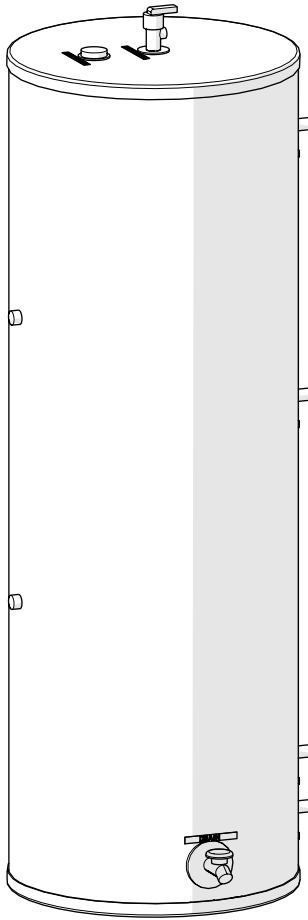




Better solutions through innovation



Owner's Manual Solar Storage Tank with Heat Exchanger

Model
DSTA-200

⚠ WARNING: This system is designed to be used with Polypropylene Glycol as a heat transfer liquid. Substitution of any other heat-transfer fluid can cause irreparable damage and create a health and safety hazard.










! NOTE: This manual should be kept in the same area as the system for reference purposes.

IMPORTANT SAFETY INFORMATION: Always read this manual first before attempting to install or use this Solar Domestic Hot Water System. For your safety, always comply with all warnings and safety instructions contained in this manual to prevent personal injury or property damage.

To view the full line of Dimplex products, please visit www.dimplex.com

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Always use a qualified technician or service agency to repair this system.

- ! NOTE:** Procedures and techniques that are considered important enough to emphasize.
- ⚠ CAUTION:** Procedures and techniques which, if not carefully followed, will result in damage to the equipment.
- ⚠ WARNING:** Procedures and techniques which, if not carefully followed, will expose the user to the risk of fire, serious injury, or death.

Disclaimer

The information presented in this manual was correct at the time of print and was prepared with the greatest diligence and care possible. The manufacturer does not take any responsibility for damage done to property or life by not adhering to the instructions given in this guide. The right is reserved to introduce technical alterations without prior notice as part of the company's continuous improvement measures. All personnel specifying or designing the use of this equipment, installing, operating or maintaining it must be appropriately trained or instructed and must follow the procedures laid out in this guide and other related and relevant literature including standards and regulations.

Welcome & Congratulations

Dear Customer,

Thank you very much for choosing the our Solar Storage Tank. We appreciate the choice of products you have had and we want to assure you that the Solar Storage Tank satisfies the highest performance, quality and reliability requirements. Should any issues arise at any stage, which you do not find sufficiently covered in this document please contact technical service using one of the means detailed below.


Wishing you lots of sunshine,

Your Technical Service Team

Contact us at:



www.renewables.dimplex.com/contact_us for Troubleshooting and Technical Support

OR  **Toll-Free 1-888-DIMPLEX (1-888-346-7539)** Monday to Friday 8:00 a.m. to 4:30 p.m. EST

IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before using this appliance.
2. Disconnect all power supplies before performing any cleaning, maintenance or relocation of the unit.
3. Do not operate the unit with any damaged cords, if any of the pumps have malfunctioned, if the tanks or piping have been damaged in any manner.
4. Consult the MSDS sheets or Safety Data Sheets for information on the heat transfer solution before filling or draining the system.
5. Only a trained and competent person should install this system.
6. Dimplex does not accept any liability for damage done to persons or property resulting from undue handling and usage of this product.
7. All regulations current at the time of installation are to be considered alongside the content of this manual as they form the code of best practice.
8. It is the responsibility of the Owner/Installer to ensure that the transport, storage, installation and operation of the product is carried out in a safe manner.
9. When making the piping connections, make sure that connecting pipe work is not mechanically over-stressed. Over time this could cause breakages, with consequent liquid losses which, in turn, could cause harm to property and/or people.

