



HPR400XD™ and HPR800XD™

Inrush Circuit Installation Kit

Field Service Bulletin

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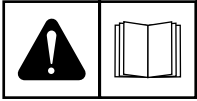
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ENGLISH

WARNING! Before operating any Hypertherm equipment, read the safety instructions in your product's manual, the *Safety and Compliance Manual* (80669C), *Waterjet Safety and Compliance Manual* (80943C), and *Radio Frequency Warning Manual* (80945C). Failure to follow safety instructions can result in personal injury or in damage to equipment.

Copies of the manuals can come with the product in electronic and printed formats. Electronic copies are also on our website. Many manuals are available in multiple languages at www.hypertherm.com/docs.

BG (БЪЛГАРСКИ/BULGARIAN)

ПРЕДУПРЕЖДЕНИЕ! Преди да работите с което и да е оборудване Hypertherm, прочетете инструкциите за безопасност в ръководството на вашия продукт, „Инструкция за безопасност и съответствие“ (80669C), „Инструкция за безопасност и съответствие на Waterjet“ (80943C) и „Инструкция за предупреждение за радиочестота“ (80945C).

Продуктът може да е съпроводен от копия на ръководствата в електронен и в печатен формат. Тези в електронен формат са достъпни също на уебсайта ни. Много ръководства са налице на няколко езика на адрес www.hypertherm.com/docs.

CS (ČESKY/CZECH)

VAROVÁNÍ! Před uvedením jakéhokoli zařízení Hypertherm do provozu si přečtěte bezpečnostní pokyny v příručce k produktu a v *Manuálu pro bezpečnost a dodržování předpisů* (80669C), *Manuálu pro bezpečnost a dodržování předpisů při řezání vodním paprskem* (80943C) a *Manuálu varování ohledně rádiových frekvencí* (80945C).

Kopie příruček mohou být součástí dodávky produktu, a to v elektronické i tištěné formě. Elektronické kopie jsou k dispozici i na našich webových stránkách. Mnoho příruček je k dispozici v různých jazycích na stránce www.hypertherm.com/docs.

DA (DANSK/DANISH)

ADVARSEL! Inden Hypertherm udstyr tages i brug skal sikkerhedsinstruktionerne i produktets manual og i *Manual om sikkerhed og overholdelse af krav* (80669C), *Manual om sikkerhed og overholdelse af krav for vandstråleskæring* (80943C), og *Manual om radiofrekvensadvarsel* (80945C), gennemlæses.

Kopier af manualerne kan leveres med produktet i elektronisk og trykt format. Elektroniske kopier findes også på vores hjemmeside. Mange manualer er tilgængelige på flere sprog på www.hypertherm.com/docs.

DE (DEUTSCH/GERMAN)

WARNUNG! Bevor Sie ein Hypertherm-Gerät in Betrieb nehmen, lesen Sie bitte die Sicherheitsanweisungen in Ihrer Bedienungsanleitung, das *Handbuch für Sicherheit und Übereinstimmung* (80669C), das *Handbuch für Sicherheit und Compliance bei Wasserstrahl-Schneidanlagen* (80943C) und das *Handbuch für Hochfrequenz-Warnung* (80945C).

Bedienungsanleitungen und Handbücher können dem Gerät in elektronischer Form oder als Druckversion beiliegen. In elektronischer Form liegen sie auch auf unserer Website vor. Viele Handbücher stehen in verschiedenen Sprachen auf www.hypertherm.com/docs zur Verfügung.

ES (ESPAÑOL/SPANISH)

¡ADVERTENCIA! Antes de operar cualquier equipo Hypertherm, lea las instrucciones de seguridad del manual de su producto, del *Manual de seguridad y cumplimiento* (80669C), del *Manual de seguridad y cumplimiento en corte con chorro de agua* (80943C) y del *Manual de advertencias de radiofrecuencia* (80945C).

El producto puede incluir copias de los manuales en formato digital e impreso. Las copias digitales también están en nuestra página web. Hay diversos manuales disponibles en varios idiomas en www.hypertherm.com/docs.

ET (EESTI/ESTONIAN)

HOIATUS! Enne Hyperthermi mis tahes seadme kasutamist lugege läbi toote kasutusjuhendis olevad ohutusjuhised ning *Ohutus- ja vastavusjuhend* (80669C), *Veejõa ohutuse ja vastavuse juhend* (80943C) ja *Raadiosageduse hoiatusjuhend* (80945C). Ohutusjuhiste eiramine võib põhjustada vigastusi ja kahjustada seadmeid.

Juhiste koopiad võivad tootega kaasas olla elektrooniliselt või trükituna. Elektroonilised koopiad on saadaval ka meie veebilehel. Paljud kasutusjuhendid on erinevates keeltes saadaval veebilehel www.hypertherm.com/docs.

FI (SUOMI/FINNISH)

VAROITUS! Ennen minkään Hypertherm-laitteen käyttöä lue tuotteen käyttöoppaassa olevat turvallisuusohjeet, *turvallisuuden ja vaatimustenmukaisuuden käsikirja* (80669C), *vesileikkauksen turvallisuuden ja vaatimustenmukaisuuden käsikirja* (80943C) ja *radiotaajuusvaroitusten käsikirja* (80945C).

Käyttöoppaiden kopiot voivat olla tuotteen mukana sähköisessä ja tulostetussa muodossa. Sähköiset kopiot ovat myös verkkosivustollamme. Monet käyttöoppaat ovat myös saatavissa useilla kielillä www.hypertherm.com/docs.

FR (FRANÇAIS/FRENCH)

AVERTISSEMENT! Avant d'utiliser tout équipement Hypertherm, lire les consignes de sécurité du manuel de votre produit, du *Manuel de sécurité et de conformité* (80669C), du *Manuel de sécurité et de conformité du jet d'eau* (80943C) et du *Manuel d'avertissement relatif aux radiofréquences* (80945C).

Les exemplaires des manuels qui accompagnent le produit peuvent être sous forme électronique ou papier. Les manuels sous forme électronique se trouvent également sur notre site Internet. Plusieurs manuels sont offerts en plusieurs langues à www.hypertherm.com/docs.

GR (ΕΛΛΗΝΙΚΑ/GREEK)

ΠΡΟΕΙΔΟΠΟΙΗΣΗ! Πριν θέσετε σε λειτουργία οποιονδήποτε εξοπλισμό της Hypertherm, διαβάστε τις οδηγίες ασφαλείας στο εγχειρίδιο του προϊόντος και στο *εγχειρίδιο ασφαλείας και συμμόρφωσης* (80669C), στο *εγχειρίδιο ασφαλείας και συμμόρφωσης του waterjet* (80943C) και στο *εγχειρίδιο προειδοποιήσεων για τις ραδιοσυχνότητες* (80945C).

Το προϊόν μπορεί να συνοδεύεται από αντίγραφα των εγχειριδίων σε ηλεκτρονική και έντυπη μορφή. Τα ηλεκτρονικά αντίγραφα υπάρχουν επίσης στον ιστότοπό μας. Πολλά εγχειρίδια είναι διαθέσιμα σε διάφορες γλώσσες στο www.hypertherm.com/docs.

HU (MAGYAR/HUNGARIAN)

VIGYÁZAT! Mielőtt bármilyen Hypertherm berendezést üzemeltetne, olvassa el a biztonsági információkat a termék kézikönyvében, a *Biztonsági és szabálykövetési kézikönyvben* (80669C), a *Vízugaras biztonsági és szabálykövetési kézikönyvben* (80943C) és a *Rádiófrekvenciás figyelmeztetéseket tartalmazó kézikönyvben* (80945C).

A termékhez a kézikönyv példányai elektronikus és nyomtatott formában is mellékelve lehetnek. Az elektronikus példányok webhelyünkön is megtalálhatók. Számos kézikönyv áll rendelkezésre több nyelven a www.hypertherm.com/docs weboldalon.

ID (BAHASA INDONESIA/INDONESIAN)

PERINGATAN! Sebelum mengoperasikan peralatan Hypertherm, bacalah petunjuk keselamatan dalam manual produk Anda, *Manual Keselamatan dan Kepatuhan* (80669C), *Manual Keselamatan dan Kepatuhan Jet Air* (80943C), dan *Manual Peringatan Frekuensi Radio* (80945C). Kegagalan mengikuti petunjuk keselamatan dapat menyebabkan cedera pribadi atau kerusakan pada peralatan.

Produk mungkin disertai salinan manual atau petunjuk dalam format elektronik maupun cetak. Salinan elektronik juga tersedia di situs web kami. Berbagai manual tersedia dalam beberapa bahasa di www.hypertherm.com/docs.

IT (ITALIANO/ITALIAN)

AVVERTENZA! Prima di usare un'attrezzatura Hypertherm, leggere le istruzioni sulla sicurezza nel manuale del prodotto, nel *Manuale sulla sicurezza e la conformità* (80669C), nel *Manuale sulla sicurezza e la conformità Waterjet* (80943C) e nel *Manuale di avvertenze sulla radiofrequenza* (80945C).

Copie del manuale possono accompagnare il prodotto in formato cartaceo o elettronico. Le copie elettroniche sono disponibili anche sul nostro sito web. Molti manuali sono disponibili in diverse lingue all'indirizzo www.hypertherm.com/docs.

JA (日本語/JAPANESE)

警告! Hypertherm 機器を操作する前に、この製品説明書にある安全情報、「安全とコンプライアンスマニュアル」(80669C)、「ウォータージェット的安全とコンプライアンス」(80943C)、「高周波警告」(80945C)をお読みください。

説明書のコピーは、電子フォーマット、または印刷物として製品に同梱されています。電子コピーは当社ウェブサイトにも掲載されています。説明書の多くは www.hypertherm.com/docs にて複数の言語でご用意しています。

KO (한국어/KOREAN)

경고! Hypertherm 장비를 사용하기 전에 제품 설명서와 안전 및 규정 준수 설명서(80669C), 워터젯 안전 및 규정 준수 설명서(80943C) 그리고 무선 주파수 경고 설명서(80945C)에 나와 있는 안전 지침을 읽으십시오.

전자 형식과 인쇄된 형식으로 설명서 사본이 제품과 함께 제공될 수 있습니다. 전자 사본도 Hypertherm 웹사이트에서 보실 수 있으며 설명서 사본은 www.hypertherm.com/docs 에서 여러 언어로 제공됩니다.

NE (NEDERLANDS/DUTCH)

WAARSCHUWING! Lees voordat u Hypertherm-apparaat gebruikt de veiligheidsinstructies in de producthandleiding, in de *Veiligheids- en nalevingshandleiding* (80669C) in de *Veiligheids- en nalevingshandleiding voor waterstralen* (80943C) en in de *Waarschuwingshandleiding radiofrequentie* (80945C).

De handleidingen kunnen in elektronische en gedrukte vorm met het product worden meegeleverd. Elektronische versies zijn ook beschikbaar op onze website. Veel handleidingen zijn in meerdere talen beschikbaar via www.hypertherm.com/docs.

