

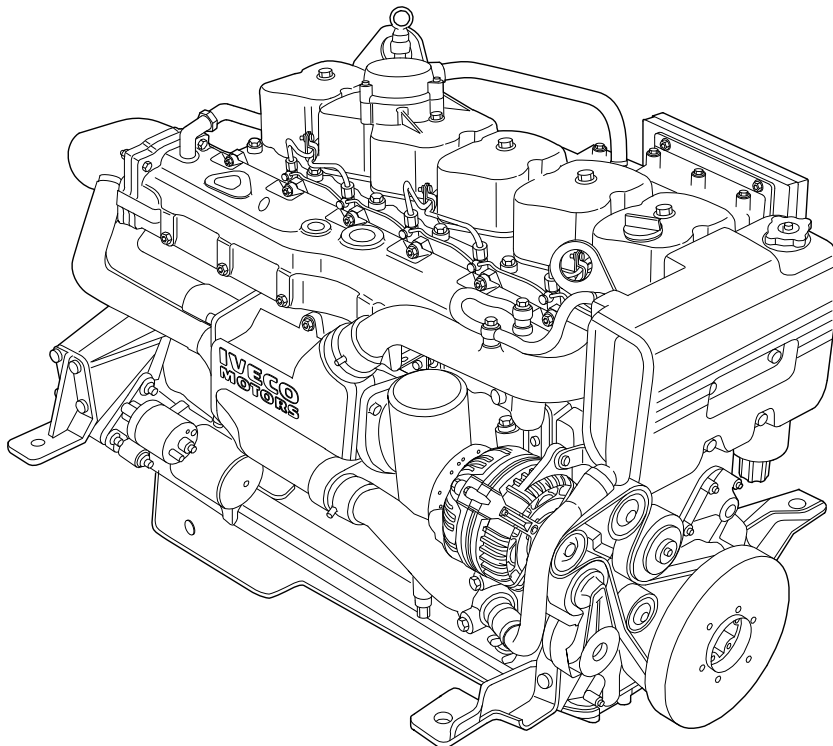
# NEF

## **N45 MNA M10 N67 MNA M15**

4 - 6 CYLINDERS IN LINE  
DIESEL CYCLE  
FOR MARINE APPLICATIONS

## INSTALLATION DIRECTIVE

MAY 2006 EDITION



TECHNOLOGICAL EXCELLENCE

**IVECO  
MOTORS**

**FPT**  
POWERTRAIN TECHNOLOGIES

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N45 MNA M10 N67 MNA M15

**Power takeoffs (optional)**

2-race front pulley for "V" belts

Reference diameter	mm	187
Race dimension	mm	12.7
Power available at 900 rpm	kW	≤ 6
Power available at 1800 rpm	kW	≤ 12
Radial force resulting from belt tension	N	≤ 1340

(\*) For direction of the resulting radial force between 60° and 300° with reference to the cylinder axis (piston at top dead center = 0°)

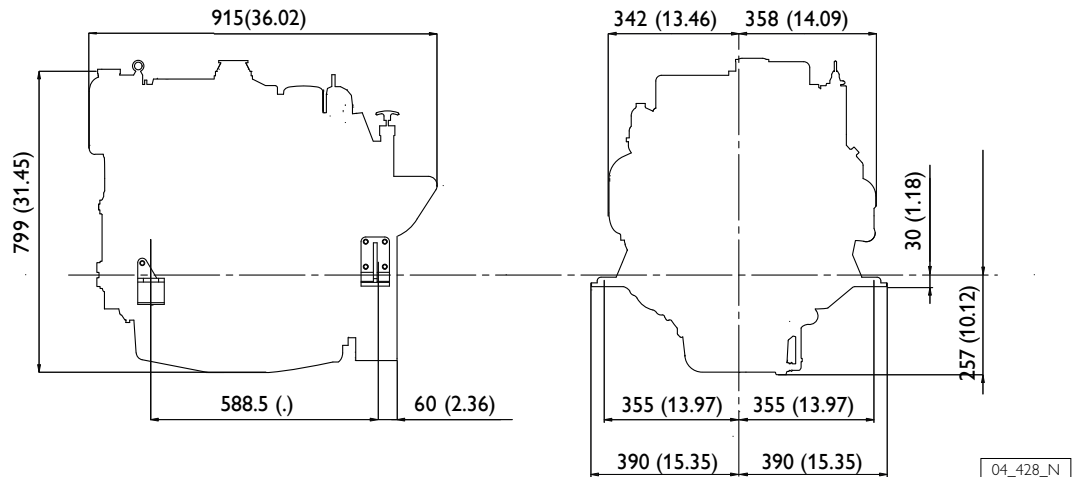
2-race front pulley + elastic joint

Torque available in engine axis	Nm	≤ 150 (15)
Moment of inertia of rigidly added masses	kgm <sup>2</sup>	≤ 0,015