SAVE THESE INSTRUCTIONS

Quick Reference Guide

General requirements

- Electrical Water Heater tank, 50 gal (184L)
- ! **NOTE:** Water heater must have adequate capacity, listed and labeled by an accredited listing organization.
- Competent person must install this system.
- Improper operation/installation of the unit could invalidate the warranty.
- ! **NOTE:** It is recommended that any systems with hard water have a water softener installed in line before the Solar Hot Water System to prevent calcium build up and reduced performance of the system.
- A predetermined location for the installation of the Solar Storage Tank and Solar Collectors.
- Tempering mixing valves, to avoid burns, are required at the outlet of the existing water heating system or at each faucet.
- All electrical installations must be grounded.
- Make sure all piping and all equipment is clean before filling or flushing (a non-foaming detergent may be used in the Solar Hot Water System, e.g. TSP) - See Commissioning Section.
- Carefully follow the instructions and labels during the connection of the units.

Optional Additional Components

Part Number	Description
DSCA-2M	SOLAR COLLECTOR, FP BLUE-A, 2M
MK-DSCA	MOUNTING KIT, 1 X DSCA
NA12142	FITTING, UNION, COMPRESSION 3/4"
254752	FITTING, ELBOW, COMPRESSION 3/4" THREADED
9702900	EXPANSION TANK, SOLAR LOOP, 6.6GAL/25L
45111.5 NA	CONTROLLER, SOLAR-A
4100170200RP	CORDSET
45722.1 NA	PUMPING STATION, SOLAR LOOP-A
45411.30 NA	PUMPING STATION, HXA
NA12141	FITTING, END-STOP, COMPRESSION
7611000	MOUNTING BRACKET, EXPANSION TANK, SOLAR LOOP-A
5400250100	EXPANSION TANK, HX-A 0.5GAL/2L
DGA-25	POLYPROPYLENE GLYCOL, DOWFROST HD, 6.6GAL/25L
NA3520-15	FLEXTUBE SET, INSULATED 1/2" WITH SENSOR WIRE - 50 FT/15M
NA12102	FITTING, FLEXTUBE, 3/4"
NA12133	MOUNTING BRACKET, FLEXTUBE, SET OF 4
NOTE: Reference to "A" in Description indicates that in larger systems multiples of these components may be used.	

Site Selection and Preparation

Prior to installation of a Domestic Solar Hot Water System Local Building Codes, Zoning Ordinances, Subdivision covenants and any other special regulations pertaining to the site should be consulted.

To find out what's needed for local compliance, contact the following:

Your local jurisdiction's zoning and building enforcement divisions

- Briefly describe your intended construction, asking for other relevant ordinances/codes that might be in effect.
- Find out if there are any additional local amendments or modifications to the regulations in effect.
- Ask how to determine whether you are located in a historic district, flood-plain area, or any other special category regulated by a government body.
- Ask where you may find pertinent ordinances/codes (local library, government office, etc.).
- Read pertinent sections of the regulations, making photocopies of information you wish to file for future review and design/installation analysis.

Homeowner's, subdivision, neighborhood, and/or community associations

- Ask if they have any ordinances, provisions, or covenants that may affect the design and installation of the system.
- Copy and file pertinent sections for reference.

City or Municipal Offices

- Required Building Permits and associated Inspections.

Location Considerations:

- You have determined the best south facing roof/mounting surface with no or minimum shading during the day. For maximum efficiency the solar collectors should be installed in a location where they can receive 8 hours of sunlight per day.
- The Solar Collector mounting surface is rated to withstand the weight of the components as

well as the Fluid.

- The condition of the mounting surface has been considered, i.e. the replacement of the shingles would result in the need to remove and reinstall the panels.
- You have allocated enough space for the Solar Hot Water System installation in the same location as you current water heating system.
- The age of the current water heating system

System Considerations:

- Your household main supply of potable water is supplied to your water heating system in accordance to applicable Plumbing Codes and Standards.
- You have installed your auxiliary electrical storage heating system to achieve standard temperatures to applicable Plumbing Codes.
- Electrical requirements are in accordance to Local and National Electrical Code.
- A mixing or tempering valve is present or needs to be added.
- Local plumbing code has been consulted to determine if additional plumbing is required on the domestic water supply.

SYSTEM INSTALLATION AREA

The location of the Solar Controller, pumping system and storage tanks can be planned in the same location as your current water heating system. The Dimplex Solar Hot Water System will require an area, in the same area as your current water heating system, which will allow for the 24" (61cm) diameter Solar Storage Tank with approximately 6" (15.2cm) diameter additional clearance, to enable easy access to monitor the system.

