

SLS0163 - Booklet A

A delicately scaled, modular system of interconnected elements and suspended LED luminaires.

suspenders[®]

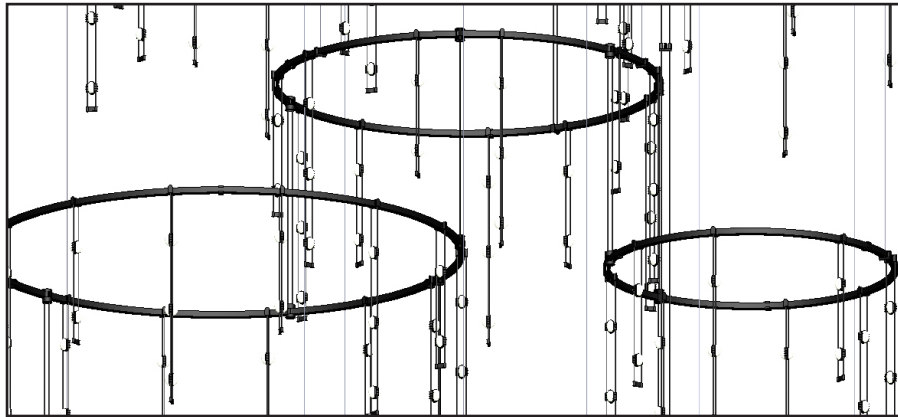
assembly instructions

SONNEMAN[®]
A WAY OF LIGHT

Suspenders® Product Information and Warnings

Important

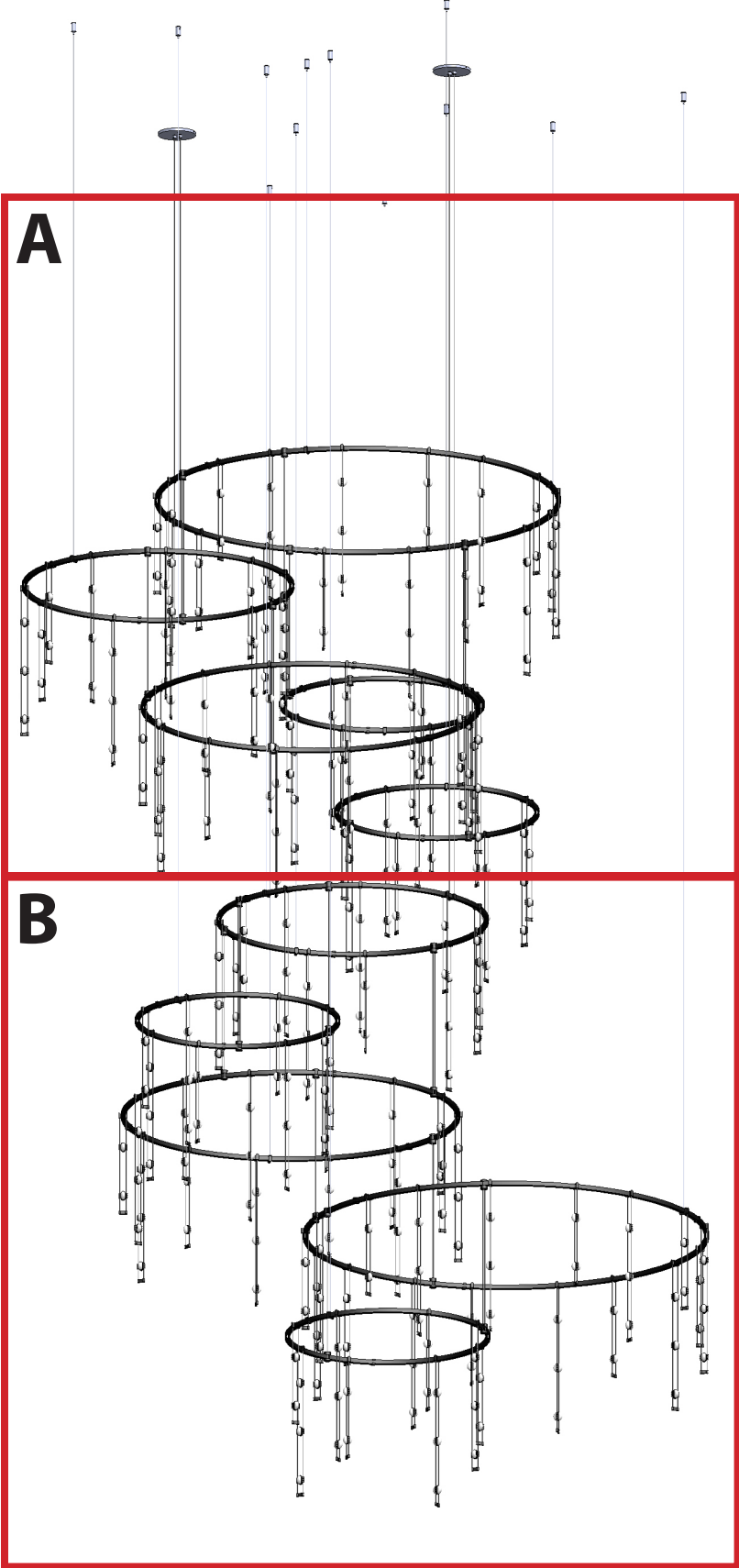
- **Always disconnect the power before installing or replacing Luminaires and before cleaning or other maintenance.**
- **Consult a qualified, licensed electrician to ensure correct branch circuit conductor.**
- Please read all included assembly instructions and warnings carefully before installation. Contact Customer Service if you have any questions or concerns. Before installation, please confirm that the fixture is compatible with your supply voltage and dimming system, if present.
- LEDs are highly sensitive electronic devices, and must be treated with care. Do not open any factory sealed compartments, and avoid touching the LEDs with your hands or any object.
- Although all our fixtures are equipped with protective devices, LED electronic systems are vulnerable to power surges and supply variations. Do not install LED fixtures on the same circuit as any motors, appliances, or HVAC systems.
- Do not remove or bypass any LED Driver or Transformer that is provided with the fixture, and do not replace or substitute with another power supply.
- Remote Transformer installation must be done by a licensed electrician and in accordance with local building and electrical codes. Remote installations should be in an accessible location, as close to the fixture as possible. The appropriate wire gauge must be used to limit the voltage drop to no more than 5%.
- Fixtures must be wired in parallel on independent leads; do not "daisy chain" multiple fixtures together or wire them in series.
- All factory-made splices and connections must remain intact. LED circuits are carefully designed and built, and improper connections may damage the fixture.
