RHEEM SOLAR THERMOSYPHON WATER HEATERS

Use and Care manual
Packing of the solar water heater

All appliances (storage tank, collector, support base and connection accessories), are delivered well packed to the customer.

The storage tank is placed between two styrofoam covers of 7 cm each, which are tightened on the storage tank with stretch film. The collector is packed with 4 plastic protective elbows, attached on each corner, which are fast tightened around the collector with a plastic strap (upon special order, the collectors could be delivered in groups of 10 pcs on a wooden pallette).

All the parts of the support base, the plastic bag with the connection fittings, the thermal fluid and other accessories are packed in a carton box, on which the indications of each model appear on the outside.

The plastic bag contains all the connection fittings of each appliance like, screws, nuts for the support base, brackets, pipe unions, moly plugs, screw-nuts, safety valves, plugs and filling funnel of the thermal fluid.

All the tubes of the storage tank and collectors are covered with plastic plugs, in order to protect their turns from striking during the transportation.

* Weight tolerance: +/- 10%

** Rheem reserves the right to change the external dimensions of the products without prior notice.

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EXTERNAL DIMENSIONS - ALL MODELS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>STORAGE TANK / ΔΕΣΜΕΝΗ</th>
<th>COLLECTOR / ΣΥΛΛΕΚΤΗΣ</th>
<th>BASE SUPPORT / ΣΥΡΤΗΚΑ</th>
<th>OΛΙΚΟ ΒΑΡΟΣ/ TOTAL WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>500x1100 48 10 BAR</td>
<td>2050x1010x90 2 1,10 36 10 BAR</td>
<td>24</td>
<td>108</td>
</tr>
<tr>
<td>160M</td>
<td>500x1320 59 10 BAR</td>
<td>2050x1010x90 2 1,20 36 10 BAR</td>
<td>24</td>
<td>119</td>
</tr>
<tr>
<td>160</td>
<td>500x1320 59 10 BAR</td>
<td>2050x101259x90 2 2,62 45 10 BAR</td>
<td>24</td>
<td>128</td>
</tr>
<tr>
<td>200</td>
<td>570x1320 65 10 BAR</td>
<td>2050x101259x90 2 2,62 45 10 BAR</td>
<td>24</td>
<td>134</td>
</tr>
<tr>
<td>200E</td>
<td>570x1320 65 10 BAR</td>
<td>2050x101010x90 2 2 x 2,10 36 10 BAR</td>
<td>26</td>
<td>143</td>
</tr>
<tr>
<td>300</td>
<td>570x2050 110 10 BAR</td>
<td>2050x101010x90 2 2 x 2,10 36 10 BAR</td>
<td>32</td>
<td>214</td>
</tr>
<tr>
<td>300E</td>
<td>570x2050 110 10 BAR</td>
<td>2050x101259x90 2 2 x 2,62 45 10 BAR</td>
<td>32</td>
<td>232</td>
</tr>
<tr>
<td>350</td>
<td>570x2050 117 10 BAR</td>
<td>2050x101010x90 2 2 x 2,10 36 10 BAR</td>
<td>32</td>
<td>221</td>
</tr>
<tr>
<td>350E</td>
<td>570x2050 117 10 BAR</td>
<td>2050x101259x90 2 2 x 2,62 45 10 BAR</td>
<td>32</td>
<td>239</td>
</tr>
</tbody>
</table>

* Weight tolerance: +/- 10%

** Rheem reserves the right to change the external dimensions of the products without prior notice.
Technical specifications of the storage tank

**Technical specifications of the closed circuit tank (indirect)**

- **External casing**: anodized aluminium
- **Tank’s insulation**: polyurethane foam 40-60 mm
- **Cylinder’s material**: low carbon steel 2.5 mm
- **Cylinder’s internal Protection**: glass enameling
- **Additional protection**: magnesium rod
- **Electric resistance**: copper
- **Thermostat**: bipolar of four contacts
- **Power rate**: available from 0.8kw – 4kw

**Technical specifications of the collector**

- **External frame**: anodized aluminium profile
- **Tank’s insulation**: polyurethane foam 40-60 mm
- **Cylinder’s material**: low carbon steel 2.5 mm
- **Cylinder’s internal Protection**: glass enameling
- **Additional protection**: magnesium rod
- **Electric resistance**: copper
- **Thermostat**: bipolar of four contacts
- **Power rate**: available from 0.8kw – 4kw

The solar collector can also be offered with a black selective painted absorber plate.

**Technical specifications of the storage tank**

**Technical specifications of the open circuit tank (direct)**

- **External casing**: anodized aluminium
- **Tank’s insulation**: polyurethane foam 40-60 mm
- **Cylinder’s material**: low carbon steel 2.5 mm
- **Cylinder’s internal Protection**: glass enameling
- **Additional protection**: magnesium rod
- **Electric resistance**: copper
- **Thermostat**: bipolar of four contacts
- **Power rate**: available from 0.8kw – 4kw

**Technical specifications of the collector**

- **External frame**: anodized aluminium profile
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What you should know about the solar water heater

TΙ ΠΡΕΠΕΙ ΝΑ ΓΝΩΡΙΖΕΤΕ ΓΙΑ ΤΟΥΣ ΗΛΙΑΚΟΥΣ ΘΕΡΜΟΣΙΦΩΝΕΣ

• The advanced technology’s Solar water heaters use a closed circuit of natural circulation. The special thermal fluid, used in the closed circuit, enhances the performance of the heater, protects it from the freeze and it prevents the salt scale deposition inside the tubes of the collector. The closed circuit (jacket) where the thermal fluid is circulating, is independent and does not communicate with the water storage tank.

• It is very important to choose with the local representative, the right size of the solar water heater, which will fulfil your needs.

• For a better choice of the appliance, the local climate conditions must be taken into a serious consideration, as well as your needs for hot water.