⚠ CAUTION: Protection against auto-ignition of combustibles: Combustible materials used in soar equipment and adjacent structures shall not be exposed to an elevated temperature that could cause ignition.

Installation Instructions

The Dimplex Solar Domestic Hot Water System is designed to be installed in series to your existing potable water heating system.

⚠ WARNING: This system is to be installed in accordance to Local Building Codes, Electrical Codes and National Roofing Contractors Association while following State/Provincial Health and Safety Standard practices.

! NOTE: For space allocation requirements see the Site Selection and Preparation section of this manual.

! NOTE: Stainless steel corrugated pipe is suggested for use but standard insulated potable compliant piping can be used.

! NOTE: Stainless steel corrugated piping is available as an optional accessory, in 50' (15.24m) lengths, with sensor wire and insulation.

! NOTE: If soldering rigid connections, ensure soldered connections meet potable water requirements and can withstand high temperatures. The Solar Storage Tank is heated through the circulation of the heated fluid (the type of fluid is dependent on the system that you have installed - Glycol or Distilled Water) through a heating coil located within the tank. The domestic potable water fills the tank which contains a temperature probe,

located at the bottom of the tank. The temperature difference is measured between the Solar Collectors and the Solar Storage tank and compared to the set point. If there is a temperature offset between the two the Solar Controller starts the Pumping Stations.

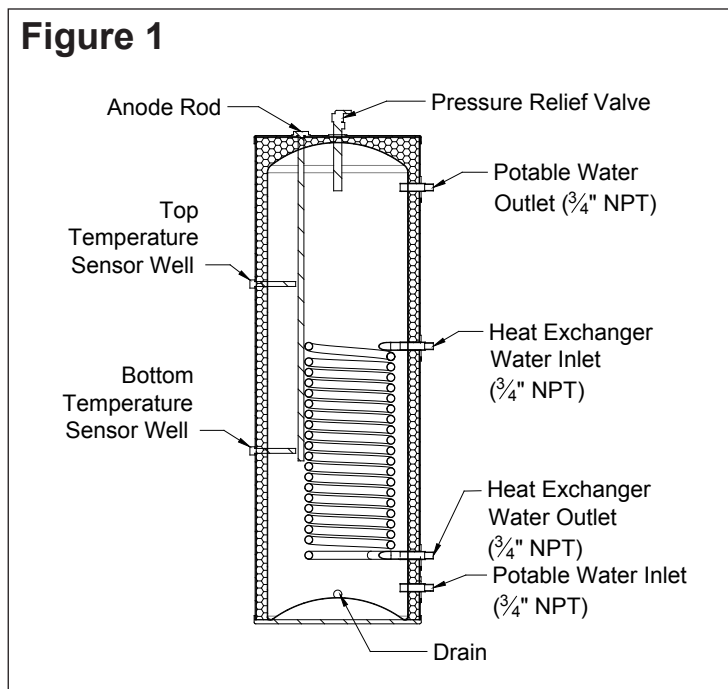
1. Using 3/4" MNPT fittings and either Stainless Steel Flexible/rigid or copper piping (not included), connect the Solar Pumping Station or HXA Pumping Station - depending on the type of system you have installed - to the Solar Storage Tank.

2. Install the temperature probe into the Temperature Sensor Well, at the bottom of the Solar Storage Tank. Insert the probe into the sensor well until it gently touches the end of the well.

! NOTE: The temperature probe will be inserted far enough in that there will be no need to secure them into the sensor well in the same fashion as on the Solar Collector.

! NOTE: Plumbing instructions for connecting the Solar Hot Water System to the household water supply are included in the Commissioning section.

⚠ CAUTION: The installer should ensure that the Solar Hot Water System is fully setup and functioning correctly before connecting the Solar Hot Water System to the Household water supply.



Commissioning

⚠ WARNING: The initial start-up must be carried out by a trained, qualified person and must be recorded in writing. The technical documentation must be kept with the equipment.

⚠ CAUTION: The installer should ensure that the Solar Hot Water System is fully setup and functioning correctly before connecting the Solar Hot Water System to the Household water supply.

Before proceeding to fill the system verify that all plumbing connections have been installed and tightened, all electrical connections have been made, all of the required flashing has been installed and all piping insulated with UV resistant insulation.