NO (NORSK/NORWEGIAN)

ADVARSEL! Før du bruker noe Hypertherm-utstyr, må du lese sikkerhetsinstruksjonene i produktets håndbok, *håndboken om sikkerhet og samsvar* (80669C), *håndboken om vannjet sikkerhet og samsvar* (80943C), og *håndboken om radiofrekvensadvarslere* (80945C).

Eksemplarer av håndbøkene kan følge med produktet i elektronisk og trykt form. Elektroniske eksemplarer finnes også på nettstedet vårt. Mange håndbøker er tilgjengelig i flere språk på www.hypertherm.com/docs.

PL (POLSKI/POLISH)

OSTRZEŻENIE! Przed rozpoczęciem obsługi jakiegokolwiek systemu firmy Hypertherm należy się zapoznać z instrukcjami bezpieczeństwa zamieszczonymi w podręczniku produktu, w *podręczniku bezpieczeństwa i zgodności* (80669C), *podręczniku bezpieczeństwa i zgodności systemów strumienia wody* (80943C) oraz *podręczniku z ostrzeżeniem o częstotliwości radiowej* (80945C).

Do produktu mogą być dołączone podręczniki użytkownika w formie elektronicznej i drukowanej. Kopie elektroniczne znajdują się również w naszej witrynie internetowej. Wiele podręczników jest dostępnych w różnych językach pod adresem www.hypertherm.com/docs.

PT (PORTUGUÊS/PORTUGUESE)

ADVERTÊNCIA! Antes de operar qualquer equipamento Hypertherm, leia as instruções de segurança no manual do seu produto, no *Manual de Segurança e de Conformidade* (80669C), no *Manual de Segurança e de Conformidade do Waterjet* (80943C) e no *Manual de Advertência de radiofrequência* (80945C).

Cópias dos manuais podem vir com o produto nos formatos eletrônico e impresso. Cópias eletrônicas também são encontradas em nosso website. Muitos manuais estão disponíveis em vários idiomas em www.hypertherm.com/docs.

RO (ROMÂNĂ/ROMANIAN)

AVERTIZARE! Înainte de utilizarea oricărei echipament Hypertherm, citiți instrucțiunile de siguranță din manualul produsului, *manualul de siguranță și conformitate* (80669C), *manualul de siguranță și conformitate Waterjet* (80943C) și din *manualul de avertizare privind radiofrecvența* (80945C).

Produsul poate fi însoțit de copii ale manualelor în format tipărit și electronic. Exemplarele electronice sunt disponibile și pe site-ul nostru web. Numeroase manuale sunt disponibile în mai mult limbi la adresa: www.hypertherm.com/docs.

RU (РУССКИЙ/RUSSIAN)

БЕРЕГИТЬСЯ! Перед работой с любым оборудованием Hypertherm ознакомьтесь с инструкциями по безопасности, представленными в руководстве, которое поставляется вместе с продуктом, в *Руководстве по безопасности и соответствию* (80669C), в *Руководстве по безопасности и соответствию для водоструйной резки* (80943C) и *Руководстве по предупреждению о радиочастотном излучении* (80945C).

Копии руководств, которые поставляются вместе с продуктом, могут быть представлены в электронном и бумажном виде. Электронные копии также доступны на нашем веб-сайте. Целый ряд руководств доступны на нескольких языках по ссылке www.hypertherm.com/docs.

SK (SLOVENČINA/SLOVAK)

VÝSTRAHA! Pred použitím akéhokoľvek zariadenia od spoločnosti Hypertherm si prečítajte bezpečnostné pokyny v návode na obsluhu vášho zariadenia a v *Manuáli o bezpečnosti a súlade s normami* (80669C), *Manuáli o bezpečnosti a súlade s normami pre systém rezania vodou* (80943C) a v *Manuáli s informáciami o rádiových frekvenciách* (80945C).

Návod na obsluhu sa dodáva spolu s produktom v elektronickej a tlačenej podobe. Jeho elektronickej formát je dostupný aj na našej webovej stránke. Mnohé z návodov na obsluhu sú dostupné vo viaczjazyčnej mutácii na stránke www.hypertherm.com/docs.

SL (SLOVENŠČINA/SLOVENIAN)

OPOZORILO! Pred uporabo katerekoli Hyperthermove opreme preberite varnostna navodila v priročniku vašega izdelka, v *Priročniku za varnost in skladnost* (80669C), v *Priročniku za varnost in skladnost sistemov rezanja z vodnim curkom* (80943C) in v *Priročniku Opozorilo o radijskih frekvencah* (80945C).

Izvodi priročnikov so lahko izdelku priloženi v elektronski in tiskani obliki. Elektronski izvodi so na voljo tudi na našem spletnem mestu. Številni priročniki so na voljo v različnih jezikih na naslovu www.hypertherm.com/docs.

SR (SRPSKI/SERBIAN)

UPOZORENJE! Pre rukovanja bilo kojom Hyperthermovom opremom pročitajte uputstva o bezbednosti u svom priručniku za proizvod, *Priručniku o bezbednosti i usaglašenosti* (80669C), *Priručniku o bezbednosti i usaglašenosti Waterjet tehnologije* (80943C) i *Priručniku sa upozorenjem o radio-frekvenciji* (80945C).

Uz proizvod se isporučuju kopije priručnika u elektronskom ili štampanom formatu. Elektronske kopije su takođe dostupne na našem web-sajtu. Mnogi priručnici su dostupni na više jezika na adresi www.hypertherm.com/docs.

SV (SVENSKA/SWEDISH)

VARNING! Läs häftet säkerhetsinformationen i din produkts *säkerhets- och efterlevnadsmanual* (80669C), *säkerhets- och efterlevnadsmanualen för Waterjet* (80943C) och *varningsmanualen för radiofrekvenser* (80945C) för viktig säkerhetsinformation innan du använder eller underhåller Hypertherm-utrustning. Kopior av manualerna kan medfölja produkten i elektroniskt och tryckt format. Elektroniska kopior finns också på vår webbplats. Många manualer finns på flera språk på www.hypertherm.com/docs.

TH (ภาษาไทย/THAI)

คำเตือน! ก่อนการใช้งานอุปกรณ์ของ Hypertherm ทั้งหมด โปรดอ่านคำแนะนำด้านความปลอดภัยในคู่มือการใช้สินค้า คู่มือด้านความปลอดภัยและการปฏิบัติตาม (80669C), คู่มือด้านความปลอดภัยและการปฏิบัติตามสำหรับการใช้หัวตัดระบบวอเตอร์เจ็ต (80943C) และ คู่มือคำเตือนเกี่ยวกับความถี่วิทยุ (80945C) การไม่ปฏิบัติตามคำแนะนำด้านความปลอดภัยอาจส่งผลให้เกิดการบาดเจ็บหรือเกิดความเสียหายต่ออุปกรณ์
สำเนาคู่มือทั้งในรูปแบบอิเล็กทรอนิกส์และแบบสิ่งพิมพ์จะถูกแนบมาพร้อมกับผลิตภัณฑ์ สำหรับสำเนาคู่มือในรูปแบบอิเล็กทรอนิกส์ของผลิตภัณฑ์และสำเนาคู่มือต่าง ๆ ในหลากหลายภาษายังมีให้บริการบนเว็บไซต์ www.hypertherm.com/docs ของเรอีกด้วย

TR (TÜRKÇE/TURKISH)

UYARI! Bir Hypertherm ekipmanını çalıştırmadan önce, ürününüzün kullanım kılavuzunda, *Güvenlik ve Uyumluluk Kılavuzu'nda* (80669C), *Su Jeti Güvenlik ve Uyumluluk Kılavuzu'nda* (80943C) ve *Radyo Frekansı Uyarısı Kılavuzu'nda* (80945C) yer alan güvenlik talimatlarını okuyun.

Kılavuzların kopyaları, elektronik ve basılı formatta ürüne birlikte verilebilir. Elektronik kopyalar web sitemizde de yer alır. Kılavuzların birçokğu www.hypertherm.com/docs adresinde birçok dilde mevcuttur.

VI (TIẾNG VIỆT/VIETNAMESE)

CẢNH BÁO! Trước khi vận hành bất kỳ thiết bị Hypertherm nào, hãy đọc các hướng dẫn an toàn trong hướng dẫn sử dụng sản phẩm của bạn, *Sổ tay An toàn và Tuân thủ* (80669C), *Sổ tay An toàn và Tuân thủ Tia nước* (80943C), và *Hướng dẫn Cảnh báo Tần số Vô tuyến* (80945C). Không tuân thủ các hướng dẫn an toàn có thể dẫn đến thương tích cá nhân hoặc hư hỏng thiết bị.

Bản sao của sổ tay có thể đi kèm với sản phẩm ở định dạng điện tử và in. Bản điện tử cũng có trên trang web của chúng tôi. Nhiều sổ tay có sẵn bằng nhiều ngôn ngữ tại www.hypertherm.com/docs.

ZH-CN (简体中文/CHINESE SIMPLIFIED)



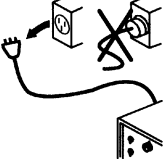
警告! 在操作任何海宝设备之前, 请阅读产品手册、《安全和法规遵守手册》(80669C)、《水射流安全和法规遵守手册》(80943C) 以及《射频警告手册》(80945C) 中的安全操作说明。

随产品提供的手册可提供电子版和印刷版两种格式。电子版本同时也在我们的网站上提供。很多手册有多种语言版本, 详见 www.hypertherm.com/docs。

ZH-TW (繁體中文/CHINESE TRADITIONAL)

警告! 在操作任何 Hypertherm 設備前, 請先閱讀您產品手冊內的安全指示, 包括《安全和法規遵從手冊》(80669C)、《水刀安全和法規遵從手冊》(80943C), 以及《無線電頻率警示訊號手冊》(80945C)。

電子版和印刷版手冊複本可能隨產品附上。您也可以前往我們的網站下載電子版手冊。我們的網站上還以多種語言形式提供多種手冊, 請造訪 www.hypertherm.com/docs。

		WARNING
	ELECTRIC SHOCK CAN KILL	<p>Disconnect electric power before doing installation or maintenance. You can get a serious electric shock if electric power is not disconnected. Electric shock can seriously injure or kill you.</p> <p>All work that requires removal of the plasma power supply outer cover or panels must be done by a qualified technician.</p> <p>Refer to the <i>Safety and Compliance Manual (80669C)</i> for more safety information.</p>

Introduction

Purpose

This Field Service Bulletin shows how to install the contents of the HPR400XD/800XD Inrush Circuit Assembly Installation Kit (428064) in an HPR400XD or HPR800XD plasma power supply. Kit 428064 includes an inrush printed circuit board (PCB), a small contactor, three inrush resistors (assembly), and an HPR power distribution PCB.

