part. Electrodes are positioned in the soft distal part (120 mm long), which allows to the catheter to conform to the endocardial wall, absorbing the movements caused by cardiac contractions and thus ensuring a stable positioning of the lead.

Spike ULTRA family includes the following models:

- ULTRA with Platinum Iridium electrodes and 2 mm touch proof connectors
- ULTRA R with Platinum Iridium electrodes and Redel connector
- LC ULTRA with Stainless Steel electrodes and 2 mm touch proof connectors
- LC ULTRA R with Stainless Steel electrodes and Redel connector

SPIKE ULTRA TECHNICAL FEATURES

BODY	Braided shaft and soft tip, Pebax		
ELECTRODES	AISI Stainless Steel ("LC" models) or Platinum Iridium		
POLES	2, 3, 4, 6, 10		
INTER ELECTRODES DISTANCE	2; 2-5-2; 5; 2-8-2; 10 mm		
CURVE	Cournand; Josephson, Damato; Coronary Sinus; HIS		
WORKING LENGTH	90 cm	115 cm, 125 cm	115 cm, 125 cm
SECTIONS	4F	5F	6F
CONNECTION	6 pins female REDEL connector ("R" models) touch proof gold plated 2 mm plugs (not "R" models)		

SPIKE ULTRA REFERENCE KEY

Ref:



Model
7 = LC ULTRA
8 or 9 = ULTRA



Poles
2 = 2
4 = 4
6 = 6
0 = 10



Curve
1 = straight
2 = courmand
3 = josephson
4 = damato
5 = coronary sinus
6 = HIS



Inter-electrode distance (mm)
2 = 2
5 = 2-5-2
6 = 5
8 = 2-8-2
0 = 10



Diameter
4 = 4F
5 = 5F
6 = 6F



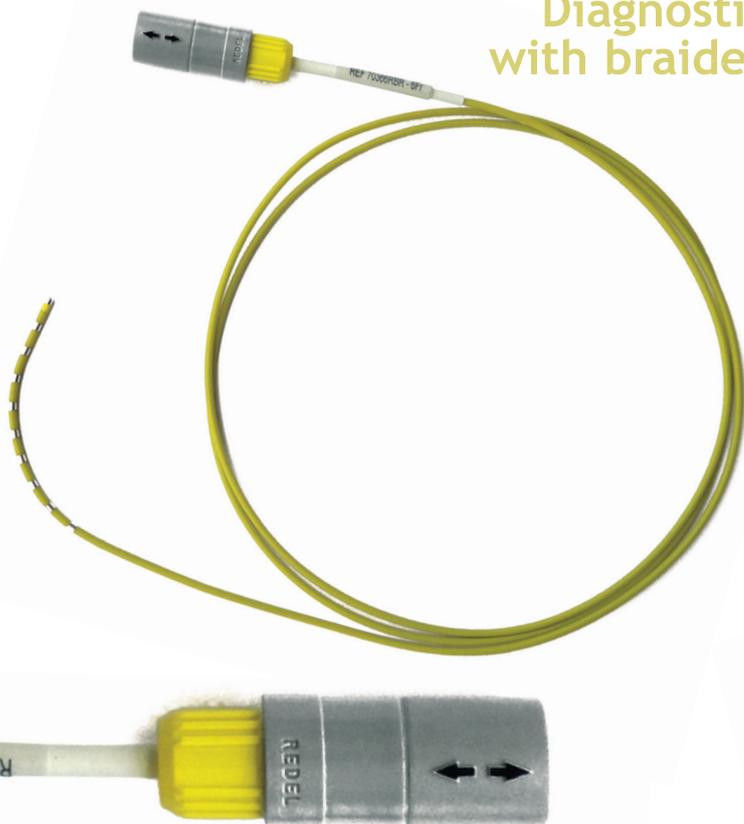
Connection
<empty> = touch-proof
R = redel

Example giving... Ref 82126 - Spike Ultra, 2 poles, straight, 2 mm inter-electrode distance, 6 French, touch-proof

Multipolar reusable extension cables F5406 series

- F5406/4REDS** 4 poles, 150 cm cable, redel connector
- F5406/6REDS** 6 poles, 150 cm cable, redel connector
- F5406/10REDS** 10 poles, 150 cm cable, redel connector

Diagnostic leads with braided shaft **SPIKE EASY**



SPIKE EASY are designed to maximize the maneuverability and control of the lead. The body is braided in the entire length (40 Shore), allowing a 1:1 torque transmission and reducing the risk of perforation and bending inside the blood vessel during introduction and positioning. Particularly indicated for use in electrophysiological studies and for temporary pacing.

Spike Easy family includes the following models:

- EASY with Platinum Iridium electrodes and 2 mm touch proof connectors
- EASY R with Platinum Iridium electrodes and Redel connector
- LC EASY with Stainless Steel electrodes and 2 mm touch proof connectors
- LC EASY R with Stainless Steel electrodes and Redel connector



SPIKE EASY TECHNICAL FEATURES

BODY	Braided shaft, Steel Pebax		
ELECTRODES	AISI Stainless Steel ("LC" models) or Platinum Iridium		
POLES	2, 3, 4, 6, 10		
INTER ELECTRODES DISTANCE	2; 2-5-2; 5; 2-8-2; 10 mm		
CURVE	Courmand; Josephson, Damato; Coronary Sinus; HIS		
WORKING LENGTH	90 cm	115 cm, 125 cm	115 cm, 125 cm
SECTIONS	4F	5F	6F
CONNECTION	6/10 pins female REDEL connector ("R" models) touch proof gold plated 2 mm plugs (not "R" models)		

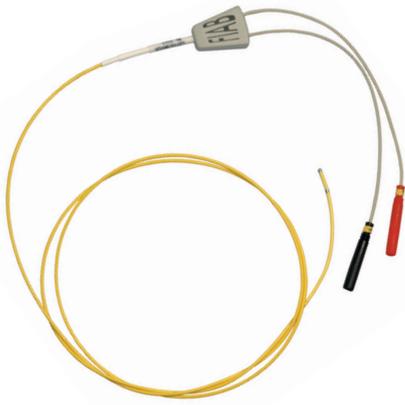
SPIKE EASY REFERENCE KEY

Ref:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> BR
	Model	Poles	Curve	Inter-electrode distance (mm)	Diameter	Connection
	7 = EASY LC 8 or 9 = EASY	2 = 2 4 = 4 6 = 6 0 = 10	1 = straight 2 = courmand 3 = josephson 4 = damato 5 = coronary sinus 6 = HIS	2 = 2 5 = 2-5-2 6 = 5 8 = 2-8-2 0 = 10	4 = 4F 5 = 5F 6 = 6F	<empty> = touch-proof R = redel

Example giving... **Ref 72304BR** - Spike Easy LC, 2 poles, Josephson, 10 mm inter-electrode distance, 4 French, touch-proof

Multipolar reusable extension cables **F5406 series**

- F5406/4REDS** 4 poles, 150 cm cable, redel connector
- F5406/6REDS** 6 poles, 150 cm cable, redel connector
- F5406/10REDS** 10 poles, 150 cm cable, redel connector



Temporary leads with not braided shaft **SPIKE LC S**

SPIKE LC S bipolar and quadripolar leads can be supplied in 4, 5 and 6F diameter; they have been designed to satisfy every specific requirement and they grant a very high flexibility; The 4F lead has a 90 cm working length, therefore it is particularly intended for paediatric use or in other particular cases.

SPIKE LC S TECHNICAL FEATURES

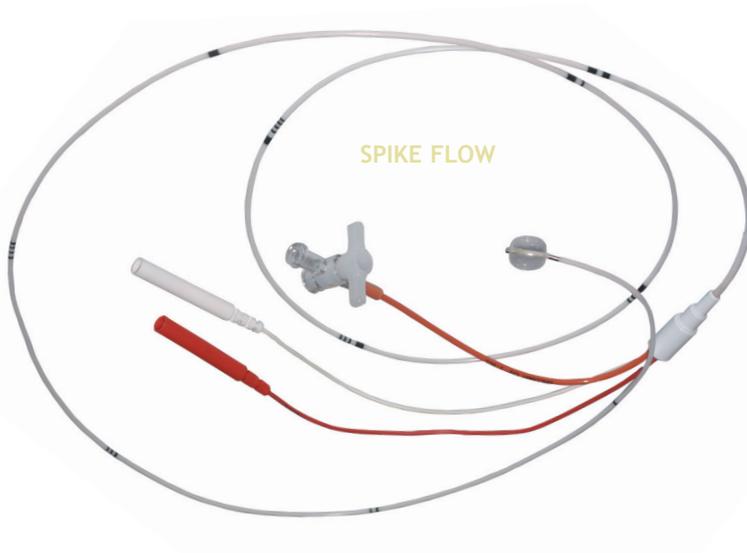
BODY	not braided shaft, Pebax		
ELECTRODES	AISI Stainless Steel		
POLES	2	4	
INTER ELECTRODES DISTANCE	2; 5; 10 mm	2; 2-5-2; 5; 10 mm	
CURVE	Cournaud; Josephson, Damato;		
WORKING LENGTH	90 cm	125 cm	125 cm
SECTIONS	4F	5F	6F
CONNECTION	touch proof gold plated 2 mm plugs		

SPIKE LC S REFERENCE KEY

Ref:	5					S
	Poles	Curve	Inter-electrode distance (mm)	Diameter		
	2 = 2 4 = 4	1 = straight 2 = cournaud 3 = josephson 4 = damato	2 = 2 5 = 2-5-2 6 = 5 0 = 10	4 = 4F 5 = 5F 6 = 6F		

Example giving... **Ref 52266S** - Spike LC S, 2 poles, Cournaud, 5 mm inter-electrode distance, 6 French, touch-proof

Temporary pacing leads with balloon **SPIKE FLOW**



Particularly intended for the Emergency Therapy, it completes the range of SPIKE temporary pacing leads. After the introduction in the vein, the balloon is blown up and the SPIKE FLOW is carried by the vein flux towards the right ventricle; after the balloon is deflated, SPIKE FLOW becomes a normal bipolar pacing catheter with the same stimulation ability as other non-floating models. Its use has the big advantage to allow its positioning in the ventricle without being obliged to use an RX-scopy device, and allows its introduction in access paths with small width (e.g. the cephalic vein)

Ref	12165
French	5 F
Effective length	110 cm
Volume of balloon inflating	1,0 cc
Balloon diameter	9 mm
Inter electrodes distance	10 mm

Device

Single chamber external pacemaker 4427 Easypace



guarantees accurate parameter setting by microprocessor control. In case of longlasting use of the pacer, battery replacement can be carried out without interrupting the pacing activity thanks to the availability of stand-by batteries which ensure power supply for the time required. The connectors on the top of the pacer accept every lead commonly marketed. Safety functions include power-on self-test, on line test of battery charge level, power-on inhibition in case of low charge level, an independent anti-runaway circuit and an alarm in case of disconnection of the lead. A "beep" and a notice in the display will alert the operator in conditions of danger.