• The energy saving that you will have with the solar water heater, depends on the use of hot water, the use of the electric resistance and the local weather conditions. Under favourable weather conditions, the energy saving may reach up to 100%. On sunny days, the power of solar radiation is greater between 10:30am to 15:30pm. For this reason it is better to schedule your heavy consumption of hot water (washing machines etc) in the middle of the day.

• During days with low sunshine and low ambient temperature, we suggest you to turn on the electric resistance, in order to have hot water all the time.

• Οι ηλιακοί θερμοσίφωνες προηγμένης τεχνολογίας είναι κλειστού κυκλώματος, φυσικής κυκλοφορίας. Το ειδικό θερμικό υγρό που χρησιμοποιείται στο κλειστό κύκλωμα ενισχύει την απόδοση του πλιακού θερμοσίφωνα, τον προστατεύει από την παγωνία και δεν επιτρέπει την επικάθιση αλάτων στους σωλήνες του συλλέκτη. Το κλειστό κύκλωμα (jacket) όπου κυκλοφορεί το θερμικό υγρό είναι ανεξάρτητο και δεν επικοινωνεί με την δεξαμενή νερού.

• Είναι πολύ σημαντικό να επιλέξετε μαζί με τον τοπικό αντιπρόσωπο το σωστό μέγεθος του πλιακού θερμοσίφωνα που θα καλύπτει πλήρως τις ανάγκες σας.

• Για την καλύτερη επιλογή της συσκευής θα πρέπει να ληφθούν σοβαρά υπόψη οι τοπικές κλιματολογικές συνθήκες και οι ανάγκες σας σε ζεστό νερό.

• Η εξοικονόμηση ενέργειας που θα έχετε από τον πλιακό θερμοσίφωνα θα εξαρτηθεί από τον τρόπο χρήσης του ζεστού νερού, από την χρήση της ηλεκτρικής αντίστασης και από τις τοπικές καιρικές συνθήκες. Υπό καλές καιρικές συνθήκες η εξοικονόμηση ενέργειας μπορεί να φθάσει μέχρι 100%.

• Σε πληθώρας ημέρες η ισχύς της ακτινοβολίας είναι μεγαλύτερη μεταξύ 10:30π.μ. – 15:30μ.μ. Για τον λόγο αυτό είναι προτιμότερο να προγραμματίζετε τις ανάγκες σας που απαιτούν μεγάλη κατανάλωση ζεστού νερού (όπως πλυντήριο ρούχων, πλυντήριο πιάτων…..κλπ) το μέσο της ημέρας.

• Για τις ημέρες με ελάχιστες πλούσιες και χαμηλή θερμοκρασία περιβάλλοντος σας προτείνουμε να έχετε την ηλεκτρική αντίσταση αναμμένη προκειμένου να έχετε συνεχώς ζεστό νερό διαθέσιμο.

• ΠΡΟΣΟΧΗ/ΑΤΤΕΝΤΙΟΝ
Οπως κοιτάμε το μπόιλερ από μπροστά η αντίσταση θα πρέπει να είναι πάντα στα δεξιά. Το ηλεκτρικό αντίστοιχα μπόλερ μπορεί να βρεθεί στη δεξιά αντίσταση. Το ηλεκτρικό αντίστοιχα μπόλερ μπορεί να βρεθεί στη δεξιά αντίσταση.
Before you start installing the solar water heater, please read carefully all the installation instructions stated and illustrated in this manual.

Before the installation of the solar water heater, it is very important that customer and installer agree on all the details concerning the correct and safe installation of the appliance, such as location, placement point, static resistance and control of the surface on which the appliance will be placed, piping and wiring run etc.

The position you will choose for the installation of the solar water heater, should not be shaded by any obstacles (trees, buildings… etc) all around the year.

The installation should be done according to the electric and plumbing regulations applicable in your area.

For optimum performance, the solar water heater must face the south, for countries located in the Northern hemisphere and north for countries located in the Southern hemisphere. In case that it is not totally possible for the solar water heater to face the equator, you can turn it towards East up to 30° if major hot water draw is before 2 pm, or towards West up to 30° if major hot water draw is after 2 pm.

If the solar water heater must be installed on a roof where the inclination is less than 15° or more than 32°, then a different than the standard equipment installation must be used. The installer has to choose, propose and install this different equipment, always under the concurrent opinion of the customer.

For installation on a sloping roof, the “D” plates must be screwed with the appropriate screws and nuts on the roof timber, in order to secure the right and safe installation of the solar water heater.

In regions subject to heavy snowfalls, it is very important to ensure that too much snow doesn’t accumulate behind the storage tank, and to check if the supports of the standard equipment are good enough to withstand the weight of the expected snow. The same attention must be paid, for regions with heavy winds and storms. In these cases, the storage tank must be placed in a stable way on the roof and must be tightened with the additional metal straps. It is absolutely necessary to use the typhoon set (page 14). The typhoon set is not included in the appliance and it is sent upon request.

The tubes of the solar water heater as well as the cold/hot water piping must be very well insulated.

Special attention must be taken for the filling and connection of the closed circuit. Only experienced technicians can provide you with the connection and the filling. Before filling the closed circuit with thermal fluid, the storage tank must be completely filled with water.

Before starting the installation of the solar water heater, you must read carefully all the instructions, described and illustrated in this manual.

After you have finished the installation clean the area where all the work took place. Fill in the warranty with all the required details and have customer sign it. Advice customer to mail immediately the coupon of the warranty to the manufacturer.

The installation must comply with the local and national regulations and laws (plumbing, electricity, hygiene, urban and others) that are into force in your country.

The observance of the instructions stated on this manual is very important and the non-observance may cancel the validity of the warranty.

Rheem declines any responsibility of any kind, that may arise from a defected installation or from an incorrect manipulation or from any elements or accessories that are integrated/fitted on the appliance.