⚠ WARNING: This system is to be installed in accordance to applicable Plumbing Codes.

When installing the Dimplex Solar Water Heater system additional plumbing will need to be added to your existing water system. (Figure 2)

! NOTE: Depending on local plumbing codes the system may require the addition of a backflow preventer on the supply water inlet.

⚠ WARNING: If a backflow preventer is installed in the system an expansion vessel will also be required to allow for the changing volume/pressure within the closed system.

1. Pipe your potable water through an isolation valve to the inlet of the Solar Storage Tank (the

bottom fitting).

! NOTE: It is recommended that any systems with hard water have a water softener installed in line before the Solar Hot Water System to prevent calcium build up and subsequently reduce the performance of the system.

! NOTE: The cold water supply line to the Solar Storage tank should be insulated with R-4.2, 1" (2.5cm) thick, for a minimum distance of 5' (1.5m) or to the wall if it is less than 5' (1.5m).

2. Install an isolation valve on the outlet of the Solar Storage Tank and add a Tee connection to the existing piping into the existing water heating system.

3. Install an Anti-Scalding valve on the outlet of the backup water heating systems before distribution throughout the house.

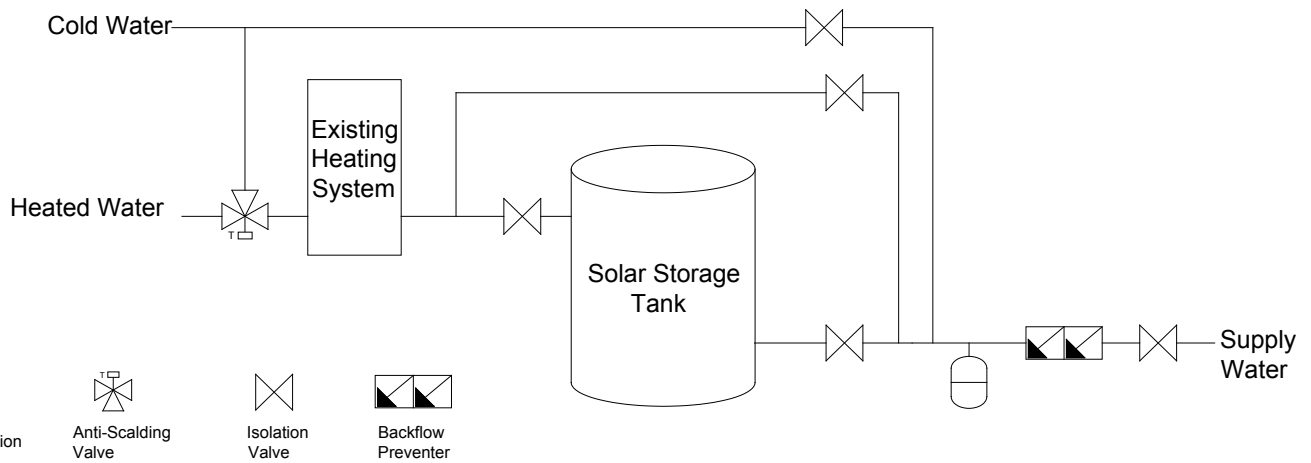
! NOTE: Anti-Scalding valves should be installed to reduce the point of use water temperature by mixing hot and cold water in branch water lines at the outlet of the heaters.

4. Close the bypass valve and open the isolation valves on either side of the Solar Hot Water System.

5. Open two faucets.

6. Open the main shut off valve and let the water run until full streams are coming out of both open water faucets. Close both faucets.

Figure 2



Commissioning

7. Actuate the pressure relief valve located on the top of the Solar Storage Tank and the Back-Up Heating System until water comes out of both, to ensure that they are full of water and free of air.

System Start Up

Once all of the piping has been filled with the associated liquid, and the system has been checked for leaks, the system can be started.


- Rotate all of the manual valves from the flushing and filling setting to the operational settings.
- Actuate the air separator to ensure that any accumulated air is removed.

! NOTE: If there is some air accumulated, open the air separator long enough to release the air. Then run the system for a little while and open it again to ensure that all of the air has been removed.

- Ensure that the Solar Controller is in automatic operation.
- Verify that covers (if used) have been removed from the solar collection panels.
- Verify that the main water supply has been turned back on.