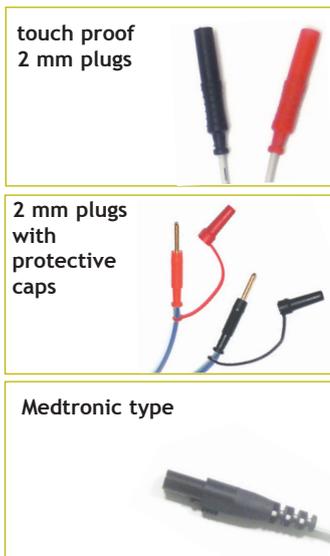
The keyboard provides a self-explanatory user interface and allows for quick program selection.

The available pacing modes are: VVI, V00, AAI and A00. In the V00 mode atrial tachyarrhythmias can be handled by means of either a burst at a rate quadruple than the set value, or a decreasing ramp. A quick pacing start under safety parameters can be obtained by using the EMERGENCY key (asynchronous pacing at 72 ppm). The AUTO key permits to start a demand pacing with automatic adjustment of rate, threshold and sensing amplitude values.

Both in EMERGENCY and in AUTO the values can subsequently be further adjusted manually.

Patient parameters are visualized in terms both of spontaneous rate expressed in ppm and of sensing threshold.

PACING MODE	VVI, V00, V00x4, AAI, A00, A00x4, decreasing ramp
RATE	30÷180 (720) ppm
PACING PERIOD	2000÷333 (83) ms
PULSE DURATION	1.4 ms
PULSE AMPLITUDE	0.2÷40 mA
MAXIMUM SENSITIVITY	0.75 mV
PROTECTION FROM RUNAWAY	180 bpm
REFRACTORY PERIOD	3/8 base cycle
MAIN BATTERIES	2 x 1.5 V (LR6) or equivalent
STAND-BY BATTERIES	3 x 1.4 V (NR44) or equivalent
SIZE	130 x 65 x 32 mm
WEIGHT INCLUDING BATTERIES	210 g



Extension cables

Bipolar extension cables F7817 for pacing leads are available both in disposable and reusable version.

They can be connected to every bipolar temporary intravenous lead equipped with 2 mm shrouded plug.

The cable length allows to place the temporary pacemaker away from the patient's bed.

The wide range proposes many different connectors on stimulator side while on the other side cables have a box or free terminals with double 2 mm shrouded socket.

Bipolar disposable extension cables **F7817/XXLC series**



- F7817/30LC double touch proof 2 mm shrouded plug
- F7817/33LC double 2 mm plug with protective cap
- F7817/MEDLC Medtronic type connector

Bipolar reusable extension cables **F7817 series**



- F7817/30 double touch proof 2 mm shrouded plug
- F7817/33 double 2 mm plug with protective cup
- F7817/33E double 2 mm spring plug with protective cup
- F7817/BIO double 4 mm socket
- F7817/MED Medtronic type connector

Touch proof adapters for bipolar cables **PG922 series**



Not Sterile

- PG922/2TP2WG 2 pieces, red+black
- PG922/2TP4WG 4 pieces, red+black+2 grey
- PG922/2TPVR 2 mm plug with fixing screw, red
- PG922/2TPVNR 2 mm plug with fixing screw, black

Sterile

- PG922/2TPS2 2 pieces, red+black
- PG922/2TPS4 4 pieces, red+black+2 grey

Every adapter can connect a touch proof plug with a 2 mm socket



THREE-WAY STOPCOCK VALVE

Hemostasis valve introducers

The hemostasis valve introduction kit facilitates the introduction of catheters into the vascular system, blood sampling and injection of fluids, and it is also able to prevent blood loss thanks to the presence of the hemostatic valve. The introducer is equipped with security lock system Dilator/Sheath (Interlocking Hub) and the access sideport, equipped with three-way stopcock, allows the catheter infusion. The kit is supplied sterile and is available in different french sizes. In case of prolonged use, the cannula can be held in position by the fixing ring.



Hemostasis valve introduction kit

F477XXV series

With 0,035" guidewire

F47704V	4F
F47705V.35	5F
F47706V.35	6F
F47707V.35	7F
F47708V.35	8F
F47709V.35	9F

With 0,038" guidewire

F47705V	5F
F47706V	6F
F47707V	7F
F47708V	8F
F47709V	9F

Each sterile kit includes:

- introducer with hemostasis valve composed of a PP dilator covered with a FEP external sheath enriched with barium sulfate;
- guide wire double-ended with "J"-Tip (3mm radius, 50 cm long) and straight tip, in stainless steel with safety wire placed inside and a plastic sheath with straightener for the placement of the "J".

Each kit can also be supplied :

- with a needle included; just in case please add "K" to the ref (e.g. F47704VK)
- with a needle and a syringe included; just in case please add "SK" to the ref (e.g. F47707VSK)

TRANSESOPHAGEAL DIAGNOSTIC AND PACING

Leads

FIAB is a worldwide manufacturer leader of transesophageal pacing leads, characterized by an high technology manufacturing and some unique advantages:

- 1) A-traumatic design: the silicone tips and the absence of sharp edges on the separation line between electrode rings and body shaft ensure maximum tolerability during the introduction and the extraction of the lead; the small diameter allows studies extended in time without much discomfort to the patient.
- 2) Performance: for every model of the esophageal lead, a particular electrodes shape and size have been developed to assure a quality and stable signal; the depth markers on the body of the lead allow a rapid positioning.
- 3) Safety: the body of the catheter has an a-traumatic design; touch proof connectors (shrouded pins) ensure maximum safety; the packaging is in double sterile pack.



Esophageal leads **ESO FLEX S** series with olive shaped electrodes

TECHNICAL FEATURES

	ESOFLEX 2S	ESOFLEX 3S	ESOFLEX 4S	ESOFLEX 4NS	ESOFLEX 5S	ESOFLEX 6S	ESOFLEX 10S
REF	25125S	25135S	25145S	25145NS	25155S	25165S	25105S
N° POLES	2	3	4	4	5	6	10
USEFUL LENGTH	75 cm						
TIP	non-traumatic SILICONE / length 7,3 mm / Ø 2,3 mm						
ELECTRODE MATERIAL	STAINLESS STEEL						
ELECTRODE AREA	57 mm ² for each electrode						
INSULATION MATERIAL	medical grade POLYURETHANE - Internal quadrifilar coil MP35N						
BODY DIAMETER	2,3 mm - 7 French						
MAX Ø OLIVE ELECTRODES	3,6 mm - 11 French						
DISTANCE BETWEEN ELECTRODES	30mm	30/15mm	30/15/15mm	15/15/15mm	20/15÷15 mm	20/15÷15mm	20/10÷10mm
DEPTH MARKERS	1 cm from the tip to 30 cm, 2 cm from 32 to 40 cm, 5 cm from 45 to 60 cm						
CONNECTORS	touch proof 2 mm plug						
STYLETS	2 stylets: Ø 0,35 mm - 0,40 mm						
STERILIZATION	ETO gas						



Esophageal leads with olive shaped electrodes **ESOLO** series

TECHNICAL FEATURES

	ESOLO 2	ESOLO 4	ESOLO 6
REF	25125LO	25145LO	25165LO
N° POLES	2	4	6
USEFUL LENGTH	75 cm		
TIP	non-traumatic SILICONE / length 7,3 mm / Ø 2,3 mm		
ELECTRODE MATERIAL	STAINLESS STEEL		
ELECTRODE AREA	57 mm ² for each electrode		
INSULATION MATERIAL	medical grade POLYURETHANE - Internal quadrifilar coil MP35N		
BODY DIAMETER	2,3 mm - 7 French		
MAX Ø OLIVE ELECTRODES	3,6 mm - 11 French		
INTER ELECTRODES DISTANCE	30mm	30/15/15mm	20/15÷15 mm
DEPTH MARKERS	1 cm from the tip to 30 cm, 2 cm from 32 to 40 cm, 5 cm from 45 to 60 cm		
CONNECTORS	touch proof gold plated 2 mm plug		
STYLETS	1 stylet: Ø 0,35 mm		
STERILIZATION	ETO gas		



Esophageal leads with gold plated electrodes **ESOGOLD S** series

TECHNICAL FEATURES

	ESOGOLD 2S	ESOGOLD 3S	ESOGOLD 4S	ESOGOLD 5S	ESOGOLD 6S
REF	27125S	27135S	27145S	27155S	27165S
N° POLES	2	3	4	5	6
USEFUL LENGTH	75 cm				
TIP	non traumatic SILICONE / length 7,3 mm / Ø 2,3 mm				
ELECTRODE MATERIAL	GOLD PLATED BRASS				
ELECTRODE AREA	57 mm ² for each electrode				
INSULATION MATERIAL	medical grade POLYURETHANE - Internal quadrifilar coil MP35N				
INSULATION DIAMETER	2,3 mm - 7 French				
MAX Ø OLIVE ELECTRODES	3,6 mm - 11 French				
INTER ELECTRODES DISTANCE	30 mm	30/15 mm	30/15/15 mm	20/15 ÷ 15 mm	20/15 ÷ 15 mm
DEPTH MARKERS	1 cm from tip to 30 cm, 2 cm from 32 to 40 cm, 5 cm from 45 to 60 cm				
CONNECTORS	touch proof gold plated 2 mm plug				
STYLETS	2 stylets: Ø 0,35 mm - 0,40 mm				
STERILIZATION	ETO gas				



