



# SUPER - NUOVA<sup>+</sup> Hot Plates, Stirrers and Stirring Hot Plates

## Operating Manual

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# Models

This manual covers the models shown below.

**Table 1. Models**

<b>Model</b>	<b>Voltage</b>	<b>Description</b>
HP88857190	100 -120 V	7 x 7 Ceramic Hot Plate
HP88857195	220 - 240 V	7 x 7 Ceramic Hot Plate
S88857190	100 - 120 V	7 x 7 Ceramic Stirrer
S88857195	220 - 240 V	7 x 7 Ceramic Stirrer
SP88857190	100 - 120 V	7 x 7 Ceramic Stirring Hotplate
SP88857195	220 - 240 V	7 x 7 Ceramic Stirring Hotplate
HP88857194	100 - 120 V	7 x 7 Aluminium Hot plate
HP88857198	220 - 240 V	7 x 7 Aluminium Hot plate
SP88857194	100 -120 V	7 x 7 Aluminium Stirring Hotplate
SP88857198	220 - 240 V	7 x 7 Aluminium Stirring Hotplate
HP88850190	100 - 120 V	10 x10 Ceramic Hot Plate
HP88850195	220 - 240 V	10 x10 Ceramic Hot Plate
S88850190	100 - 120 V	10 x10 Ceramic Stirrer
S88850195	220 - 240 V	10 x10 Ceramic Stirrer
SP88850190	100 - 120 V	10 x10 Ceramic Stirring Hotplate
SP88850195	220 - 240 V	10 x10 Ceramic Stirring Hotplate

# Safety Information

## Alert Signals



**WARNING:** Warnings alert you to a possibility of personal injury.



**CAUTION:** Cautions alert you to a possibility of damage to the equipment.

**Note:** Notes alert you to pertinent facts and conditions.



**HOT SURFACE:** Hot surfaces alert you to a possibility of personal injury if you come in contact with a surface during use or for a period of time after use.

**Note:** The SUPER-NUOVA<sup>+</sup> hot plates are not explosion proof. If explosion proof models are required, contact Customer Service at 1-800-553-0039 for more information.



**WARNING:** Refer servicing to qualified personnel.

Your Thermo Scientific SUPER-NUOVA<sup>+</sup> hot plate, stirrer or stirring hot plate has been designed with function, reliability, and safety in mind. It is your responsibility to install it in conformance with local electrical codes. For safe operation, please pay attention to the alert signals throughout the manual.



**WARNING:** These products should be used only under the operating conditions specified in the Operating Manual. Always use safe laboratory practices and do not leave the unit in operation while unattended as product functionality or laboratory practice failures could occur that might lead to uncontrolled or excessive heating of the top surface. Safety procedures (including, but not limited to, unplugging when not in use) and response plans should be put in place to address the worst case possibility.



If an over-temperature failure occurs, the top surface temperature could rise to the maximum temperature (300-450°C depending on your model's specification) and remain at that temperature indefinitely. Under these conditions, the material being heated on the surface of the hotplate could reach levels in excess of the maximum temperature.

This manual contains important operating and safety information. The user must carefully read and understand the contents of this manual prior to the use of this equipment.

## Warnings

### To avoid electrical shock, always:



- Use a properly grounded electrical outlet of correct voltage and current handling capacity.
- Disconnect from the power supply prior to maintenance and servicing.

### To avoid personal injury



- Do not use in the presence of flammable or combustible materials — fire or explosion may result. This device contains components which may ignite such materials. Not rated for use in hazardous atmospheres.
- Use caution when heating volatile materials; top surface and element can reach the “Flash Point Temperature” of many chemicals. These hot plates are not explosion proof. Fire or explosion may result. Unit contains components which may ignite such materials.
- Keep top surface clean. Use a non-abrasive cleaner. Alkali spills, hydrofluoric acid spills or phosphoric acid spills may damage top and lead to thermal failure. Unplug unit and remove spills promptly. Do not immerse unit for cleaning.



- Replace the top immediately if damaged by etching, scratching or chipping. A damaged top can break in use.
- Do not use metal foil on hot plate which may block air flow. Overheating will result.
- Check and tighten the removable cord periodically making sure it is secure. If loosened, the cord could become hot and/or spark and be a potential fire hazard. If cord appears damaged, replace immediately. If cord is repeatedly loosened it is recommended to purchase the power cord.
- Do not remove or modify grounded power plug. Use only properly grounded outlets to avoid shock hazard.
- Use appropriate hand and eye protection when handling hazardous chemicals.
- Gross weight of items placed on top of hot plates should not exceed 35 lbs (15.9 kg) on the 10" x 10" models and 25 lbs (11.3 kg) on the 7" x 7" models.
- "Caution Hot Top. Avoid Contact." The top plate of the unit can remain hot for some time after use. A "CAUTION-HOT TOP" light will remain on until top plate temperature cools to below 50°C.
- Do not leave an active probe out of the fluid. This may cause uncontrolled heating of the fluid on the hot plate and unintentional boiling or an explosion could occur.
- Localized heater element temperature can be significantly higher than the temperature indicated on the display. If flammable concentrations reach internal element, a fire could result.
- Note that the exterior housing will be hot during and for a period of time after use.
- Refer servicing to qualified personnel.



# Información de seguridad

## Señales de alerta



**Advertencia:** Las advertencias le alertan de la posibilidad de lesiones personales.



**Precaución:** Precauciones le alerta de posibilidades de daños en el equipo.

**Nota:** Las notas le alertan sobre información y condiciones pertinentes.



**Superficie caliente:** Las superficies calientes le alertan de la posibilidad de lesiones personales si tiene contacto con la superficie durante su uso o después de un determinado periodo de tiempo.

Su Plancha Caliente de Agitación Thermo Scientific SUPER-NUOVA<sup>+</sup> fue diseñada con la función, la fiabilidad y la seguridad en mente. Para su instalación es su responsabilidad hacerlo en conformidad con los códigos eléctricos locales. Para su seguro funcionamiento, por favor, preste atención a las señales de alerta especificados en el manual.



**Advertencia:** Estos productos deben ser usados siguiendo las condiciones de operación especificadas en el Manual de Operación. Siempre use prácticas seguras de laboratorio y no deje la plancha de calentamiento en funcionamiento sin vigilancia ya que puede haber cualquier falla en la funcionalidad del producto o en la práctica de laboratorio que podría conducir a un calentamiento incontrolado o excesivo de la superficie superior.



**Advertencia:** Se deben poner en marcha los procedimientos de seguridad (incluyendo, pero no limitado a, desconectar cuando no está en uso) y los planes de respuesta para hacer frente en el peor de los escenarios. Si se produce un fallo de exceso de temperatura, la temperatura de la superficie superior podría elevarse a una temperatura máxima de (300-540°C dependiendo de las especificaciones de su modelo) y permanecer a esa temperatura indefinidamente. En estas condiciones, el material se calienta en la superficie de la plancha calefactora que podría alcanzar niveles que superen la temperatura máxima permitida.

Este manual contiene información importante acerca del funcionamiento y seguridad. Antes de utilizar el equipo el usuario debe leer cuidadosamente y entender el contenido de este manual.

## Advertencias

### Para evitar descarga eléctrica, siempre:



- Utilice una toma eléctrica con polo a tierra con la correcta tensión y la capacidad de manejo de corriente.
- Desconecte de la red eléctrica antes de hacer cualquier mantenimiento y/o reparación.

### Para evitar lesiones personales:



- No utilizar cerca de materiales inflamables o combustibles - podría conllevar a un incendio o una explosión. Este dispositivo contiene componentes que pueden encender estos materiales. No está clasificado para ser usado en entornos peligrosos.



