



Totally Focused. Totally Independent.

Retrofitting Procedure PD500

Series EC038

Operating Instructions

**The world's largest
independent producer of
alternators 1 – 5,000kVA**

INDEX

INTRODUCTION	page 4
ECO38 AVR PANELS	page 4
PD500 RETROFIT KIT FOR ECO38	page 5
INSTALLATION	page 7
TECHNICAL REFERENCE GUIDES	page 16

The information contained in this manual may be modified without advance notice.
 This revision supersedes and replaces all previous editions.
 Even partial reproduction of this manual is prohibited, with any means whatsoever, without prior written authorisation by Mecc Alte S.p.A.

INTRODUCTION

This manual contains information about PD500 retrofitting operations on ECO38 series.

WARNING: These informations are applicable only for ECO38 equipped with below AVR panels, alternators ordered after about june 2016.



In order to avoid damage to persons and/or property, only qualified personnel, having full knowledge and understanding of the information contained in this manual, should perform the procedures described herein; when power to the unit is on, the voltage present may be lethal for the operator.



Before to perform the operations explained, read the PD500 manual reported on technical reference guide section.
 All connections must be made with the power off.
The jumpers J1 and J2 must always be present both.

ECO 38 AVR PANELS

1. PD-I main fixing holes
2. DSR fixing holes
3. PD-I alternative fixing holes

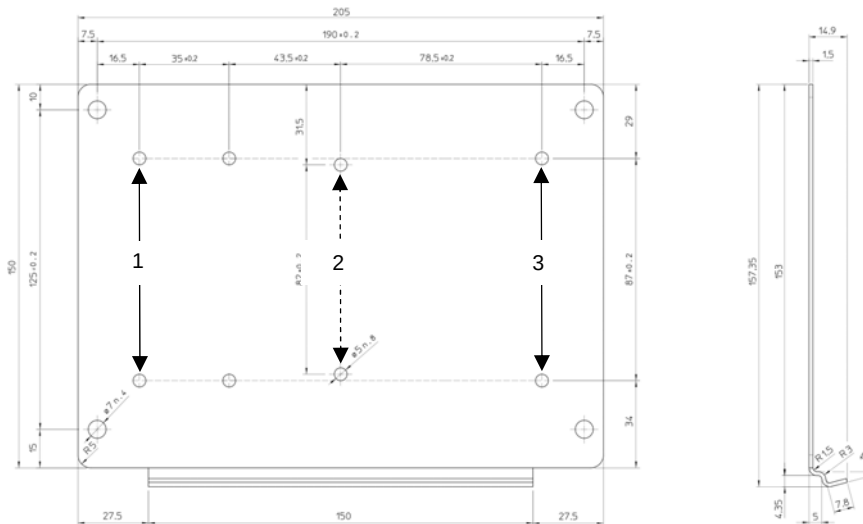


Fig.1 AVR hold panel, A9115/02

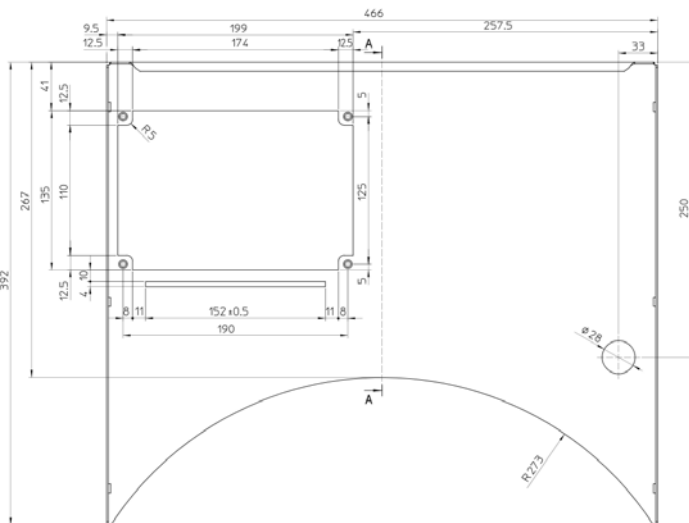


Fig.2 high front panel, A9144/03

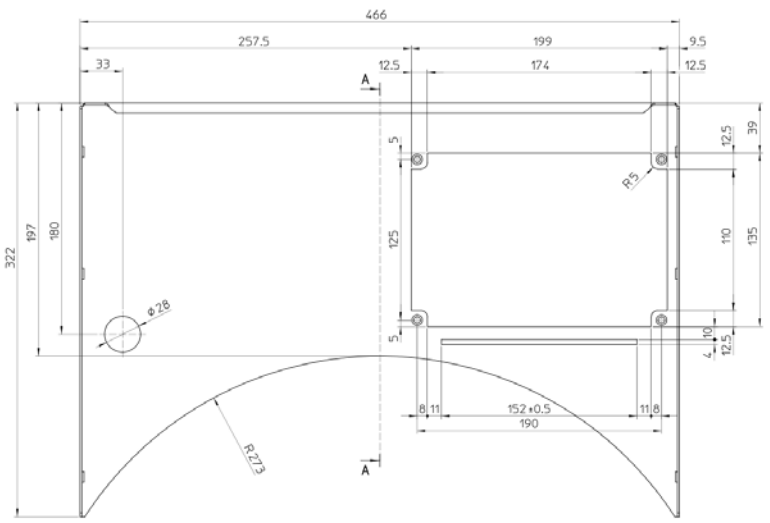


Fig.3 low front panel, A9340/01

PD500 RETROFIT KIT FOR ECO38

The kit for the PD500 retrofit on ECO38 alternator includes the following components:

1. PD500 and fixing accessories
 - 1.1 self-drilling screw M5: 4pcs.
2. PD-I and fixing accessories:
 - 2.1 screw M4x25: 2pcs.
 - 2.2 toothed iron washer: 4pcs.
 - 2.3 metal nut: 2pcs.
3. PD-I and AVR connection wire marked P1.
4. Isolator and fixing accessories:
 - 4.1 flat iron washer: 2pcs.
 - 4.2 toothed iron washer: 2pcs.
 - 4.3 screw M10x16: 1pcs.
 - 4.4 screw M10x20: 1pcs.
5. Power cable (1m x 70mmq) with mounted accessories:
 - 5.1 terminal M10: 1pcs.
 - 5.2 terminal M16: 1pcs.
 - 5.3 markers n.2: 2pcs.
6. Plastic cable ties:
 - 6.1 size 2.5x100: 2pcs.
 - 6.2 size 7.5x360: 2pcs.