- Any mounting hardware is provided for your convenience and should be used with discretion. Always use the appropriate hardware for the mounting surface.
- Suspenders® transformers can be loaded up to 80% of their rated wattage.
- Suspenders® transformers feature short-circuit protection with automatic recovery, and will resume operation once the short-circuit condition is removed.
- Suspenders® transformers have 24VAC output
- Suspenders® must be installed in dry locations ONLY.



Configuration Assembly

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SLS0163 Breakdown



A

SLS0163 Segment A
See page 6

B

SLS0163 Segment B
See Book B

Shallow Single Double Power Feed Installation (Fig. 1):

1. Install 3 **power feeds**, see page 5 for power feed location.
2. Shut off power to the **outlet box**.
3. **For remote transformer use:** The **Transformer** must be installed in an accessible location in accordance with local electrical codes. You must use the appropriate wire gauge from the transformer to the Power Feed to limit the voltage drop to less than 5%.
4. Make appropriate electrical connections using wire nuts:
 - a. Connect the **Transformer's** live wire (black) to the live outlet box wire.
 - b. Connect the Transformer's neutral wire (white) to the neutral outlet box wire.
 - c. Connect the ground outlet box wire (green or uncoated) to the mounting plate using the green screw.
 - d. Connect one of the black **Power Feed** wires to one of the transformer output wires. Connect the other black Power Feed wire to the second transformer output wire.
 - e. Carefully place connections in outlet box.
5. Attach the **mounting plate** to the outlet box using the two (2) **screws**.
6. Attach Power Feed to mounting plate. Secure using **set screws** and included **Allen key**.
7. To adjust orientation of bushings:
Loosen set screws using included Allen key and rotate Power Feed to the desired position.