- Tenga cuidado al calentar materiales volátiles; la superficie superior y el elemento puede alcanzar a una "Temperatura Punto de inflamación" de muchos productos químicos. Estas planchas no son a prueba de explosiones. Podría producirse un incendio o una explosión. La unidad contiene componentes que pueden encender estos materiales.
- Mantenga limpia la parte superior superficie. Use un limpiador no abrasivo. Los vertidos alcalinos, los derrames de ácido fluorhídrico o derrames de ácido fosfórico pueden dañar la parte superior y conllevar a una insuficiencia térmica. Desconecte la unidad y elimine los derrames de inmediato. No sumerja la unidad en líquidos para su limpieza.
- Reemplace la tapa inmediatamente si está dañada por el efecto de los químicos, rayado o astillado. Una tapa dañada puede romperse durante su uso.
- No utilice papel de aluminio en la plancha caliente este puede bloquear el flujo de aire dando lugar a un sobrecalentamiento.
- Se debe revisar y apretar el cable desmontable periódicamente para asegurarse de que es seguro. Si está aflojado, el cable se podría calentar y/ o provocar chispas siendo un peligro potencial de incendio. Sustituya el cable inmediatamente si el cable está dañado. Si el cable se afloja continuamente se recomienda comprar el cable de energía eléctrica.
- No retire o modifique el enchufe con polo a tierra. Utilice sólo enchufes con polo a tierra para evitar el riesgo de descarga eléctrica.
- Utilice la protección adecuada para manos y ojos al manipular productos químicos peligrosos.



- El peso bruto de los objetos que se pongan en la parte superior de las planchas calientes no debe exceder las 35 libras. (15,9 kg) En los modelos 10" x 10", 25 libras. (11.3 kg) en los modelos 7" x 7".
- "Precaución: Hot Top. Evite el contacto. "La placa superior de la unidad puede permanecer caliente durante algún tiempo después de su uso. Una luz de "PRECAUCIÓN - HOT TOP" permanecerá encendida hasta que la temperatura plancha superior se enfríe por debajo de los 50°C.
- No deje una sonda activa fuera del fluido. Esto puede causar un calentamiento incontrolado del fluido en la plancha caliente y podría producirse una ebullición o una explosión.
- El elemento de temperatura del calentador localizado puede ser significativamente mayor que la temperatura indicada en la pantalla. Si las concentraciones inflamables alcanzan algún componente interno, podrían provocar un incendio.
- Debe tener en cuenta que la carcasa exterior permanecerá caliente durante su uso y por un periodo de tiempo después de su uso.
- Siempre solicite los servicios del personal cualificado.

# Sicherheitshinweise

## Gefahrensymbole



**Warnung:** Eine Warnung weist Sie auf die Möglichkeit einer -Verletzung hin.



**Vorsicht:** Das Symbol Vorsicht weist Sie auf die mögliche Beschädigung der Ausrüstung hin.

**Hinweis:** Hinweise weisen Sie auf einschlägige Fakten und Bedingungen hin.



**Heiße Oberfläche:** Das Symbol heiße Oberfläche weist Sie auf das Risiko von Verletzungen hin, sollten Sie während des Betriebs oder für einen bestimmten Zeitraum danach in Kontakt mit einer Oberfläche kommen.

Ihre Thermo Scientific SUPER-NUOVA+ Rühr- Heizplatte wurde unter den Gesichtspunkten der Funktionalität, Zuverlässigkeit und Sicherheit entworfen. Es obliegt Ihrer Verantwortung diese in Übereinstimmung mit den örtlichen elektrischen Vorschriften zu installieren. Für einen sicheren Betrieb beachten Sie bitte die Gefahrensymbole in der gesamten Bedienungsanleitung.



**Warnung:** Diese Produkte sollten nur unter den in der Betriebsanleitung angegebenen Betriebsbestimmungen eingesetzt werden. Wenden Sie immer sichere Laborpraktiken an und lassen Sie die Heizplatte nicht eingeschaltet, während diese unbeaufsichtigt ist, da das Fehler der Produktfunktionalität oder der Laborpraktiken zu unkontrollierter oder übermäßiger Erwärmung der Oberfläche führen kann.



**Warnung:** Sicherheitsverfahren (einschliesslich, aber nicht beschränkt auf das Ziehen des Netzsteckers bei Nichtgebrauch) und Reaktionspläne sollten erstellt werden, um auf den Ernstfall vorbereitet zu sein. Wenn eine Störung zu einer Überhitzung führt, könnte die Oberflächentemperatur auf die Maximaltemperatur ansteigen (300-540°C, je nach Modellspezifikation) und für unbestimmte Zeit auf dieser Temperatur verbleiben. Unter diesen Bedingungen kann das zu erheizende Material an der Oberfläche der Heizplatte eine höhere Temperatur als die Höchsttemperatur erreichen.

Dieses Handbuch enthält wichtige Bedienungs- und Sicherheitshinweise. Der Benutzer muss dieses Handbuch sorgfältig durchlesen und die Inhalte vor der Verwendung dieses Geräts verstehen.

## Warnungen

### Zur Vermeidung von Stromschlag, immer:



- Eine ordnungsgemäß geerdete Steckdose verwenden, welche auf die korrekte Spannung und Strombelastbarkeit ausgelegt ist.
- Das Gerät vor der Wartung und Reparatur von der Stromversorgung abtrennen.

### Um Verletzungen zu vermeiden:



- Nicht in der Nähe von entzündlichen oder brennbaren Materialien verwenden - es besteht Brand- oder Explosionsgefahr. Dieses Gerät enthält Komponenten, die solche Materialien entzünden können. Nicht für den Einsatz in Bereichen freigegeben, in denen Explosionsgefahr besteht.

## Um Verletzungen zu vermeiden:



- Vorsicht beim Erhitzen flüchtiger Materialien. Die Oberfläche und das Element können die Temperatur des "Entflammungspunkts" vieler Chemikalien erreichen. Die Heizplatten sind nicht explosionsgeschützt. Dies kann zu einem Brand oder einer Explosion führen. Dieses Gerät enthält Komponenten, die solche Materialien entzünden können.
- Halten Sie die Oberfläche sauber. Verwenden Sie ein nicht scheuerndes Reinigungsmittel. Leckagen von Alkali, Flußsäure oder Phosphorsäure können die Oberfläche beschädigen und zum Ausfall der Heizkomponenten führen. Ziehen Sie den Netzstecker der Einheit und entfernen Sie Leckagen unverzüglich. Nicht zur Reinigung in Flüssigkeiten eintauchen.
- Ersetzen Sie die Oberfläche sofort, falls es durch Verätzungen, Kratzer oder Absplitterungen beschädigt ist. Eine beschädigte Oberfläche kann während dem Gebrauch brechen.
- Verwenden Sie keine Metallfolie auf der Heizplatte, welches den Luftstrom blockieren kann. Das kann Überhitzung zur Folge haben.
- Überprüfen und ziehen Sie das abnehmbare Kabel regelmäßig an und gewährleisten, dass es sicher ist. Wenn gelockert, kann das Kabel heiß werden und/oder Funken schlagen und eine potentielle Brandgefahr darstellen. Wenn das Kabel beschädigt erscheint, sofort ersetzen. Wenn das Kabel sich wiederholt lockert, wird es empfohlen, das Netzkabel zu kaufen.
- Den geerdeten Netzstecker nicht entfernen oder modifizieren. Verwenden Sie nur geerdete Steckdosen, um einen Stromschlag zu vermeiden.
- Benutzen Sie geeigneten Hand und Augenschutz beim Umgang mit gefährlichen Chemikalien.
- Das Bruttogewicht der Gegenstände, die auf die Heizplatten gegeben werden sollte 15,9 kg nicht überschreiten (35 lbs). Auf den 10 Zoll x 10 Zoll Modellen, 11,3 kg (25 lbs) auf den 7 Zoll x 7 Zoll Modellen.
- "Vorsicht: Heiße Oberfläche. Kontakt vermeiden." Die obere Heizplatte des Geräts kann für einige Zeit nach der Benutzung heiß bleiben. Eine Warnleuchte "ACHTUNG - HEISSE OBERFLÄCHE" wird aufleuchten bis die Temperatur der oberen Heizplatte auf unter 50°C abkühlt.
- Lassen Sie keine Flüssigkeit aus der aktiven Probe entweichen. Dies kann eine unkontrollierte Erwärmung der Flüssigkeit auf der Heizplatte zur Folge haben und ein unbeabsichtigtes Sieden oder eine Explosion verursachen.
- Die lokalisierte Heizelementtemperatur kann wesentlich höher sein als die Temperatur die auf dem Display angegeben ist. Wenn brennbare Mischungen innenliegende Elemente erreichen, könnte dies zu einem Brand führen.
- Beachten Sie, dass das Außengehäuse während dem Gebrauch und eine gewisse Zeit danach heiß ist.
- Kontaktieren Sie für alle Wartungsarbeiten qualifiziertes Servicepersonal.