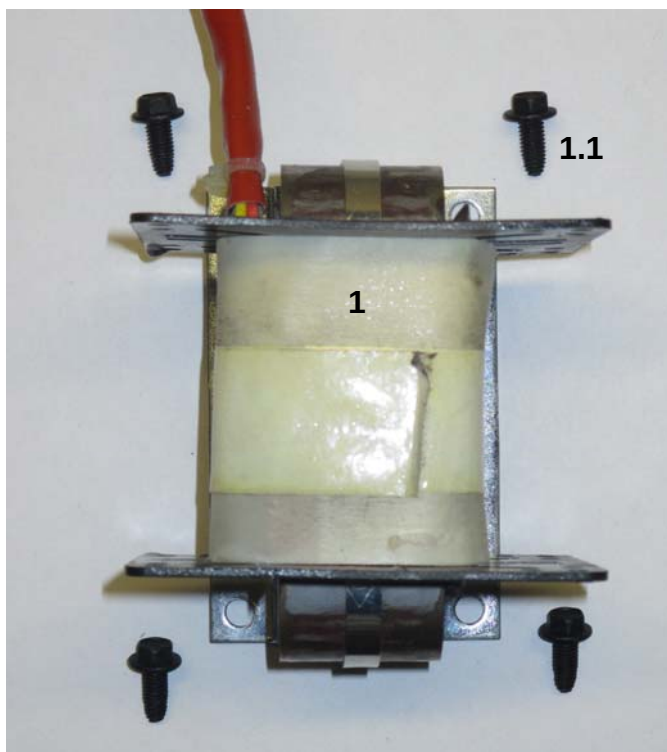


Fig.4 kit components: 1 and 1.1

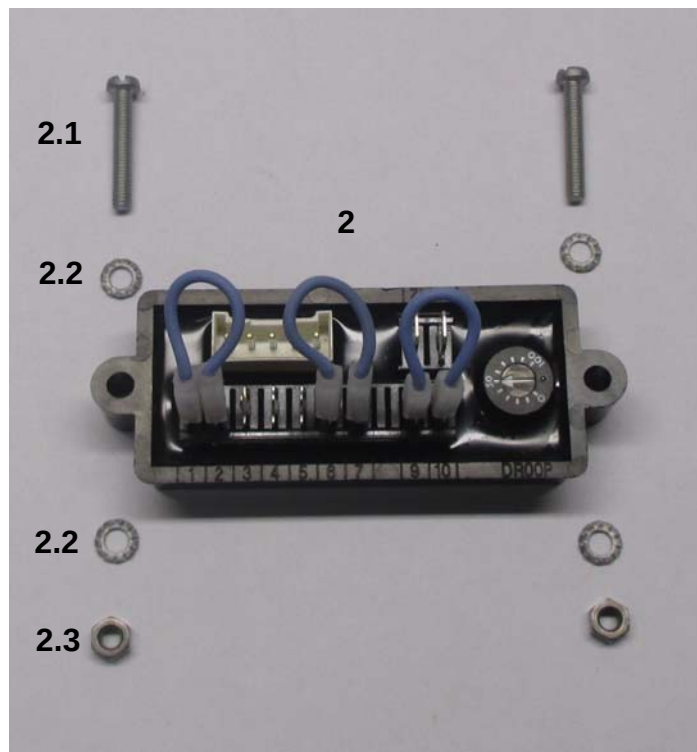


Fig.5 kit components: 2, 2.1, 2.2 and 2.3

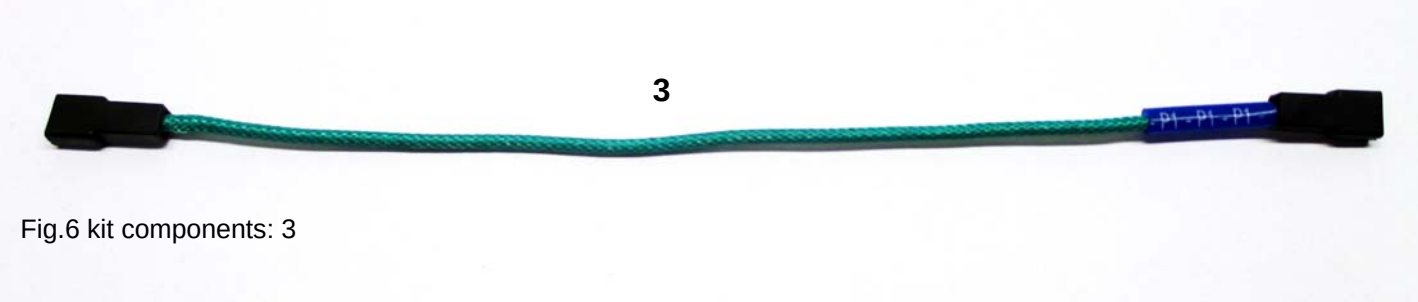


Fig.6 kit components: 3

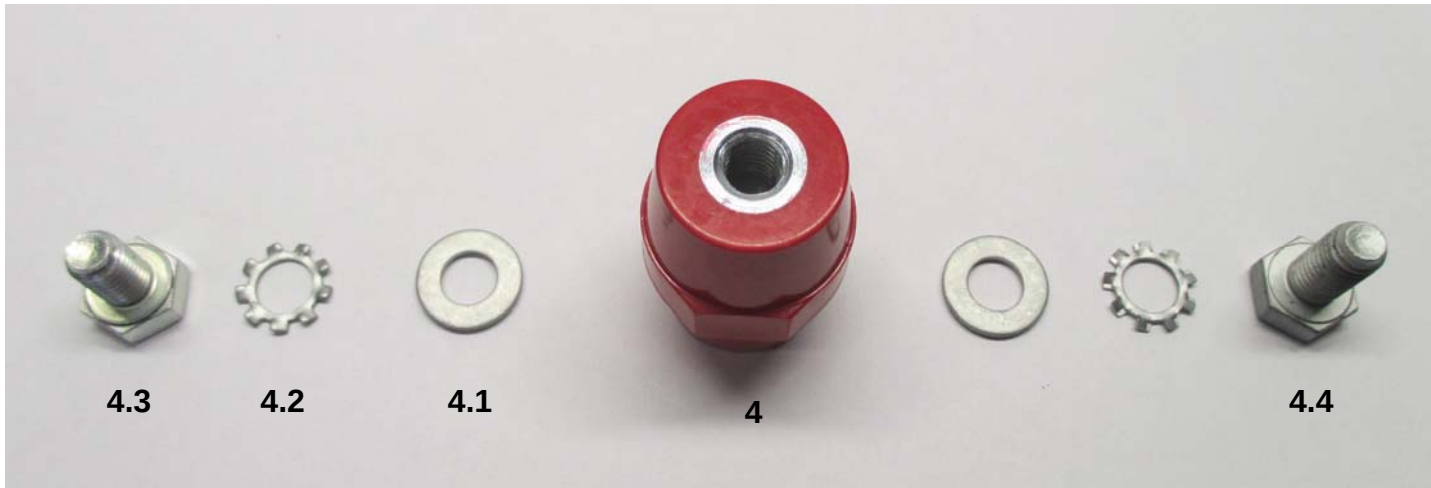


Fig.7 kit components: 4, 4.1, 4.2, 4.3 and 4.4



Fig.8 kit components: 5, 5.1,5.2 and 5.3

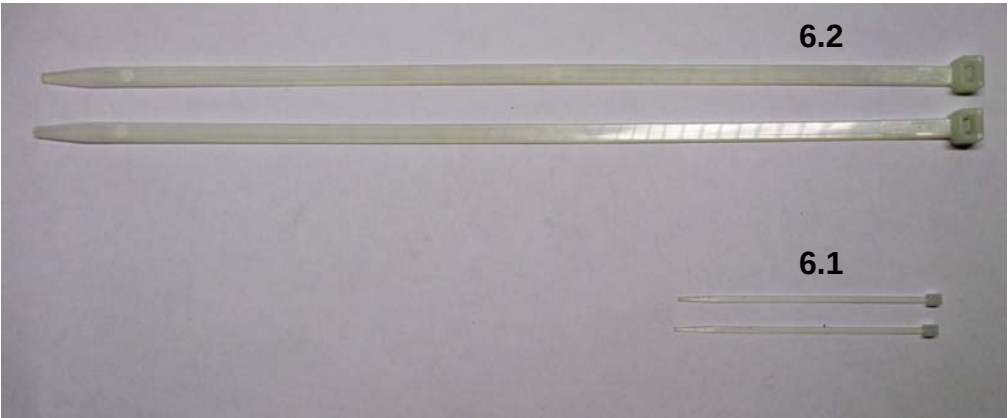


Fig.9 kit components: 6.1 and 6.2

INSTALLATION

1. Remove the terminal box cover and lateral panels



Fig.10 ECO38 Cover detail



Fig.11 ECO38 with only frontal panel

2. Fix the PD-I on the AVR holding panel

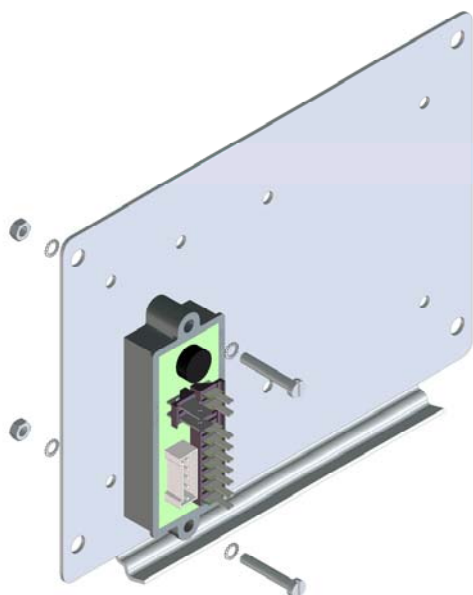