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ASSEMBLY INSTRUCTIONS

Before choosing the location and the installation point, ensure that it is not shaded by any obstacle (trees, buildings… etc., see obstacle diagram below). The same support base is used for either sloping or flat surfaces.

Connect the plates A, B, C, D, U and Z by screwing them tight as shown in the drawings. For models 300, 300E, 350 and 350E, screw also the plates F. Screw gently the bottom plate E on the plates B.

Attention: The top plate E is adjusted after the placement of the collectors.

Plumb the support base on the flat surface’s level. Place the collector(s), on the support base and then screw it with the moly plugs and the screw nuts on the concrete, according to your country’s regulations.

Support base for 120, 160, 160M, & 200 (with 1 collector)

Support base for 200E, 300, 300E, 350 and 350E (with 2 collectors)

LENGTHS OF THE SUPPORT BASE PLATES

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Z + U</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 mm</td>
<td>2360 mm</td>
<td>1150 mm</td>
<td>915 mm</td>
<td>875 mm</td>
<td>930 mm</td>
</tr>
</tbody>
</table>

SAME FOR ALL MODELS

FOR MODELS WITH 1 COLLECTOR 120, 160, 160M, 200

FOR MODELS WITH 2 COLLECTORS 200E, 300, 300E, 350

FOR MODELS WITH 1 COLLECTOR 120, 160, 160M, 200

FOR MODELS WITH 2 COLLECTORS 200E, 300, 300E, 350E

SAME FOR ALL MODELS

ONLY FOR MODELS 300, 300E, 350, 350E

“F Parts are not included in model 200E”

Support base for 120, 160, 160M, & 200 (with 1 collector)

Support base for 200E, 300, 300E, 350 and 350E (with 2 collectors)

“F Parts are not included in model 200E”

ASSEMBLY DIAGRAM OF THE SUPPORT BASE ON A FLAT SURFACE

ΟΔΗΓΙΕΣ ΣΥΝΑΡΜΟΛΟΓΗΣΗΣ

Πριν επιλέξετε το σημείο όπου θα τοποθετηθεί η βάση στήριξης ελέγξτε μήπως σκιάζεται από τυχόν εμπόδια, (συμβουλεύτετε τον πίνακα εμπόδιων παρακάτω).

Ως βάση στήριξης για 200Ε, 300, 300Ε, 350 & 350Ε (με 2 συλλέκτες)

Ως βάση στήριξης για 120, 160, 160M, & 200 (με 1 συλλέκτη)

Διανυσματική απεικόνιση της βάσης στήριξης σε επίπεδη επιφάνεια
Assembly diagram of the support base for one collector on a surface with maximum inclination of 32°

**ASSEMBLY INSTRUCTIONS**

Before choosing the location and the installation point, ensure that it is not shaded by any obstacle (trees, buildings, etc. see obstacle diagram here below).

The same support base is used for either sloping or flat surfaces.

Connect the plates (A) and (E) so that to form a parallelogram frame, as shown in the drawing. Bend the four (D) plates as shown in the drawing. Remove the tiles, and place the bended plates (D) on the wooden timbers or on the concrete of the roof. Screw tightly the parallelogram frame (A)+(E) on the plate (D). Plumb the support base and screw the plates (D) on the wooden timber of the roof (see drawing).

Screw the plates (B) on the parallelogram frame (A)+(E). Ensure that the plates (B) are tightly screwed on the holes of the plate (A). Screw gently the bottom plate E on the plates B.

**note:** The standard support base can be used also for surfaces with minimum inclination 15° and maximum 32°.

For smaller or greater inclinations, different equipment is offered.

**attention:** The plate (C) is screwed in the 3rd hole and NOT the 1st. Also the plates (C) protrude from the sheets (B) 7 cm for the small collector.

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**ODΗΓΙΕΣ ΣΥΝΑΡΜΟΛΟΓΗΣΗΣ**

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Η ίδια βάση στήριξης χρησιμοποιείται για τοποθέτηση σε επίπεδο και επικλινή επιφάνεια.

Συνδέστε τα ελάσματα (A) και (E) ώστε να σχηματίζουν ένα παραλληλόγραμμο πλαίσιο, όπως φαίνεται στο σχεδιάγραμμα.

Αλφαδιάστε τη βάση και βιδώστε τα ελάσματα (D) πάνω στα δοκάρια της οροφής όπως φαίνεται στο σχέδιο.

Βεβαιωθείτε ότι τα ελάσματα (B) προεξέχουν από τα ελάσματα (Ε) 7 εκ. για το μικρό επάνω έλασμα (Ε) βιδώνεται στην 3η τρύπα και ΟΧΙ στην 1η.

Διαμόρφωστε τα 4 ελάσματα (D) όπως φαίνεται στο σχέδιο. Αφαιρέστε τα κεραμίδια και τοποθετείστε τα λυγισμένα ελάσματα (D) πάνω στα ξύλινα δοκάρια ή στο μπετόν της οροφής.

Βεβαιωθείτε ότι τα ελάσματα (B) προέξεχουν από τα ελάσματα (Ε) 7 εκ. για το μικρό επάνω έλασμα (Ε).

ΟΔΗΓΙΕΣ ΣΥΝΑΡΜΟΛΟΓΗΣΗΣ

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Συνδέστε τα ελάσματα (Α) και (Ε) ώστε να σχηματίζουν ένα παραλληλόγραμμο πλαίσιο, όπως φαίνεται στο σχεδιάγραμμα.

Αλφαδιάστε τη βάση και βιδώστε τα ελάσματα (D) στα δοκάρια της οροφής όπως φαίνεται στο σχέδιο.

Βεβαιωθείτε ότι τα ελάσματα (B) προέξεχουν από τα ελάσματα (Ε) 7 εκ. για το μικρό επάνω έλασμα (Ε).