# Informations de sécurité

## Signaux d'alerte



**Avertissement:** Les avertissements vous alertent de la possibilité de blessures corporelles.



**Mise en garde:** Les mises en garde vous avertissent de la possibilité d'endommagement de l'équipement.

**Remarque:** Les remarques vous alertent de conditions et de faits pertinents.



**Surface chaude:** Les surfaces chaudes vous avertissent de la possibilité de blessures corporelles, si vous entrer en contact avec une surface en cours d'utilisation ou pour une période de temps après l'utilisation.

Votre Plaque Chauffante Agitatrice SUPER-NUOVA+ Thermo-Scientifique a été conçue, tout en ayant à l'esprit: la fonction, la fiabilité et la sécurité. Il est de votre responsabilité de l'installer en conformité aux codes électriques locaux. Pour un fonctionnement en toute sécurité, veuillez prêter attention aux signaux d'alerte mentionnés à travers le manuel.



**Avertissement:** Ces produits ne devraient être utilisés que dans des conditions d'utilisation spécifiées dans le manuel d'utilisation. Employer toujours des pratiques de laboratoire sûres et ne laissez pas la plaque chauffante fonctionner sans surveillance puisque des défaillances de fonctionnement du produit ou de pratique de laboratoire pourraient survenir et conduire à un chauffage incontrôlé ou excessif de la surface supérieure. Des procédures de sécurité (y compris, mais non limité au débranchement lorsqu'il n'est pas en cours d'utilisation) et des plans d'intervention devraient être mis en place pour résoudre le pire des scénarios. Si une panne de surchauffe se produit, la température de la surface supérieure pourrait augmenter jusqu'à la température maximale (300-540°C, en fonction des spécifications de votre modèle) et demeurer indéfiniment à cette température. Dans ces conditions, le matériel chauffé sur la surface de la plaque chauffante pourrait atteindre des niveaux au-delà de la température maximale.

Ce manuel contient d'importantes informations relatives au fonctionnement et à la sécurité. L'utilisateur doit attentivement lire et comprendre le contenu de ce manuel avant d'utiliser cet équipement.

## Avertissements

### Pour éviter tout risque de choc électrique, toujours:



- Utiliser une prise électrique correctement mise à la terre avec une tension et capacité de gestion du courant correctes.
- Débrancher de la source d'alimentation, avant de procéder à l'entretien et la maintenance.

### Pour éviter les blessures



- Ne pas utiliser en présence de matériaux inflammables ou combustibles - cela peut entraîner un incendie ou une explosion. Cet appareil contient des composants qui peuvent enflammer ces matériaux. Ne pas utiliser dans des lieux dangereux.
- Faire preuve de prudence lors du chauffage de matériaux volatils; la surface supérieure et l'élément.
- Garder propre la surface supérieure. Utiliser un produit de nettoyage non abrasif. Les déversements alcalis, les déversements d'acide fluorhydrique ou les déversements d'acide phosphorique peuvent endommager la partie supérieure et conduire à une défaillance thermique. Débrancher l'appareil et enlever rapidement les déversements. Ne pas plonger l'unité dans de l'eau pour le nettoyer.
- Remplacer immédiatement la partie supérieure, si elle est endommagée par une attaque chimique, une rayure ou un écaillage. Une partie supérieure endommagée peut tomber en passe en cours d'utilisation.
- Ne pas utiliser la feuille de métal sur la plaque chaude, cela peut bloquer la circulation d'air. Une surchauffe pourra se produire.



- Vérifiez et serrez périodiquement la corde amovible afin d'assurer sa sécurisée. Si la corde se desserre, elle va devenir chaude et/ou produire de l'étincelle et aussi devenir un risque d'incendie potentiel. S'il y a des endommagements, on doit remplacer la corde immédiatement. Si la corde se desserre plusieurs fois, on vous recommande d'acheter la corde d'alimentation.
- Ne pas retirer ou modifier la fiche d'alimentation mise à la terre. Utiliser uniquement des prises mises à la terre correctement, afin d'éviter tout risque de choc électrique.
- Utiliser des lunettes et des gants de protection, lors de la manipulation de produits chimiques dangereux.
- Le poids brut des éléments placés sur la partie supérieure des plaques chauffantes ne doit pas dépasser 35 lbs (15,9 Kg) sur les modèles 10" x 10", 25 lbs (11,3 Kg) sur les modèles 7" x 7".
- "Mise en garde: Partie supérieure Chaude. Éviter tout contact." La partie supérieure de la plaque de l'unité peut rester chaude pendant un certain temps après utilisation. Un témoin "ATTENTION - PARTIE SUPÉRIEURE CHAUDE" restera allumé jusqu'à ce que la température de la partie supérieure de la plaque descende en-dessous de 50°C.
- Ne pas laisser de sonde active hors du liquide. Cela peut provoquer un réchauffement incontrôlé du liquide sur la plaque chaude et une ébullition involontaire ou une explosion pourraient se produire.
- La température de l'élément chauffant localisé peut être sensiblement plus élevée que la température indiquée sur l'affichage. Si des concentrations inflammables atteignent l'élément interne, un incendie pourrait se produire.
- Notez que le boîtier extérieur sera chaud pendant et pour une période de temps après utilisation.
- S'adresser à un personnel qualifié pour la maintenance.

# Informação de Segurança

## Sinais de Aviso



**Aviso:** Os avisos alertam para a possibilidade de ferimentos pessoais.



**Cuidado:** Os sinais de cuidados alertam para a possibilidade de danos no equipamento.

**Nota:** As notas alertam para factos e condições pertinentes.



**Superfície Quente:** Os sinais de superfície quente alertam para a possibilidade de ferimentos pessoais se entrar em contacto com uma superfície durante a utilização ou por um período de tempo após a utilização.

A sua Chapa Eléctrica SUPER-NUOVA<sup>+</sup> Térmica foi desenhada com funcionalidade, confiança e segurança em mente. É sua responsabilidade instalar de acordo com os regulamentos eléctricos locais. Para operação segura, preste atenção aos sinais de alerta presentes no manual.



**Aviso:** Estes produtos devem ser unicamente utilizados sob as condições de operação especificadas no Manual de Utilização. Siga sempre todas as práticas de laboratório seguras e não deixe a chapa eléctrica em funcionamento sem supervisão, uma vez que a funcionalidade do produto ou falhas de práticas de laboratório podem ocorrer e conduzir ao aquecimento não controlado ou excessivo na superfície superior. Os procedimentos de segurança (incluindo, mas não limitado a, desligar da ficha quando não estiver em utilização) e planos de resposta devem ser postos em prática no pior caso possível. Em caso de falha de sobreaquecimento, a temperatura da superfície superior pode aumentar para a temperatura máxima (300 - 540°C dependendo das especificações do seu modelo) e manter-se na mesma durante um tempo indefinido. Sob estas condições, o material a ser aquecido na superfície da chapa pode alcançar níveis excessivos de temperatura.

Este manual contém informação de operação e segurança importante. O utilizador deve ler atentamente e compreender os conteúdos deste manual antes de utilizar o equipamento.

## Avisos

### Para evitar choque eléctrico:



- Utilize sempre uma tomada eléctrica aterrada com a voltagem e capacidade de manuseamento de corrente correctas.
- Desligue sempre a alimentação antes da manutenção e assistência.

### Para evitar ferimentos pessoais:



- Não utilize na presença de materiais combustíveis ou inflamáveis - poderá resultar em incêndio e explosão. Este dispositivo contém componentes que podem incendiar esses materiais. Não aprovado para utilização em atmosferas perigosas.
- Tenha cuidado quando aquecer materiais voláteis; a superfície e elemento superiores podem alcançar a "Temperatura de Ponto de Incêndio" de muitos químicos. Estas chapas eléctricas não são à prova de explosão. Poderá resultar em incêndio ou explosão. A unidade contém componentes que.
- Mantenha a superfície superior limpa. Utilize um detergente não abrasivo. Derramamentos de alcalinos, ácidos hidrofluóricos ou ácidos fósforos podem danificar a superfície e conduzir a falha termal. Desligue a unidade da tomada e limpe os derramamentos de imediato. Não mergulhe a unidade para limpeza.
- Substitua a superfície de imediato se danificada por cauterização, arranhões ou lascas. A superfície pode partir durante a utilização.
- Não utilize folha de metal na chapa, pois poderá bloquear o fluxo de ar. Poderá resultar em sobreaquecimento.