Fig.12 PD-I mounting procedure

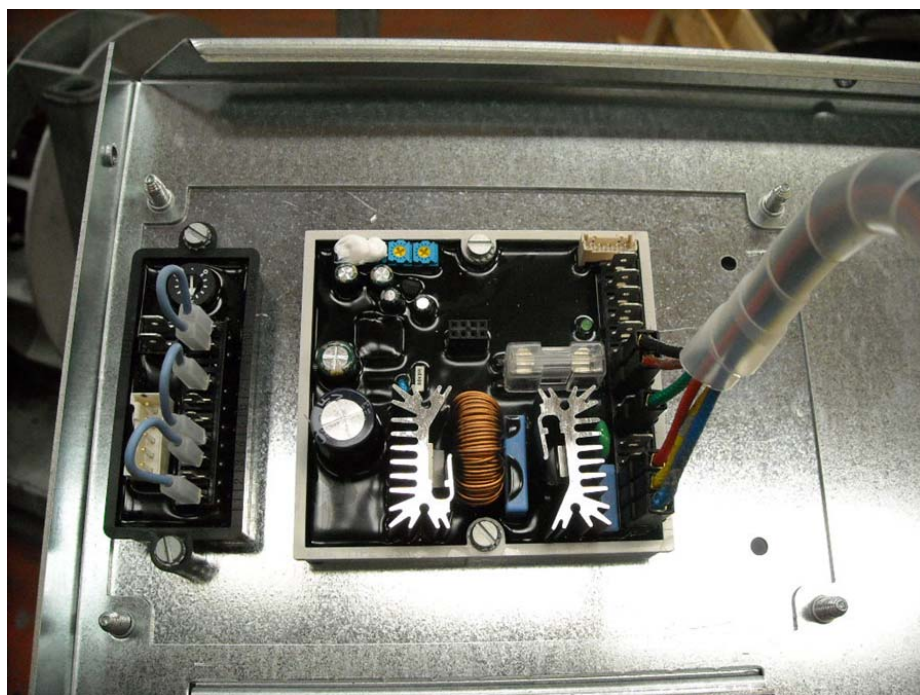


Fig.13 Mounted PD-I and DSR detail

3. Fix the isolator on the terminal board support

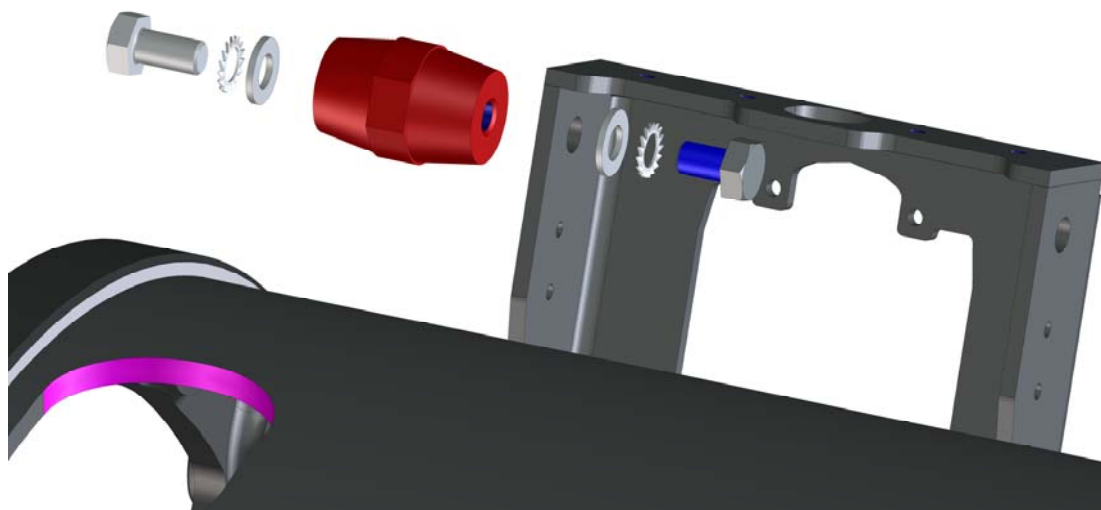


Fig.14 Isolator mounting procedure

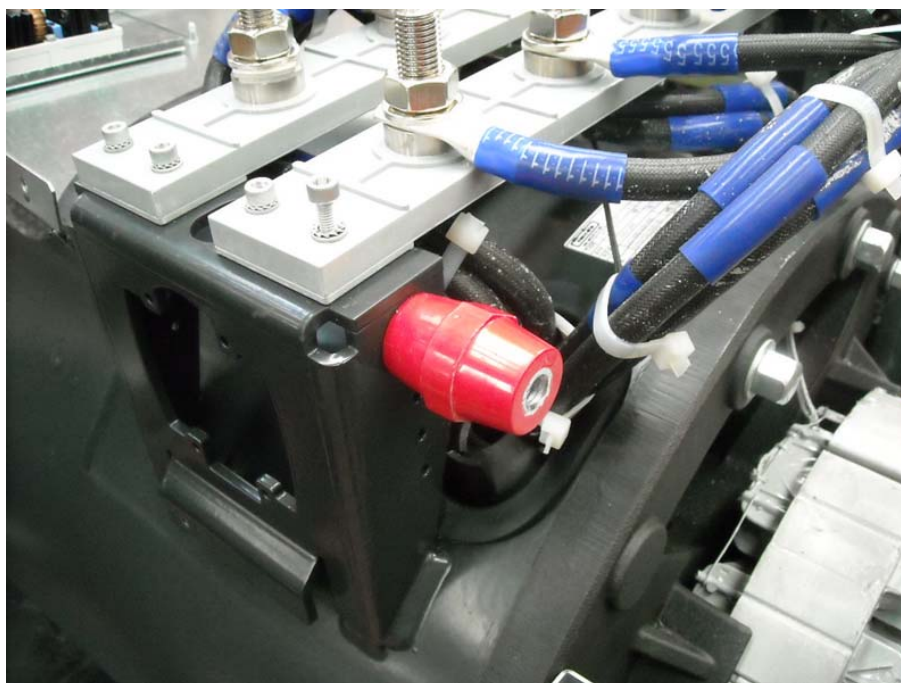


Fig.15 Mounted Isolator detail

4. Disconnect the n.2 power cable from the terminal board and fit it on the isolator

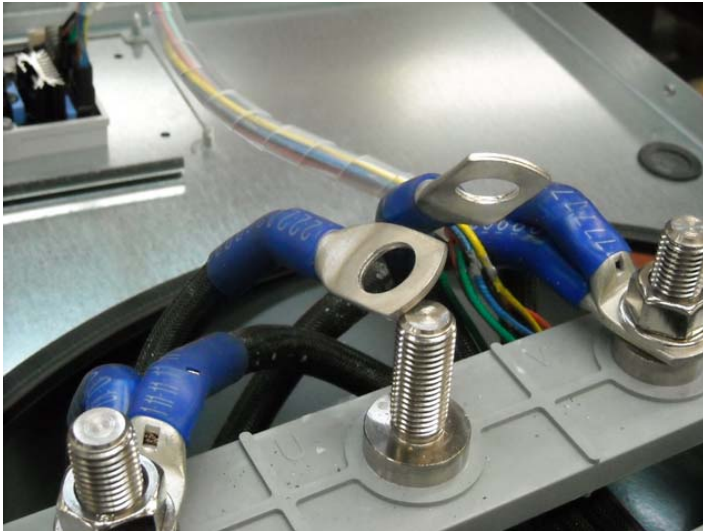


Fig.16 n.2 power cable disconnected



Fig.17 n.2 power cable on the isolator

5. Fix the M16 n.2 power cable terminal and M10 kit power cable terminal on the isolator