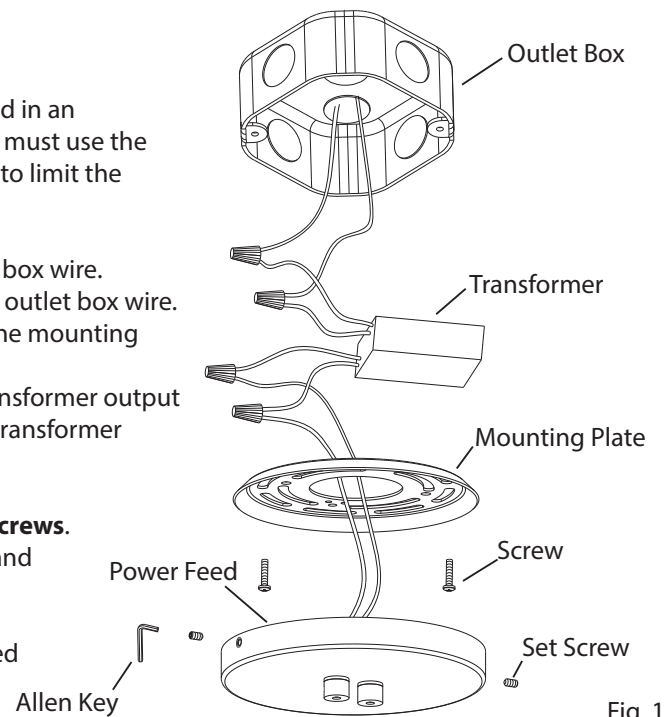
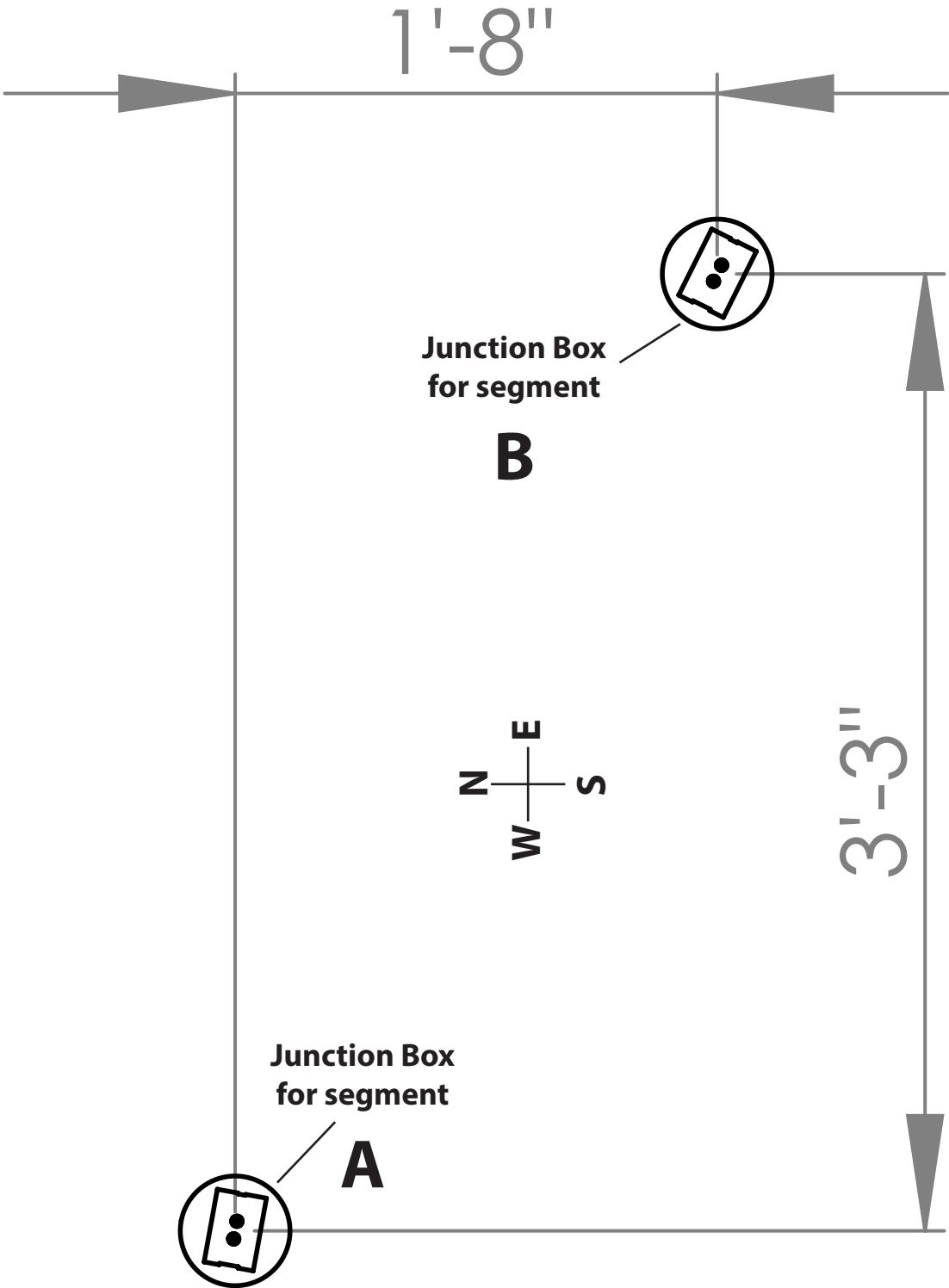