- Verifique e aperte o cabo removível periodicamente para ter certeza que está seguro. Caso esteja frouxo, o cabo poderá se aquecer e/ou soltar faíscas, gerando perigo de incêndio. Se o cabo parecer danificado, substitua-o imediatamente. Se o cabo se afrouxar com frequência, é recomendada a aquisição do cabo de alimentação.
- Não retire nem modifique a ficha de alimentação aterrada. Utilize unicamente tomadas correctamente aterradas para evitar perigo de choque eléctrico.
- Utilize protecção de mãos e olhos quando manusear químicos perigosos.
- O peso bruto dos produtos colocados em cima da chapa não deve exceder os 35 lbs (15.9 kg) em modelos 10" x 10", 25 lbs (11.3 kg) em modelos 7" x 7".
- "Cuidado: Topo Quente. Evite Contacto." A chapa superior da unidade pode permanecer quente durante algum tempo após a utilização. A luz "CUIDADO - TOPO QUENTE" irá permanecer ligada até a temperatura descer abaixo dos 50°C.
- Não deixe um estilete activo fora do fluido. Isto poderá causar aquecimento descontrolado do fluido na chapa e poderá resultar em fervura ou explosão não intencional.
- A temperatura de elemento de aquecimento localizada pode ser significativamente superior à temperatura indicada no ecrã. Se as concentrações inflamáveis alcançarem o elemento interno, poderá resultar em incêndio.
- Note que o revestimento exterior estará quente durante a utilização e após a mesma.
- Refira a assistência ao pessoal qualificado.



# Информация по безопасности

## Сигналы тревоги



**Предупреждение:** Символы предупреждения указывают на возможность получения травмы.



**Осторожно:** Символы осторожно указывают на возможность повреждения оборудования.

**Примечание:** Примечания указывают на соответствующие факты и условия.



**Горячая поверхность:** Символ горячей поверхности предупреждает о возможности получения травмы, если вы вступите в контакт с поверхностью во время использования или в течение периода времени после использования.

Ваша термо нагревательная плита была разработана с функцией надежности и безопасности. Вам необходимо установить ее в соответствии с местными нормативами. Для безопасной эксплуатации, пожалуйста, обратите внимание на сигналы тревоги по всему руководству.



**Предупреждение:** Данные продукты следует использовать только в рабочих условиях, указанных в руководстве по эксплуатации. Всегда следуйте технике безопасности и не оставляйте работающую плиту без присмотра, так как функциональность продукта или несоблюдение техники безопасности может привести к неконтролируемому или чрезмерному нагреву верхней поверхности. Техника безопасности (включая, но не ограничиваясь, отсоединение от розетки, во время, когда плита не используется) и планы реагирования должны быть приняты для решения крайней необходимости.



Если происходит сбой из-за перегрева, температура верхней поверхности может подняться до максимальной температуры (300-540°C в зависимости от спецификации вашей модели) и оставаться при этой температуре в течение длительного времени. В этих условиях, продукты, нагреваемые на поверхности плиты, могут достичь уровня выше максимальной температуры.

Это руководство содержит важную операционную информацию и информацию по безопасности. Пользователь должен внимательно прочитать и понять содержание данного руководства перед началом использования данного оборудования.

## Предупреждения

**Во избежание поражения электрическим шоком, всегда:**



- Используйте правильно заземленную розетку соответствующего напряжения и пропускной способностью тока.
- Отсоединяйте от источника питания перед обслуживанием и сервисом.

**Во избежание получения травмы:**



- Не используйте возле легко воспламеняющихся или горючих материалов – это может привести к ожогу или взрыву. Это устройство содержит компоненты, которые могут воспаленить эти материалы. Не предназначено для использования в опасной атмосфере.
- Будьте внимательны при нагревании летучих веществ; верхняя поверхность и элемент могут достигнуть "температуры вспышки" многих химических веществ. Данные нагревательные плиты не взрывозащищенные. Это может привести к пожару или взрыву. Блок содержит компоненты, которые могут воспаленить эти материалы.



- Держите верхнюю поверхность в чистоте. Используйте неабразивный очиститель. Елочные растворители, растворители с содержанием фтористоводородной кислоты или фосфорной кислоты могут повредить верхний слой и привести к термическим повреждениям. Отключайте устройство и тщательно удаляйте растворители. Не опускайте прибор в воду для чистки.
- Немедленно замените верхнюю поверхность, если она повреждена в результате травления, царапин или обкалывания. Поврежденная верхняя поверхность может сломаться во время использования.
- Не используйте металлическую фольгу на нагревающей плите, это может локализовать поток воздуха и привести к перегреву.
- Проверить и заменить съемный кабель, в процессе проверяя безопасность. Если кабель слабо затянут, то он может нагреваться или искрить, что может быть причиной возгорания. Если кабель поврежден, его необходимо немедленно заменить. Если кабель постоянно слабо затянут, то рекомендуется приобрести кабель питания.
- Не удаляйте или не изменяйте заземленную вилку. Используйте только правильно заземленные розетки, чтобы избежать поражения электрическим током.
- Используйте соответствующие защитные средства для рук и глаз при работе с опасными химическими веществами.
- Общий вес предметов, помещаемых на плиту, не должен превышать 35 фунтов (15,9 кг) на 10" x 10" модели, 25 фунтов (11,3 кг) на 7" x 7" модели.
- "Осторожно: Горячая поверхность. Избегайте контакта." Верхняя плита блока может оставаться горячей некоторое время после использования. Надпись "ОСТОРОЖНО – ГОРЯЧАЯ ПОВЕРХНОСТЬ" будет гореть до тех пор, пока температура верхней плиты не остынет до температуры ниже 50°C.
- Не оставляйте активную емкость с чрезмерным количеством жидкости. Это может привести к неконтролируемому нагреву жидкости на горячей плите и непреднамеренному кипению или взрыву.
- Локализованная температура нагревательного элемента может быть значительно выше, чем температура, указанная на дисплее. Если горючие концентрации достигают внутреннего элемента, это может привести к пожару.
- Необходимо принять во внимание, что внешний корпус будет горячим во время и в течение периода времени после использования.
- За сервисным обслуживанием обращайтесь к квалифицированному персоналу.

# General Specifications

## Ceramic Hot Plate Specifications

**Table 2. Ceramic Hot Plate Specifications**

<b>Overall Dimensions</b>	<b>HP88857190</b>	<b>HP88857195</b>	<b>HP88850190</b>	<b>HP88850195</b>
Width - in. (cm)	8.2 (20.8)	8.2 (20.8)	11.3 (28.8)	11.3 (28.8)
Height - in. (cm)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)
Depth - in. (cm)	14.2 (36)	14.2 (36)	17.2 (43.8)	17.2 (43.8)
Weight - lbs. (kg)	7.5 (3.4)	7.5 (3.4)	11.5 (5.2)	11.5 (5.2)
<b>Top Plate Dimensions</b>				
Width - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)
Height - in. (cm)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)
Depth - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)
Volts	100-120	220-240	100-120	220-240
Amps	12.3	4.4	13.2	6.0
Watts	1480	1056	1580	1440
Freq.	50/60	50/60	50/60	50/60
Phase	1	1	1	1
Max. Temp °C (°F)	450°C (842°F)	450°C (842°F)	400°C (752°F)	400°C (752°F)

## Ceramic Stirrer Specifications

**Table 3. Ceramic Stirrer Specifications**

<b>Overall Dimensions</b>	<b>S88857190</b>	<b>S88857195</b>	<b>S88850190</b>	<b>S88850195</b>
Width - in. (cm)	8.2 (20.8)	8.2 (20.8)	5.1 (13)	5.1 (13)
Height - in. (cm)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)
Depth - in. (cm)	14.2 (36)	14.2 (36)	17.2 (43.8)	17.2 (43.8)
Weight - lbs. (kg)	9.0 (4.1)	9.0 (4.1)	13.0 (5.9)	13.0 (5.9)
<b>Top Plate Dimensions</b>				
Width - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)
Height - in. (cm)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)
Depth - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)