Fig.18 M16 n.2 power cable and M10 kit power cable terminals on the isolator

M10
Kit power cable
terminal

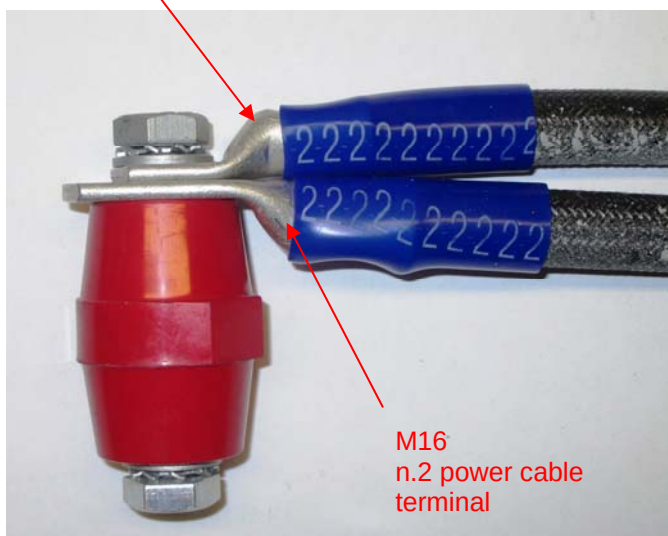


Fig.19 M10 and M16 terminals fixing detail

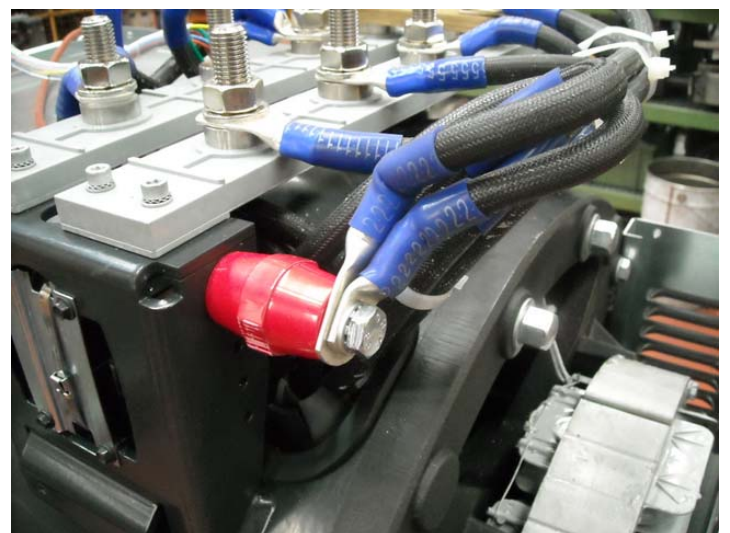


Fig.20 M16 and M10 terminals fixing detail

6. Fix the PD500 under the terminal board support and make ready the kit power cable coil

Care must be taken in the direction of the turn of the power cable through the PD500.

Taken as reference the external PD500 output wire side, the M16 kit power cable terminal must enter in the PD500 from the opposite one.



WARNING: If the turn direction is inverted, the voltage will rise instead of decreasing.