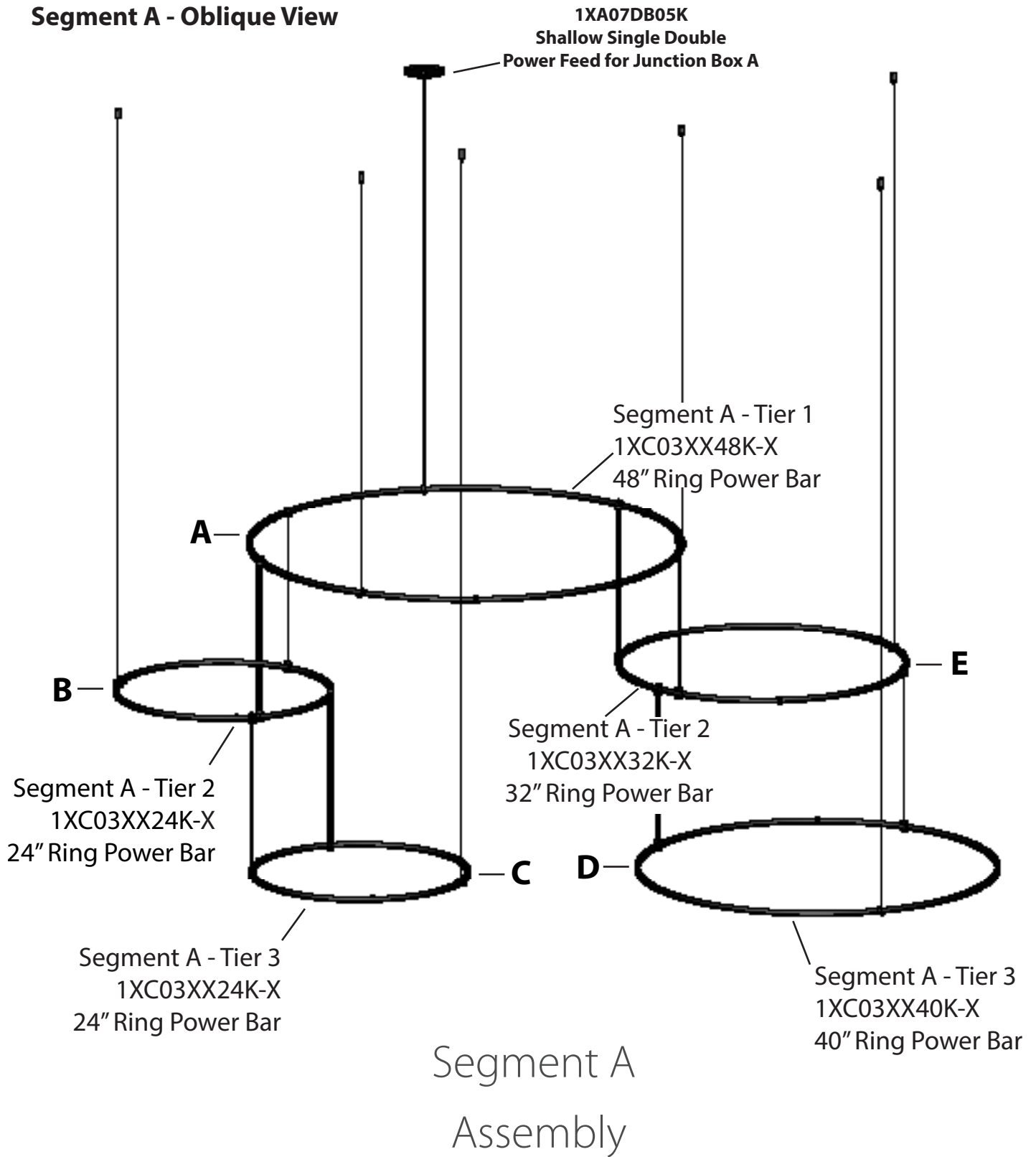
Fig. 1

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Power Feed Location

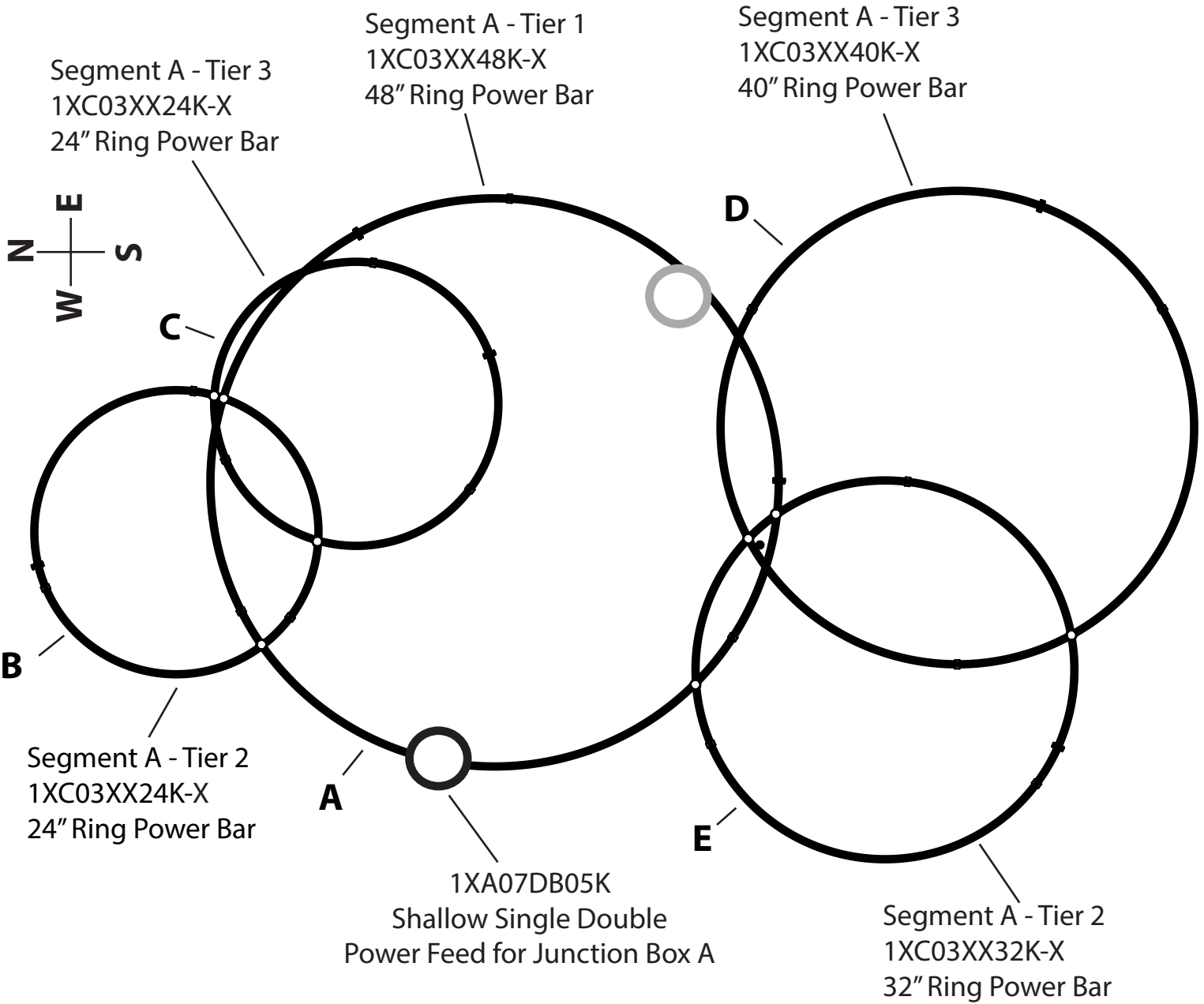