**Table 3. Ceramic Stirrer Specifications**

Overall Dimensions	S88857190	S88857195	S88850190	S88850195
Volts	100-120	220-240	100-120	220-240
Amps	0.2	0.1	0.2	0.1
Watts	24	24	24	24
Freq.	50/60	50/60	50/60	50/60
Phase	1	1	1	1

## Ceramic Stirring Hotplate Specifications

**Table 4. Ceramic Stirring Hotplate Specifications**

Overall Dimensions	SP88857190	SP88857195	SP88850190	SP88850195
Width - in. (cm)	8.2 (20.8)	8.2 (20.8)	5.1 (13)	5.1 (13)
Height - in. (cm)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)
Depth - in. (cm)	14.2 (36)	14.2 (36)	17.2 (43.8)	17.2 (43.8)
Weight - lbs. (kg)	9.0 (4.1)	9.0 (4.1)	13.0 (5.9)	13.0 (5.9)
<b>Top Plate Dimensions</b>				
Width - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)
Height - in. (cm)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)
Depth - in. (cm)	7.25 (18.4)	7.25 (18.4)	10.5 (26.7)	10.5 (26.7)
Volts	100-120	220-240	100-120	220-240
Amps	12.3	4.4	13.2	6.0
Watts	1480	1056	1580	1440
Freq.	50/60	50/60	50/60	50/60
Phase	1	1	1	1
Max. Temp °C (°F)	450°C (842°F)	450°C (842°F)	400°C (752°F)	400°C (752°F)

## Aluminum Hot Plate Specifications

**Table 5. Aluminum Hot Plate Specifications**

Overall Dimensions	HP88857194	HP88857198	SP88857194	SP88857198
Width - in. (cm)	8.2 (20.8)	8.2 (20.8)	8.2 (20.8)	8.2 (20.8)
Height - in. (cm)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)	4.1 (10.5)
Depth - in. (cm)	14.2 (36)	14.2 (36)	14.2 (36)	14.2 (36)

**Table 5. Aluminum Hot Plate Specifications**

<b>Overall Dimensions</b>	<b>HP88857194</b>	<b>HP88857198</b>	<b>SP88857194</b>	<b>SP88857198</b>
Weight - lbs. (kg)	7.5 (3.4)	7.5 (3.4)	9.0 (4.1)	9.0 (4.1)
<b>Top Plate Dimensions</b>				
Width - in. (cm)	7.25 (18.4)	7.25 (18.4)	7.25 (18.4)	7.25 (18.4)
Height - in. (cm)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)	1.0 (2.5)
Depth - in. (cm)	7.25 (18.4)	7.25 (18.4)	7.25 (18.4)	7.25 (18.4)
Volts	100-120	220-240	100-120	220-240
Amps	6.0	2.6	6.0	2.6
Watts	720	624	720	624
Freq.	50/60	50/60	50/60	50/60
Phase	1	1	1	1
Max. Temp °C (°F)	300°C (572°F)	300°C (572°F)	300°C (572°F)	300°C (572°F)

## Heating Specifications

Top Plate Surface - Solid Ceramic

**Table 6. Heating Specifications**

<b>Specifications</b>	<b>7" x 7"</b>	<b>10" x 10"</b>
Temperature range:	30°C - 450°C (86°F - 842°F)*	30°C - 400°C (86°F - 752°F)*
Heat-up time to maximum temperature (unloaded top plate).	5 minutes	7 minutes
Accuracy of the temperature display vs. the actual average temperature of a 2" diameter of setting area at the center of the top plate (setpoint 100°C unloaded).	± 5.0°C	± 5.0°C
Temperature stability at the center of the top plate surface (@ 100°C unloaded).	± 1.0°C	± 1.0°C
Accuracy of remote probe at user selected calibration temperature after calibration procedure.	± 0.5 typical	± 0.5 typical
Temperature stability using remote probe (500 ml of water in a 1000 ml flask at 70°C)	± 0.5°C	± 0.5°C

# Top Plate Surface - Solid Aluminum

Specifications	7" x 7"
Temperature range: 30°C - 300°C (86°F - 572°F)*	7" x 7"
Heat-up time to maximum temperature (unloaded top plate).	5 minutes
Accuracy of the temperature display vs. the actual average temperature of a 2" diameter of setting area at the center of the top plate (setpoint 100°C unloaded).	± 5.0°C
Temperature stability at the center of the top plate surface (@ 100°C unloaded).	± 1.0°C
Accuracy of remote probe at user selected calibration temperature after calibration procedure.	± 0.5 typical
Temperature stability using remote probe (500 ml of water in a 1000 ml flask at 70°C)	± 0.5°C

\*\* As the top plate becomes dirty, the maximum temperature will decrease. To return the unit to its maximum temperature performance, use a mild abrasive to remove stained areas.

## Stirring Speed Specifications

Speed Range 50 to 1500 RPM (Maximum speed is dependent on the viscosity of the solution).

Stability of the stirring speed setpoint (600 ml of water in a 1000 ml glass flask) is ± 2.0% at 1000 RPM.

**Table 7. Stirring Speed Specifications**

Top Plate Size	Max Recommended Flask size	Max Weight on Top Plate
7 x 7	4 liters	25 lbs
10 x 10	6 liters	35 lbs

\* The specification defined in this section is derived from testing data statistics of Thermo Fisher Scientific lab. We reserve the right to make changes in design and specification without prior notice.

## Environmental Conditions

Operating: 5°C to 35°C; 20% to 80% relative humidity, non-condensing.

Installation category: II (overvoltage) in accordance with IEC 664.

Pollution degree: 2 in accordance with IEC 664.

Altitude Limit: 2,000 meters

Storage -25°C to 65°C

10% to 85% relative humidity

## Declaration of Conformity

We hereby declare under our sole responsibility that this product conforms with the technical requirements of the following standards:

EMC	EN 61000-3-2	Limits for harmonic current emissions
	EN 61000-3-3	Limits for voltage fluctuations and flicker
	EN 61326-1	Electrical equipment for measurement, control, and laboratory use; Part I: General Requirements

Safety	EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use; Part I: General Requirements
	EN 61010-2-010	Part II: Particular requirements for laboratory equipment for the heating of materials
	EN 61010-2-051	Part II: Particular requirements for laboratory equipment for mixing and stirring

Per the provisions of the Electromagnetic Compatibility Directive 2014/30/EU, and per the provisions of the Low Voltage Directive 2014/35/EU.

Copies of the Declaration of Conformity are available upon request.

# Introduction



**Figure 1. SUPER-NUOVA<sup>+</sup> Stirring Hotplate**

Please read all the information in this manual before operating the unit.

Your SUPER-NUOVA<sup>+</sup> hot plate, stirrer or stirring hot plate is a heating and/or stirring plate designed for laboratory procedures requiring precise control of temperature and/or stirring speed. Each SUPERNUOVA<sup>+</sup> model includes a liquid crystal display for monitoring actual and setting temperature and/or stirring speed. The hot plate is capable of producing accurately controlled top plate temperatures from 30°C through 300°C, 400°C or 450°C depending on models. The temperature is controlled at the plate surface by an internal Type K thermocouple sensor, or the solution temperature may be controlled by utilizing the included PT100 probe. A PT1000 probe may be ordered separately. The 7 x 7 or 10 x 10 top plate on the SUPER-NUOVA<sup>+</sup> units are solid ceramic or solid aluminum, and are suitable for use with glass or metal vessels and sand baths.

Other features of the SUPER-NUOVA<sup>+</sup> include a time feature that can be used to shut off heating. Specific temperature setpoints may be set using the PROGRAM buttons on the SUPER-NUOVA<sup>+</sup>. An over temperature protection (OTP) can be displayed in the system configuration menus. See details in “System Configuration”.

Your SUPER-NUOVA<sup>+</sup> model may be used for general purpose heating applications including sample preparation, heating reagents, melting paraffin, warming resinous chemicals, content analysis, solvent evaporations, digestions, media preparation and sterilization, titrations, sand baths, and micro-scale chemistry applications.