ΟΔΗΓΙΕΣ ΣΥΝΑΡΜΟΛΟΓΗΣΗΣ

Πριν επιλέξετε το σημείο όπου θα τοποθετηθεί η βάση στήριξης ελέγχτε μήπως σκιάζεται από τυχόν εμπόδια. (συμβουλεύετε τον παρακάτω πίνακα εμποδίων).

Η ίδια βάση στήριξης χρησιμοποιείται για τοποθέτηση σε επίπεδο και επικλινή επιφάνεια.

Συνδέστε τα ελάσματα (Α) και (Ε) ώστε να σχηματίζουν ένα παραλληλόγραμμο πλαίσιο, όπως φαίνεται στο σχεδιάγραμμα.

Αλφαδιάστε τη βάση και βιδώστε τα ελάσματα (D) στα δοκάρια της οροφής όπως φαίνεται στο σχέδιο.

Βεβαιωθείτε ότι τα ελάσματα (B) προέξεχουν από τα ελάσματα (Ε) 7 εκ. για το μικρό επάνω έλασμα (Ε).
Installation instructions of the storage tank and collector on the support base

Before the placement of the collectors on the support base, loosen the screws of the bottom plate E, so that the bottom fin of the collector can pass easy between the plates E and B.

The top plate (E) is fixed after the placement of the collector(s).

Place and centralize the collector(s) on the support base.

For the models 200E, 300, 300E, 350 and 350E which consist of two collectors, you must connect them to each other by using the pipe unions (12), supplied with each appliance.

Secure the bottom part of the collector(s) by screwing tightly the bottom plate E on the plates B.

Screw tightly the top plate E, on the plates B, securing the collector(s).

Place the face-plate (20A) on the U, and secure it under the collector(s).

Then place the storage tank on the two U.

**Attention**

a. Before placing the storage tank on the two U, check carefully if the plates U and Z are screwed tightly to the plates B.

b. The electric resistance must be on the right hand side, as we face the appliance.

c. Ensure that the appliance does not tilt from one or the other side and that the tubes (02) and (14) of the storage tank are vertical on the highest point of the storage tank. Use necessarily a plumb.

**Proσοχή**

a. Πριν τοποθετήσετε το μπόιλερ πάνω στα U ελέγξτε προσεκτικά αν έχουν βιδωθεί σφιχτά μεταξύ τους οι ελάσματα U και Z με τα ελάσματα B.

b. Η ηλεκτρική αντίσταση θα πρέπει να βρίσκεται δεξιά όπως κατέστησε τη συσκευή απο εμπρός.

c. Βεβαιωθείτε ότι, η συσκευή δε γέρνει προς τη μία ή την άλλη πλευρά καθώς επίσης οι σωλήνες (02) και (14) να είναι κατακόρυφοι και στο υψηλότερο σημείο του μπόιλερ. Χρησιμοποιήστε απαραίτητα αλφάδι.
Connection instructions of the storage tank, collector and components

For models 200E, 300E, 350 and 350E, which have two collectors, connect them by using the collector connector (pipe unions) (12), supplied with each appliance.

Put the plug (17A) on the pipe (17) which is located on the top right hand side of the collector (13) and the plug (13A) on the pipe (13) which is located on the bottom left hand side of the collector, and use Teflon or oakum for their complete water tightness.

Screw the elbow raccords (03) on the pipes of the storage tank (04) and (16) with the indication "jacket" and on the pipes of the collector(s) (10) and (19) respectively.

Afterwards join the small connection tube (05) onto (04) and (10) and the big connection tube (18) onto (16) and (19) respectively. Before connecting the tubes (05) and (18) ensure that the compression rings (07) have been placed on the tubes.

Screw the non-return valve (15B) on the inlet pipe (15) of the storage tank (indication: "cold inlet").

Connect the cold water supply to the spherical switch and turn the cold water supply on until the storage tank is completely filled. When you are filling the storage tank with water, the outlet of hot water (08) should be opened. Connect the hot water supply to the storage tank outlet pipe (08). (Indication: "hot outlet").

After connecting all the fittings, check very carefully all connections for their complete water tightness.

In some countries (like South Africa, Australia and others) the local standards require the installation of a T&P valve fixed onto the tank.

In such cases, after a special request, the storage tanks will be sent with an additional socket (14A) on the top for the installation of the T&P valve. The T&P valve is supplied from the local distributor/installer (not by the manufacturer).

Attention: In regions where the temperature falls bellow zero, ensure that the connection tubes of the storage tank and collector as well as the hot and cold water piping to/from the solar water heater are well insulated.

Follow step by step the installation instructions of this manual.

All the plumbing installations must be made in accordance with the plumbing regulations applicable in your area.
For antifreeze protection of the solar water heater, please follow the ratio of antifreeze protection stated in the table below.

Mix well the thermal fluid with water.

Start filling the closed circuit with the mixture, from the pipes (14) and (02). The filling must be done alternatively, from both pipes (14) and (02). During the filling, we advice you to shake the system, so that to ensure that no air is trapped inside the storage tank and the collector. Continue this procedure until the close circuit is completely full. The responsibility for the correct use of the antifreeze liquid quantity is for the account of the installer. The use of water only or other liquid may cancel the validity of the warranty.

Add some more fluid in the closed circuit, until it overflows from the tubes (14) and (02). Screw the plug (14A) onto the tube (14) and fix the safety valve (02A) onto the tube (02). Check carefully all connections for complete water tightness.

Place the protective side cover (20).

Add some more fluid in the closed circuit, until it overflows from the tubes (14) and (02). Screw the plug (14A) onto the tube (14) and fix the safety valve (02A) onto the tube (02). Check carefully all connections for complete water tightness.

Place the protective side cover (20).

For the correct use of the antifreeze liquid quantity is for the account of the installer. The use of water only or other liquid may cancel the validity of the warranty.

Add some more fluid in the closed circuit, until it overflows from the tubes (14) and (02). Screw the plug (14A) onto the tube (14) and fix the safety valve (02A) onto the tube (02). Check carefully all connections for complete water tightness.