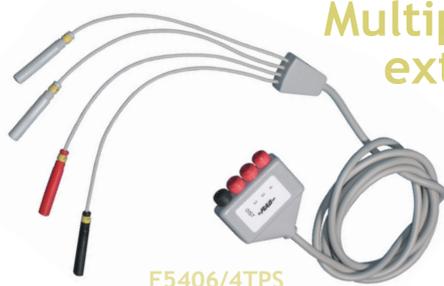
Silicone esophageal leads **ESOSOFT S** series

TECHNICAL FEATURES					
	ESOSOFT 2S	ESOSOFT 3S	ESOSOFT 4S	ESOSOFT 5S	ESOSOFT 6S
REF	35125S	35135S	35145S	35155S	35165S
N° POLES	2	3	4	5	6
USEFUL LENGTH	60 cm				
TIP	non-traumatic SILICONE / length 7,3 mm / Ø 3,0 mm				
ELECTRODE MATERIAL	STAINLESS STEEL				
ELECTRODE AREA	47 mm ² for each electrode				
INSULATION MATERIAL	medical grade SILICONE - Internal quadrifilar coil MP35N				
INSULATION DIAMETER	3,0 mm - 9 French				
INTER ELECTRODES DISTANCE	30 mm	30/15 mm	30/15/15 mm	20/15÷15 mm	20/15÷15 mm
CONNECTORS	touch proof gold plated 2 mm plug				
STYLETS	2 stylets: Ø 0,35 mm - 0,40 mm				
STERILIZATION	ETO Gas				



Paediatric esophageal leads **ESOKID S** series

TECHNICAL FEATURES		
	ESOKID 2S	ESOKID 4S
REF	25125ES	25145ES
N° POLES	2	4
USEFUL LENGTH	75 cm	
TIP	non-traumatic SILICONE / length 4,0 mm / Ø 2,0 mm	
ELECTRODE MATERIAL	STAINLESS STEEL	
ELECTRODE AREA	distal 25 mm ² - proximal 21 mm ²	
INSULATION MATERIAL	medical grade POLYURETHANE	
INSULATION DIAMETER	2,0 mm - 6 French	
INTER ELECTRODES DISTANCE	20 mm	10/10/10 mm
DEPTH MARKERS	1 cm from the tip to 30 cm, 2 cm from 32 to 40 cm, 5 cm from 45 to 60 cm	
CONNECTORS	touch proof gold plated 2 mm plug	
STERILIZATION	ETO Gas	



F5406/4TPS

Multipolar reusable extension cables **F5406** series

F5406/4TPS	4 poles, 150 cm cable, touch proof connector
F5406/6TPS	6 poles, 150 cm cable touch proof connector
F5401TPS	10 poles, 150 cm cable touch proof connector

Devices

Asynchronous esophageal cardiac stimulator 2007

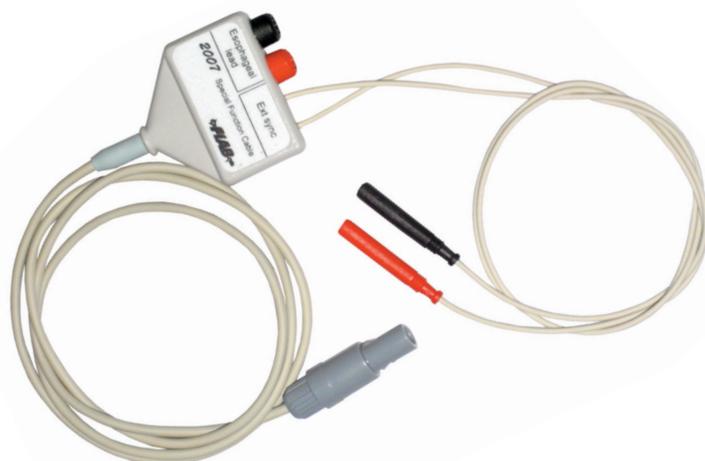


2007 is a device suitable for oesophageal cardiac pacing to be used with appropriate transesophageal leads.

The device, small sized and battery operated, provides an asynchronous pacing both for therapeutic and diagnostic purposes. The user interface has been maintained simple, to allow the user to control basic functions at first use. Wide freedom in selecting pacing parameters makes the device easily adaptable to any need.

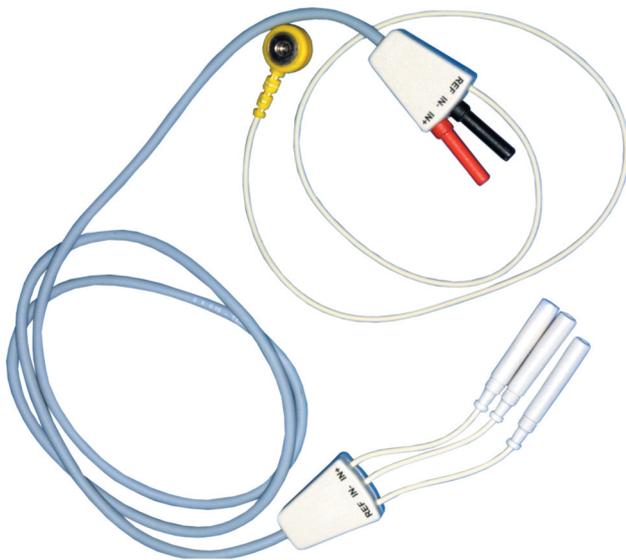
The cardiac stimulator has a specific interface that allows the connection to devices for electrophysiologic studies equipped with advanced programs for endocardial pacing.

When connected, these programs can be used for complete oesophageal electrophysiologic studies.



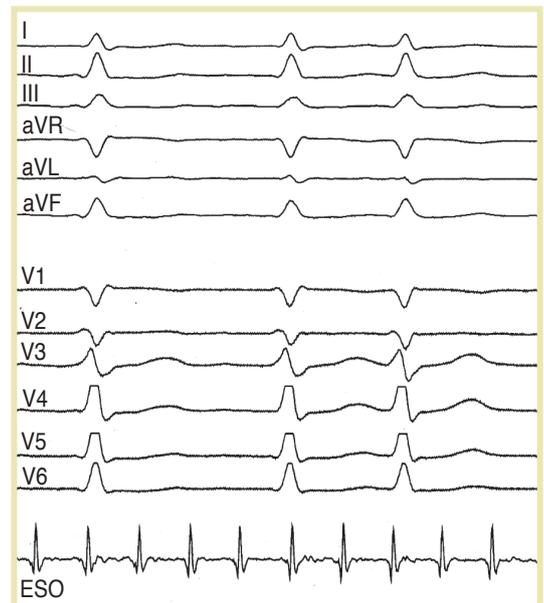
CLASS	Internally powered equipment
TYPE OF APPLIED PART	CF
PACING METHOD	Asynchronous
PACING RATE	30 - 1200 ppm
PULSE DURATION	1 - 2 - 3 - 5 - 10 - 15 - 20 ms
PULSE AMPLITUDE	1-40 mA
INPUT	External trigger
DISPLAY	LCD: 45,6 x 17,8 mm
DISPLAYED DATA	Stimulation frequency, low battery
PROTECTION FROM DEFIBRILLATION	yes
PROTECTION GRADE	IP65 (protected against water jets and dust)
POWER SUPPLY	1 x 9V battery (mod. 6LR61)
BATTERY LIFE	About 4 hours in pacing mode
SIZE	173 x 83 x 33 mm
WEIGHT INCLUDING BATTERY	300 g

Rostock filter 30104



The oesophageal method has shown to be extremely useful during arrhythmological diagnostics, because it allows an accurate recording of atrial complexes. After years of experience with the innovating AR-1 and EHF-4, FIAB introduces a device that is able to solve various problems relative to the recording of oesophageal signals.

The filter has been developed in co-operation with the Rostock University in Germany. Thanks to many selectable cut-off frequencies, this filter permits to obtain an optimal recording of the atrial signals. The device can also be used for Holter recording, being it very compact and easy to use.



INPUT	IN+, IN -, REF 2 mm touch-proof sockets (E-DIN 42802-2)
OUTPUT	OUT, REF
SELECTABLE OUTPUT	HIGH GAIN 2920 mV/mV LOW GAIN 29,2 mV/mV
FILTERING	active high-pass second order filter
FREQUENCY	3, 15, 30, 40, 60, 80, 110, 150 Hz (±10%)
GAIN	HIGH GAIN 96-2920 (±10%) LOW GAIN 0,96-29,2 (±10%)
MAIN BATTERY	1 X 9V (6LR61)
BATTERY LIFE	48 hours
SIZE	120X65X22 mm
WEIGHT INCLUDING BATTERY	140 g

The user interface was designed to be easy and compact in order to allow an immediate use of the filter. The device is switched on automatically by turning the setting gain knob, which adjusts the amplification of the output signal. Two output channels can be selected by a switch situated in the battery housing (about 30 mV for 1 mV of input for connection to an ECG device, about 3000 mV for 1 mV of input for connection to a monitor). The cut-off frequency filter is easily set by pressing a button. Frequency range is very wide, from 3Hz to 150 Hz. This makes the filter to be practically universal in its applications in the field of esophageal traces recording.

Programmable stimulator 8817



FIAB 8817 is a programmable external pacemaker for both endocardial and transoesophageal electrophysiologic studies. The device can be used with intravenous and esophageal leads and allows the stimulation of the heart along with the monitoring of heart signal for diagnostic and therapeutic purposes. It is available in various versions to suit every user's requirements.