Required tools and materials

- Two 3/8-inch wrenches
- Blade screwdriver
- #2 Phillips® screwdriver
- 6 mm hex wrench
- Drill with a 5/16-inch drill bit (additional smaller drill bits can help)
- 7/16-inch wrench for washer-nut removal/installation
- 3/8-inch nut driver
- Needle nose pliers

Inrush Circuit Assembly Installation Kit

Kit 428064 contents

Part number	Description	Quantity
141558	Inrush PCB, pre-installed on the inrush PCB mounting bracket (101507)	1
101507	Inrush PCB mounting bracket with pre-installed inrush PCB (141558) and pre-installed screws (075530)	1
229579	Inrush circuit assembly for HPR400XD and HPR800XD plasma power supplies	1
075530	M3 X 6 screws, pre-installed on the inrush PCB mounting bracket (101507)	4
229971	Inrush PCB wire harness	1
101506	Inrush PCB cover with pre-installed wire holder (074353)	1
074353	Wire holder, pre-installed on the inrush PCB cover (101506)	1
075161	1/4-20 hex nut	4
075241	1/4-20 X 1/2-inch sheet metal screws	4
343003	Cable ties	3
041802	HPR power distribution PCB assembly	1

NOTICE



FAILURE TO CORRECTLY INSTALL OR REMOVE NUTS AND BOLTS CAN CAUSE EQUIPMENT DAMAGE

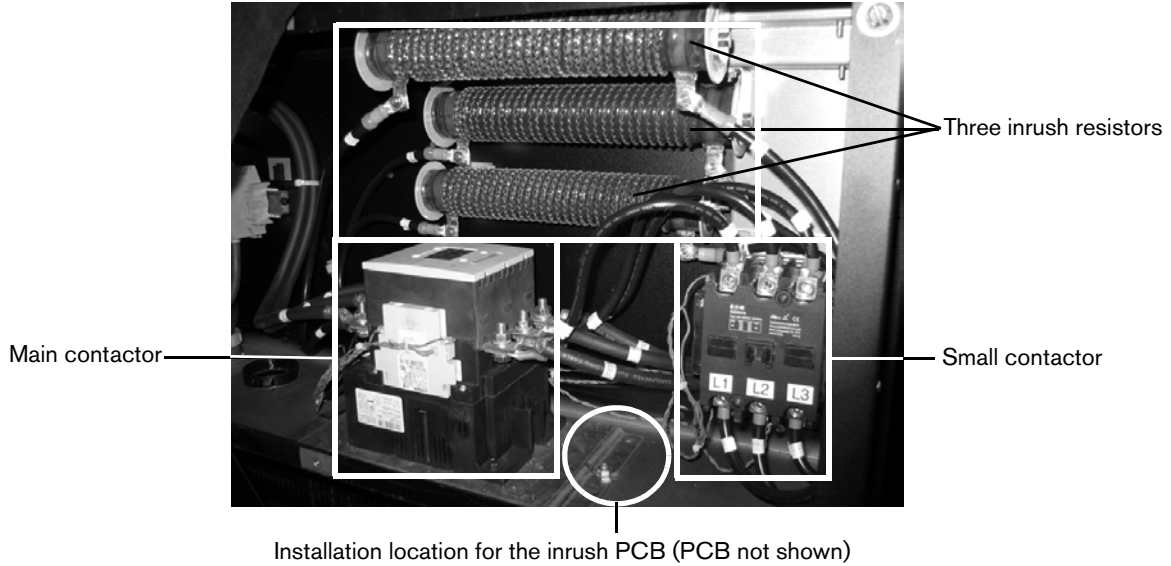
Always use two wrenches to correctly install or remove hex nuts and bolts. Equipment damage can occur when hex nuts and bolts are incorrectly installed or removed.

Overview

The inrush PCB (141558) supplies and removes electric power to and from the inrush and main contactors in a pre-defined sequence that causes the following results:

- Decreases the effects of high inrush current that occur when electric power is first supplied to the main contactor.
- Disconnects inrush resistors when they are not in use to prevent power loss to inrush resistors during cutting.

Figure 1 – Approximate configuration and locations of kit components in the plasma power supply*



* The configuration and locations in your plasma power can be slightly different from this example, based the kit or the plasma power supply.

This document includes the following two procedures:

1. Install the inrush circuit assembly and the inrush PCB in the plasma power supply.
2. Connect the inrush circuit assembly and the inrush PCB to the main contactor.

The steps are the same for both the HPR400XD and the HPR800XD.

⚠ WARNING



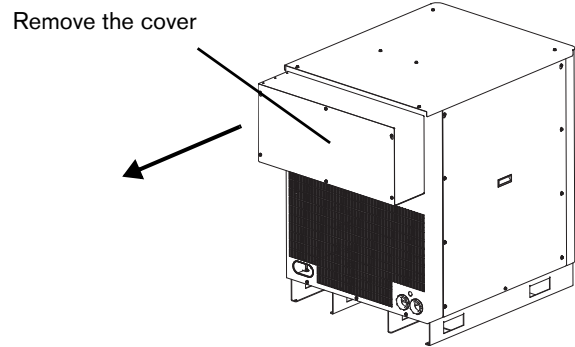
FAILURE TO CORRECTLY INSTALL WIRES AND CONNECTIONS CAN CAUSE ELECTRIC SHOCKS AND FIRES

Do **not** cross the L1, L2, and L3 wires. Use the color-coded and numbered labels on the wires for guidance about how to correctly install them. Make sure to follow the steps in this manual. Incorrect wire installation or bad connections between the inrush PCB and main contactor can cause electric shocks and fires.

Prepare the plasma power supply

1. Remove the power from the cutting system:
 - a. Set the line-disconnect switch to the OFF position.
 - b. Make sure that the power-indicator LED on the plasma power supply is **not** illuminated.
 - c. Remove the supply-gas pressure from the cutting system.
2. Use a 3/8-inch nut driver to remove the cover from the box at the rear of the plasma power supply ([Figure 2](#)). Examine the interior panels of the box. Look for two sets of pre-installed studs on the right-side and the top-center panels. The studs hold the mounting brackets for the small contactor (right-side) and inrush resistors (top-center).
 - a. If you find two sets of pre-installed studs, continue to [step 1](#) of [Install the inrush circuit assembly](#) on page 9.
 - b. If there are **no** pre-installed studs, complete [step 3](#) and [step 4](#) of this procedure to drill holes in the panels before continuing with [step 1](#) of [Install the inrush circuit assembly](#) on page 9.

Figure 2



NOTICE



THE DRILL-HOLE LOCATIONS CAN BE BAD IF THE TEMPLATES ARE INCORRECT

Make sure to use the correct templates. Templates that are the incorrect type or size will cause incorrect measurements for drilling.

If you print templates from an electronic copy of this document, **make sure to use the "Actual Size" printer setting**. Do **not** scale or re-size templates when you print them from an electronic copy.

3. Complete the following steps to drill two holes in the **right-side** panel:
 - a. Remove [Template A](#) from this document. Fold or cut the template where shown.
 - b. Put the template over the **right-side** panel of the box. Make sure that the template is aligned with the bottom-right corner of the panel. For information about how to use the template, refer to [Template A instructions \(right-side panel\)](#) on page 21.
 - c. Use the location of the drill-holes on the template to find the correct locations for the drill-holes on the panel.
 - d. Use a 5/16-inch drill bit to drill two holes in the **right-side** panel where shown on the template.
4. Complete the following steps to drill two holes in the **top-center** panel:
 - a. Remove [Template B](#) from this document. Fold or cut the template where shown.
 - b. Put the template over the **top-center** panel of the box. Make sure that the template is aligned with the right corner of the panel. For information about how to use the template, refer to [Template B instructions \(top-center panel\)](#) on page 25.
 - c. Use the location of the drill-holes on the template to find the correct locations for the drill-holes on the panel.
 - d. Use a 5/16-inch drill bit to drill two holes in the **top-center** panel where shown on the template.



To make the drilling cleaner and easier, use a smaller drill bit before the 5/16-inch drill bit.

Install the inrush circuit assembly

1. Get the mounting bracket (101507) with pre-installed inrush circuit assembly (229579) from Kit 428064. Examine the mounting bracket. Look for six pre-installed screws (075530).
2. If there are **no** pre-installed screws, continue to [step 3](#) of this procedure.



If you find pre-installed screws, continue to [step 8](#) on page 12.

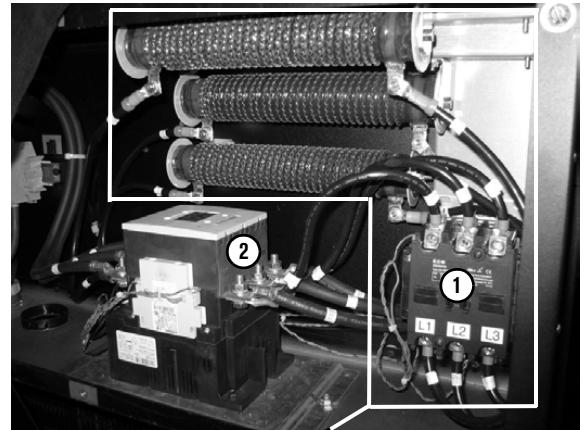
3. Do the following steps to install the mounting bracket with pre-installed inrush circuit assembly:
 - a. Get the four sheet-metal screws (075241) and the four hex nuts (075161) from Kit 428064.
 - b. Align the mounting bracket with pre-installed inrush circuit assembly (229579) with the holes drilled in [step 3](#) and [step 4](#) of [Prepare the plasma power supply](#) on page 8.
 - c. Use a blade screwdriver and 3/8-inch wrench to tighten the sheet-metal screws and hex nuts that hold the mounting bracket.



Refer to [Figure 3](#) to see the approximate installation locations for the small contactor ① and main contactor ②.

4. Connect the **red** (L1), **blue** (L2), and **green** (L3) wires from the top of the small contactor ① to the right-side of the main contactor ② (reference [Figure 3](#)):
 - a. If the connectors on the main contactor are exposed, as shown in [Figure 4](#) on page 10, use two 3/8-inch wrenches to do the following steps:
 - Disconnect the **red** (L1), **blue** (L2), and **green** (L3) wires from the small contactor.
 - Connect the **red** (L1) wire from the small contactor to the L1 connector (reference ① in [Figure 4](#)) on the main contactor. Then connect the red (L1) wires that were previously connected to the main contactor.
 - Connect the **blue** (L2) wire from the small contactor to the L2 connector (reference ② in [Figure 4](#)) on the main contactor. Then connect the blue (L2) wires that were previously connected to the main contactor.
 - Connect the **green** (L3) wire from the small contactor to the L3 connector (reference ③ in [Figure 4](#)) on the main contactor. Then connect the green (L3) wires that were previously connected to the main contactor.