Place the protective side cover (20).

For the correct use of the antifreeze liquid quantity is for the account of the installer. The use of water only or other liquid may cancel the validity of the warranty.

Add some more fluid in the closed circuit, until it overflows from the tubes (14) and (02). Screw the plug (14A) onto the tube (14) and fix the safety valve (02A) onto the tube (02). Check carefully all connections for complete water tightness.

Place the protective side cover (20).
**Thermal Fluid** (only for closed circuit Solar Water Heaters)

(ΜΟΝΟ ΓΙΑ ΗΛΙΑΚΟΥΣ ΘΕΡΜΟΣΙΦΩΝΕΣ ΚΛΕΙΣΤΟΥ ΚΥΚΛΩΜΑΤΟΣ)

**ANTIFREEZE PROTECTION RATIO TABLE FOR SOLAR WATER HEATERS**

<table>
<thead>
<tr>
<th>MODEL/MODEL</th>
<th>CLOSED CIRCUIT TOTAL CAPACITY</th>
<th>TEMPERATURE</th>
<th>RATIO</th>
<th>ANALOGIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 x 2.10m²</td>
<td>160 x 2.10m²</td>
<td>160 x 2.62m²</td>
<td>200 x 2.62m²</td>
<td>200E x 4.20m²</td>
</tr>
<tr>
<td>5.60 lt</td>
<td>5.60 lt</td>
<td>6.00 lt</td>
<td>6.50 lt</td>
<td>7.80 lt</td>
</tr>
<tr>
<td><strong>- 5°C</strong></td>
<td><strong>- 11°C</strong></td>
<td><strong>- 18°C</strong></td>
<td><strong>- 20°C</strong></td>
<td><strong>- 27°C</strong></td>
</tr>
<tr>
<td>Water / Νερό</td>
<td>4.60 lt</td>
<td>4.50 lt</td>
<td>4.00 lt</td>
<td>3.50 lt</td>
</tr>
<tr>
<td>Fluid/ Αντιψυκτικό</td>
<td>1.00 lt</td>
<td>1.10 lt</td>
<td>1.60 lt</td>
<td>2.10 lt</td>
</tr>
<tr>
<td><strong>RATIO</strong></td>
<td><strong>- 5°C</strong></td>
<td><strong>- 11°C</strong></td>
<td><strong>- 18°C</strong></td>
<td><strong>- 20°C</strong></td>
</tr>
<tr>
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<td>1.00 lt</td>
<td>1.10 lt</td>
<td>1.60 lt</td>
<td>2.10 lt</td>
</tr>
<tr>
<td><strong>ANALOGIA</strong></td>
<td><strong>- 5°C</strong></td>
<td><strong>- 11°C</strong></td>
<td><strong>- 18°C</strong></td>
<td><strong>- 20°C</strong></td>
</tr>
<tr>
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<td>4.60 lt</td>
<td>4.50 lt</td>
<td>4.00 lt</td>
<td>3.50 lt</td>
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<td>1.00 lt</td>
<td>1.10 lt</td>
<td>1.60 lt</td>
<td>2.10 lt</td>
</tr>
</tbody>
</table>

Please take into account also to the dilution table on the bottle of the antifreeze liquid.

Να λάβετε επίσης υπόψη και τον πίνακα αναλογιών που αναγράφεται στην ετικέττα πανω στο μπουκάλι με το αντιψυκτικό υγρό.

**ΠΡΟΣΟΧΗ/ΑΤΤΕΝΣΙΟΝ**

Όπως κοιτάμε το μπόιλερ από μπροστά η αντίσταση θα πρέπει να είναι πάντα στα δεξιά.

The electric resistance must be located in the right hand side as we face the system.
Description of the parts of

ΟVAL TYPE / ΟΒΑΛ ΑΝΤΙΣΤΑΣΗ

21 Plastic cover
22 Electric element
22A Thermostat's socket
22B Element plate
23 Base of multiple plug (for the electric lines)
24 Metal wires for the connections of the element with the thermostat
25 Rubber flange for water tightness
26 Bolt
27 Tightening nuts
28 Grounding lug
29 Power wire
30 Earth wire
31 Multiple plug for power lines
32 Metal wires for the connections of the element with the thermostat
33 Thermostat
34 Temperature control
35 Safety thermal switch (indication “F” or “S”)
36 Magnesium rod

CONNECTION OF THE CABLES / ΟΔΗΓΙΕΣ ΣΥΝΔΕΣΗΣ ΚΑΛΩΔΙΩΝ

1. Turn off the power main supply.
2. The cover of the electric resistance is on the right hand side of the storage tank. Unscrew the screws and remove the cover.
3. The thermostat is adjusted from the factory at 60°C. You can adjust it at the temperature you wish, by using the temperature control (34). In that case we advise that the temperature you will fix not to exceed 75°C.
4. Check the safety thermal switch (indication “F” or “S”) on the thermostat. The safety switch is in operation when it is pushed in.
5. RESISTANCE TYPE “OVAL”: Connect the lug 2 of the thermostat to the lug “N” of the power line connector (blue cable). Connect the lug 3 of the thermostat to the lug “L” of the power line connector (black cable) – see diagram.
6. RESISTANCE TYPE “ROUND”: Connect the lug 1 of the thermostat to the lug “N” of the power line connector (black cable). Connect the lug 4 of the thermostat to the lug “N” of the power line connector (black cable).
the electric resistance and thermostat

The electric resistance and thermostat type: Round Type / Στρογγυλή Αντίσταση

- Power line connector (blue cable) – see diagram in this page.
- The grounding lug is connected from the manufacturer, as shown in the diagram. Ensure that it is well screwed.
- Pass the wire through the hole of the cover (21) and connect the wires on the power line connector. Screw the cover (21) on the storage tank.