Segment A - Oblique View



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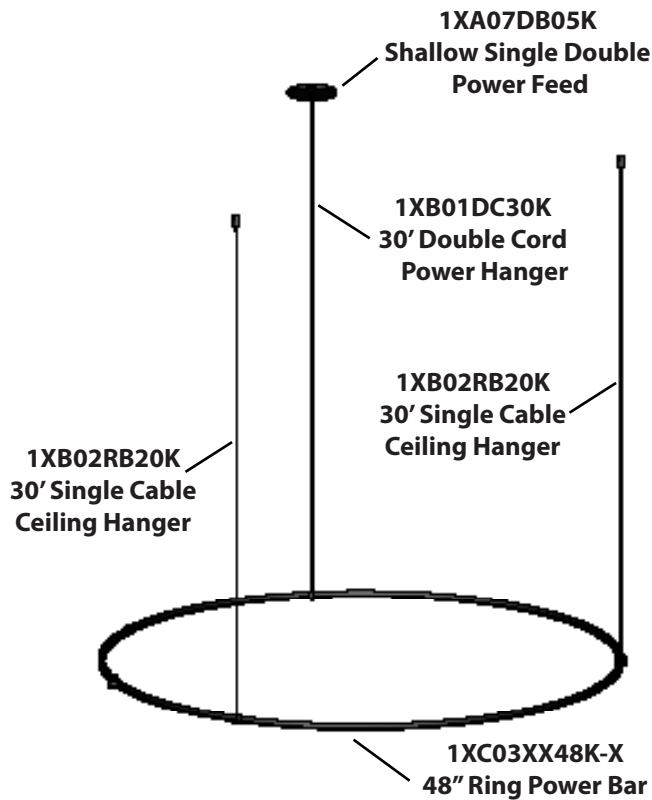
Segment A - Ceiling Plan