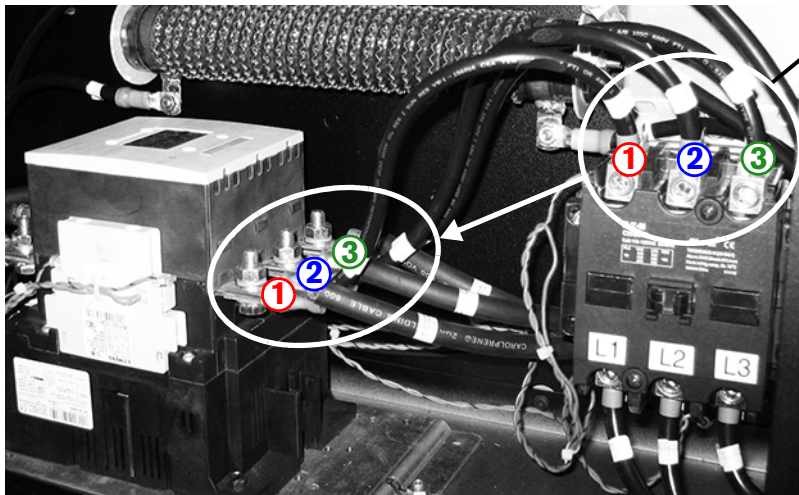
Figure 3



Approximate configuration and locations of kit components in the plasma power supply, including the small contactor ① and main contactor ②. The configuration and locations in your plasma power supply can be slightly different from this example, based on the kit and plasma power supply.

Inrush Circuit Assembly Installation Kit

Figure 4 – Small contactor connected to the main contactor when the connectors are exposed



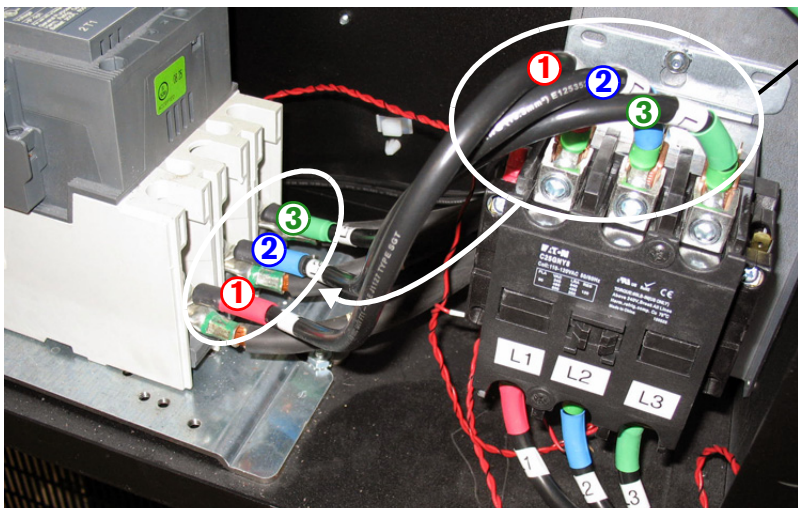
The wires from the top of the small contactor connected to the right-side of the main contactor when the connectors are exposed. Use two 3/8-inch wrenches to loosen and tighten the bolts.

- 1 Red (L1) wire
- 2 Blue (L2) wire
- 3 Green (L3) wire

b. If the connectors on the main contactor are **not** exposed, as shown in [Figure 5](#), use a 6 mm hex wrench to do the following steps:

- Disconnect the **red** (L1), **blue** (L2), and **green** (L3) wires from the small contactor.
- Connect the **red** (L1) wire from the small contactor to L1 connector (reference ① in [Figure 5](#)) on the main contactor. Then connect the red (L1) wires that were previously connected to the main contactor.
- Connect the **blue** (L2) wire from the small contactor to the L2 connector (reference ② in [Figure 5](#)) on the main contactor. Then connect the blue (L2) wires that were previously connected to the main contactor.
- Connect the **green** (L3) wire from the small contactor to the L3 connector (reference ③ in [Figure 5](#)) on the main contactor. Then connect the green (L3) wires that were previously connected to the main contactor.

Figure 5 – Small contactor connected to the main contactor when the connectors are **not** exposed

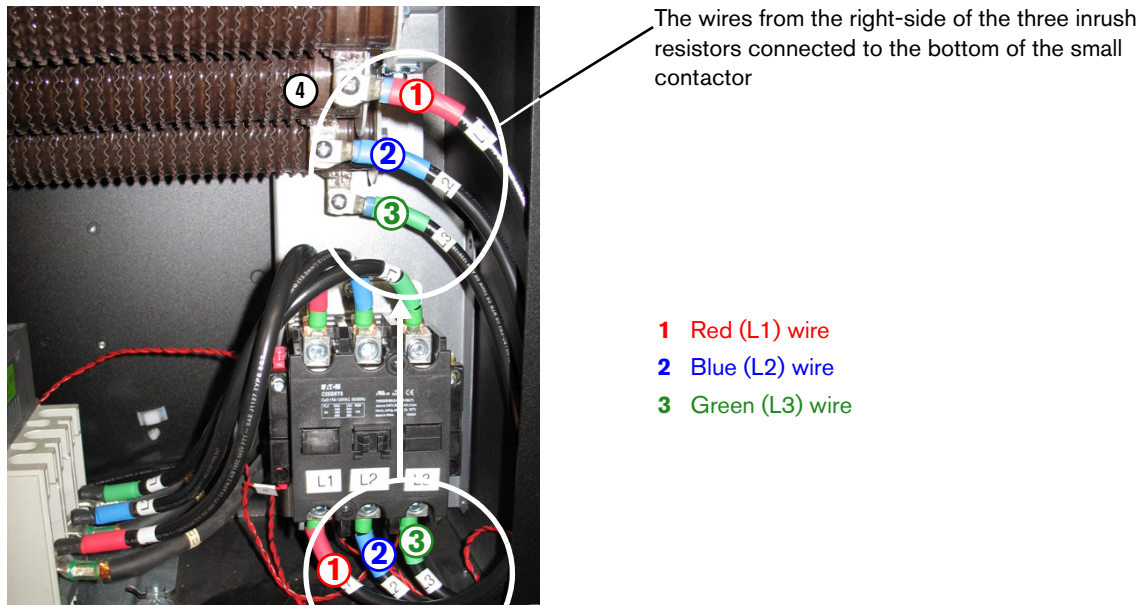


The wires from the top of the small contactor connected to the right-side of the main contactor when the connectors are not exposed. Use a 6 mm hex wrench to loosen and tighten the screws.

- 1 Red (L1) wire
- 2 Blue (L2) wire
- 3 Green (L3) wire

5. Make sure that the **red**, **blue**, and **green** wires from the right-side of the three inrush resistors ④ are connected to the same color-coded wires on the bottom of the small contactor, as shown in [Figure 6](#). Make sure that the following connections are correct and tight:
- ❑ The **red** (L1) wire to the **top** inrush resistor.
 - ❑ The **blue** (L2) wire to the **middle** inrush resistor.
 - ❑ The **green** (L3) wire to the **bottom** inrush resistor.

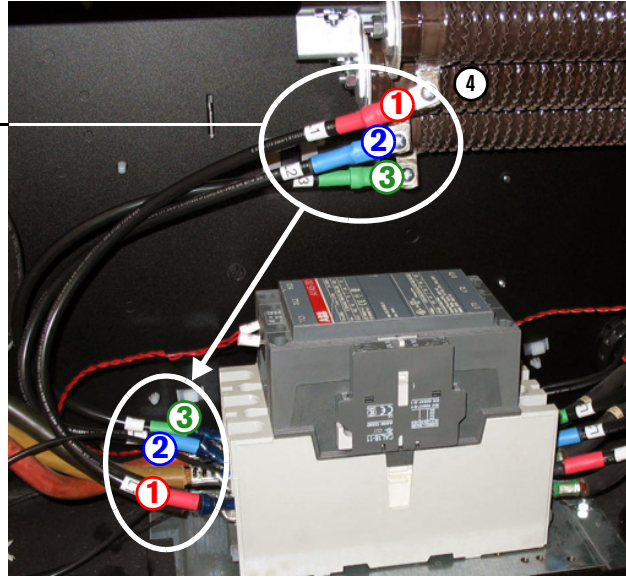
Figure 6 – Inrush resistors connected to the small contactor




6. Connect the **red** (L1), **blue** (L2), and **green** (L3) wires from the **left-side** of the three inrush resistors ④ to the **left-side** of the main contactor, as shown in [Figure 7](#) on page 12:
- a. If the connectors on the main contactor are exposed, use two 3/8-inch wrenches to do the following steps:
- Remove the bolt that holds the main contactor. The bolt is near the box cover that was removed during [step 2](#) of [Prepare the plasma power supply](#) on page 8.
 - Disconnect the **red** (L1), **blue** (L2), and **green** (L3) wires from the left side of each inrush resistor.
 - Connect the **red** (L1) wire from the **top** inrush resistor to the L1 connector (reference ① in [Figure 7](#)) on the main contactor. Then connect the L1 wires that were previously connected to the main contactor.
 - Connect the **blue** (L2) wire from the **middle** inrush resistor to the L2 connector (reference ② in [Figure 7](#)) on the main contactor. Then connect the L2 wires that were previously connected to the main contactor.
 - Connect the **green** (L3) wire from the **bottom** inrush resistor to the L3 connector (reference ③ in [Figure 7](#)) on the main contactor. Then connect the L3 wires that were previously connected to the main contactor.

Figure 7 – Inrush resistors connected to the main contactor

The wires from the left-side of the three inrush resistors connected to the left-side of the main contactor



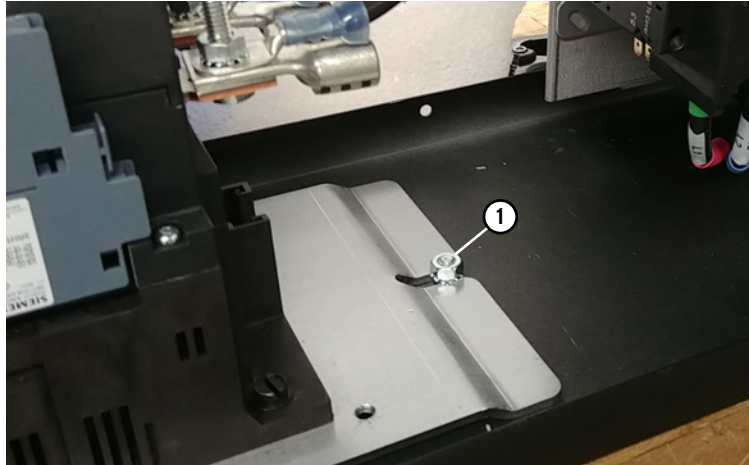
- 1 Red (L1) wire
- 2 Blue (L2) wire
- 3 Green (L3) wire

- b. If the connectors on the main contactor are **not** exposed, use a 6 mm hex wrench to do the following steps:
 - Remove the screw that holds the main contactor. The screw is near the box cover that was removed during [step 2](#) of [Prepare the plasma power supply](#) on page 8.
 - Disconnect the **red** (L1), **blue** (L2), and **green** (L3) wires from the left-side of each inrush resistor.
 - Connect the **red** (L1) wire from the **top** inrush resistor to the L1 connector (reference ① in [Figure 7](#)) on the main contactor. Then connect the L1 wires that were previously connected to the main contactor.
 - Connect the **blue** (L2) wire from the **middle** inrush resistor to the L2 connector (reference ② in [Figure 7](#)) on the main contactor. Then connect the L2 wires that were previously connected to the main contactor.
 - Connect the **green** wire (L3) from the **bottom** inrush resistor to the L3 connector (reference ③ in [Figure 7](#)) on the main contactor. Then connect the L3 wires that were previously connected to the main contactor.
7. Examine the connections for the inrush resistors. Make sure they are correct. Look for loose connections. Use a #2 Phillips screwdriver and a 3/8-inch wrench to tighten loose connections if found.
8. Do the following steps to install the mounting bracket (101507) with pre-installed inrush circuit assembly (229579) over the pre-installed studs:
 - a. Get the four hex nuts (075161) from Kit 428064.
 -  The 075241 sheet-metal screws are not necessary with pre-installed studs.
 - b. Find the slots that are on the mounting bracket. Move each mounting bracket into position over the studs that are on the top-center and ride-side panels in the box.
 - c. Use a 3/8-inch wrench to tighten the four hex nuts that hold each mounting bracket.