- When the Solar Collector has been turned on and the system is running the pump icon



() should be On and turning in the bottom left hand corner and both of the pumps running.

After the system has been started (and the installer is satisfied that it is operating properly) complete the warranty registration, found at the end of this manual.

Operation

The Solar Storage Tank is equipped with a pressure relief valve. The activation pressure of the pressure relief valve is 29 psi (2 bar).

Although the valve is set for 29 psi (2 bar) as the pressure release, **the normal operation of the unit will be 14.5 psi (1 bar).**

⚠ WARNING: The supplied pressure relief valve must be permanently installed at the intended position of the Solar Storage Tank (Figure 3).

Maintenance

⚠ WARNING: Always completely disconnect the device from the power supply before performing maintenance or electrical work.

The Solar Hot Water System should be monitored on at least a monthly basis, by checking system pressures, flows and temperatures to ensure that they are within normal operating range. These ranges can be found in the Operation Section of the manual and the Warranty Sheet.

The entire system, both the Solar Heating system and the Back-up heating system, should be inspected on a yearly basis, Fall is suggested, to ensure proper operation and condition of each component.

⚠ WARNING: The components and liquid in the system can be hot and the risk of burning/scalding will be present.

Piping

There is no specific maintenance that is required for the piping. A visible inspection is all that is required. Ensure that there are no signs of leaking or large areas of rusting that could begin to leak, check that all of the insulation is present and access to the Solar Controller, pressure relief valves, and the connecting cables is ensured.

Storage Tanks

A visible inspection of the Storage Tanks, insulation, the insertion of the temperature probe(s) and the tightness of the fittings should be done on a yearly basis.

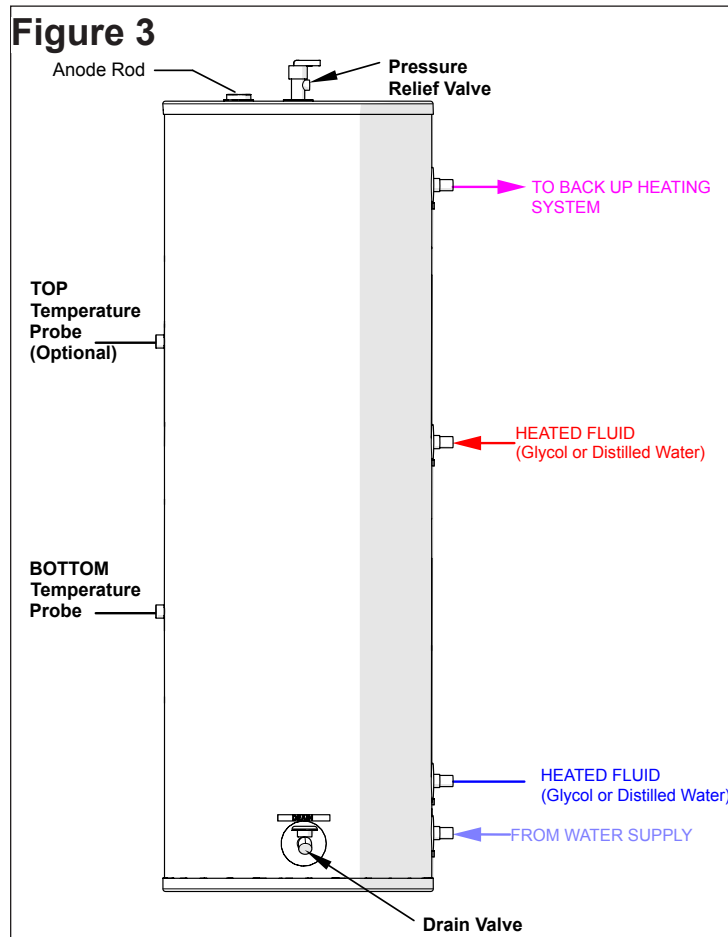
On a bi-annual basis the anodes within the tank will need to be replaced to ensure the maximum life and efficiency of the Solar Storage Tank. The system has been equipped with 2 replacement anodes.

Changing Anode Rod

1. Turn off the power or fuel to your Back-up Water Heating System.
2. Turn off power to the Solar Water Heater System.
3. Allow the water in both tanks to cool.

⚠ WARNING: The water in both of the tanks is hot enough that it could scald.