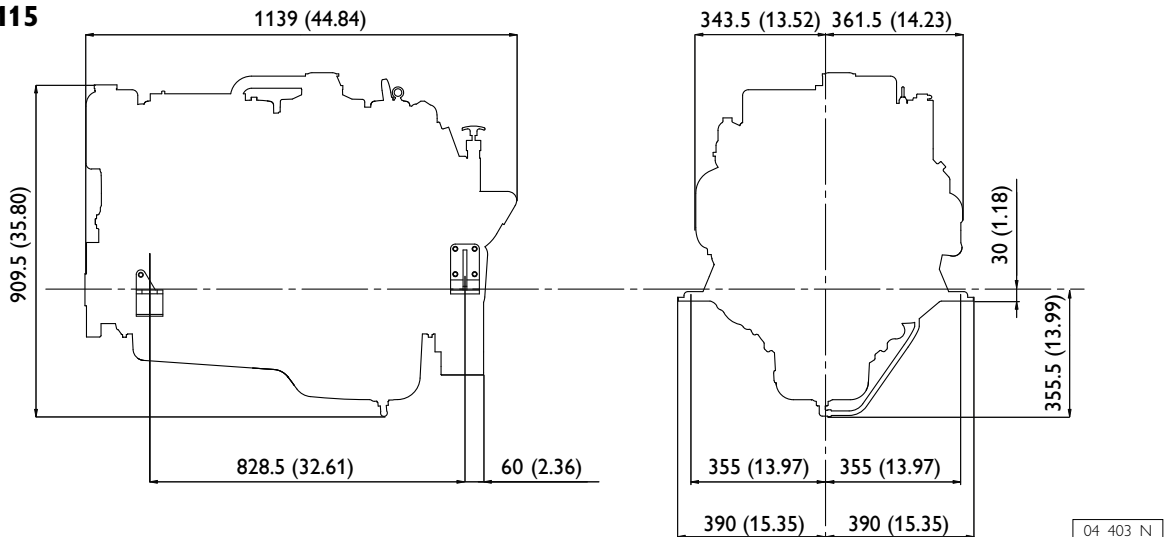
**Dimensions**

Figure 5

**N45 MNA M10**



**N67 MNA M15**

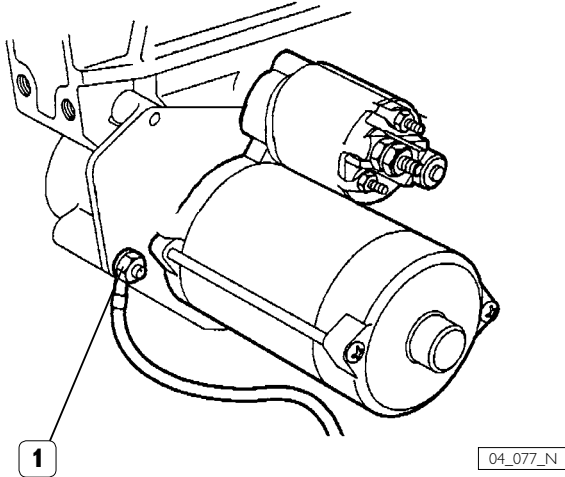


Measurements in millimeters (inches)

### Engine electrical ground

The connection of the engine electrical ground is achieved by connecting with a cable of at least 70 mm<sup>2</sup> cross section to the negative pole of the battery to the tightening point of the electric starter motor as shown in Figure 13.

Figure 13



1. Point of connection of the engine electrical ground.

To anchor the grounding terminal to the engine, proceed as follows:

Completely remove the conducting paint from both parts constituting the connection, using mechanical means or suitable chemical product; if the anchoring operation is to take place on superficially treated parts, completely remove the anaphoretic paint with mechanical means, obtaining a smooth support surface.