Install the inrush PCB and connect the wires

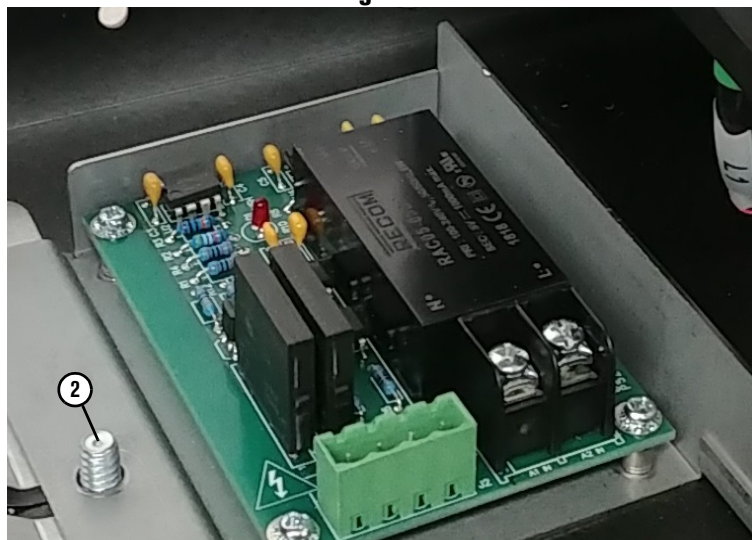
1. Use a 7/16-inch wrench to remove the washer nut ① that holds the mounting bracket for the main contactor, as shown in [Figure 8](#). Keep this nut to use with the new inrush PCB.

Figure 8



2. Put the mounting bracket (101507) with pre-installed inrush PCB (141558) on top of the washer-nut stud ②, as shown in [Figure 9](#).

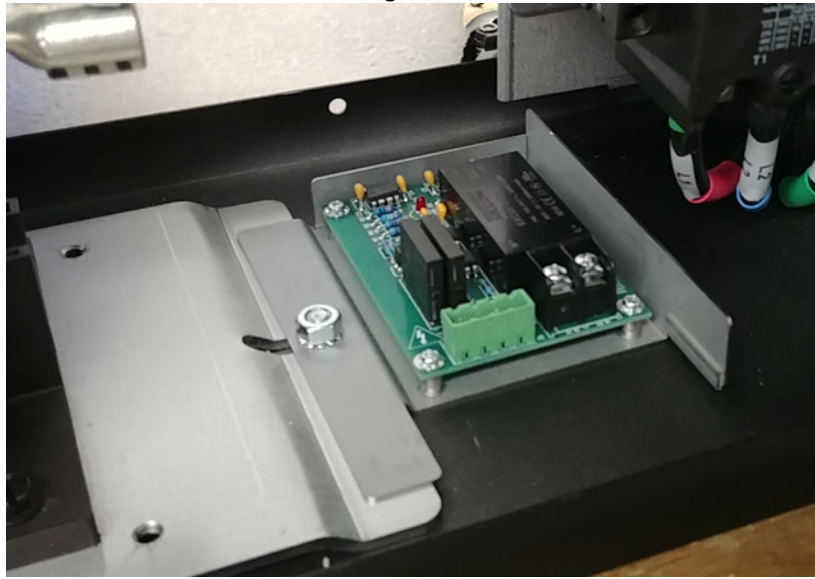
Figure 9



Inrush Circuit Assembly Installation Kit

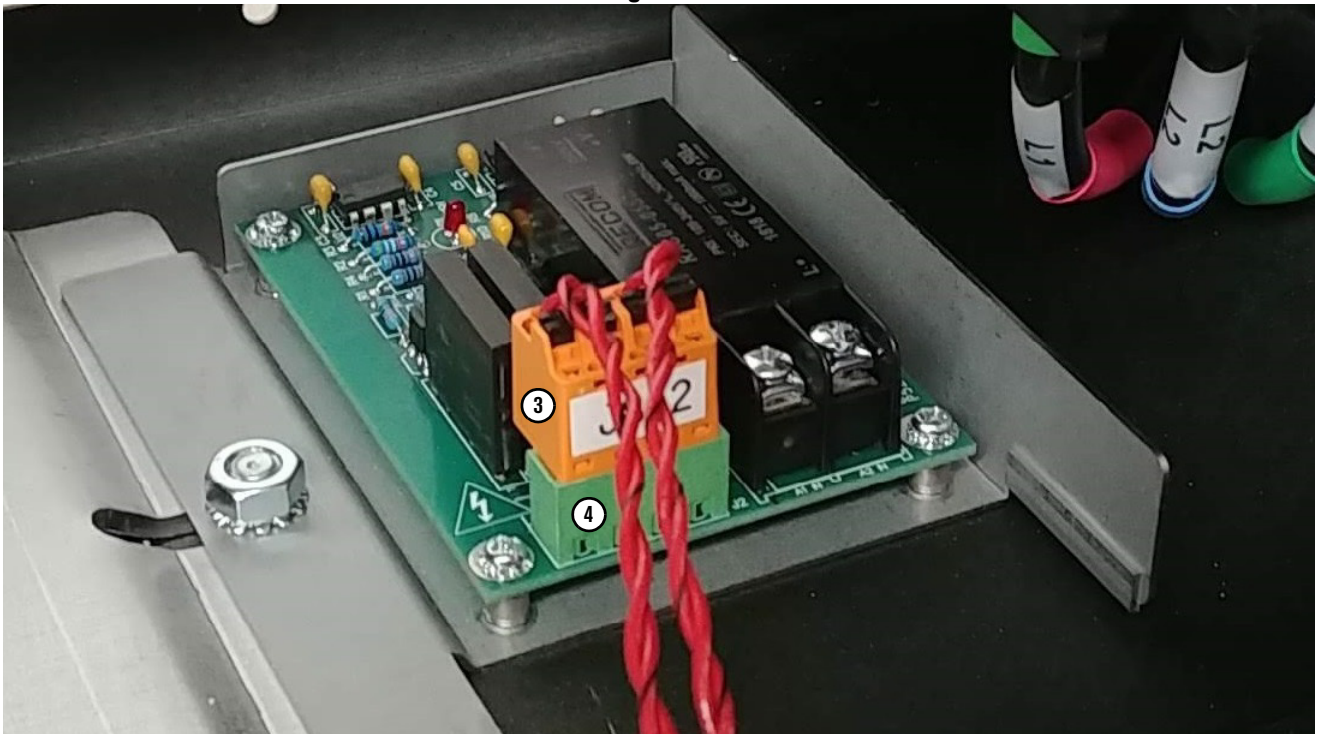
3. Use a 7/16-inch wrench to install the washer nut and temporarily hold the mounting bracket (101507) with pre-installed inrush PCB (141558) in the plasma power supply, as shown in [Figure 10](#).

Figure 10



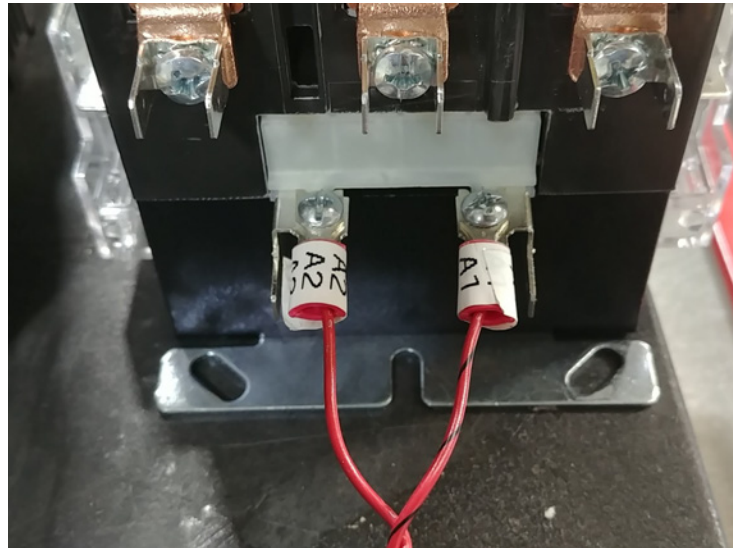
4. Use the PCB wire harness (229971) from Kit 428064 to connect the J8.2 connector ③ on the wire harness to the J2 connector ④ on the newly installed inrush PCB, as shown in [Figure 11](#).

Figure 11



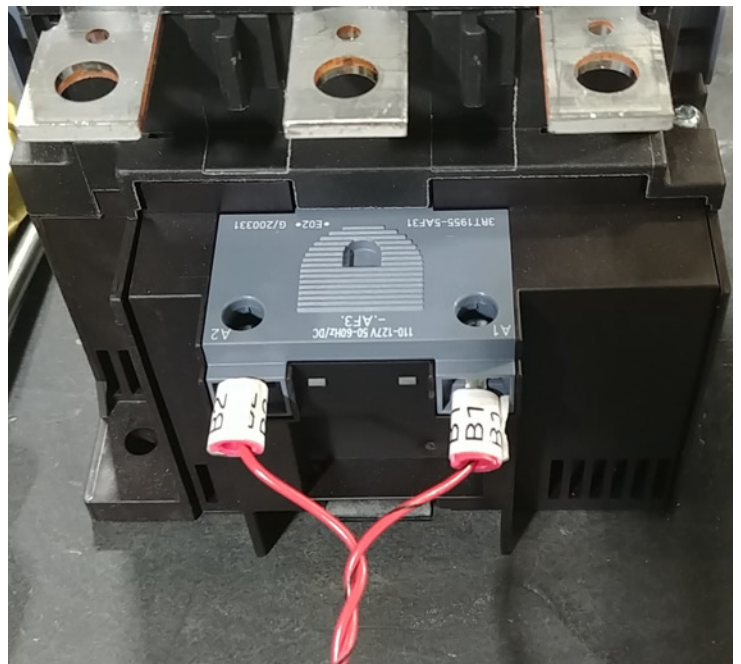
5. Use a #2 Phillips screwdriver to connect the A1 wire and the A2 wire from the J8.2 PCB wire harness to the coil terminals on the small contactor, as shown in [Figure 12](#).