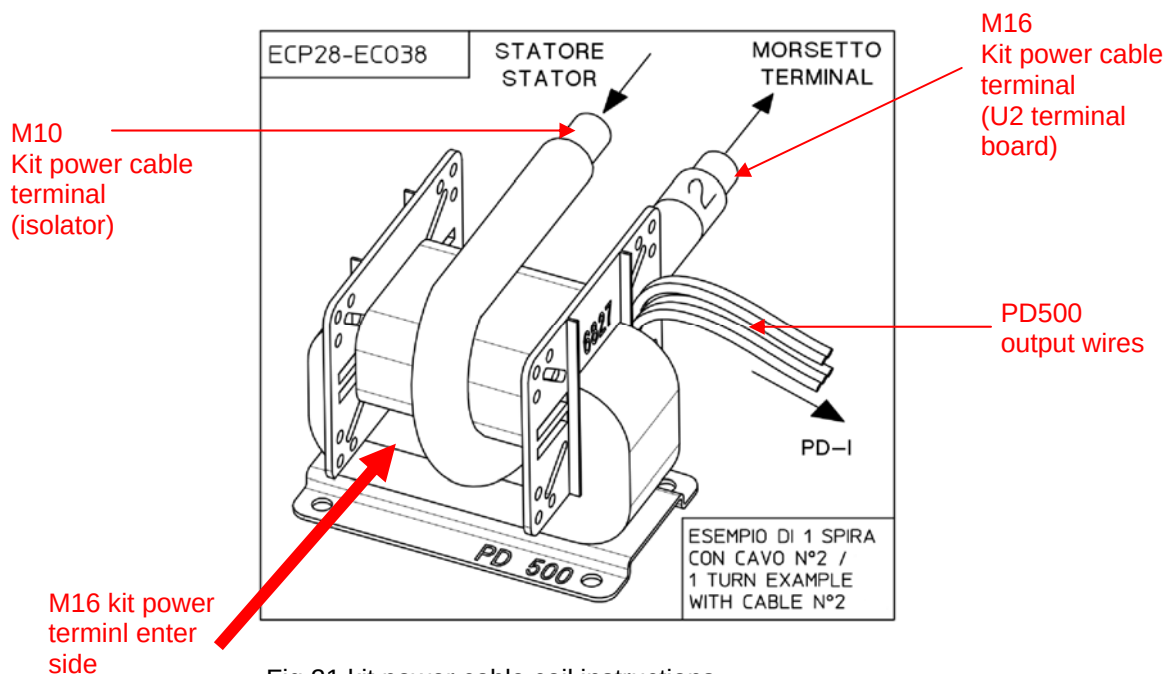


Fig.21 kit power cable coil instructions



Fig.22 kit power cable coil detail

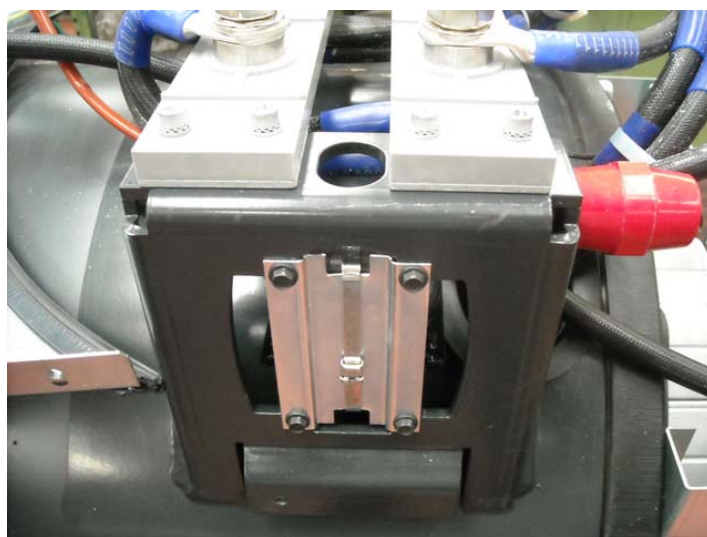


Fig.23 Mounted PD500 detail

7. Fix the M16 n.2 kit power cable terminal and the n.3 power cable terminal on the U2 threaded power terminal stud

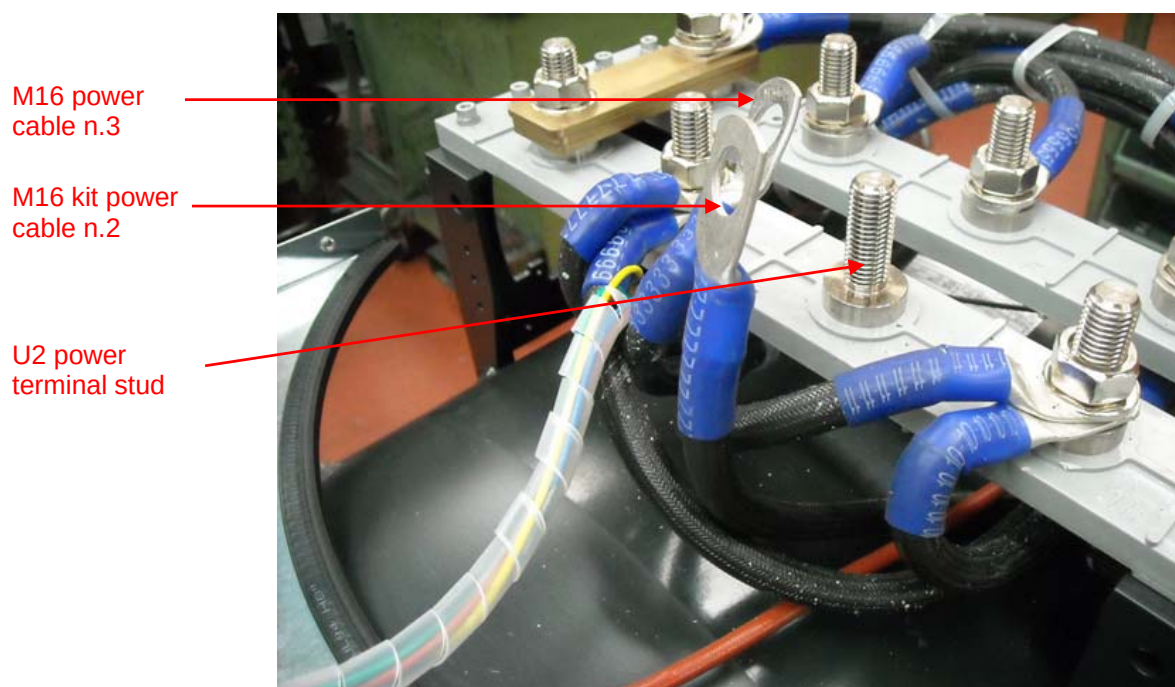


Fig.24 n.2 and n.3 power cable terminals and U2 power terminals stud detail

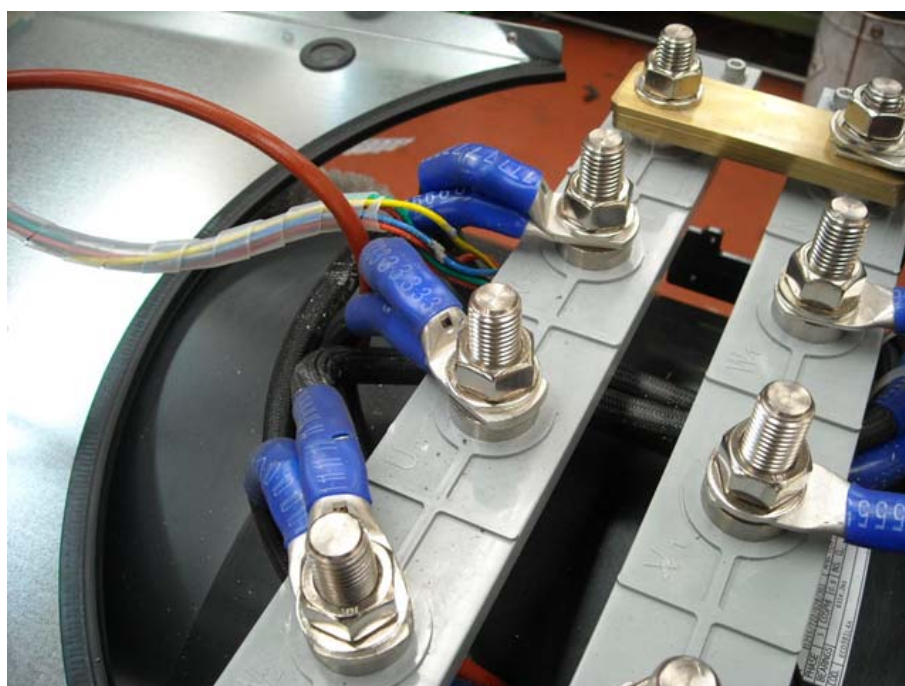


Fig.25 n.2 and n.3 power cable terminals fixed on U2 power terminal stud

8. Insert the PD500 output wires in the AVR plastic spiral

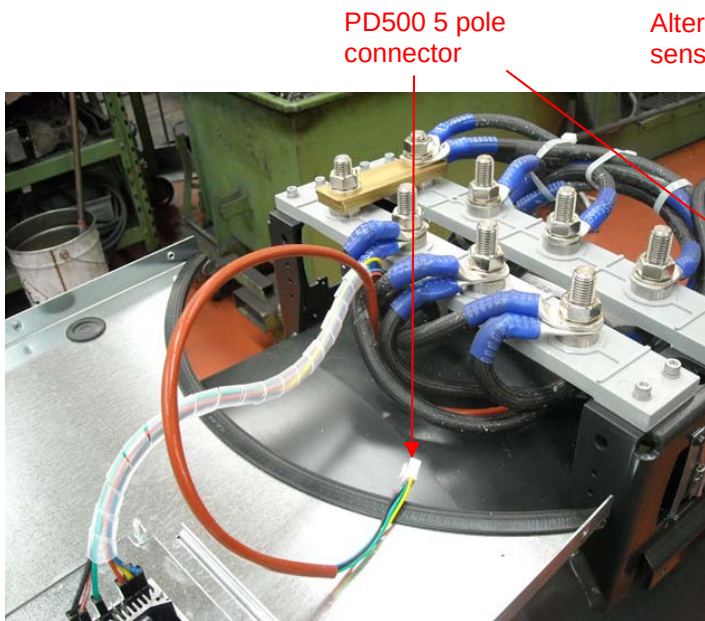


Fig.26 PD500 output wires detail

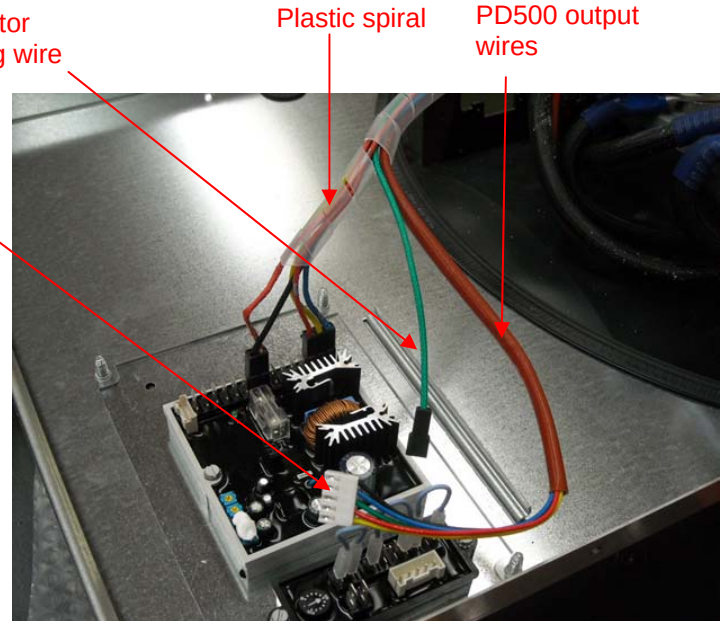


Fig.27 PD500 and DSR wires detail

9. PD-I wiring

For AVR wiring scheme refer to manuals reported in technical reference guide section.