- Among its most significant features we underline:
- simple but wide selection of programs guided by self-explanatory menu;
 - high surface and high resolution display visualizing up to three ECG traces and alphanumeric information;
 - a blanking circuit that eliminates stimulation interferences from ECG and lead signals;
 - possibility to select several different waveforms;
 - detection of atrial signal for a correct transoesophageal pacing synchronism;
 - availability of automatic programs for the determination of cSNRT, Wenckebach and 2:1 A/V block and ramp;
 - specifically designed box for connection to electrodes that allows fast and easy switching.

RATE	30÷1200 ppm (50÷2000 ms)
PULSE DURATION	0.5÷20 ms (oesophageal); 0.5÷2 ms (endocardial)
PULSE AMPLITUDE	5÷45 mA (oesophageal); 1÷20 mA (endocardial)
EXTRASTIMULI	1 / 2 / 3
SENSITIVITY UP TO	0.35 mV
PACING PROGRAMS	asynchronous with rate ramp, SSI, asynchronous or demand paired stimulation, asynchronous or demand burst with fixed or decremental cycle, emergency
AUTOMATIC PROGRAMS	cSNRT, Wenckebach and 2:1 A/V, ramp
POWER SUPPLY	230 V - 50Hz / 60Hz battery
SIZE	300 x 340 x 110 mm
WEIGHT	7 Kg

Electrophysiology filter 9517

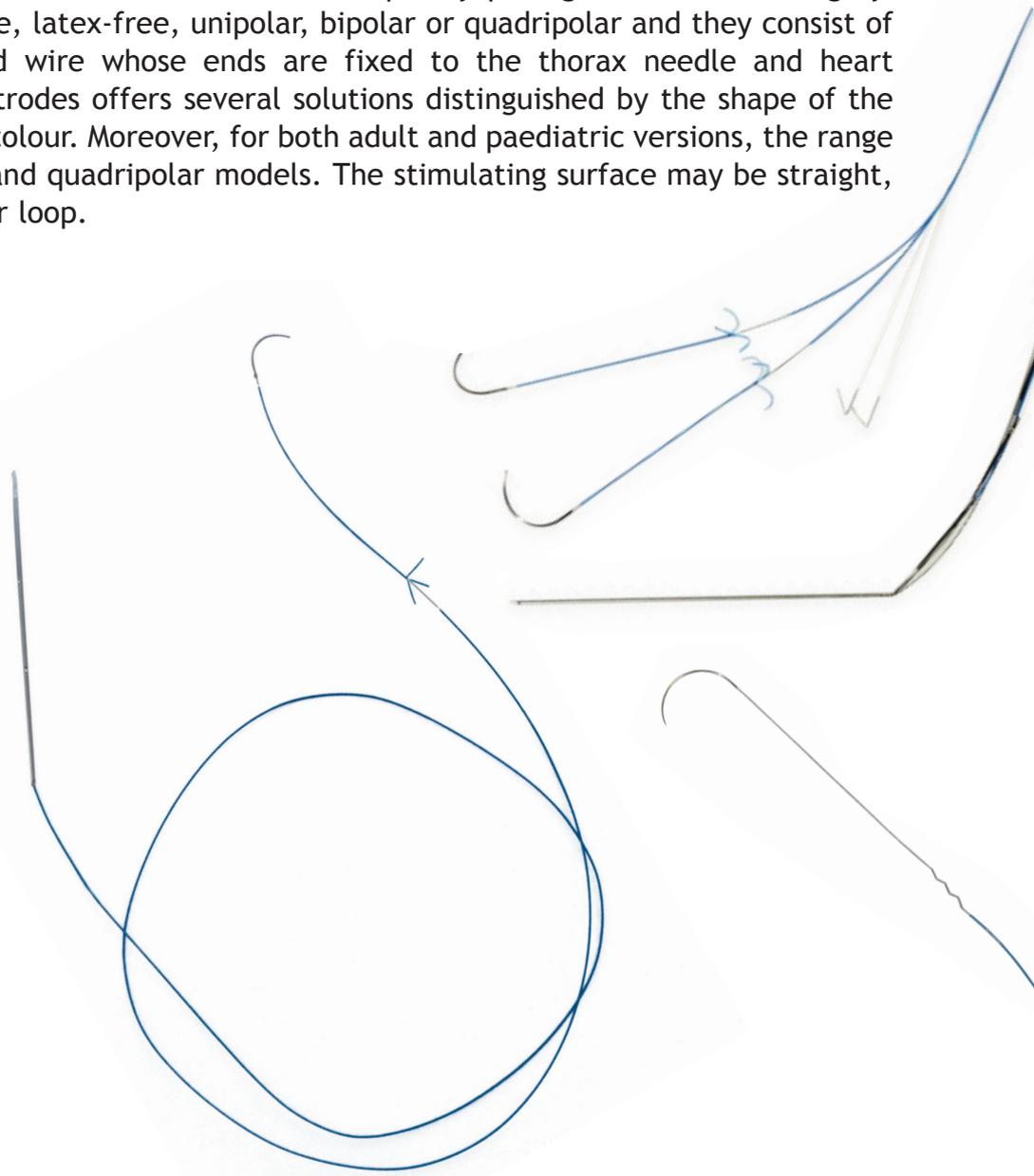
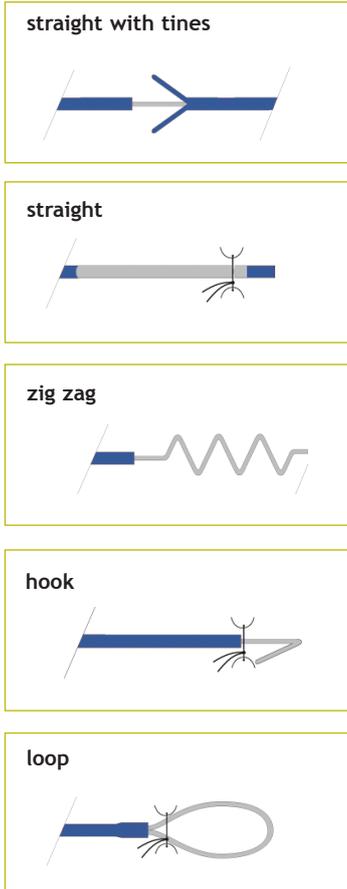
9517 is an accessory to model 8817 cardiac stimulator; this filter is intended for electrophysiology and permits to add three recording channels, with filtering for intravenous signals, to existing sense internal channel.

TYPE OF LEADS CONNECTABLE TO THE TWO CONNECTORS	Up to 10 poles (i.e. a 4 poles and a 6 poles lead, etc.)
ADDED RECORDING CHANNELS	Three, obtained as a selection of three couples of poles of the 10.
LEAD SELECTION	By means of mechanical selectors, with poles numbering from 0 to 9
FILTERING OF THREE CHANNELS	Pass band 50-150 Hz
GAIN SETTING	Three positions commutator (1, 1/3, 1/10) corresponding to 30, 10 and 3 gains 300 mm/mV 5%, 100 mm/mV 5% e 30 mm/mV 5%
POWER SUPPLY	No added power is required. The accessory is powered by 8817
WEIGHT AND DIMENSIONS	130x67x185 (mm); weight less than 1 kg

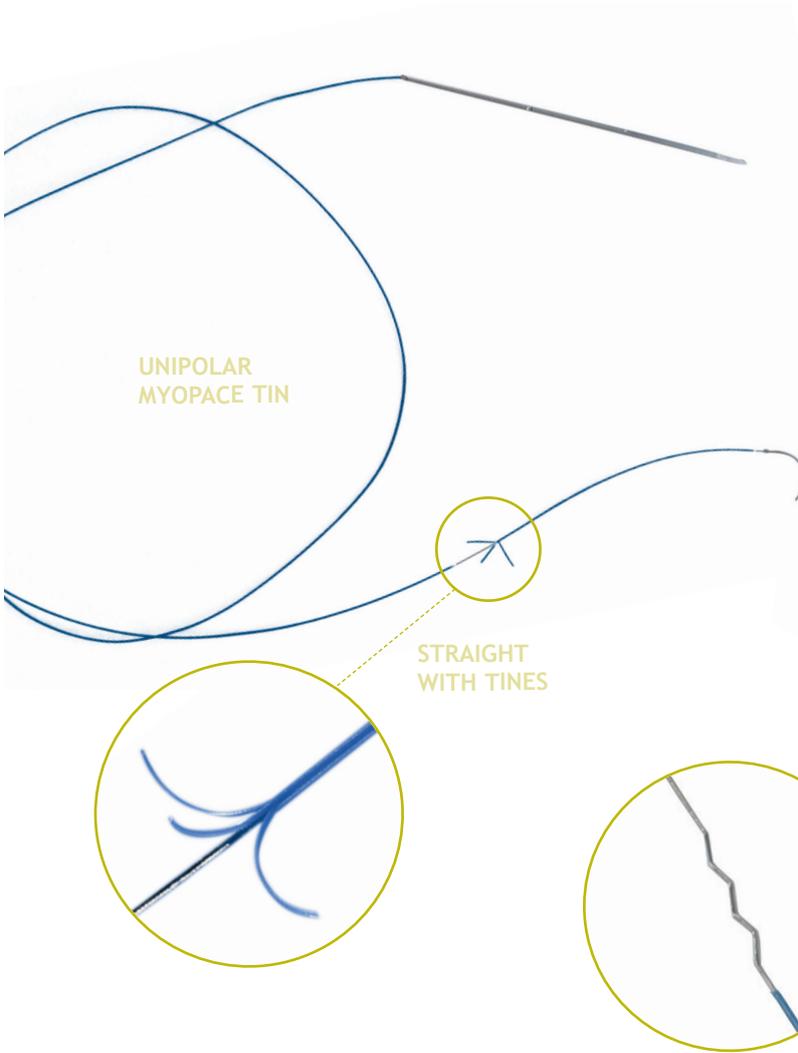


CARDIAC SURGERY

Myopace myocardial electrodes are intended for temporary pacing after cardiac surgery. They are sterile, disposable, latex-free, unipolar, bipolar or quadripolar and they consist of a multi-stranded insulated wire whose ends are fixed to the thorax needle and heart needle. The range of electrodes offers several solutions distinguished by the shape of the fixing surface, length and colour. Moreover, for both adult and paediatric versions, the range includes unipolar, bipolar and quadripolar models. The stimulating surface may be straight, zig-zag, with tines, hook or loop.