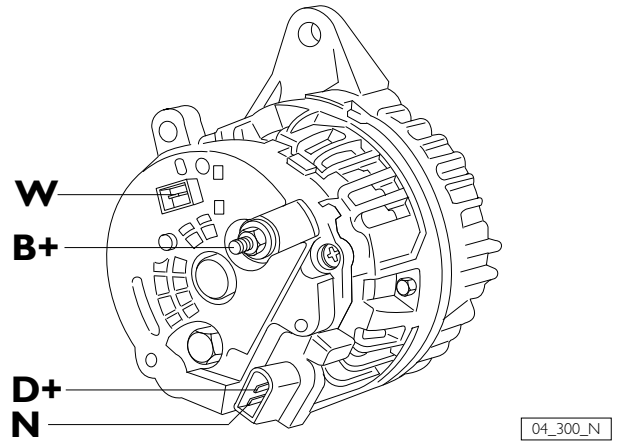
IVECO standard 18-1705:

Apply a uniform layer of BH44D paint with a brush or spray gun.

Join the parts constituting the grounding note within 5 minutes from the time the paint was applied.

### Battery recharging

Figure 14



W. Signal for revolution counter -  
B+. Connected to the +30 of the electric starter motor - D+.  
Excitation - N. Not connected.

This is accomplished through the power supply line of the electric starter motor and connection to the +B of the alternator. The electronic regulator of the alternator that equips the engine allows an effective control over the battery recharging operation.

If, due to installation requirements, the batteries need to be positioned at a distance from the engine, we recommend increasing the cross section of the power line conductors and verifying recharging effectiveness by measuring voltage across the battery poles.

## Functions of the JD terminals

PIN	Description	Electric level	
		OFF Indication	ON Indication
1	Module power supply	Positive (+B)	
2	EDC lamp power supply	Power supply positive (+B)	
3	EDC Fault indication	High (+B)	Low (ground)
4	Pre-heating light power supply	Power supply positive (+B)	
5	Pre-heating indication	High (+B)	Low (ground)
6	Pre-lubrication indication	Open circuit	High (+B)
7	Engine start	Power supply positive (+B) while starting	
8	Sound alarm inhibition	Negative (ground) during the request	
9	Module power supply	Negative (ground)	
10	Buzzer power supply	Negative (ground) during the emission of sound	
11	Clogged oil filter indication	Open circuit	Low (ground)
12	Clogged oil vapor filter indication	Open circuit	Low (ground)
13	Clogged air filter indication	Open circuit	Low (ground)
14	Clogged fuel filter indication	Low (ground)	Open circuit
15	Alternator fault indication	High (+B)	Low (1 to 3 V)
16	Low engine coolant level indication	Open circuit	Low (ground)
17	High coolant temperature indication	Open circuit	Low (ground)
18	Low engine oil pressure indication	Open circuit	Low (ground)
19	Presence of water in fuel indication	Open circuit	Low (ground)
20	Overloaded or runaway engine indication	Open circuit	High (+B)
21	Not connected	-	
22	Not connected	-	
23	Reception of data from main panel	NMEA communication protocol (0 to 5 V)	
24	Transmission of data to secondary panel	NMEA communication protocol (0 to 5 V)	

### CAUTION

To assure the utmost reliability and safety while underway, all installations must be provided with the following alarm indications:

(SATA) high coolant temperature

(SBPO) low oil pressure

It is also recommended that the following indications be present:

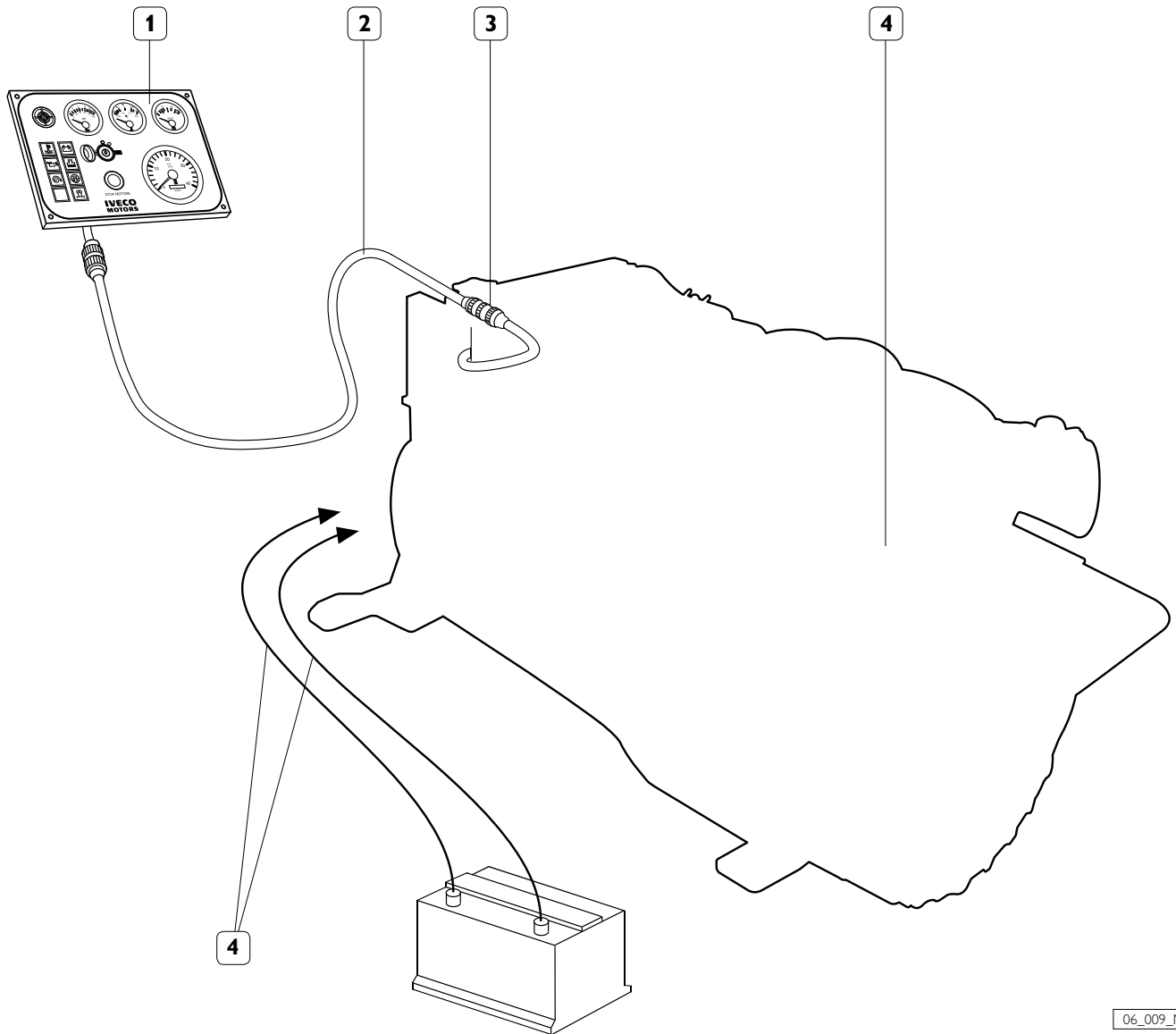
(SAC) presence of water in the fuel pre-filter