9.1. Connect PD-I and PD500 output wires through the 5 pole connector.

9.2. Connect the kit green wire P1 to the PD-I terminal 11.

9.3. Disconnect the AVR sensing green wire (marked n.3) and connect the kit green wire P1 to the same AVR terminal.

9.4. Connect the AVR sensing green wire (marked n.3) to the PD-I terminal 12.

9.5. Set J1 and J2 jumpers as indicated by the table(A9865/00) on point 10.

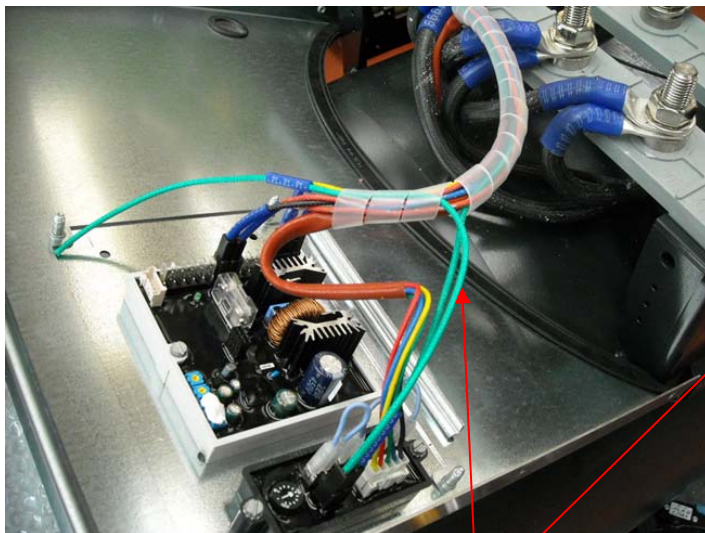


Fig.28 DSR wiring detail

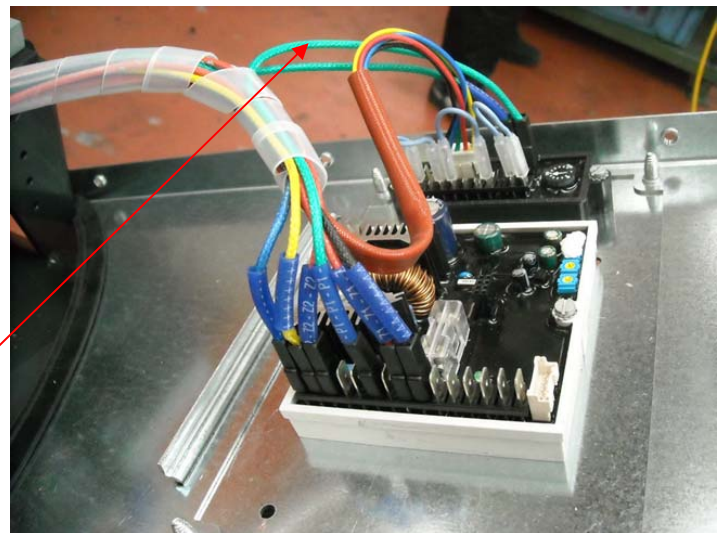


Fig.29 DSR wiring detail

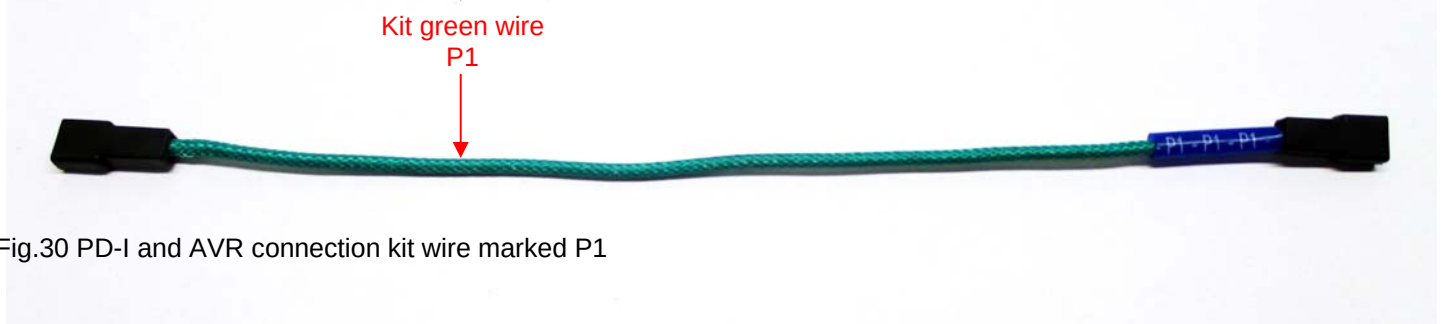
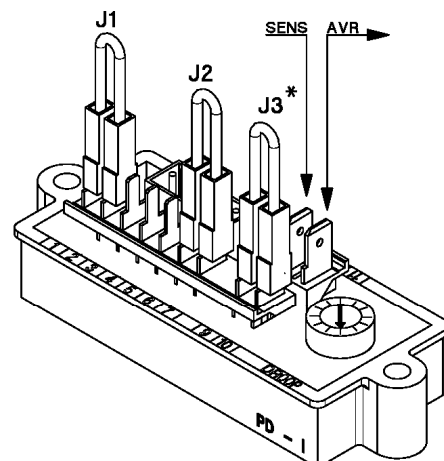