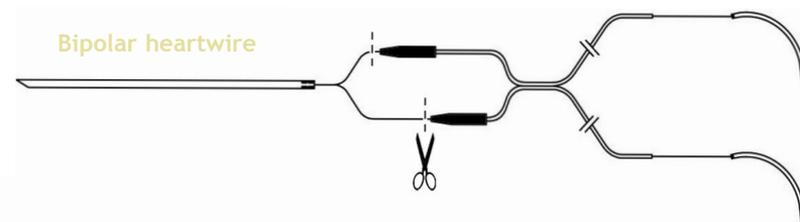
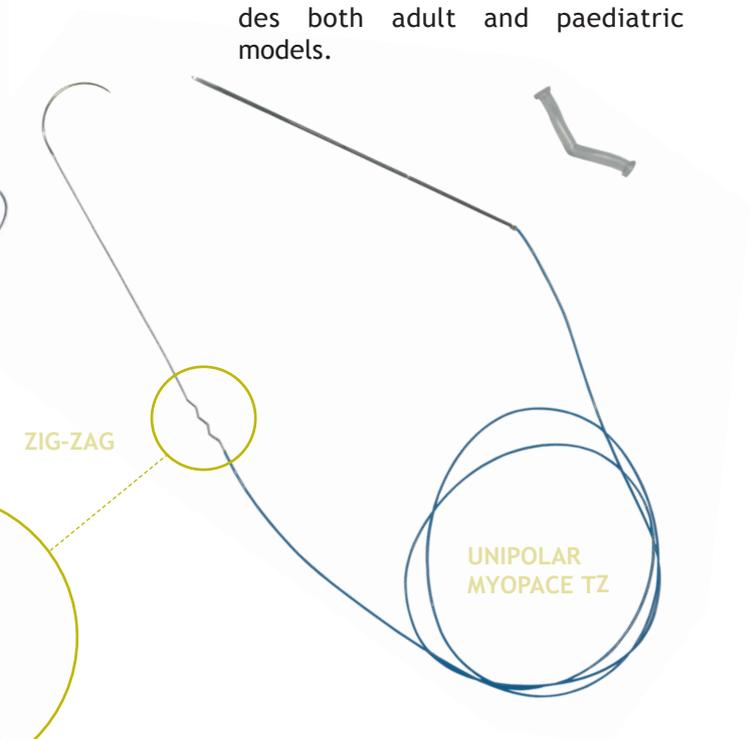


TECHNICAL FEATURES									
REF	for adults					paediatric			
	TIN	TZ	T	TV	TL	TINP	P	TVP	TLP
USEFUL LENGTH			60 / 220					55	
SINGLE WIRE ACTIVE SURFACE (mm ²)			9,4					5,0	
THORAX NEEDLE shape			straigh					straigh	
THORAX NEEDLE diameter (mm)			0,9					0,9	
THORAX NEEDLE length (mm)			90					63	
HEART NEEDLE shape	curved	curved	curved	/	/	curved	curved	/	/
HEART NEEDLE diameter (mm)			0,6					0,5	
HEART NEEDLE length (mm)			27					13	
CONDUCTOR MATERIAL			AISI					AISI	
WIRE INSULATION			PE					PE	
ELECTRODE ACTIVE PART	Straigh with tines	Zig Zag	Straigh	Hook	Loop	Straigh with tines	Straigh	Hook	Loop



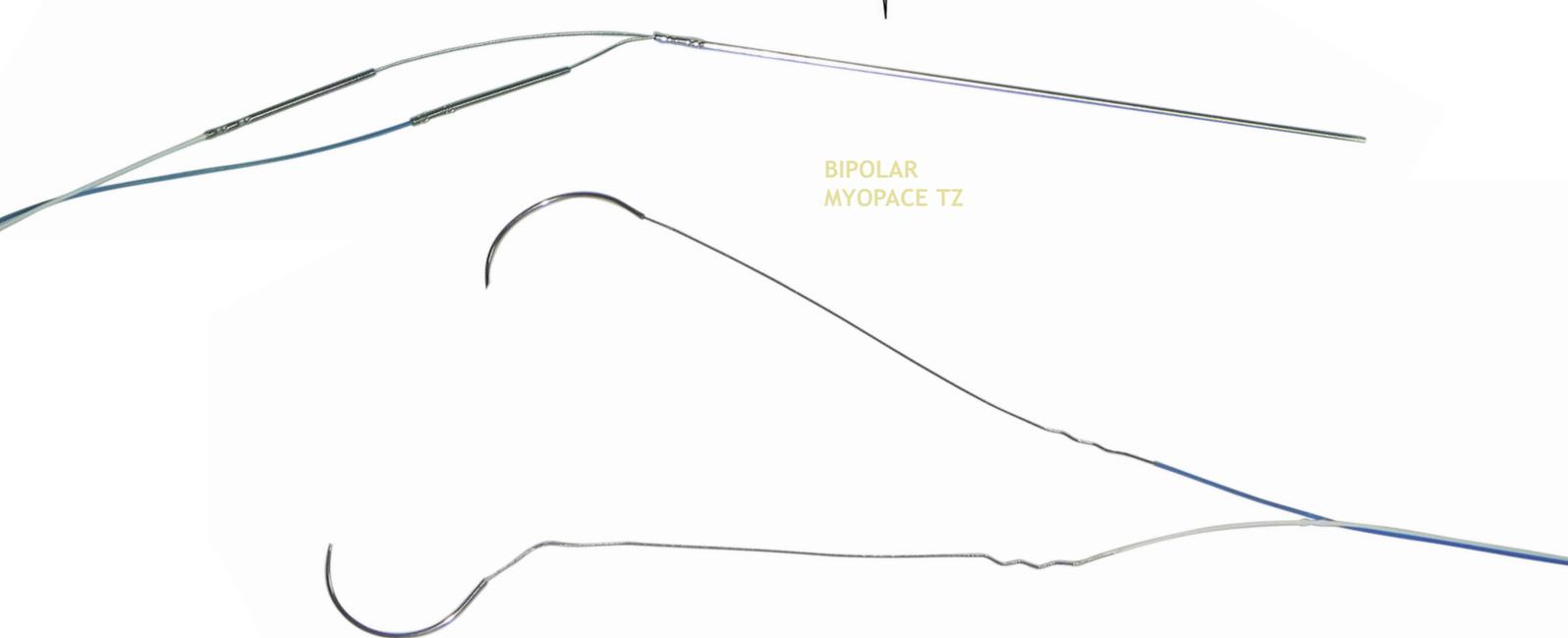
Unipolar heartwires

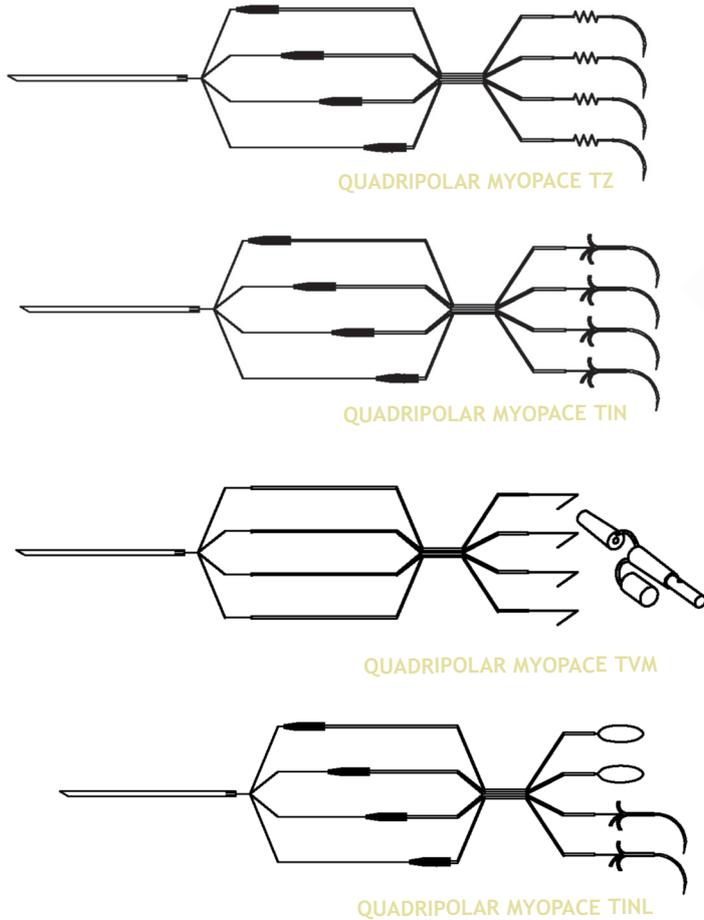
For unipolar models the connection to the stimulator is carried by the pre-cut thorax needle; unipolar heartwires can be provided with white or blue wire. The range includes both adult and paediatric models.



Bipolar heartwires

Bipolar models can be connected to the stimulator by two plugs (Ø 1 mm, 22 mm long) with PVC protective caps.





Quadripolar heartwires

Quadripolar models can be connected to the stimulator by four plugs (ø 1 mm, 22 mm long) with PVC protective caps. Quadripolar models are intended for adult patients and are wrapped on a spool in order to make them easier and safer to use.