Figure 12



6. Use a #2 Phillips screwdriver to connect the B1 wire and the B2 wire from the J8.2 PCB wire harness to the coil terminals on the main contactor, as shown in [Figure 13](#).

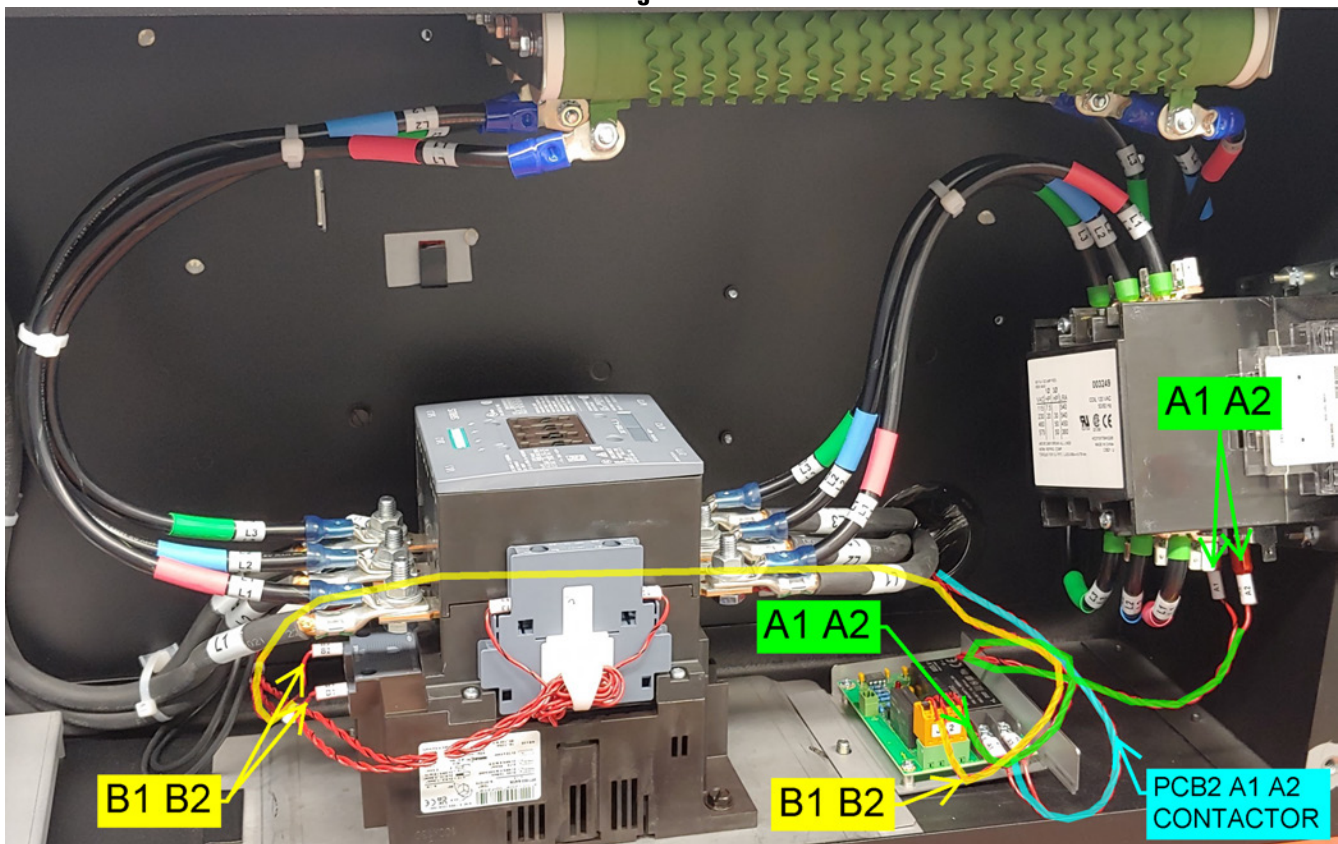
Figure 13



Inrush Circuit Assembly Installation Kit

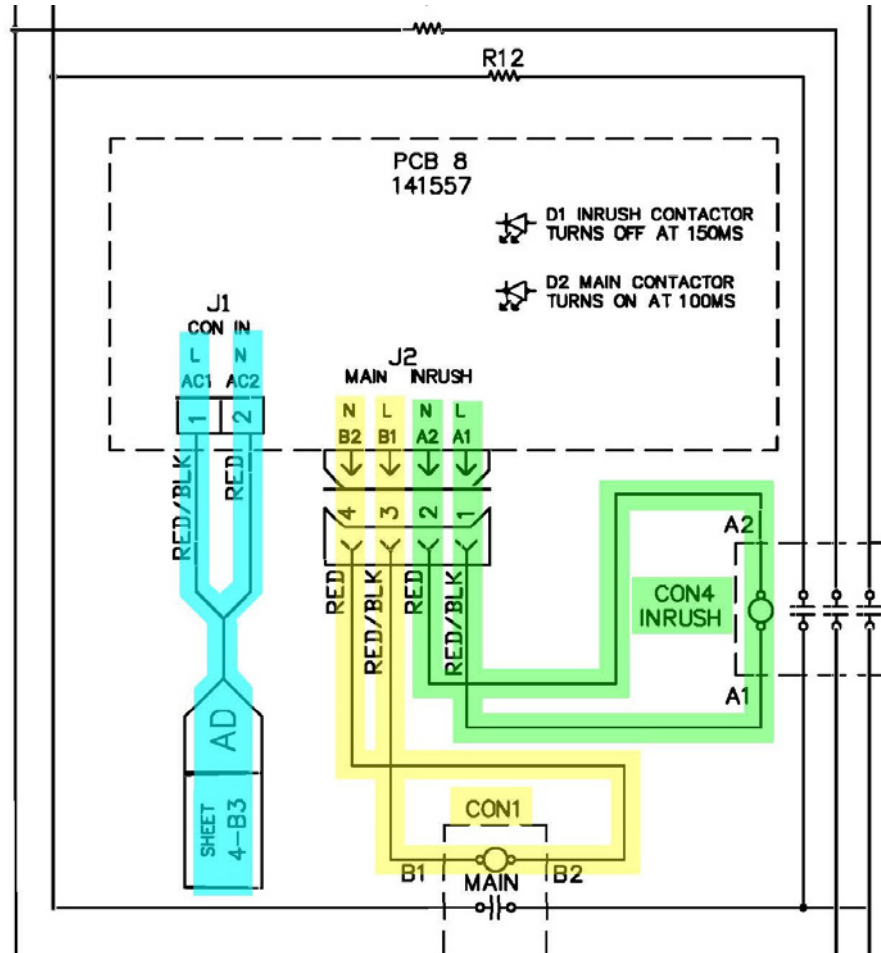
- Use a #2 Phillips screwdriver to connect the A1 and A2 fork-terminal wire connectors to the terminal block on the inrush PCB, as shown in [Figure 14](#).

Figure 14



- Make sure that the connections for the A1 / A2 and B1 / B2 wires are correct. For guidance, refer to [Figure 15](#) on page 17 to see inrush and main contactor connections from an example wiring diagram (013381). You can also refer to the wiring diagram in the instruction manual that came with your power supply.

Figure 15



The colors in this example diagram show the correct wire routing. The wire colors in your plasma power supply can be different.



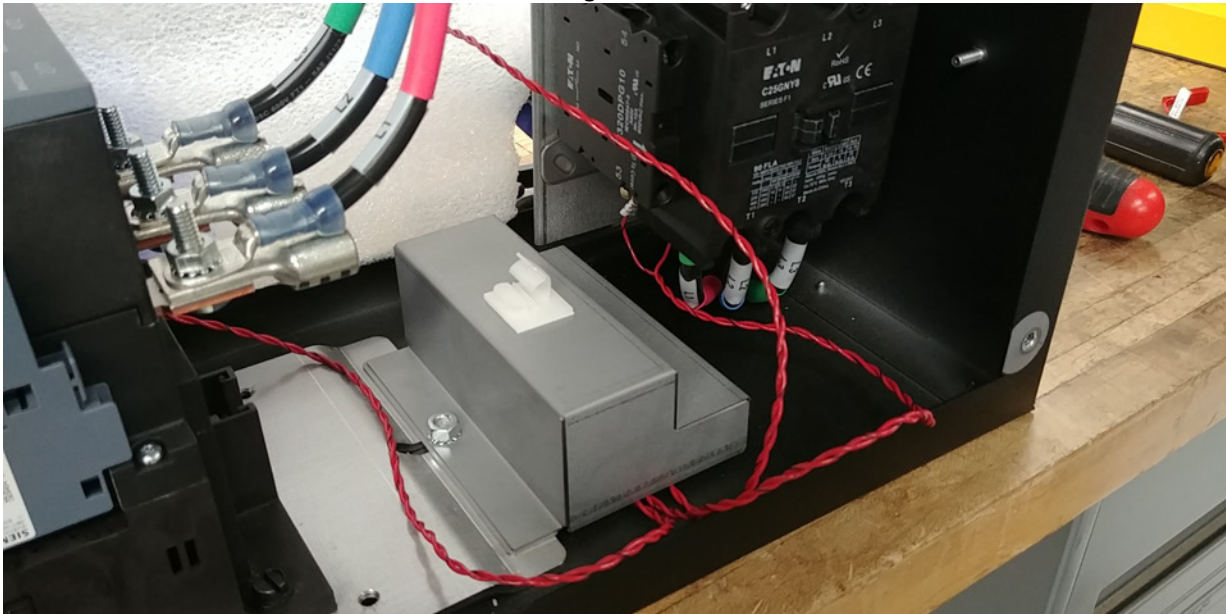
For complete wiring diagrams, refer to the instruction manual that came with your power supply. Technical documentation is available at www.hypertherm.com/docs.

9. Remove the washer nut that temporarily holds the mounting bracket for the new inrush PCB.
10. Put the inrush PCB cover (101506) from Kit 428064 on top of the mounting bracket and pre-installed inrush PCB. Make sure that the cover does not pinch any wires.