## General Cleaning Instructions

Keep top surface clean. Use a non-abrasive cleaner. Alkali spills, hydrofluoric acid spills or phosphoric acid spills may damage top and lead to thermal failure. Unplug unit and remove spills promptly. Do not immerse unit for cleaning. Wipe exterior housing with lightly dampened cloth containing mild soap solution.



# Unpacking and Installation



**WARNING:** Use a properly grounded electrical outlet of correct voltage and current handling capacity.

- Do not remove or modify grounded power plug. Use only properly grounded outlets to avoid shock hazard. Not rated for use in hazardous atmospheres.
- Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains components which may ignite such materials. If explosion proof models are required, contact Customer Service at 1-800-553-0039 for more information.
- Do not use in highly corrosive atmospheres; corrosive fumes and spills may damage top and internal components, creating shock hazard.

**Note:** Some misalignment of the motor bearings in this product may have occurred during shipping. Prior to using this product, run the stirrer at maximum speed for ten minutes to realign the bearings.

## Unpacking

Remove your SUPER-NUOVA<sup>+</sup> unit from the carton.

Inspect to ensure that the unit has not been damaged during shipment. If the unit appears to have sustained shipping damage contact the distributor from whom you purchased this product or Customer Service at 800-553-0039. Check for remote probe and thumbscrew prior to discarding packaging.

The following items are included in the shipment:

- SUPER-NUOVA<sup>+</sup> unit
- Cord
- Remote Probe – PT100
- Stir Bar (Stirring models only)
- Knob
- Operation's Manual

If any of these items are missing from the carton, contact Customer Service.

## Installation

Set the unit on a flat stable surface at least 12" away from combustible materials, and plug the cord set into a properly grounded electrical outlet of correct voltage and current handling capacity.

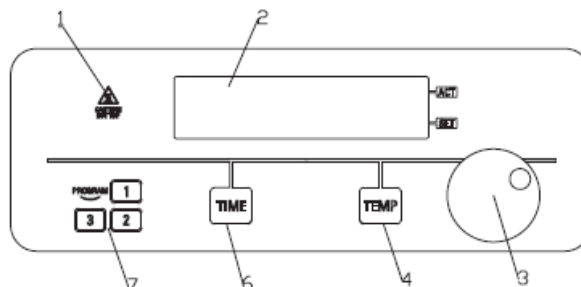


Figure 2. SUPER-NUOVA<sup>+</sup> Hot Plate Control Panel

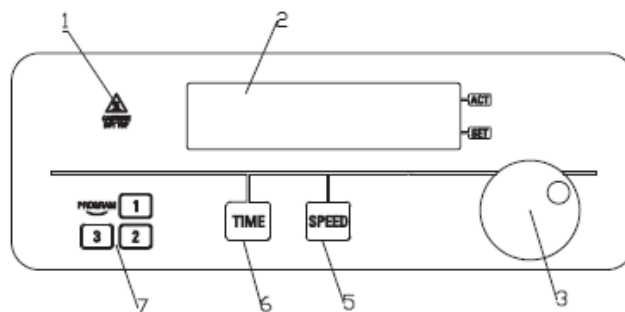


Figure 3. SUPER-NUOVA<sup>+</sup> Stirrer Control Panel

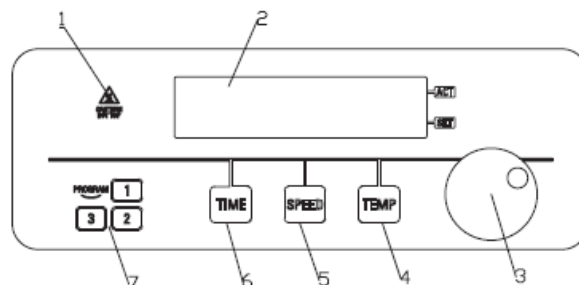


Figure 4. SUPER-NUOVA<sup>+</sup> Stirring Hot Plate Control Panel

# Control Panel

Key	Description
1	CAUTION! HOT TOP Indicator
2	Display
3	Knob
4	Temperature Set Button
5	Speed Set Button
6	Time Set Button
7	Program Buttons

## Principles of Operation

Each SUPER-NUOVA<sup>+</sup> unit utilizes the latest microprocessor technology to deliver the most reliable, accurately controlled, ceramic top or aluminum top hot plate on the market.

Your SUPER-NUOVA<sup>+</sup> unit with heating functionality has an electronic, closed-loop feedback control which will accurately maintain temperature setpoints from 30°C through 300°C, 400°C or 450°C depending on models.

The SUPER-NUOVA<sup>+</sup> units use a Type K thermocouple for measuring the top plate temperature, OTP and the external probe. Both top plate surface and OTP temperature are measured with independent analog circuits. This provides a significant increase in safety due to the redundancy of the circuits. It is possible to heat certain types of metal vessels and sand baths on the SUPER-NUOVA<sup>+</sup> without damaging the ceramic top or aluminum top.

The electronic stirring speed control will maintain the speed setpoint when the unit is loaded. The motor is combined with a powerful magnet to provide exceptional magnetic coupling with a stir bar.

The time feature on the SUPER-NUOVA<sup>+</sup> can be programmed to turn off the stirring, heating or both. See **“Setting the Time”** section of this manual.

# Operation



**WARNING:** Use caution when heating volatile materials; top surface and element can reach the “Flash Point Temperature” of many chemicals. These hot plates are not explosion proof. Fire or explosion may result. Unit contains components which may ignite such materials.

Use appropriate hand and eye protection when handling hazardous chemicals. “Caution: Hot Top. Avoid Contact.” The top plate of the unit can remain hot for some time after use. A “CAUTION - HOT TOP” light will remain on until top plate temperature cools to below 50°C.

**Note:** Boiling times are dependent on solution volume and the surface area of the flask that is exposed to the hot plate. For example, when heating the same amount of solution in a 2 L flask vs. a 1 L flask, the solution will heat about 20% faster.

**Note:** The top plate temperature will be higher than the solution temperature.

## Hard Switch

The SUPER-NUOVA<sup>+</sup> unit has a hard switch on the left side of the unit. The unit may be powered on by pressing the hard switch. When the unit is turned on, the unit will initialize and then model name will be displayed on the first row of display screen while software version in second row. To turn off power to the unit, press the hard switch off.



Figure 5. Hard Switch

## Setting the Stirring Speed

The SUPER-NUOVA<sup>+</sup> stirring unit has an electronic feedback speed control which will maintain a precise speed setpoint from 50 rpm through 1500 rpm.

(Maximum speed is dependent on viscosity of the solution.) The SUPER-NUOVA<sup>+</sup> stirring hot plates are equipped with a strong magnet and high torque motor which will draw a vortex in fluids up to 700 cp.

To set the stirring speed, press “SPEED” key located under display. Then the speed setpoint will flash. Use the knob on the front panel to set a speed. Turn the knob clockwise to increase the speed or counterclockwise to decrease the speed. When desired setpoint has been reached, press the “SPEED” key or wait 10 seconds, the speed setpoint will no longer flash indicating that it has been set.

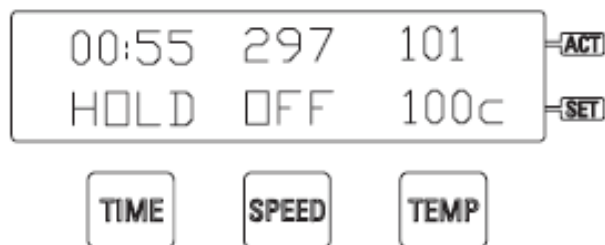


Figure 6. Setting the Stirring Speed

Once the unit begins stirring, the display will indicate both actual speed and setpoint. To stop the stirring action without changing your setpoint press the knob once. To resume stirring at the set speed, press the knob again.

To turn stirring off, press “SPEED” key under the display and turn the knob counterclockwise until the display reads “OFF”.