4. Close the Household Water isolation valve.
5. Turn on a hot water faucet to relieve pressure from the system.
6. Turn on another faucet, to allow air into the system.
7. Open the drain valve at the bottom of the Solar Storage Tank and drain approximately 2 gallons (7.5 liters) of water from the tank, so that when the rods are removed water does not splash out of the hole.
8. Unthread the Anode rod from top of tank. The rod may be rusted in place, the use of spray lubricant will assist in removing the rod.
9. Add sealant, pipe compound or Teflon tape, to the threads on the new anode, so that the threads are sealed from leaking. Ensure that there is allowance made for contact between the tank metal and the anode rod.





Maintenance

! NOTE: Test the installation with a volt meter, by ensuring that there is electrical continuity between the anode head and the pipe nipple.

10. Open the main shut off valve and let the water run until full streams are coming out of both open water faucets. Close both faucets.
11. Actuate the pressure relief valve located on the top of the Solar Storage Tank until water comes out, and all of the air has been removed.
12. Restore power and fuel to both of the water heating systems.

DIMPLEX NORTH AMERICA LIMITED - LIMITED WARRANTY FOR SOLAR PRODUCTS

Scope of limited warranty coverage

Dimplex North America Limited's ("Dimplex") limited warranty to the original purchaser ("you") of a product from the Dimplex product range set out below (each a "Product") is as follows (the "Warranty"): Subject to the terms and conditions set out below, Dimplex warrants that new Products shall be free from defects in workmanship and materials under normal and proper usage, maintenance and service for the warranty periods set out below (each, a "Warranty Period"). Upon expiration of the applicable Warranty Period, all liability of Dimplex in respect of the Warranties shall terminate.

Dimplex will extend the coverage of the Warranty and the duration of the Warranty as set out below provided that the you register for such extended warranty within 60 days from the date of installation of a Product by a Dimplex authorized dealer ("Dealer"). Registration for extended Warranty coverage may be made at: www.renewables.dimplex.com/solar_hot_water/warranty_registration.

Product	Catalogue Number	Warranty Period and Coverage	Extended Warranty Period and Coverage
Storage Tank, Solar HX, 53GAL/200L	DSTA-200	Warranty Period: 1 year. Coverage: parts and freight to Dealer.	Warranty Period: 6 years. Coverage: parts

The Warranty Period begins on the date of purchase as shown on your invoice or purchase receipt (as applicable).

Upon determination by Dimplex that a Product has manufacturing defects that substantially affect performance during the Warranty period under proper use, maintenance and service, the sole remedy available to you is for Dimplex, at its option, to either: (i) replace the applicable Product; (ii) replace non-performing components of the applicable Product; or (iii) make all necessary repairs or modifications to the applicable Product.

The Warranty applies to the original purchaser of a Product and is transferrable only to subsequent residents of the same address as such original purchaser. The Warranty may be subject to further limitations for purchases of Products made outside of the United States or Canada. Please consult your Dealer for further information regarding any such limitations.

What is not covered by this limited warranty?

The Warranty is void, does not apply under, and does not cover defects or damages to a Product resulting from any: (i) use with the applicable Product of components and/or parts that are not warranted by Dimplex; (ii) misuse, abuse, accident, negligence or alteration; (iii) improper installation of the applicable Product including, but not limited to, over-tightening of fittings, installation methods that are not in compliance with the applicable codes, regulations or ordinances of any applicable governmental authority, or installation that is otherwise not in accordance with Dimplex's installation and operating instructions; (iv) use of a Product for a purpose other than medium temperature (110 - 160°F / 43 - 70°C) domestic or residential water heating; (v) improper maintenance, storage, handling or operation of the applicable Product; (vi) clouding or condensation; (vii) chemicals, fluids or liquids that are not authorized or otherwise approved by Dimplex for with the applicable Product; (viii) freezing temperatures and other natural or extreme weather conditions; and/or (ix) fire or other factors or circumstances that are outside of Dimplex's control including, but not limited to, an Act of God.

The Warranty does not apply to and does not cover: (i) cosmetic damage including, without limitation, discoloration or glazing; or (ii) any breakage to any glass component of a Product. Further, the Warranty does not apply to and does not cover Products for which you do not have proper commissioning and maintenance records.

How to Make a Warranty Claim?