**Attention:**
- The grounding lug (L) on the power line connector, must be connected with the grounding wire of the building.
- The power cable must be connected to a switchboard, of which the separating distance of the contacts is more than 3mm.
- The standard power of the electric resistance is 2000W for 230V. Upon a special order, the electric resistance can be offered with power from 800W to 4000W. For power of 110V, the electric resistance is available (upon special order) with power from 800W to 2000W.

**Note:**
- A certified electrician must make all the electric connections.
- Ensure that all the electric connections comply with the electric regulations applicable in your area and your building.
- Do not turn on the electric resistance, when the storage tank is empty.

All models can be delivered, upon a special order, with a tube heat exchange built-in to the electric resistance.

The tube heat exchanger can be connected with the central heating system for more energy saving.

The instructions of the electric connections are same to the ones of the electric resistance without a tube heat exchanger.

**Electric Resistance with a Built-In Tube Heat Exchanger**

- Hot water inlet from the central heating / Είσοδος ζεστού από κεντρική θέρμανση
- Cold water outlet to the central heating / Έξοδος κρύου προς κεντρική θέρμανση

**Note:**
- All electric connections must be made by a certified electrician.
- All electrical connections must comply with the local electrical regulations.

**Warning:**
- Do not turn on the electric resistance when the storage tank is empty.
- Ensure that all the electrical connections comply with the electrical regulations applicable in your area and your building.
- A certified electrician must make all the electric connections.

**Electric Resistance Type “Round” / Στρογγυλή Αντίσταση**

- Standard power of the electric resistance is 4000W for 230V. Upon special order, the electric resistance can be offered with power from 800W to 4000W. For power of 110V, the electric resistance is available (upon special order) with power from 800W to 2000W.

**Note:**
- All electric connections must be made by a certified electrician.
- All electrical connections must comply with the local electrical regulations.

**Warning:**
- Do not turn on the electric resistance when the storage tank is empty.
- Ensure that all the electrical connections comply with the electrical regulations applicable in your area and your building.
- A certified electrician must make all the electric connections.

**Electricity with a Built-In Tube Heat Exchanger / Ηλεκτρική Αντίσταση με Ενσωματωμένο Εναλλάκτη**

- Hot water inlet from the central heating / Είσοδος ζεστού από κεντρική θέρμανση
- Cold water outlet to the central heating / Έξοδος κρύου προς κεντρική θέρμανση

**Note:**
- All electric connections must be made by a certified electrician.
- All electrical connections must comply with the local electrical regulations.

**Warning:**
- Do not turn on the electric resistance when the storage tank is empty.
- Ensure that all the electrical connections comply with the electrical regulations applicable in your area and your building.
- A certified electrician must make all the electric connections.

**Electric Resistance with a Built-In Tube Heat Exchanger / Ηλεκτρική Αντίσταση με Ενσωματωμένο Εναλλάκτη**

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**Note:**
- All electric connections must be made by a certified electrician.
- All electrical connections must comply with the local electrical regulations.

**Warning:**
- Do not turn on the electric resistance when the storage tank is empty.
- Ensure that all the electrical connections comply with the electrical regulations applicable in your area and your building.
- A certified electrician must make all the electric connections.
In regions where heavy winds, typhoons, hurricanes and storms are usual, it is necessary to use the special TYPHOON SET. The typhoon set is not included in the appliance and it is sent upon request.

The typhoon set contains:
1. Plates (J) of 1150mm
2. Plates (D) of 915 mm
3. Short fixing plates (L)
4. Long screws - small step nuts
5. Tape of metal belt.
6. Rubber profile
7. Moly plugs - screw nuts

Before you start installing the appliance, you should check the following:
• For installation on a flat surface, check the density, hardness and strength of the concrete.
• For installation on a sloping roof, additional rafters must be installed under the tiles, so that the distance between the rafters doesn’t exceed 50 cm, and their strength must be good enough for the safe installation of the appliance.

After you have placed the storage tank on the support base, adjust the metal belt connecting the one end of the belt between the screw-nuts, which tighten the plates U and Z and the other end of the metal belt between the screw-nuts which tighten the plates U and B. (see detail a & b).

Attention
Use the second nuts (O) to tighten the metal belts. Tighten well the metal belts on the storage tank.

Special climatic conditions

To assemble the support base follow the same assembly procedures, mentioned on pages 6-7 (for flat or sloping surfaces).

For the connection of the plates U, Z and B, use the long screws - small step nuts.

Before you adjust the metal belts around the storage tank, place the rubber profile between the storage tank and the metal belt.

ASSEMBLING INSTRUCTIONS / ΟΔΗΓΙΕΣ ΣΥΝΑΡΜΟΛΟΓΗΣΗΣ

Για την συναρμολόγηση της βάσης στήριξης ακολουθείτε τις ίδιες διαδικασίες συναρμολόγησης που αναφέρονται στις σελίδες 6-7 (για επίπεδη και επικλινή επιφάνεια).

Για την σύνδεση των ελασμάτων U, Z και B, θα πρέπει να χρησιμοποιηθούν οι βίδες που έχουν μεγαλύτερο μήκος.

Πριν προσαρμόσετε τους μεταλλικούς μάντας περιμετρικά της δεξαμενής, τοποθετήστε το λάστιχο ανάμεσα στη δεξαμενή και στον μάντα.
For the safer installation of your appliance, we recommend you to secure the storage tank on the support base using more metal belts than the ones illustrated in the photos.

All the parts and accessories of the typhoon set are packed in one carton which carries on the outside the description "TYPHOON SET".

For installation on a sloping roof, we recommend you to use more metal belts, securing both the storage tank and the support base, by screwing them on the timbers under the tiles. You can also use the four D plates, by screwing them under the timbers.

**INSURANCE OF THE APPLIANCE**

In regions where typhoons, tornados, hurricanes …etc occur and hail is larger than 20mm in diameter, we recommend you to issue insurance for your appliance.