MYOPACE REFERENCE KEY				
Ref: 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Poles 0=1 pole 1=2x1 pole 2=2 poles 4=4 poles	Length 050 = 55 cm (paediatric) 060 = 60 cm (for adults) 220 = 220 cm (for adults)	Cable colour <empty> = blue (unipolar) blue/white (bipolar) B = blue (bipolar) W = white BW = blue and white	Fixing method T, P = straight TZ = zig zag TIN, TINP = tines TV, TVP = hook TL, TLP = loop TINV = 2 tines + 2 hooks TINL = 2 tines + 2 loops
				Adaptor <empty> = without adaptor M = with adaptor
Example giving... Ref 50060WTINM - Myopace, unipolar, 60 cm (for adults), white, straight with tines, with adaptor				

Unipolar adapter

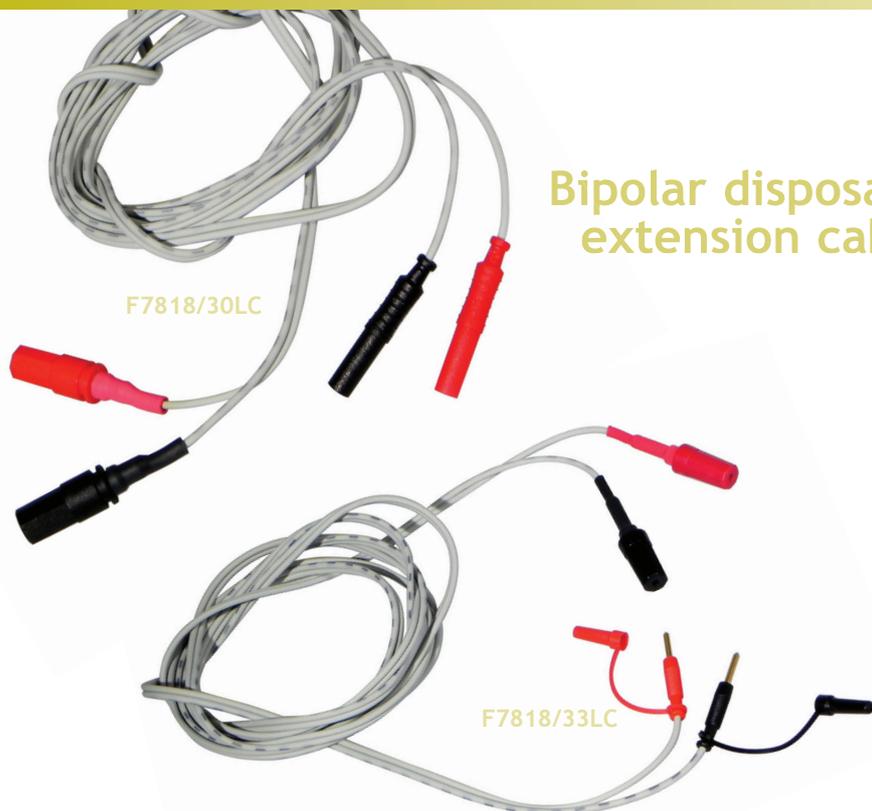


MYOCONNECTOR

Myoconnector allows to equip FIAB Myopace with a 2 mm plug and it's particularly intended to be used with 220 cm long models. It is composed of a metallic part with a hole for the insertion of the signal wire and a plastic insulating part. A removable cap is attached to the plastic part, in order to protect the 2 mm pin after use. Every heartwire which is supplied with the myoconnector included in the pouch shows the suffix "M" in the ref.

Heartwire extension cables

Bipolar disposable extension cables **F7818/LC series**

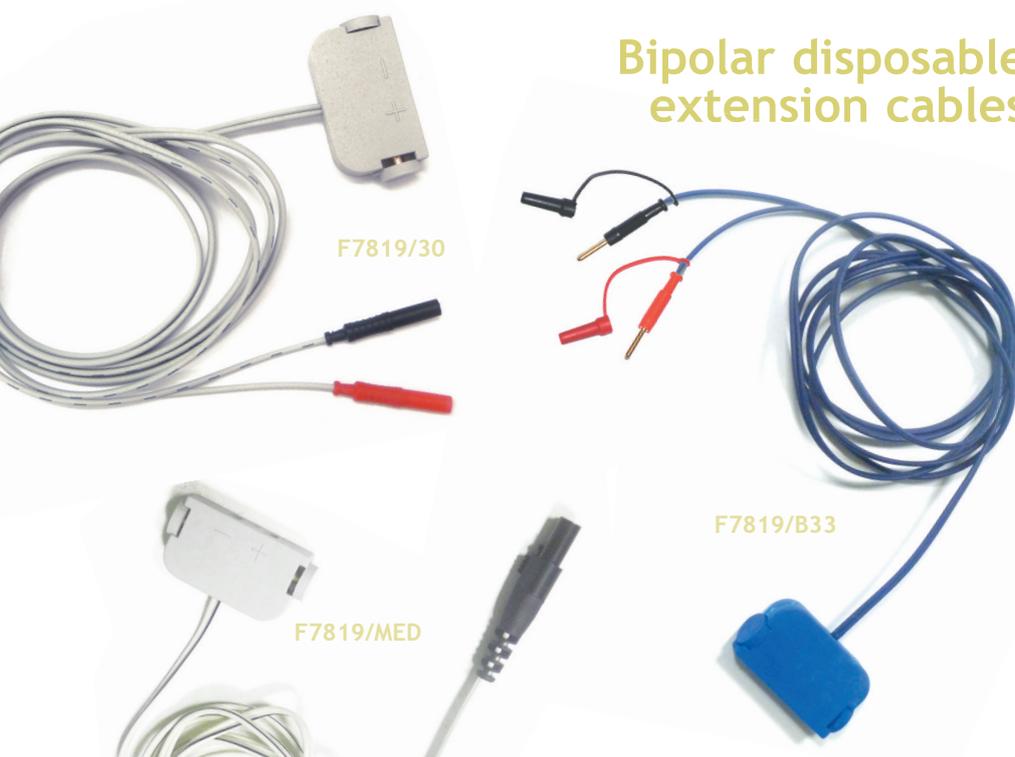


Disposable extension cables are ready for use without need of any cleaning, maintenance, checking or sterilizing service. They make easier every implantation procedure avoiding any managing issue and represent a very competitive cost-effective solution for every need. The cables are equipped with 2 mm universal screw sockets at one side, while at the other side several different connectors are available.



- F7818/30LC Touch proof 2 mm shrouded plugs (grey cable)
- F7818/33LC 2 mm plugs with protective caps (grey cable)
- F7818/B33LC 2 mm plugs with protective caps (blue cable)
- F7818/MEDLC Medtronic type connector (grey cable)
- F7818/BMEDLC Medtronic type connector (blue cable)
- F7818/BRLC Redel connector (blue cable)
- F7818/4BIOLC Biotronic Redel connector with 4 screw sockets (grey cable)
- F7818/BIOLC Biotronic Redel connector (grey cable)
- F7818/BBIOLC Biotronic Redel connector (blue cable)

Bipolar disposable extension cables **F7819 series**



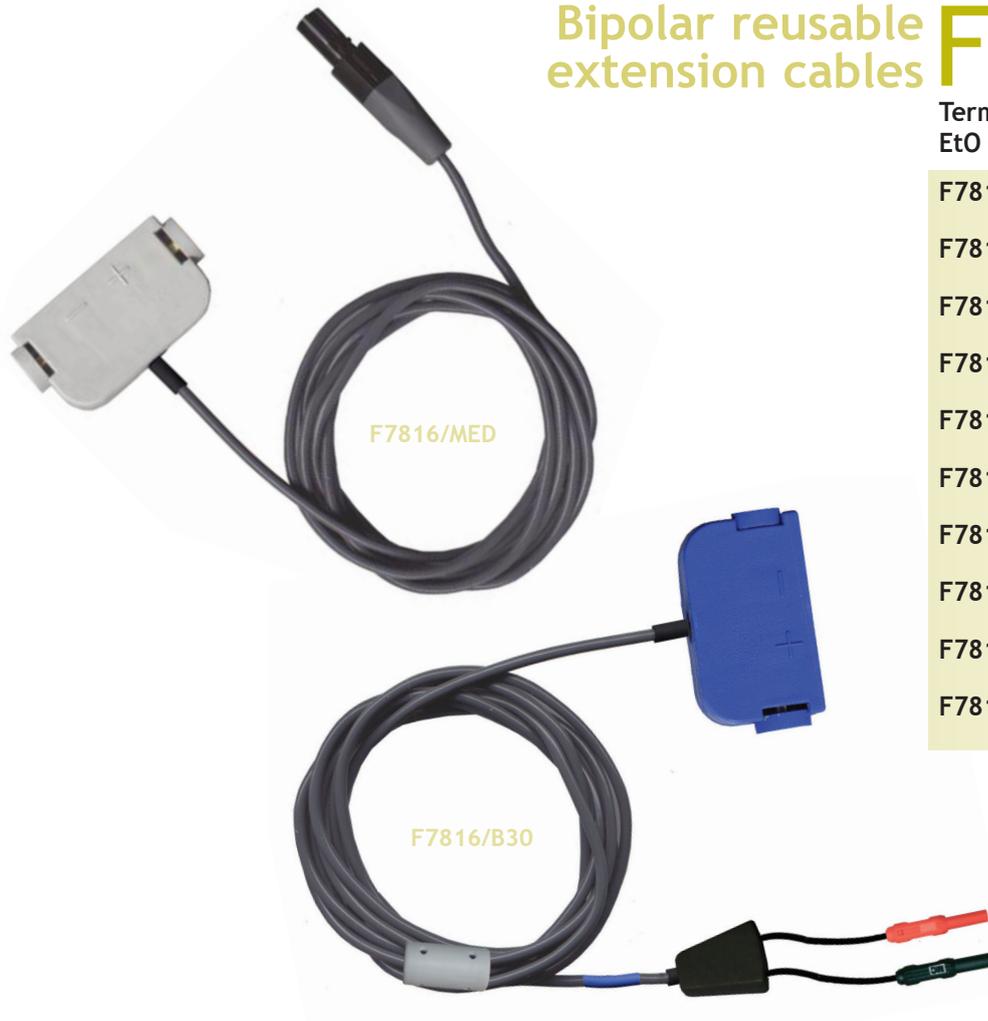
Terminal box with 2 mm screw side socket

- F7819/30 Touch proof 2 mm shrouded plugs, grey box
- F7819/B30 2 mm plugs, blue box
- F7819/33 2 mm plugs with protective caps, grey box
- F7819/B33 2 mm plugs with protective caps, blue box
- F7819/MED Medtronic type connector, grey box
- F7819/BMED Medtronic type connector, blue box
- F7819/BIO Redel connector, grey box
- F7819/BBIO Redel connector, blue box

Bipolar reusable extension cables **F7816** series

Terminal box with 2 mm screw side socket.
EtO gas and steam sterilization.