(SIFA) clogged air filter

(SS) alternator fault

**15.M10.01/M15.01 ELECTRICAL EQUIPMENT**

Figure 31



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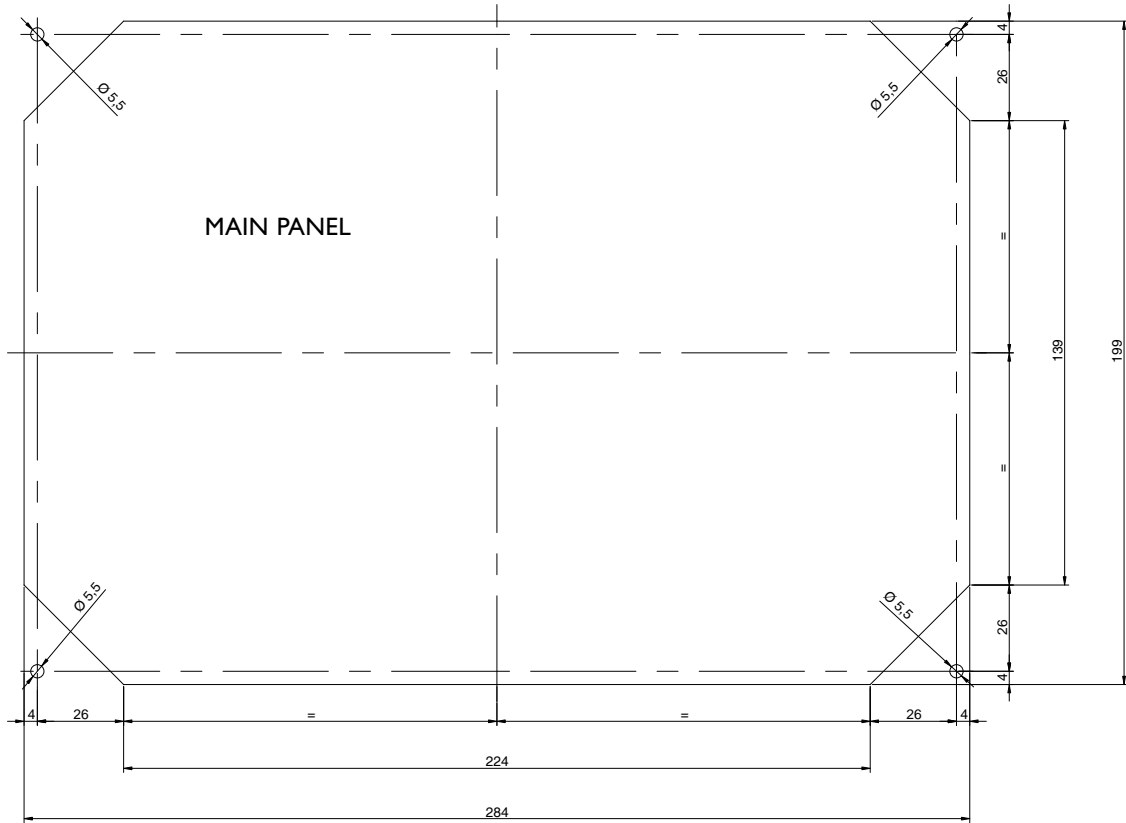
1. Indicator and control panel - 2. Provided wire harness - 3. JB Connection - 4. Power line for electric starter motor and alternator.

The electrical equipment of the engine comprises a series of components provided separately from the engine to enable an easy and diversified installation, according to the Yard's design choices. The need to make accessible, at sea or underway, the controls to the electrical components contained in the relay box may be met through different installation arrangements.

Along with the coupling of all connectors provided in the wire harnesses, completing the installation also requires to complete the power line and to connect the accumulator to the engine wire harness.

### 18. M10.01/M15.01 DRILLING PLANS FOR ANALOG PANELS

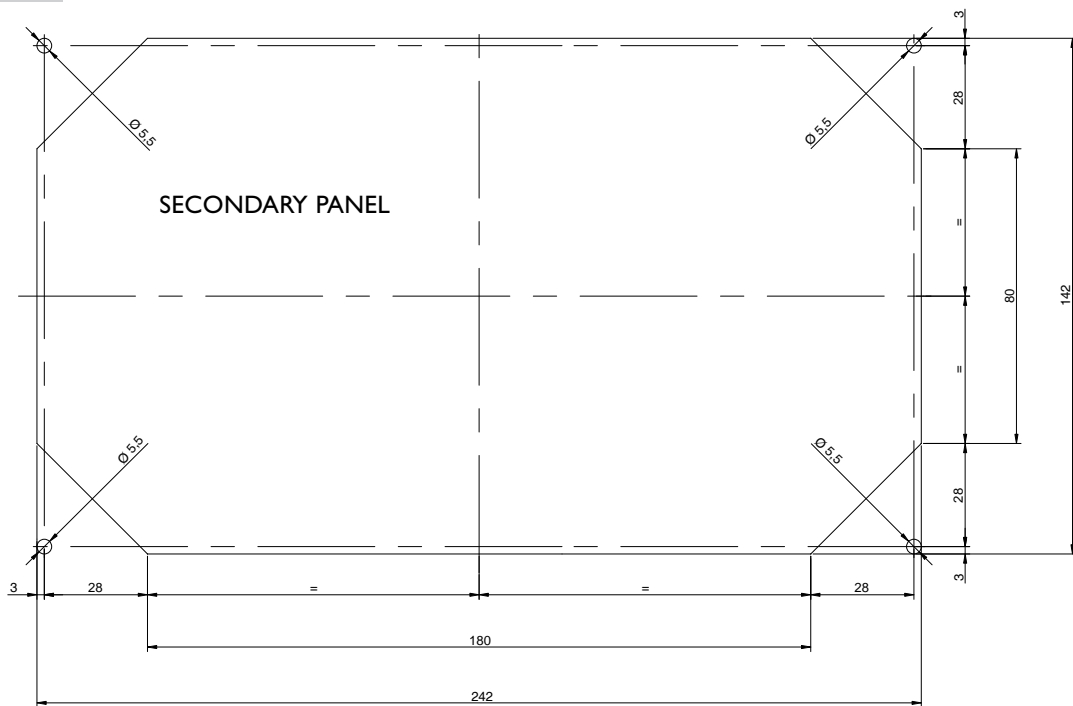
Figure 43



06\_001\_N

Measurements in millimeters.