Fig.30 PD-I and AVR connection kit wire marked P1

10. J1 and J2 PD-I jumpers setting table(A9865/00)

TABELLA DISPOSITIVO DI PARALLELO PD500 PARALLEL DEVICE TABLE PD500											
USCITA 50 Hz 50 Hz OUTPUT			110/190/220/380 115/200/230/400 120/208/240/415		220/380/440/760 230/400/460/800 240/415/480/830		220/380 230/400 240/415				
USCITA 60 Hz 60 Hz OUTPUT			127/220/254/440 133/230/265/480 139/240/277/480		254/440/508/880 265/460/530/920 277/480/554/960		254/440 265/480 277/480				
TIPO DI RIFERIMENTO TYPE OF SENSING			Rif. monofase 1-phase sensing		Rif. trifase 3-phase sensing		Rif. monofase 1-phase sensing		Rif. trifase 3-phase sensing		
Generatore tipo Generator type	Pn at 50 Hz (KVA)	Output cable turns	J1	J2	J1	J2	J1	J2	J1	J2	J2
ECP 28-M/2A	22	5	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-2L/2A	27	4	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-3L/2A	31,5	4	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-VL/2A	40	3	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 32-2S/2A	44	3	1-2	4-7	1-2	5-7	1-4	5-7	1-2	6-7	
ECP 32-3S/2A	55	2	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 32-1L/2A	66	2	1-2	4-7	1-2	5-7	1-4	5-7	1-2	6-7	
ECP 32-2L/2A	82	2	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 34-1S/2A	100	1	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 34-2S/2A	125	1	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 34-1L/2A	156	1	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 34-2L/2A	170	1	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECO 38-1S/2A	158	1	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECO 38-1L/2A	208	1	1-2	3-7	1-4	5-7	1-5	6-7	1-3	6-7	
ECO 38-2L/2A	300	1	1-3	4-7	1-5	6-7	1-2	3-7	1-2	5-7	
ECP 28-1VS/4A	7,8	14	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-2VS/4A	11	10	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-0S/4A	13,5	8	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-S4/4A	17	7	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-M4/4A	20	6	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-2L/4A	25	5	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 28-VL/4A	30	4	1-2	4-7	1-4	6-7	1-4	5-7	1-2	6-7	
ECP 32-2S/4B	35	3	1-2	4-7	1-3	6-7	1-2	5-7	1-2	6-7	
ECP 32-3S/4B	42,5	3	1-2	4-7	1-2	5-7	1-4	5-7	1-2	6-7	
ECP 32-1M/4B	50	3	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 32-2M/4B	63	2	1-2	4-7	1-2	5-7	1-4	5-7	1-2	6-7	
ECP 32-3L/4B	75	2	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 32-4L/4B	80	2	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 34-1S/4A	85	2	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 34-2S/4A	105	2	1-2	3-7	1-4	5-7	1-5	6-7	1-3	6-7	
ECP 34-1L/4A	130	1	1-2	4-7	1-2	5-7	1-4	5-7	1-2	6-7	
ECP 34-2L/4A	150	1	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECP 34-3L/4A	160	1	1-2	3-7	1-3	5-7	1-5	6-7	1-2	6-7	
ECO 38-1S/4A	180	1	1-2	3-7	1-4	5-7	1-5	6-7	1-3	6-7	
ECO 38-2S/4A	200	1	1-2	3-7	1-4	5-7	1-5	6-7	1-3	6-7	
ECO 38-3S/4A	225	1	1-3	4-7	1-4	5-7	1-2	3-7	1-3	6-7	
ECO 38-1L/4A	250	1	1-3	4-7	1-5	6-7	1-2	3-7	1-2	5-7	
ECO 38-2L/4A	300	1	1-3	4-7	1-5	6-7	1-2	3-7	1-2	5-7	
ECO 38-3L/4A	350	1	1-3	4-7	1-2	4-7	1-2	3-7	1-4	5-7	
ECO 40-1S/4A	400	1	1-3	4-7	1-2	4-7	1-5	6-7	1-3	6-7	
ECO 40-2S/4A	450	1(*)	1-2	3-7	1-4	5-7	1-2	4-7	1-4	6-7	
ECO 40-3S/4A	500	1(*)	1-2	3-7	1-5	6-7	1-2	4-7	1-4	6-7	
ECO 40-1L/4A	550	1(*)	1-3	4-7	1-5	6-7	1-2	4-7	1-2	5-7	
ECO 40-1,5L/4A	620	1(*)	1-3	4-7	1-5	6-7	1-2	3-7	1-3	5-7	
ECO 40-2L/4A	680	1(*)	1-3	4-7	1-2	4-7	1-2	3-7	1-3	5-7	
ECO 40-VL/4A	750	1(*)	1-3	4-7	1-2	4-7	1-2	3-7	1-4	5-7	
ECO 43-1S/4A	800	1(*)	1-3	4-7	1-2	4-7	1-5	6-7	1-3	6-7	
ECO 43-2S/4A	930	1(*)	1-2	3-7	1-4	5-7	1-2	4-7	1-2	5-7	
ECO 43-1M/4A	1025	1(*)					1-2	4-7	1-2	5-7	
ECO 43-2M/4A	1150	1(*)					1-2	4-7	1-2	5-7	
ECO 43-2L/4A	1300	1(*)					1-2	4-7	1-3	5-7	
ECO 43-VL/4A	1400	1(*)					1-2	3-7	1-3	5-7	
ECO 46-1S/4A	1500	1(*)					1-2	4-7	1-2	5-7	
ECO 46-1,5S/4A	1650	1(*)					1-5	6-7	1-2	6-7	
ECO 46-2S/4A	1800	1(*)					1-5	6-7	1-2	6-7	
ECO 46-1L/4A	2100	1(*)					1-5	6-7	1-3	6-7	
ECO 46-1,5L/4A	2300	1(*)					1-2	4-7	1-4	6-7	
ECO 46-2L/4A	2500	1(*)					1-2	4-7	1-2	5-7	
ECO 46-VL/4A	2800	1(*)					1-2	4-7	1-2	5-7	

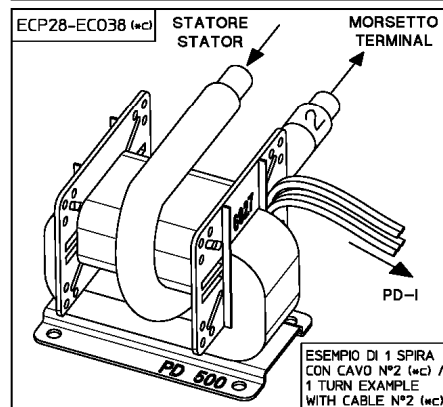
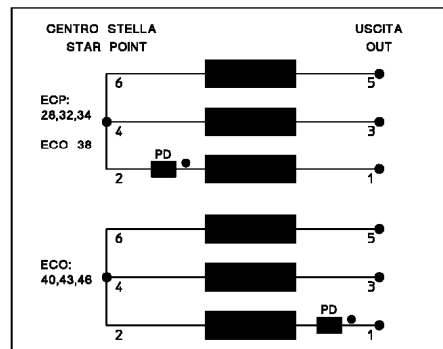


	ATTENZIONE	DEVONO SEMPRE ESSERE PRESENTI SIA J1 CHE J2
	CAUTION	J1 AND J2 MUST ALWAYS BE PRESENT BOTH

*J3 = Ponte disabilitazione Droop / J3 = Droop disable jumper

Se, in casi particolari, la caduta del PD500 data dalle combinazioni riportate non fosse soddisfacente, è possibile utilizzarne una adiacente secondo la tabella riportata qui sotto. If, in special cases, the droop of the PD500 given by the shown combinations isn't satisfactory, it is possible to use an adjacent one according to the table below.

COMBINAZIONI POSSIBILI / POSSIBLE COMBINATIONS			PD500	
J1	J2	SPIRE/ COILS		
1-2	6-7	805		
1-3	6-7	687		
1-4	6-7	620		
1-2	5-7	545		
1-3	5-7	427		
1-4	5-7	360		
1-5	6-7	260		
1-2	4-7	185		
1-2	3-7	118		
1-3	4-7	67		
J3	9-10	0		



(a) una spira con uno solo dei due cavi n°1/
one turn with only one cable n°1

(b) una spira con uno solo dei quattro cavi
n°1 / one turn with only one cable n°1

(c) ECO40 - ECO43 - ECO46

Nel caso di passaggio cavo n°1 attraverso il PD, il verso della spira è invertito/
In the case of cable n°1 through the PD, the direction of the turn is reversed

11. Fix the power cables and AVR /PD-I wires with the plastic ties



WARNING: Be careful that all the wires don't touch the lamination panels.

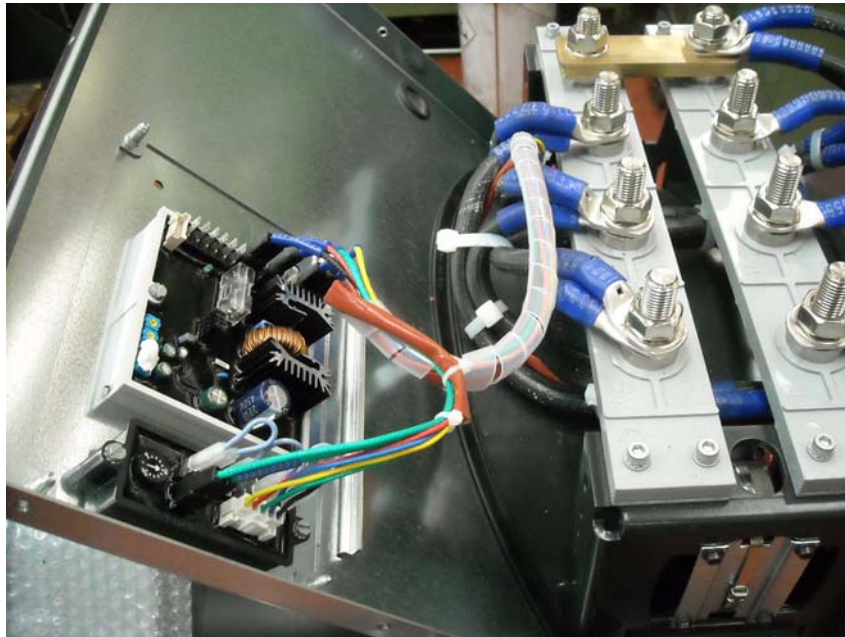


Fig.31 wires and cables detail

12. PD-I test

- 12.1. With the machine switched off, check again the PD and PD-I settings according to the alternator model, as said in the previous points.
 - 12.1.1 The PD and PD-I must be connected through the 5 pin connector.
 - 12.1.2 The alternator and regulator sensing wires must be connected respectively to fastons 12 and 11 of the PD-I.
 - 12.1.3 Place the jumpers J1 and J2, as indicated in point 10, with J3 inserted (PD disabled).
 - 12.1.4 Turn PD-I **trimmer DROOP** in the **middle position**.
- 12.2. Remove the J3 to enable the PD.
 - 12.2.1 Switch on the machine in **no-load condition**.
 - 12.2.2 The measured alternator voltage will be about 10V greater than the rated value.
 - 12.2.3 **Turn the AVR trimmer VOLT** anticlockwise to reduce the alternator voltage to the rated value