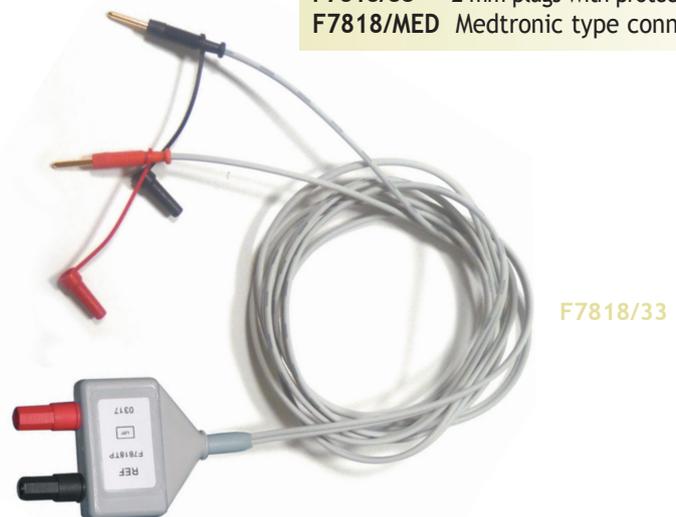
F7816/MED	Medtronic type connector, grey box
F7816/BMED	Medtronic type connector, blue box
F7816/RED	Redel connector, grey box
F7816/BRED	Redel connector, blue box
F7816/BIO	Biotronic Redel connector, grey box
F7816/BBIO	Biotronic Redel connector, blue box
F7816/30	Touch proof 2 mm shrouded plugs, grey box
F7816/B30	Touch proof 2 mm shrouded plugs, blue box
F7816/33	2 mm plugs with protective caps, grey box
F7816/B33	2 mm plugs with protective caps, blue box



Bipolar reusable extension cables **F7818** series

Terminal box with 2 mm screw socket.
EtO or gas plasma sterilization.

F7818/30	Touch proof 2 mm shrouded plugs
F7818/33	2 mm plugs with protective caps
F7818/MED	Medtronic type connector



ACCESSORIES FOR PERMANENT PACING

Peel away introducers

FIAB Peel-Away introducer kit allows an easy placement of pacing cardiac leads (or central venous leads) through one of the traditional venous accesses according to Seldinger's method; after introduction the sheath can be pulled back by peeling off the two parts along the precutted line. It's equipped with a safe "Interlocking hub" system dilator /cannula.

Peel away introduction kit **F47XXX** series

With 0,038" guide wire

F47505	5F
F47506	6F
F47507	7F
F47508	8F
F47509	9F
F47609	9,5F
F47510	10F
F47610	10,5F
F47511	11F
F47512	12F
F47513	13F
F47514	14F
F47515	15F
F47516	16F
F47517	17F
F47518	18F

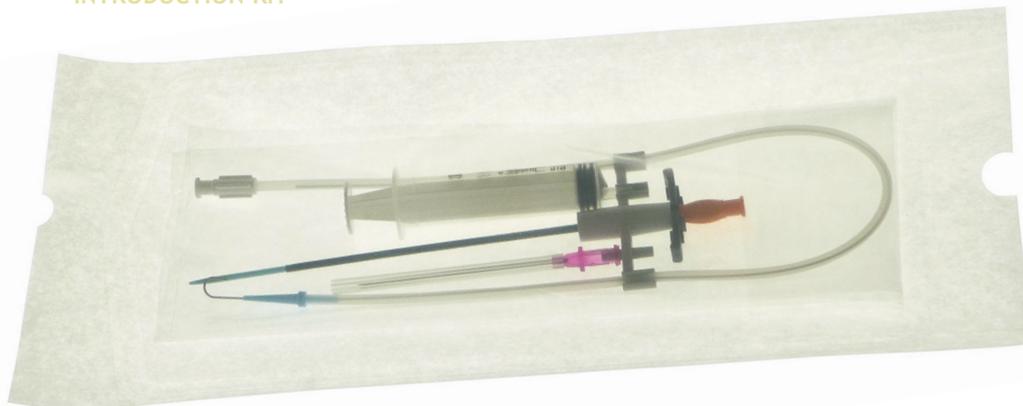
With 0,035" guide wire

F47507.35	7F
F47508.35	8F
F47509.35	9F
F47510.35	10F
F47610.35	10,5F

Each sterile kit includes:

- peel away radiopaque introducer composed of a HDPE dilator (17 cm long) covered with a PTFE sheath;
- guide wire with "J" flexible tip (50 cm long) equipped with a suitable conical accessory to straighten the tip;
- thin wall needle (18 G X 70 mm);
- 10 ml syringe with eccentric cone.

INTRODUCTION KIT



XL introducers **F475XXXL/Y** series



XL introducers have the same features of standard ones except for the dilator, which is 23 or 33 cm long instead of 17 cm

F47506XL/23	6F, 23 cm dilator
F47507XL/23	7F, 23 cm dilator
F47508XL/23	8F, 23 cm dilator
F47509XL/23	9F, 23 cm dilator
F47510XL/23	10F, 23 cm dilator
F47511XL/23	11F, 23 cm dilator
F47512XL/23	12F, 23 cm dilator
F47508XL/33	8F, 33 cm dilator
F47509XL/33	9F, 33 cm dilator
F47510XL/33	10F, 33 cm dilator
F47511XL/33	11F, 33 cm dilator
F47512XL/33	12F, 33 cm dilator
F47514XL/33	14F, 33 cm dilator

Peel away introduction kit with threshold cable **F475XX/3X** series



These models are composed of a peel away introduction kit and a threshold cable (F7830S or F7833S)

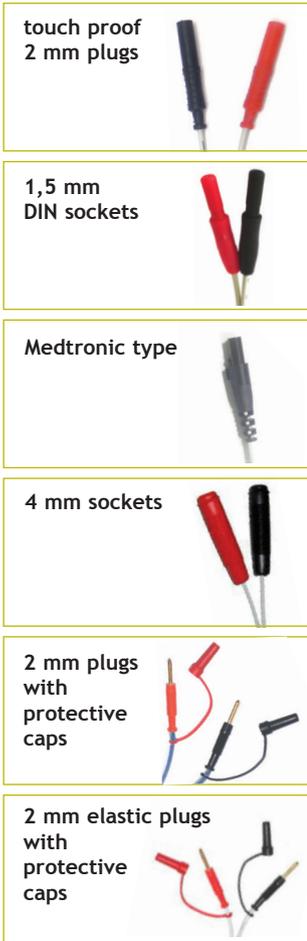
F47507/30	F47507 + F7830S
F47508/30	F47508 + F7830S
F47509/30	F47509 + F7830S
F47510/30	F47510 + F7830S
F47507/33	F47507 + F7833S
F47508/33	F47508 + F7833S
F47509/33	F47509 + F7833S
F47609/33	F47609 + F7833S
F47510/33	F47510 + F7833S

Single introducers **F475XX/S** series



Single introducers (cannula with dilator) are packed without guide wire, needle and syringe

F47506/S	6F
F47507/S	7F
F47508/S	8F
F47509/S	9F
F47510/S	10F
F47511/S	11F



Cables with several connectors **F783X series**

Threshold cables

These cables, intended for pacing and sensing thresholds test, are equipped with alligators at one side while at the opposite side different connectors are available.



- F7830S** Touch proof 2 mm plug, 200 cm grey cable
- F7830DIN** 1,5 DIN socket, 200 cm grey cable
- F7830/MED** Medtronic type connector, 200 cm grey cable
- F7830/AF** 4 mm socket, 200 cm grey cable
- F7831S** Touch proof 2 mm plug, 200 cm blue cable
- F7832S** Touch proof 2 mm plug, 400 cm grey cable
- F7833** 2 mm plug with protective cap, 200 cm grey cable
- F7833E** 2 mm elastic plug with protective cap, 200 cm grey cable
- F7834** 2 mm plug with protective cap, 200 cm blue cable

Cables with IS-1 connector **F783XIS-1 series**



- F7830IS-1** 2 mm touch proof socket
- F7833IS-1** 2 mm plug with protective cap

Cable for Medtronic Programmer 2090 **F7840 series**

F7840 series

F7840/MEDT is an interface cable which allows the Medtronic Programmer 2090 to be used with sterile threshold cables terminating with touch proof connectors as F7830S FIAB.