When you have to install the appliance on a flat roof, you must use the two plates J, screwing them on the plates C.

Screw the short plates L on the plates J. To screw the plates J on the plates C use the long screws - small step nuts.

Screw the short fixing plates L and plates A on the roof, using the moly plugs of the typhoon set, as well as the 4 screw nuts included in the plastic bag with the fittings. The plastic bag with the connection fittings is packed in the support base carton.

When the TYPHOON SET is used, the face-plate (20A) is not placed.

When you have to install the appliance on a flat roof, you must use the two plates J, screwing them on the plates C.

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Screw the short plates L on the plates J. To screw the plates J on the plates C use the long screws - small step nuts.

Screw the short fixing plates L and plates A on the roof, using the moly plugs of the typhoon set, as well as the 4 screw nuts included in the plastic bag with the fittings. The plastic bag with the connection fittings is packed in the support base carton.

When the TYPHOON SET is used, the face-plate (20A) is not placed.

When you have to install the appliance on a flat roof, you must use the two plates J, screwing them on the plates C.

Screw the short plates L on the plates J. To screw the plates J on the plates C use the long screws - small step nuts.

Screw the short fixing plates L and plates A on the roof, using the moly plugs of the typhoon set, as well as the 4 screw nuts included in the plastic bag with the fittings. The plastic bag with the connection fittings is packed in the support base carton.

When the TYPHOON SET is used, the face-plate (20A) is not placed.
• The solar water heater will reach optimum performance two days after the installation. During these two days, it is recommended to avoid hot water consumption, even if there is sunshine.

• Check every year the level of the fluid in the closed circuit.

• In regions with a lot of dust, we recommend that you clean the glass of the collector with water, every two months in order to remove the dust from the glass, unless there is enough rain.

• A certified electrician must do all the electrical connections and checking.

• The solar water heater will reach optimum performance two days after the installation. During these two days, it is recommended to avoid hot water consumption, even if there is sunshine.

• Check carefully all the connections of the solar water heater for leaks.

• During a long absence (such as summer holidays), it is recommended to cover the collector(s) with an opaque cover.

• If your solar water heater continues not to supply hot water, contact your local distributor.

• During a long absence (such as summer holidays), it is recommended to cover the collector(s) with an opaque cover.

• Once the storage tank is filled in with water, it must not get empty (evacuated) for many hours, and only if there is a need for changing the magnesium rod or the electrical resistance for which it is required a short time, and only if there is a need for changing the magnesium rod or the electrical resistance for which it is required a short time.

• Check the fluid level in the closed circuit and fill it, if necessary (see instructions, page 10).

• The following should be also taken into consideration:

- During a long absence (such as summer holidays), it is recommended to cover the collector(s) with an opaque cover.

- If the solar water heater continues not to supply hot water, contact your local distributor.

- During a long absence (such as summer holidays), it is recommended to cover the collector(s) with an opaque cover.

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- The following should be also taken into consideration:

- During a long absence (such as summer holidays), it is recommended to cover the collector(s) with an opaque cover.

- If the solar water heater continues not to supply hot water, contact your local distributor.
To replace the magnesium rod:
1. Turn the power supply off.
2. Empty the water from the storage tank.
3. Remove the electric resistance and unbolt the old worn magnesium rod and fix the new one. Fix afterwards the electric resistance after you have checked that the elastic flange is not worn-out. If the elastic flange is worn out, replace it with a new one.
4. Turn on the water supply and check that the tank is completely water tight.
5. After the tank is completely filled, switch on the main power supply.

**Note:**
An authorized distributor must do the replacement of the magnesium rod, at client’s care and expenses.

The period of time for the replacement of the magnesium rod can be every 6 months up to every 2 years depending on the quality of the water.

In areas where the total dissolved solids (TDS) is more than 600 ppm it is necessary to install a filter.

**Note:**
The specifications of the products, their accessories (e.g. electric resistances, thermostats, valves, liquid…etc) and their materials are in accordance with the Greek standards. You must be informed and check if the specifications of the products and their accessories are in accordance with the local and national standards and regulations that apply in your country. The importer/distributor is responsible for the importation, commercialization and installation of the products.

**Rheem** in no case is liable for any damages caused to third par-ties for any reason, such as wrong installation of the appliances and their accessories, from the non-observation of the regulations and laws (electrical, urban planning, plumbing, sanitary…etc) applying in your country/area. In case of a defective product apply the terms and conditions of the warranty.

The terms and conditions of the product warranty apply.

From the warranty are excluded the following:

- The glass of the collector.
- Damages to the tank, resulting from failure to replace the magnesium rod, which should be replaced every 2 (two) years by the local distributor, at client’s care and expenses.
- Damages to the tank, resulting from failure to fit the over pressure limiting valve, in areas where the water supply pressure exceeds 4 Bar.
- Damages to the tank, resulting from the quality of the water (according to the technical regulations in force to the country of installation of the product).
- Damages to the tank, when the feed water of the tank derives from rivers, lakes, wells, drillings or desalination processes.
- When the electrical thermostat is set to be constantly operating at over 60AC.
- Installers must ensure that they select the right lighting protection devices according to the technical regulations of the country where the product will be installed.
- Damages on the product caused from an erroneous installation and/or from a wrong manipulation of the product and/or its accessories.
- Damages to the product and/or its accessories caused during transportation, removal and/or due to inappropriate storage of the product.
- Damages on the product resulting from acts of God, frost, wear and tear, force majeure.
- Salt scaling in the collector (only for open circuit).
- When the closed circuit has not been filled with an approved antifreeze liquid, appropriate for solar systems.
- The connection, adaptation, integration, incorporation or assembly of other equipment or parts that either directly or indirectly affect the operation or performance of this product.
- When the service and/or repair was made by unauthorized and not-specialized staff.
- When local plumbing, electrical, sanitary, urban and other regulations are not observed.
- The warranty does not cover problems related to the installation of the products, the installer must deal eventual problems related to the installation.
- The warranty is not valid, if the product is treated in an incorrect manner, damaged or installed from an unauthorized and not-specialized person.
- The warranty is not valid if you do not comply with the payment terms on the scheduled dates.