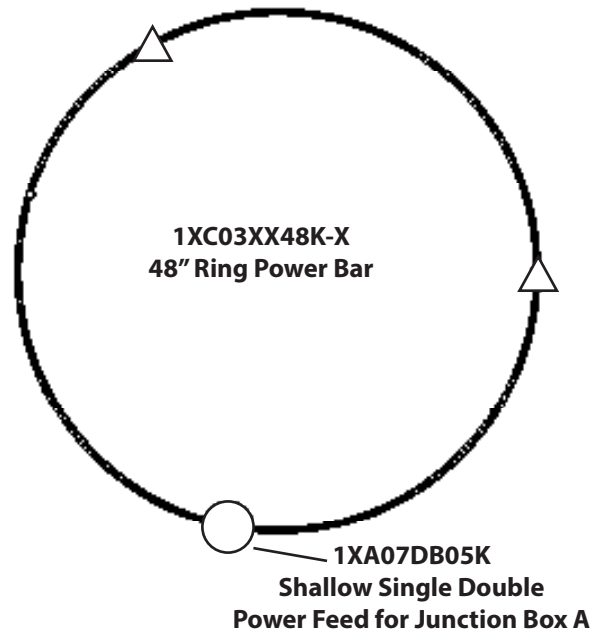
 = Power Feed not used for this segment. Only use as a reference to position rings.

Segment A
Assembly

Segment A - Tier 1



Component	Description	Symbol
1XA07DB05K & 1XB01DC30K	Shallow Single Double Power Feed and 30' Double Cord Power Feed Hanger	○
1XB02RB20K	30' Single Cable Ceiling Hanger	△