Figure 44



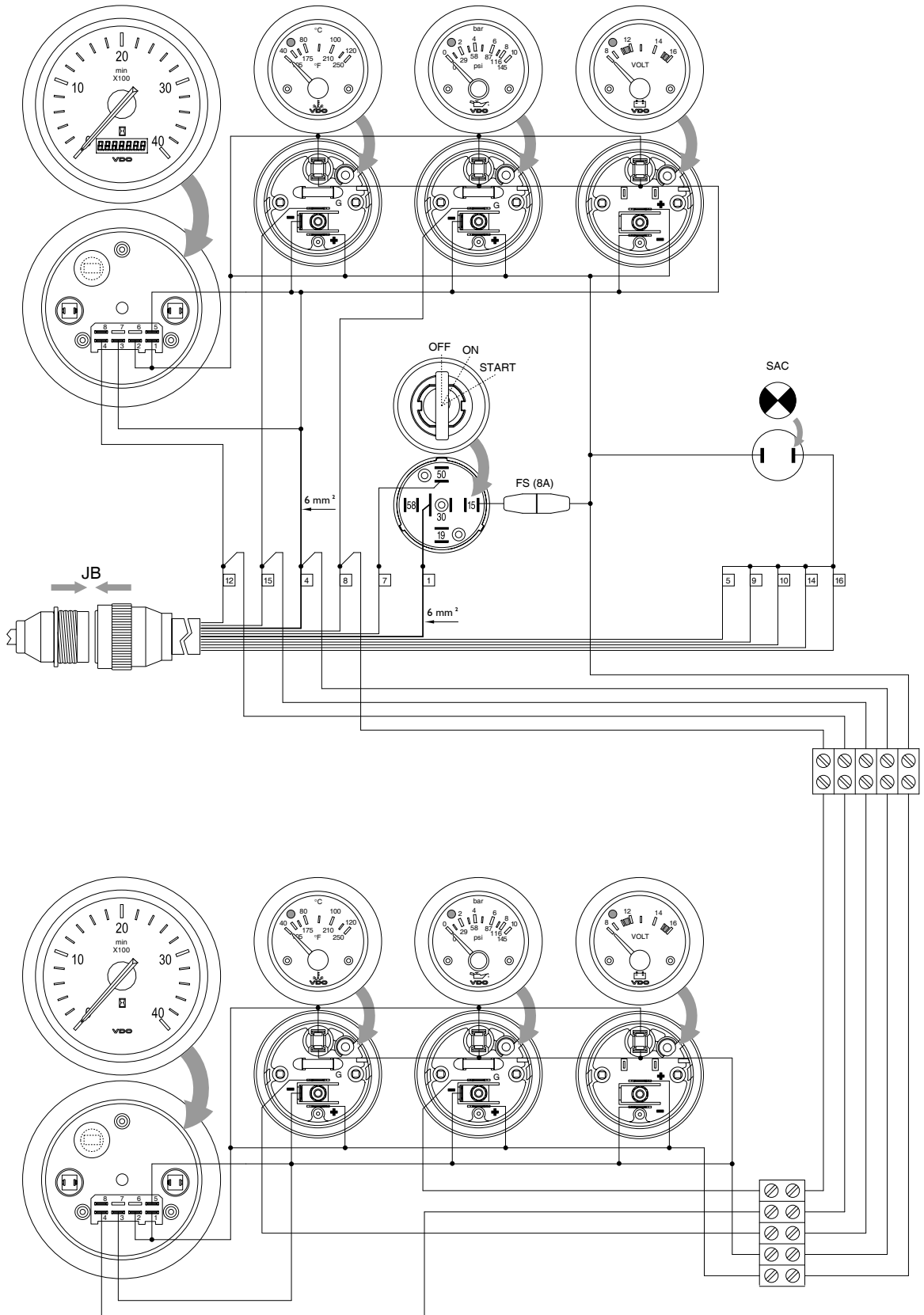
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Measurements in millimeters.

### M10.01/M15.01 Wiring of the double personalised instrument board (main with SAC light and secondary board)

MAIN PANEL

SECONDARY PANEL



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