Any repair, inspection, service and replacement of any component, shall in no case result in the extension of the warranty period. Any dispute or disagreement on the interpretation of both the terms and provisions of the present warranty is subject to the Greek law and responsible are the Greek courts of Athens in Greece.

**Γ. ΑΝΤΙΚΑΤΑΣΤΑΣΗ ΤΗΣ ΡΑΒΔΟΥ ΜΑΓΝΗΣΙΟΥ**

For the antikatzasto to the rod of magnesium, prouteite sto paraqarvwn energeias: 1. Kleiste to paraxo elktroktiko me李先生.
2. Aziaste to vepo apo to antikazeste.
3. Azeiaste to elktroktiko anastas kai zeviaste to mali thi xephtimeno rodh manganis kai bidaste te nea.

Toposthetei to elktroktiko anastas taurpria wuste elxete evn eina elktroktiko fylaxista den exei katasfrwexe. Ezed eina vepi anastatikaste se me mia zia.

4. Aziaste to vepo apo to antikazeste.

Ποταμος ο παιχνιδια όπως το γρασί και διαβαζεις τον θεσμον των υριων και προσοχης της παραστασης εγγυησης, υποκειται στην Ελληνικη νομοθεσια και αρμαδιε ειναι τα Δικαστηρια της Αθηνας στην Ελλαδα.
Parallel connection of multiple systems

ΠΑΡΑΛΛΗΛΗ ΣΥΝΔΕΣΗ ΤΡΙΩΝ ΗΛΙΑΚΩΝ ΘΕΡΜΟΣΙΦΩΝΩΝ

Notes:
1. All the branch lines to the storage tanks must have same length and geometry (diameter of tube, curves... etc)
2. Pressure drop (Δp) must be almost the same in hot and cold-water tubes

Serial connection of multiple systems

(It is recommended the installation of maximum five appliances)

ΣΕΙΡΙΑΚΗ ΣΥΝΔΕΣΗ ΠΕΝΤΕ ΗΛΙΑΚΩΝ ΘΕΡΜΟΣΙΦΩΝΩΝ

(συνιστάται η τοποθέτηση μέχρι πέντε συσκευών)

In multiple connections where the electric resistance is used, you should avoid connecting the electric resistance in the storage tanks of the first two appliances. These appliances will be used to pre-heat the water for the consumption.

For this kind of installation (or for more than three solar water heaters connected in a row) you have to make a special request for 3/4" inlets-outlets pipes on the storage tank. We recommend you to use a maximum of five appliances.

Σε συστήματα όπου χρησιμοποιείται η πλεκτική αντίσταση, θα πρέπει να αποφεύγετε να συνδέετε την πλεκτική αντίσταση στις δεξαμενές των δύο πρώτων συσκευών. Αυτές οι συσκευές θα χρησιμοποιούνται για να προθερμαίνουν τον νερό κατανάλωσης. Για αυτό τον τύπο εγκατάστασης (ή γενικά για περισσότερους από 3 πλακούς θερμοσίφωνες συνδεδεμένους σε σειρά) θα πρέπει να ζητήσετε στην παραγγελία σας για στόμια «εισόδου/εξόδου» 3/4" στη δεξαμενή. Σας συνιστούμε να χρησιμοποιείτε το πολύ πέντε συσκευές ανά σειρά.
Typical installation of multiple units
ΤΥΠΙΚΗ ΕΓΚΑΤΑΣΤΑΣΗ ΠΕΝΤΕ ΗΛΙΑΚΩΝ ΘΕΡΜΟΣΙΦΩΝΩΝ

notes
1. All the branch lines to the storage tanks must have same length and geometry (diameter of tube, curves... etc)

σημειώσεις
1. Όλοι οι κλάδοι προς τις δεξαμενές θα πρέπει να έχουν ίδιο μήκος και ίδια γεωμετρία (διάμετρος σωλήνα, καμπύλες... κτλ).

2. Pressure drop (Δρ) must be almost the same in hot and cold-water tubes
3. In case that you have to install one more solar water heater, the diameter of the piping must be increased to the next size.

σημειώσεις
2. Η πτώση πίεσης (ΔΡ) θα πρέπει να είναι περίπου ίδια στους σωλήνες κρύου και ζεστού νερού.
3. Στην περίπτωση που πρέπει να τοποθετήσουμε άλλο ένα πλακό σύστημα η διάμετρος του σωλήνα θα πρέπει να αυξηθεί στο επόμενο μέγεθος.

Parallel connection of multiple systems in series
ΠΑΡΑΛΛΗΛΗ ΣΥΝΔΕΣΗ ΠΟΛΛΩΝ ΗΛΙΑΚΩΝ ΣΥΣΚΕΥΩΝ ΣΕ ΣΕΙΡΑ

notes
1. All the piping in 20 mm diameter. For this kind of installation (or for more than three solar water heaters connected in a row) you have to make a special request for 3/4“ inlets/outlets pipes on the storage tank.
2. We recommend you to use a maximum of five appliances in a row.

σημειώσεις
1. Όλοι οι σωλήνες 20mm διάμετρο. Για αυτό το τύπο εγκατάστασης (ή γενικά για περισσότερους από 3 πλακούς θερμοσίφωνες συνδεδεμένους σε σειρά) θα πρέπει να ζητάτε στην παραγγελία σας για στόμια 3/4“ εισόδου/εξόδου στη δεξαμενή
2. Συνιστάται να χρησιμοποιείτε το πολύ 5 συσκευές ανά σειρά.
NOTE: Rheem reserves the right to change any specifications of the product and their accessories without prior notice.