- F7840/MEDT** 2 mm socket, L 150 cm
- F7840/4/MEDT** 2 mm socket, L 400 cm



Miscellaneous

Magnet **SM30**

- SM30** Sterile disposable magnet



Electrocauteries **F72X4**

- F7234** Fine 75 mm tip
- F7244** Fine 28 mm tip



Pacing and sense analyzer

Pacing and sense analyzer (PSA) 2307



PRINTER

MODEL	2307
REF.	30105
CLASS AND TYPE	Portable instrument with internal power supply
APPLIED PART	Type CF, protected against defibrillator discharges
POSSIBLE MEASUREMENTS	Sensing values, pacing threshold.
SENSITIVITY	Impedance of the pacing circuit at 5V 0.2 ÷ 50mV peak-peak - Tolerance: the highest between ±0.1 mV and ±15%
SPONTANEOUS FREQUENCY	15 ÷ 230 bpm - Tolerance: the highest between ±1bpm and ±5%
PULSE AMPLITUDE	0.1÷15 V - adjustable with 0.1V steps Tolerance: the highest between ±0.1V e ±15%
PULSE DURATION	0.25 ÷ 2.00 ms - adjustable with 0.05ms steps Tolerance: ±10%
STIMULATION FREQUENCY	30 ÷ 180ppm - adjustable with 1ppm steps Tolerance: ± 5%
STIMULATION METHOD	Asynchronous and on demand
5V IMPEDANCE (0.5MS)	100 ÷ 3000 Ω Tolerance: ±15%
EMERGENCY FUNCTIONS	Ventricular stimulation: stimulation parameters preset at 60ppm, 15V, 1ms High frequency atrial stimulation: 180 ÷ 1000ppm
DISPLAY	LCD graphics, dimensions 60 x 42 mm, with possibility of rear illumination
RECOMMENDED THRESHOLD CABLE	Ref. F7830S Sterile disposable threshold cable
OPTIONAL ACCESSORIES	Ref. 30106 Infrared Printer (examination report on printout in heat-sensitive paper)
POWER SUPPLY	Two 9V alkaline batteries (mod. 6LR61)
FLAT BATTERY SIGNAL	Indication on the display
AUTONOMY	8 hours @ 20°C
MAX. DIMENSIONS	244 x 117 x 47 mm
WEIGHT	Approx. 490 g, including batteries

2307 is a portable, single-chamber, batteryrun threshold analyser, designed to allow for simple and precise measuring of the sensing values and pacing threshold. FIAB developed the threshold analyser model “2307” in order to offer to the market a handy device, technologically updated and easy to use. When a heart pacing device is being implanted, the sensing and pacing threshold as well as the stimulation circuit impedance must be measured in both chambers which are going to be paced permanently. These parameters must be measured singularly in one chamber at a time. That is the reason why FIAB has considered that a single chamber device would contribute to an easier and safer use.

2307 allows to measure, in each preselected heart chamber, the following:

- Peak to peak value of the amplitude of the electrogram detected in mV (minimum and maximum)
- Slew rate of the electrogram detected in mV/ms (minimum and maximum)
- Stimulation threshold in V
- Impedance value at 5V of the patient circuit in Ω.

2307 is a medical device serving for diagnostic purposes. For safety reasons in the conduction of the clinical procedures, the device has been fitted with a specific emergency stimulation function that can be activated from a specific control. Moreover a dedicated high frequency asynchronous stimulator allows the treatment of atrial tachy-arrhythmia occurred during procedure. The diagnostic functions for detecting the useful parameters for programming a permanent heart stimulation are the following:

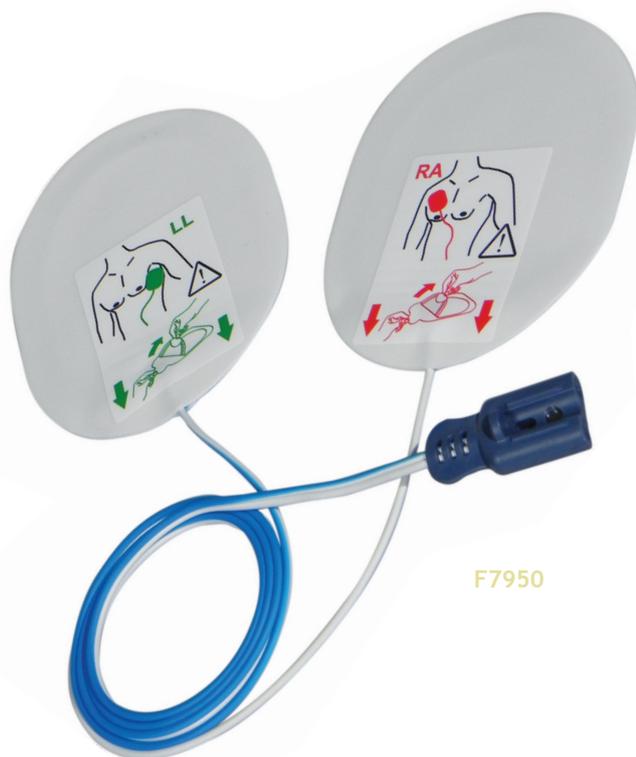
- Auto - Sense
(function for measuring the sensing parameters with automatic detection by the electrogram)
- Pace threshold S00
(function for measuring the threshold via asynchronous stimulation)
- Pace threshold SSI
(function for measuring the threshold via stimulation on request)
- 5V Impedance
(function for measuring the impedance of the stimulation circuit via asynchronous stimulation)

DEFIBRILLATION AND PACING PADS

Multifunction pads

Euro Defi Pads: a complete line of disposable multifunction electrodes for defibrillation, synchronized cardioversion, external cardiac stimulation and ECG monitoring. Easy to be used, they allow simple but specific and optimal clinical performances both in emergency cases and for other uses. Thanks to the high quality of the solid gel, to the excellent adhesivity and to their particular shape, Euro Defi Pads perfectly stick to patient's skin and grant a balanced distribution of the current on all the conductive surface of the pad. Models with cable of the right length and safety antishock connector allow the direct connection -without any adaptor- to the devices of the main defibrillators brands, that nowadays are present on the market.

Euro Defi Pads are compatible with monophasic and biphasic defibrillators (manual, semi-automatic and automatic) and they comply with European Directives and International Standards (ANSI/AAMI DF-80, IEC/CEI/EN 60601-2-4, 60601-1, ISO10993-1, FDA approved).



F7950

Besides Adult Standard series, Euro Defi Pads are available in a Paediatric Standard version too, for patients under 8 years.

Paediatric models for AED are also available: they're equipped with a power reducer on the cable, which allows to reduce automatically the delivered energy.



F7952P



F7952PL



Radiotransparent models have been optimized for use in EP labs, haemodynamics, during radiographic and angiographic procedures and in emergency rooms. Radiotransparent version is available for both adults and paediatric and pads and cable are both radiotransparent.



Lead-out models have cable and terminal connector outside the pouch, allowing to connect pads to the defibrillator before opening pouch; they have been intended especially for emergency situations, in order to save time and make procedures more safe.

		ADULT SERIES		PAEDIATRIC SERIES				
		Radiopaque	Radiotransparent	Radiopaque	AED	Radiotransparent		
CONNECTORS BRANDS (*)								
F7950 F7950W F7750	F7950P F7750P F7950PW	F7950PL, F7950WPL	Philips Medical® Laerdal Medical® Agilent Philips Medical	F7950 F7950W	F7750 F7750W	F7950P F7950PW	F7950PL F7950WPL	F7750P
	Zoll Medical Corp®	F7951 F7951W	F7751 F7751W	F7951P F7951PW		F7751P		
F7952PL F7952WPL	OTHERS	Medtronic-Physiocontrol® Osatu Bexen Cardioline® Mindray	F7952 F7952W	F7752 F7752W	F7952P F7952PW	F7952PL F7952WPL	F7752P F7752PW	
	Agilent Laerdal Medical® Hewlett-Packard	F7953 F7953W	F7753	F7953P F7953PW		F7753P		
	Schiller Esaote	F7954 F7954W	F7754	F7954P		F7754P		
	Nihon Kohden Welch Allyn® Innomed	F7955 F7955W	F7755 F7755W	F7955P F7955PW		F7755P		
F7956P	OTHERS	Schiller	F7956 F7956W	F7756	F7956P			
	CU Medical Systems, inc	F7958 F7958W		F7958P	F7958PL			
	CU Medical Systems, inc Cmos Drake	F7959 F7959W	F7759	F7959P	F7959PL F7959WPL ⁽¹⁾			
	Metrax Primedic	F7960 F7960W	F7760					
	Nihon Kohden	F7961 F7961W	F7761	F7961P				
	Marquette GE® Esaote	F7962	F7762	F7962P				
	Nihon Kohden	F7963						
	Weinmann Cardiaid	F7964W						

(*) The brands, models and commercial names reported in this document belong to the companies owning the corresponding registered brands, models and names. FIAB is not affiliated to any of the above mentioned companies.
 (1) With power reducer and cable outside the pouch ("lead out")

		ADULT SERIES		PAEDIATRIC SERIES		
		Radiopaque	Radiotransparent	Radiopaque	AED	Radiotransparent
	Corpuls	F7965 F7965/PLUS		F7965P F7965PXL		
	Defibtech	F7966W			7966WPL ⁽²⁾	
	Schiller	F7967		F7967P		
	Mediana	F7969W		F7969PW		
	Marquette GE®	F7981				
	Metsis	F7983W		F7983PW		
	Instramed	F7984W		F7984PW		
	Instramed	F7985		F7985P		
	Laerdal Medical®	F7970		F7970P		
	Medtronic-Physiocontrol®	F7971				
	GE®	F7972		F7972P		

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(1) Pouch suitable for onboard device positioning

(2) With power reducer and cable outside the pouch ("lead out")

Stimulation pads

Besides Euro Defi Pads models, some additional pads have been intended for external cardiac stimulation.

CONNECTORS	BRANDS (*)		
	Zoll Medical Corp® (M series, pacer version only)	F7951/STIM F7951P/STIM	<i>for adults</i> <i>paediatric</i>
	Nihon Kohden Innomed	F7955/STIM	<i>for adults</i>
	Medtronic-Physiocontrol®	F7973	<i>for adults</i>

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FIAB SpA manufactures and markets from over 40 years medical devices and accessories for electrophysiology, cardiac surgery, ECG, electrosurgery, neurology, oxygentherapy and physiotherapy.

High quality and technology in producing medical devices and accessories, achieved also thanks to a close cooperation with many specialists and to a skilled R&D Department, make FIAB a reliable Company in the domestic and international market, able to grant a strong technical and productive capability, always supported with an excellent flexibility respect to customers' needs.

In order to consolidate and develop its own productivity, FIAB boasts three different manufacturing plants, with 2 clean rooms. FIAB exports its products worldwide, in more than 100 countries, thanks to a good cooperation with several distributors.

The quality system is certified ISO 13485 by the British Standards Institution (BSI); every FIAB product is CE marked according to the directive 93/42/CEE under the supervision of the notified bodies BSI (0086) and National Institute of Health - ISS (0373).





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