13. Close the terminal box with the lateral panels



Fig.32 ECO38 lateral panels mounting detail

14. Close the terminal box with the cover

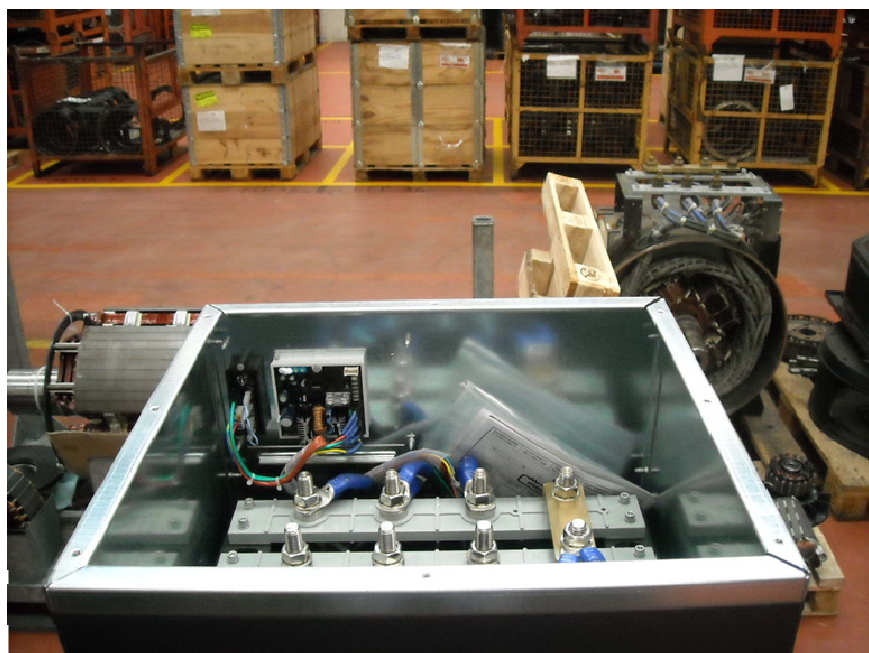


Fig.33 ECO38 with mounted lateral panels

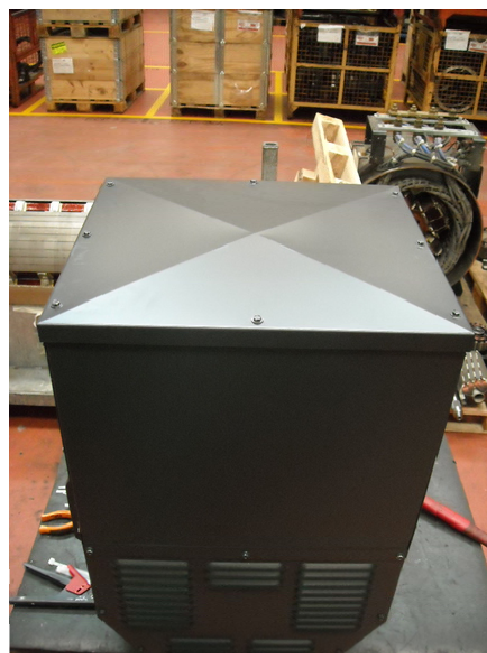


Fig.34 ECO38 with mounted cover

TECHNICAL REFERENCE GUIDES	
Title	Link
Parallel operation	http://www.meccalte.com/send_file.php?fileid=parallel%20manual_PD500.pdf
DSR technical guide	http://www.meccalte.com/send_file.php?fileid=manual_dsr_en.pdf
DER1 technical guide	http://www.meccalte.com/send_file.php?fileid=Manuale_DER1_EN_rev06.pdf
DER2 technical guide	http://www.meccalte.com/send_file.php?

REVISION HISTORY		
Revision	Date	Description
rev.00	11/16	Initial Release
rev.01	11/16	Back Cover typo corrected

Zanardi Alternatori srl (HQ)

Via Dei Laghi
48/B – 36077 Altavilla
Vicenza – ITALY
T: +39 0444 370799
F: +39 0444 370330
E: info@zanardialternatori.it

Mecc Alte SpA

Via Roma
20 – 36051 Creazzo
Vicenza – ITALY
T: +39 0444 396111
F: +39 0444 396166
E: info@meccalte.it
aftersales@meccalte.it

Mecc Alte Portable

Via Roma
20 – 36051 Creazzo
Vicenza – ITALY
T: +39 0444 396111
F: +39 0444 396166
E: info@meccalte.it
aftersales@meccalte.it

Mecc Alte Power Products srl

Via Melaro
2 – 36075 Montecchio
Maggiore (VI) – ITALY
T: +39 0444 1831295
F: +39 0444 1831306
E: info@meccalte.it
aftersales@meccalte.it

United Kingdom

Mecc Alte U.K. LTD
6 Lands' End Way
Oakham
Rutland LE15 6RF
T: +44 (0) 1572 771160
F: +44 (0) 1572 771161
E: info@meccalte.co.uk
aftersales@meccalte.co.uk

Spain

Mecc Alte España S.A.
C/ Rio Taibilla, 2
Polig. Ind. Los Valeros
03178 Benijofar (Alicante)
T: +34 (0) 96 6702152
F: +34 (0) 96 6700103
E: info@meccalte.es
aftersales@meccalte.es

China

Mecc Alte Alternator Haimen LTD
755 Nanhai East Rd
Jiangsu HEDZ 226100 PRC
T: +86 (0) 513 82325758
F: +86 (0) 513 82325768
E: info@meccalte.cn
aftersales@meccalte.cn

India

Mecc Alte India PVT LTD
Plot NO: 1, Sanaswadi
Talegaon
Dhamdhare Road Taluka:
Shirur, District:
Pune - 412208
Maharashtra, India
T: +91 2137 619600
F: +91 2137 619699
E: info@meccalte.in
aftersales@meccalte.in

U.S.A. and Canada

Mecc Alte Inc.
1229 Adams Drive
McHenry, IL, 60051
T: +1 815 344 0530
F: +1 815 344 0535
E: info@meccalte.us
aftersales@meccalte.us

Germany

Mecc Alte Generatoren GmbH
Ensener Weg 21
D-51149 Köln
T: +49 (0) 2203 503810
F: +49 (0) 2203 503796
E: info@meccalte.de
aftersales@meccalte.de

Australia

Mecc Alte Alternators PTY LTD
10 Duncan Road, PO Box 1046
Dry Creek, 5094, South
Australia
T: +61 (0) 8 8349 8422
F: +61 (0) 8 8349 8455
E: info@meccalte.com.au
aftersales@meccalte.com.au

France

Mecc Alte International S.A.
Z.E. La Gagnerie
16330 ST. Amant de Boixe
T: +33 (0) 545 397562
F: +33 (0) 545 398820
E: info@meccalte.fr
aftersales@meccalte.fr

Far East

Mecc Alte (F.E.) PTE LTD
19 Kian Teck Drive
Singapore 628836
T: +65 62 657122
F: +65 62 653991
E: info@meccalte.com.sg
aftersales@meccalte.com.sg



www.meccalte.com