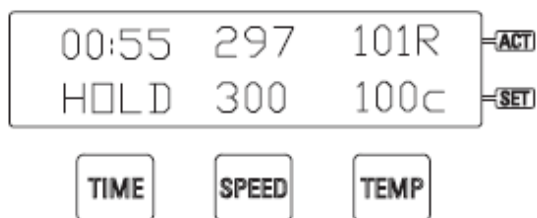
**Note:** Boiling times are dependent on solution volume and the surface area of the flask that is exposed to the hot plate. For example, when heating the same amount of solution in a 2 L flask vs. a 1 L flask, the solution will heat about 20% faster.

**Note:** The top plate temperature will be higher than your solution temperature.

# Setting the temperature

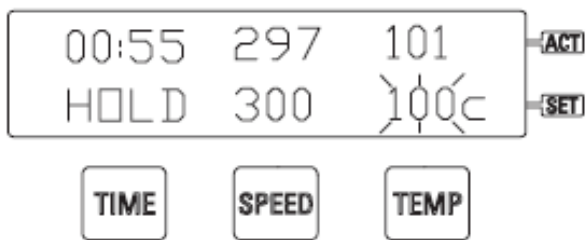
The SUPER-NUOVA<sup>+</sup> heating unit has an electronic closed-loop feedback control which will accurately maintain temperature setpoints from 30°C through 300°C, 400°C or 450°C (depending on the model). An unloaded hot plate will heat to maximum temperature in just 5 minutes. A “CAUTION HOT TOP” light on the front panel will illuminate whenever the top surface temperature exceeds 50°C. The temperature may be controlled either at the top plate by the internal Type K thermocouple sensor, or in the solution using an accessory ungrounded PT100 probe. If a probe is used, the display will indicate “R” after actual temperature.

The SUPER-NUOVA<sup>+</sup> heating units will accept any ungrounded PT100 (PT1000) probe, however the accuracy of probes other than those tested and specified may not reach the probe accuracy rating designated.



**Figure 7. Setting the temperature (if Probe is used)**

To set the temperature, press “TEMP” key located under display. Then the temp setpoint will flash. Use the knob on the front panel to select a temp. Turn the knob clockwise to increase the temp or counterclockwise to decrease the temp. When desired setpoint has been reached, press the “TEMP” key or wait 10 seconds, the temp setpoint will no longer flash indicating that it has been set.



**Figure 8. Setting the temperature**

# Controlling Solution Temperature Using External Probe

To control the solution temperature plug a PT100 probe into the probe receptacle located on the back side of the unit. When the probe is connected, the adjustable temperature range is 30-250 °C. Place the probe into the solution. The display will indicate the actual temperature of the solution as measured by the probe.

The external probe offers more exact temperature control than regulating the top plate by the internal sensor. If you need to maintain a precise setpoint it is recommend to use a probe to control the solution temperature instead of controlling by the top plate temperature.

When using a probe with the SUPER-NUOVA<sup>+</sup> unit it is recommended that a clamp on a support rod be used to hold the probe in the solution.

To ensure accurate probe readings, as much of the probe sheath as possible should be immersed in the solution. Make sure the probe is immersed in the liquid and is not located in air or outside of the solution. If the probe is plugged into the hot plate, but is not in solution while the heat control is operating, the temperature display will continue to indicate an ambient temperature, and a probe out of solution error will occur. Because the set point cannot be reached the heating element will continue to supply heat to the top plate, and the maximum top plate temperature(300°C, 400°C or 450°C) may be reached. If the remote probe does not sense a temperature change in three minutes the unit will display ExProbe Err and shut down.

# Using Preset Programs

The SUPER-NUOVA<sup>+</sup> unit features the option of presetting 3 setpoints into its memory. To program a preset, press any preset button, and the indicator LED on the number button will be illuminated. Then adjust the time, speed and heat features to your desired setpoints. Press the number button again to exit the preset program. The setpoints are stored in memory automatically. The presets will be held in memory, even if the unit is unplugged, until you choose to override it with another preset.

To activate one of the presets, press the corresponding number then press the knob, the time, speed and heat features will automatically adjust itself.

It may be helpful to set one of the presets at “OFF”. This way, the heating can be shut off quickly.

The SUPER-NUOVA<sup>+</sup> unit has a Preset Continue function. It means different presets can run continuously when Preset Continue is being utilized. The default setting is to turn off the function. By pressing 1 and then pressing the knob the unit will run by continuous presets by order 1, 2, 3. By selecting 2 and then pressing the knob the unit will run by continuous presets by order 2, 3.

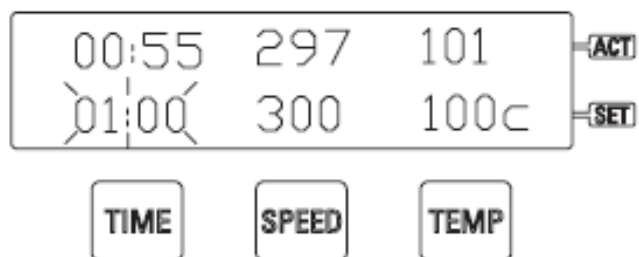
See **“System Configuration”** section of the manual to activate the Preset Continue function.

## Heating Metal Vessels and Sand Baths

Metal vessels and sand baths cannot be heated on most solid ceramic tops because of the tendency for the metal and the sand to reflect heat back into the top, eventually exceeding the maximum temperature rating for a ceramic top, which causes it to break. Because of its advanced electronic control, the SUPER-NUOVA<sup>+</sup> is capable of precisely regulating the top plate temperature. Metal vessels and sand baths may be heated safely without the danger of the ceramic top breaking.

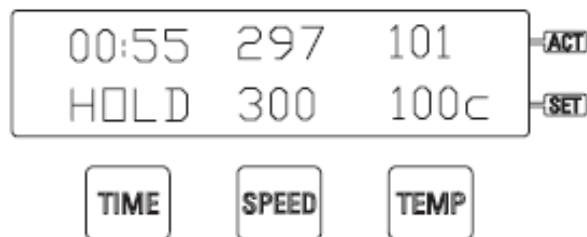
## Setting the Time

The time function on the SUPER-NUOVA<sup>+</sup> can be set to shut off heating. To set the time, press “TIME” key located under display. Hold will begin to flash. Turn the knob until time shows then press “TIME” key again. Use the knob on the front panel to select a time. Turn the knob clockwise to increase the time or counterclockwise to decrease the time. When desired setpoint has been reached, press the “TIME” key or wait 10 seconds, the time setpoint will no longer flash indicating that it has been set. In the temperature rising mode, when the temperature is more than 2 degree below the temperature setpoint, the timer will start to count. In the temperature declining mode, when the temperature is less than 2 degree above the temperature setpoint, the timer will start to count.



**Figure 9. Setting Time Function**

When the time setpoint display shows “HOLD” it means there is no setting for time function.

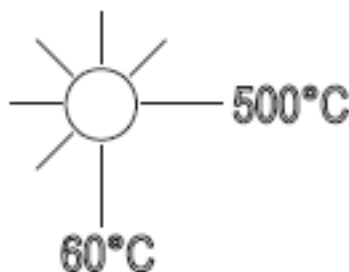


**Figure 10. No Setting for Time Function**

## Hardware Over-Temperature Protection

A hardware Over-Temperature-Protection (OTP) analog circuit is designed separately to protect unexpected heating.

A small straight blade screwdriver can be used to adjust the scale at right side of the unit. The protection value can be set from 60°C to 500°C (or 300°C/450°C depending on models).



**Figure 11. Setting protection value**

Please notice that this function is only purposed to avoid abnormal heating if unit is out of control. Users should not use this function to limit the temperature in normal applications. Refer to the section ‘Over-temperature Set Point – OTP’ for accurate temperature protection.

Default set is at maximum scale.

# System Configuration

The System Configuration has three features that will allow a user to customize their unit.

A table of the features available in the System Configuration is given below. The features are given in order of their appearance in the System Configuration when rotating the knob in a clockwise rotation. The Feature column is the name of the feature, the Display column is the designation of that

feature as shown on the display of the unit, the Availability column gives which type of unit the feature is applicable (HP = hot plate SP = stirring hot plate S= stir plate), and the last column gives a brief description of the purpose of the feature.