Inrush Circuit Assembly Installation Kit

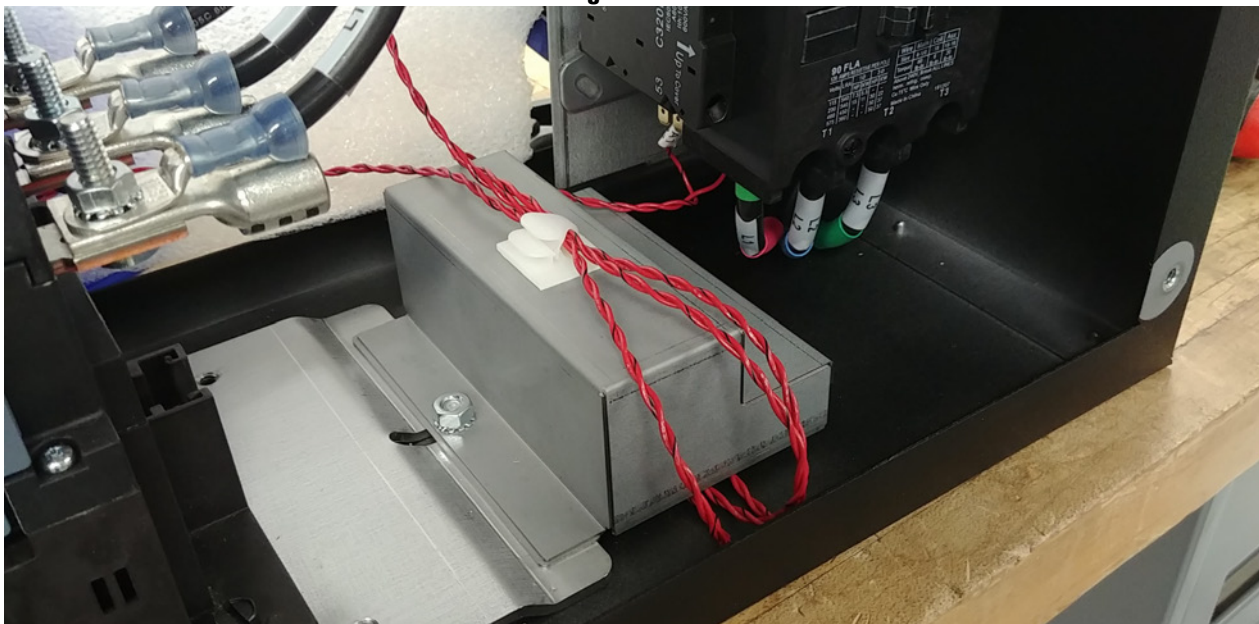
11. Use a 7/16-inch wrench to install the washer nut to permanently hold the inrush PCB cover, mounting bracket, and inrush PCB in position, as shown in [Figure 16](#).

Figure 16



12. Collect the 3 wires from the newly installed inrush PCB/mounting-bracket assembly. Move the wires on top of the cover. Use the cable holder, pre-installed on the inrush PCB cover, to hold the wires, as shown in [Figure 17](#).

Figure 17



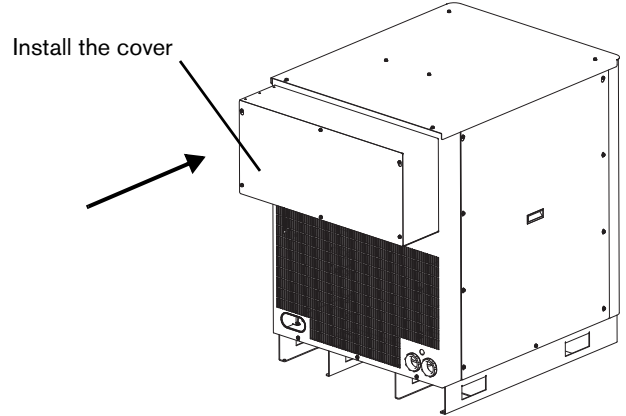
13. Use a 3/8-inch nut driver to install the cover on the box, as shown in [Figure 18](#). Make sure that the cover does not pinch any wires.
14. Use the power distribution PCB assembly (041802) from Kit 428064 to replace the power distribution PCB in the plasma power supply.



Some users with a plasma power supply that has a power distribution PCB earlier than revision W have seen 105 diagnostic codes when electric power is supplied to the new inrush PCB. Installing the power distribution PCB from Kit 428064 prevents potential incompatibility issues that can cause bad 105 diagnostic codes.

15. Supply the supply-gas pressure to the cutting system.
16. Supply power to the cutting system:
 - a. Set the line-disconnect switch to the ON position.
 - b. Make sure that the power-indicator LED on the power supply is illuminated.

Figure 18



Addendum – measurements for drilling

NOTICE



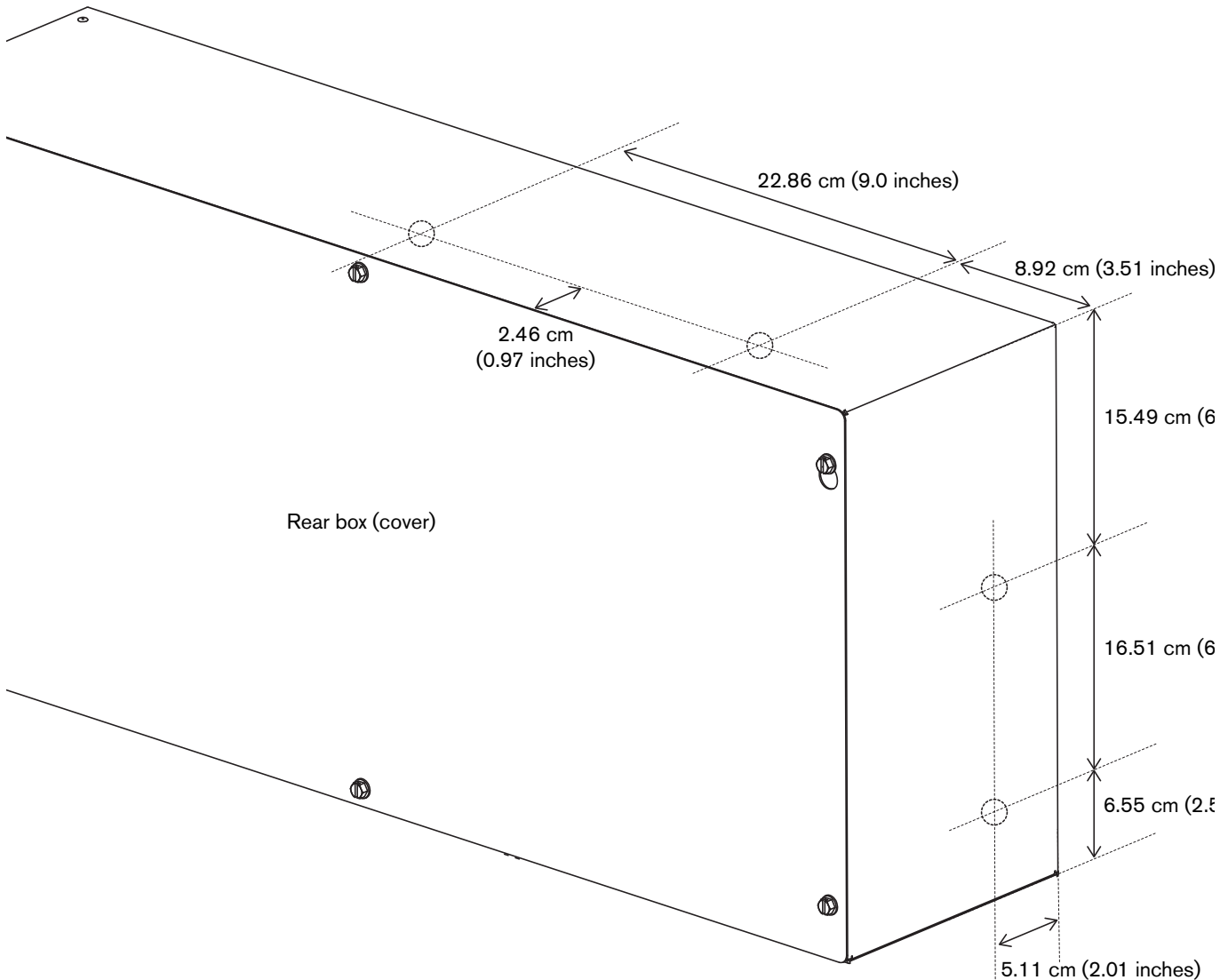
THE DRILL-HOLE LOCATIONS CAN BE BAD IF THE TEMPLATES ARE INCORRECT

Make sure to use the correct templates. Templates that are the incorrect type or size will cause incorrect measurements for drilling.

If you print templates from an electronic copy of this document, make sure to use the “Actual Size” printer setting. Do **not** scale or re-size templates when you print them from an electronic copy.

If you are unable to use the [Template A](#) and [Template B](#) sheets included in this document, you can use the measurements in [Figure 19](#) to find the correct locations to drill the holes.

Figure 19 – Measurements for drilling the four holes if the templates are not available



Template A instructions (right-side panel)

1. Remove the [Template A](#) sheet from this document. Fold or cut the template where shown.
2. Put the template over the right-side panel of the box, as shown in [Figure 20](#). Make sure that the template is aligned with the bottom-right corner of the panel.
3. Use the location of the drill-holes on the template to find the correct location for the drill-holes on the panel.
4. Use a 5/16-inch drill bit to drill two holes, based on the hole locations on the template.