If you discover a defect in materials within the Warranty Period, you must promptly contact the Dealer to begin the Warranty claim process.

Making a Warranty claim will require the following:

- a completed Dimplex warranty claim form (which will be provided to you by the Dealer as part of the claim process);
- proof of purchase of the Product from a Dealer;
- digital pictures of the alleged defective in the Product(s);
- applicable commissioning and maintenance records; and
- such other supporting documentation and materials as Dimplex may require.

Additional conditions of this limited warranty?

You must submit all necessary information requested by Dimplex through the Dealer for Dimplex to assess your warranty claim. The Warranty will extend only to claims received by Dimplex before the end of the applicable Warranty Period. Product removal, reinstallation, and related costs and fees are excluded from the Warranty. All replaced Products will become Dimplex's property and the replacement Product(s) becomes your property. The replacement Product shall be warranted for the balance of the period remaining on the original Product

What Dimplex will do in the event of a valid warranty claim?

Upon determination by Dimplex that a Warranty claim is valid, Dimplex shall deliver repaired or replaced Product(s) or components to the Dealer, freight pre-paid by Dimplex. Where the Warranty covers labour (as set out above), Dimplex shall also be responsible for the costs of the Dealer's labour for [the installation of any repaired or replaced Products or components] All other costs of removal and/or re-installation of the Product(s) or components associated with Dimplex's Warranty services including, but not limited to, any additional labour, shipping duty or other charges, shall be borne by you.

Limitations of this limited warranty and what Dimplex is not responsible for

THE WARRANTY IS YOUR EXCLUSIVE WARRANTY AND CONSTITUTES THE SOLE LIABILITY OF DIMPLEX TO YOU FOR ALL PRODUCTS. DIMPLEX HEREBY DISCLAIMS ALL OTHER REPRESENTATIONS, WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF EXPRESS OR IMPLIED WARRANTIES, SO THE FOREGOING EXCLUSIONS MAY NOT APPLY TO YOU. IN THAT EVENT, ALL EXPRESS AND IMPLIED WARRANTIES ARE THEN LIMITED TO THE WARRANTY PERIOD SET OUT ABOVE.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, IN NO EVENT WILL DIMPLEX, OR ITS DIRECTORS, OFFICERS, OR AGENTS, BE LIABLE TO YOU OR ANY THIRD PARTY, WHETHER IN CONTRACT, IN TORT, OR ON ANY OTHER BASIS, FOR ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY, CONSEQUENTIAL, OR INCIDENTAL LOSS, COST, OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH THE SALE, MAINTENANCE, USE, OR INABILITY TO USE THE PRODUCT, EVEN IF DIMPLEX OR ITS DIRECTORS, OFFICERS, OR AGENTS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS OR DAMAGES, OR IF SUCH LOSSES, COSTS, OR DAMAGES ARE FORESEEABLE. IN NO EVENT WILL DIMPLEX, OR ITS OFFICERS, DIRECTORS, OR AGENTS BE LIABLE FOR ANY DIRECT LOSSES, COSTS, OR DAMAGES THAT EXCEED THE PURCHASE PRICE OF THE PRODUCT. AS SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS OR EXCLUSION MAY NOT APPLY TO YOU.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

Miscellaneous

The division of this document into sections and the insertion of headings are for convenience of reference only and do not affect the construction or interpretation of this document. Each section of this document is distinct and severable. If any section of this document, in whole or in part, is or becomes illegal, invalid, void, voidable or unenforceable in any jurisdiction by any court of competent jurisdiction, the illegality, invalidity or unenforceability of that section, in whole or in part, will not affect: (i) the legality, validity or enforceability of the remaining sections of this document, in whole or in part; or (ii) the legality, validity or enforceability of that section, in whole or in part, in any other jurisdiction. The failure of Dimplex to exercise or enforce any right or provision of this document shall not operate as a waiver of such right or provision. This document is governed by, and is to be construed and interpreted in accordance with, the laws of the Province of Ontario and the laws of Canada applicable in that Province. The United Nations Convention on Contracts for the International Sale of Goods (also called the Vienna Convention, and which is cited in the statutes of Canada as the International Sale of Goods Contracts Convention Act) will not apply to this Agreement or the transactions contemplated by this Agreement.



Dimplex North America Limited

1367 Industrial Road

Cambridge ON

Canada N1R 7G8

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