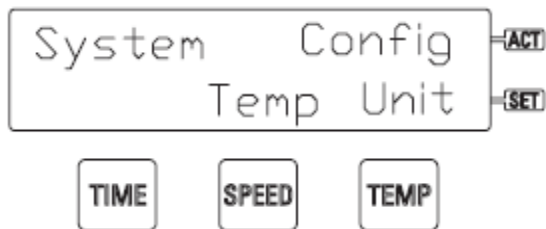
**Table 8.**

Feature	Display	Availability	Brief Description
Temperature Unit Conversion Over-temperature Set Point	Temp Unit	HP, SP	Allows the user to converse temperature unit between C and F.
Over-temperature Set Point	User OTP	HP, SP	Allows the user to see the setting of the Over Temperature Protection control.
Preset Continue Setting	Preset Continue	HP, S, SP	Allows the user to set the program presetting function.
Temperature Probe Calibration	Calibrate Temp	HP, SP	Allows calibration of the temperature probe and associated circuitry.

## Temp Unit

This option is only available for units that have heating functionality.

Plug the unit into the appropriate power, enter the System Configuration by pressing and holding the knob. After about 5 seconds you may remove your finger from the knob. The display indicate “System Config” on the first row, the “Temp Unit” will show on the second row of the display.



**Figure 12. System Config**

Press the knob to enter the Temp Unit setting interface. (Long press will return to operation menu.) The “Temp Unit” will display on the first row, the Actual temperature and unit “c” or “F” flash on the second row. Turn the knob clockwise or counterclockwise to change the temperature unit. When the desired temperature unit has reached, wait 10 seconds, the display will return to operation menu indicating that it has been set.



**Figure 13. Temp Unit**

# Over-temperature Set Point – OTP

This option is only available for units that have heating functionality. The Over-temperature Set Point is the set point of the independent temperature control. The purpose of the control is to limit the top temperature of the element independently of the standard heating control. This is helpful if there is a failure of the main control that would cause the top to heat excessively. Typically the set point will be adjustable from 60 to 300°C, 400°C or 540°C (depending on the model).

The Over-temperature can be set or viewed with this menu option. To do so, follow the instructions given below:

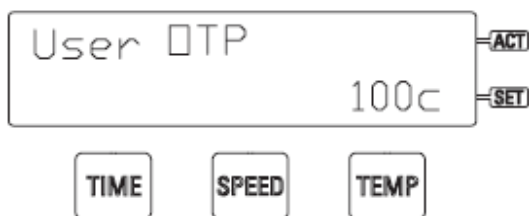
Enter the System Configuration by pressing and holding the knob. After about 5 seconds a single you may remove your finger from the knob. The display indicate “system config” on the first row, the “Temp Unit” will show on the second row of the display.

Turn the knob clockwise until the “User OTP” show on the second row of the display. If you do no action, the display will return to the operation status.



**Figure 14. System Config with User OTP**

Press the knob to enter the Over-temperature setting interface. (Long press will return to operation menu.) The “User OTP” will display on the first row, the Over-temperature setpoint flash on the second row. Turn the knob clockwise to increase the temp or counterclockwise to decrease the temp. When the desired Over-temperature setpoint has been reached, wait 10 seconds, the display will return to operation menu indicating that it has been set.



**Figure 15. Over Temperature Setting Interface**

# Preset Continue

Enter the System Configuration by pressing and holding the knob. After about 5 seconds a single you may remove your finger from the knob. The display indicate “system config” on the first row, the “Temp Unit” will show on the second row of the display. Turn the knob clockwise until the “Preset continue” show on the second row of the display. If you do no action, the display will return to the operation status.



**Figure 16. Display of Preset Continue**

Press the knob to enter the Preset Continue setting interface. (Long press will return to operation menu.) The “User OTP” show on the first row, “OFF” flash on the second row. Turn the knob clockwise to change the status. When “On” has reached, wait 10 seconds, the display will return to operation menu indicating that it has been set.



**Figure 17. ON Preset Continue**

# Temperature Probe Calibration

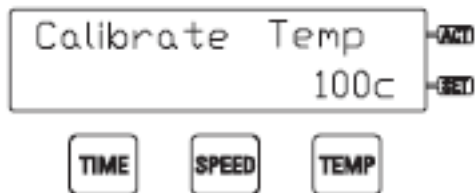
This section applies only to the calibration of the temperature probe system. The hot plate surface and the motor speed cannot be calibrated. This method is only applicable to units that have heating functionality.

Enter the System Configuration by pressing and holding the knob. After about 5 seconds a single you may remove your finger from the knob. The display indicate “system config” on the first row, the “Temp Unit” will show on the second row of the display. Turn the knob clockwise until the “Calibrate Temp” show on the second row of the display. If you do no action, the display will return to the operation status. The option “Calibrate Temp” will only show when there is a remote probe PT100 or PT1000 adopted.



**Figure 18. Display of Calibrate Temp**

Press the knob to enter the Calibrate Temp setting interface. The “Calibrate Temp” show on the first row, the measured temperature flash on the second row. If the data is not matched the temperature you measure by external thermo detector, you can turn the knob to calibrate. When it’s matched, press the knob to complete the calibration.



**Figure 19. Calibrate Temp**

When setting and/or viewing is complete, the knob can be pressed to return to the previous operation menu.



# Troubleshooting

## Error Codes

Error Handler will lock out heating functions if heating error is detected. Stirring functionality is unaffected. Error Handler will lock out stirring functions if stirring error is detected. Heating functionality is unaffected. If the condition that caused the error is no longer present, the unit will clear Errors automatically.

**Table 9. Error Codes**

Displayed Message	Intended to Detect	Cause	Solution
InProbe Err	Internal thermocouple out of range.	Internal thermocouple not connected. Thermocouple open. Thermocouple connected backwards (reversed polarity).	Ensure proper connection and polarity of thermocouple. Replace thermocouple (attached to element). Ensure proper connection and polarity.
Check Heater	Excessive top heat-up time	Internal thermocouple short circuit. Failure in Internal thermocouple. Failure in Element. Failure in optocoupler/triac circuit.	Remove short. Replace thermocouple (attached to element). Replace Element. Replace Control Board.
ExProbe Err	External Probe left out of solution.	External Probe left out of solution. External probe connected backwards.	Place external probe into solution. Correct orientation of external probe.
Over Temp	OTP thermocouple out of range.	OTP Circuit failure. OTP potentiometer set too low.	Replace Control Board. Increase OTP setting.
Check Motor	Motor system failure.	Locked rotor condition. Failure of motor. Failure of motor circuit. Failure of motor sensor.	Free locked rotor. Replace motor. Replace Control Board. Replace motor sensor.

# Accessories

**Table 10. Accessories**

<b>Order No.</b>	<b>Description</b>
CIC0001444	Splash guard protection shield 4", for 4" x 4" Stirrers and Hotplate Stirrers
CIC0001445	Splash guard protection shield 7", for 7" x 7" Stirrers and Hotplate Stirrers
CIC0001446	Splash guard protection shield 10", for 10" x 10" Stirrers and Hotplate Stirrers
CIC0001447	PT100 External probe, 0-400°C, Stainless steel, for all sizes of Hotplates and Hotplate Stirrers
CIC0001448	PT1000 External probe, 0-400°C, Stainless steel, for all sizes of Hotplates and Hotplate Stirrers
CIC0001449	Hastelloy PT1000 External probe, 0-400°C, Hastelloy, for all sizes of Hotplates and Hotplate Stirrers
CIC0001830	Supporting rod, Aluminum Alloy, for Hotplates and Hotplate Stirrers
CIC0001831	Clamp holder, Stainless steel, for Hotplates and Hotplate Stirrers
CIC0001468	Thermo ASSY CORD CHINA 10 A 250 V PLUG
CIC0001469	Thermo ASSY CORD 18-3 HSJO 10 A EURO 86 PE
CIC0001470	Thermo ASSY CORD 1 MM-2 BRIT 240 10 A PE
CIC0001471	Thermo ASSY CORD US & JP 120 V PLUG

# Warranty

The Warranty Period starts two weeks from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period.

During the first three (3) years, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor included. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo Fisher Scientific postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-800-438-4851 (USA and Canada) or 1-740-373-4763. We are ready to answer your questions on equipment warranty, operation, maintenance, service and special application. Outside the USA, contact your local distributor for warranty information.

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