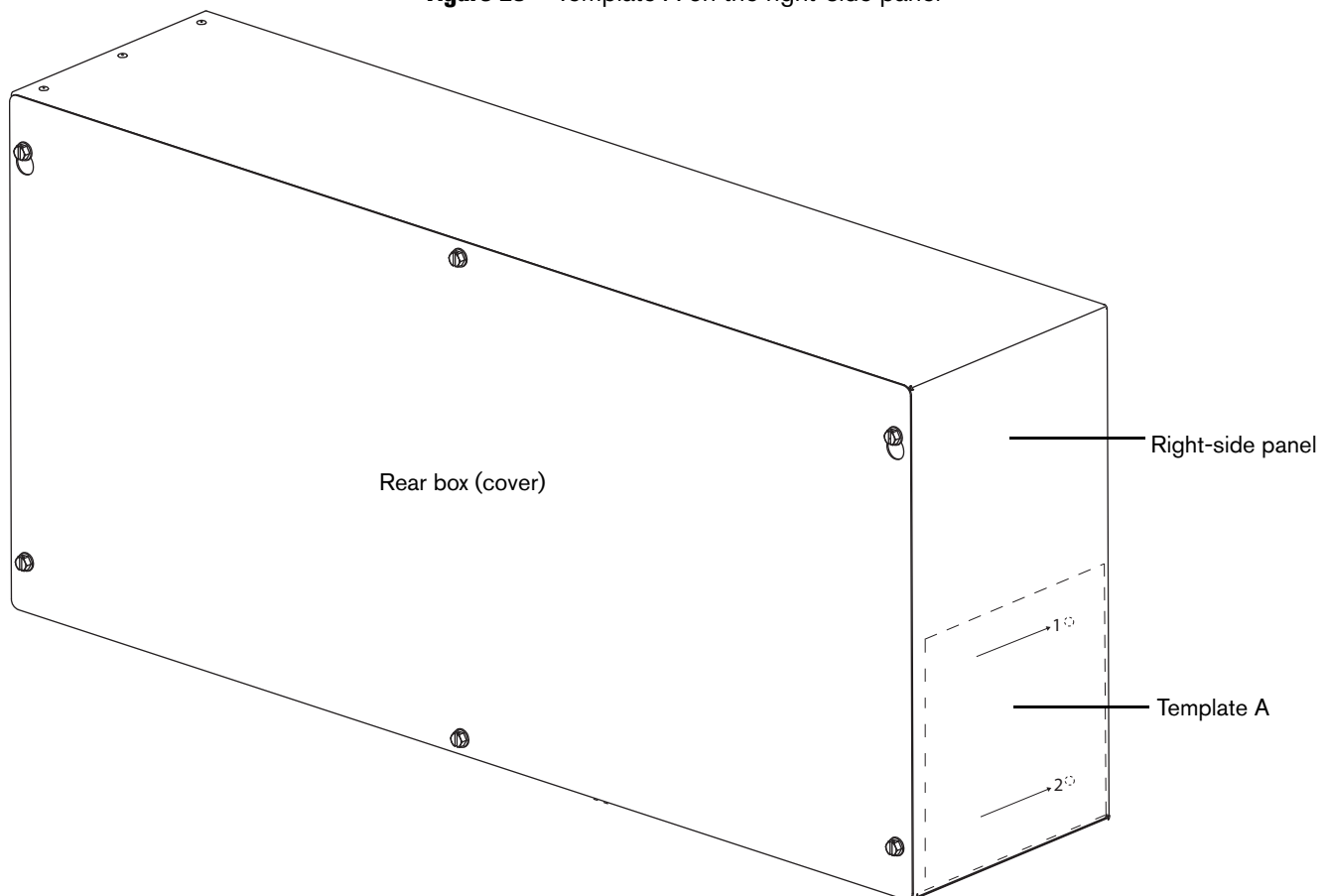
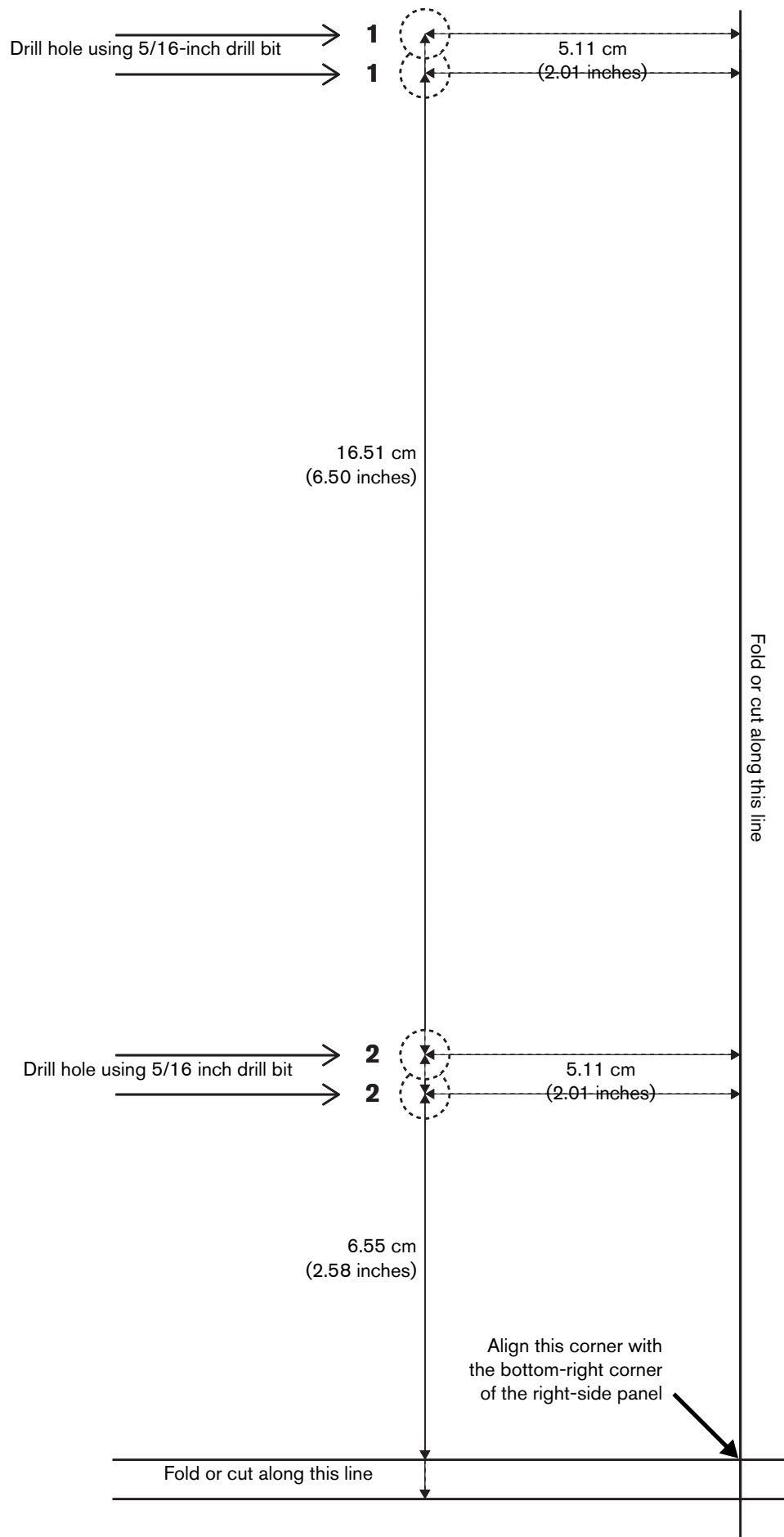
NOTICE	
	<p>THE DRILL-HOLE LOCATIONS CAN BE BAD IF THE TEMPLATES ARE INCORRECT</p> <p>Make sure to use the correct templates. Templates that are the incorrect type or size will cause incorrect measurements for drilling.</p> <p>If you print templates from an electronic copy of this document, make sure to use the "Actual Size" printer setting. Do not scale or re-size templates when you print them from an electronic copy.</p>

Figure 20 – Template A on the right-side panel



Template A



Template B instructions (top-center panel)

1. Remove the [Template B](#) from this document. Fold or cut the template where shown.
2. Put the template over the top-center panel of the box, as shown in [Figure 21](#). Make sure that the template is aligned with the right corner of the panel. This is the corner that is near the rear-box cover.
3. Use the location of the drill holes on the template to find the correct location for the drill holes on the panel.
4. Use a 5/16-inch drill bit to drill two holes in the panel, based on the hole locations on the template.

NOTICE

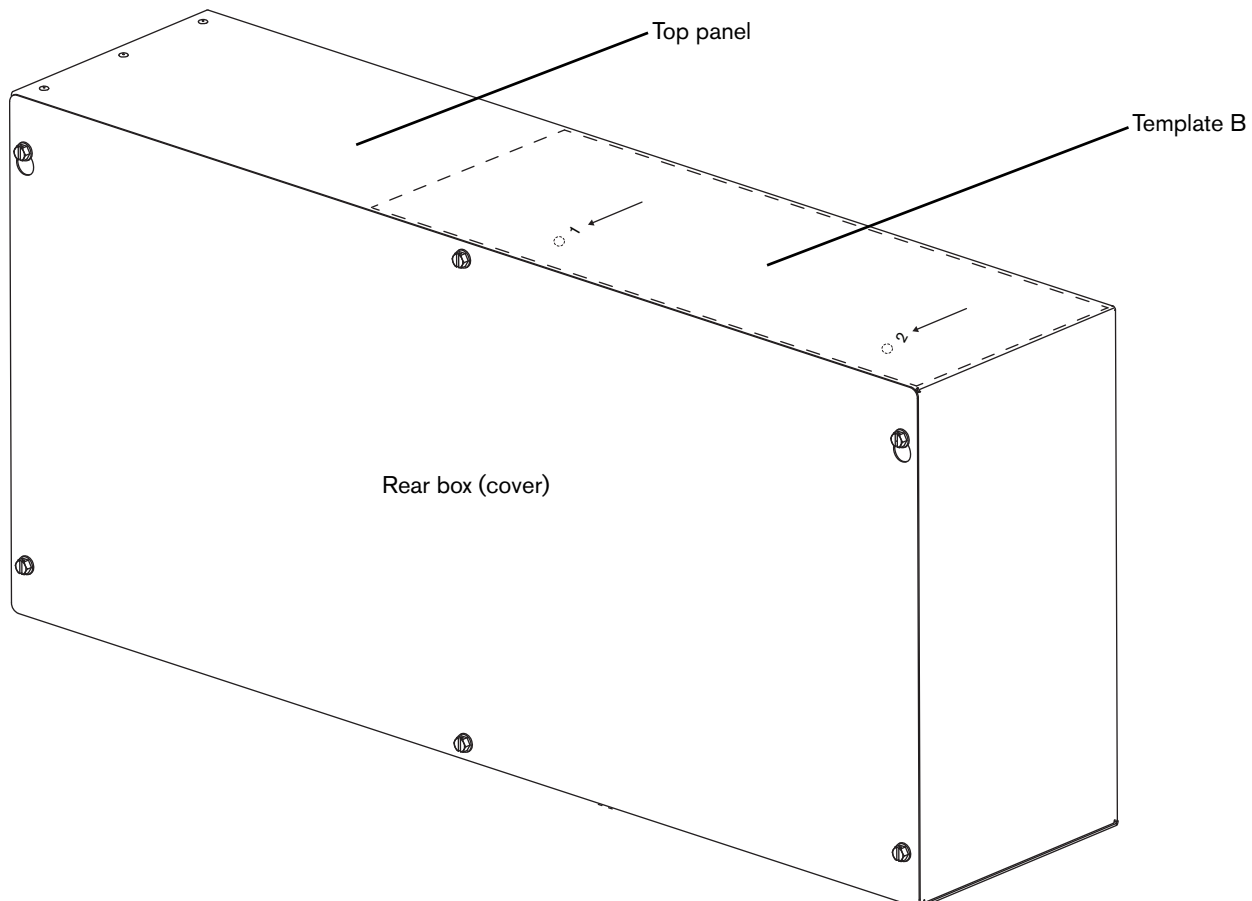


THE DRILL-HOLE LOCATIONS CAN BE BAD IF THE TEMPLATES ARE INCORRECT

Make sure to use the correct templates. Templates that are the incorrect type or size will cause incorrect measurements for drilling.

If you print templates from an electronic copy of this document, make sure to use the "Actual Size" printer setting. Do **not** scale or re-size templates when you print them from an electronic copy.

Figure 21 – Template B on the top-center panel



Template B