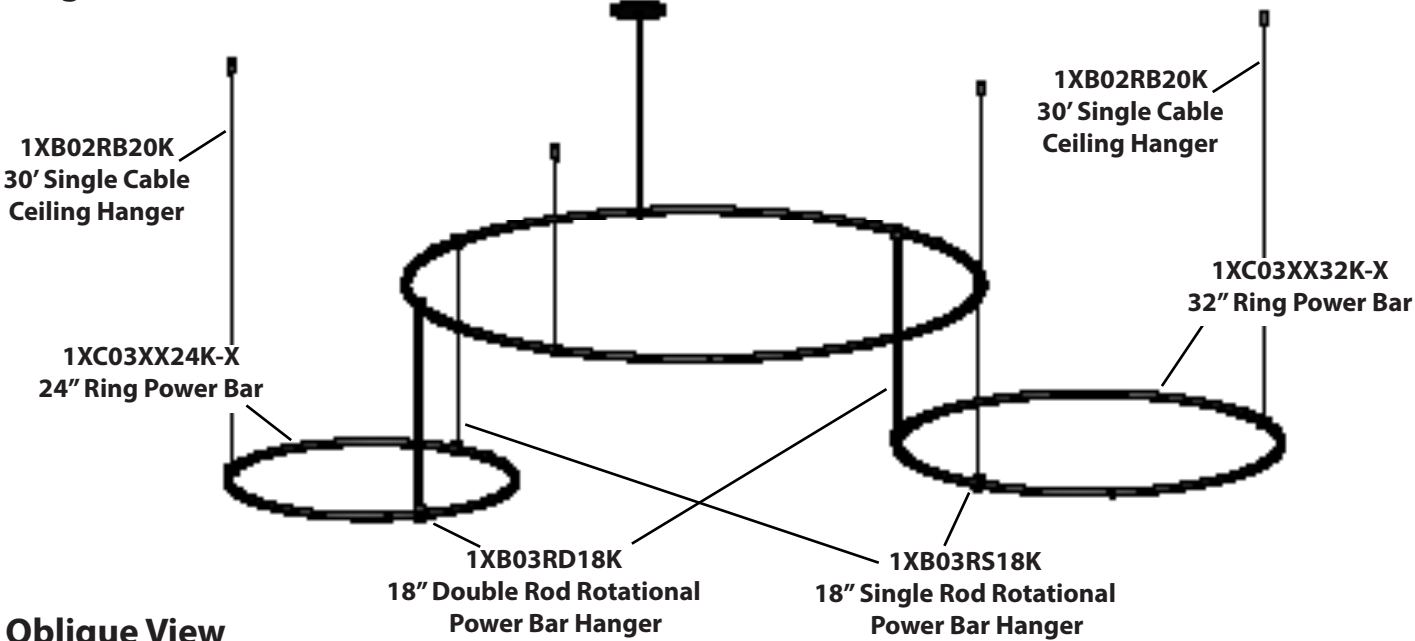


1. Shut off power to the outlet box.
2. Hang the First-Tier Ring Power Bar from three evenly spaced (2x) **Ceiling Hangers** and (1x) **Power Feed Hanger** (Page 12).

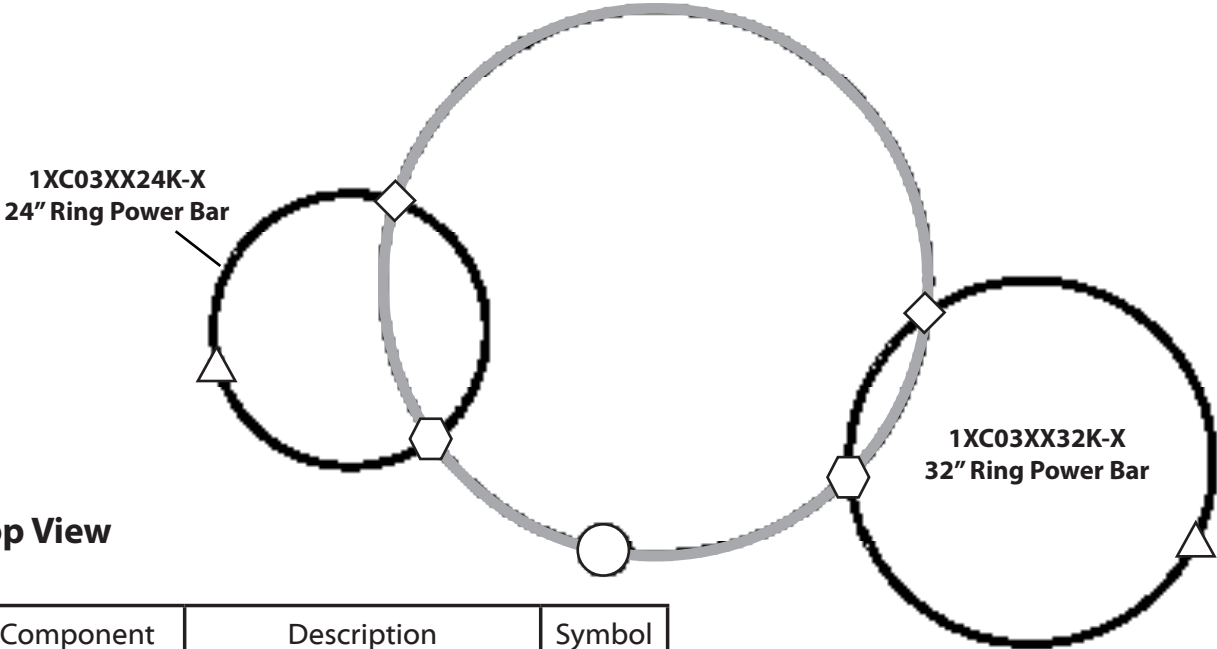
NOTE: The exact location of each Ring Power Bar and its ceiling hangers is flexible. It is only important that the cables and cords hang straight from the ceiling.

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Segment



Oblique View

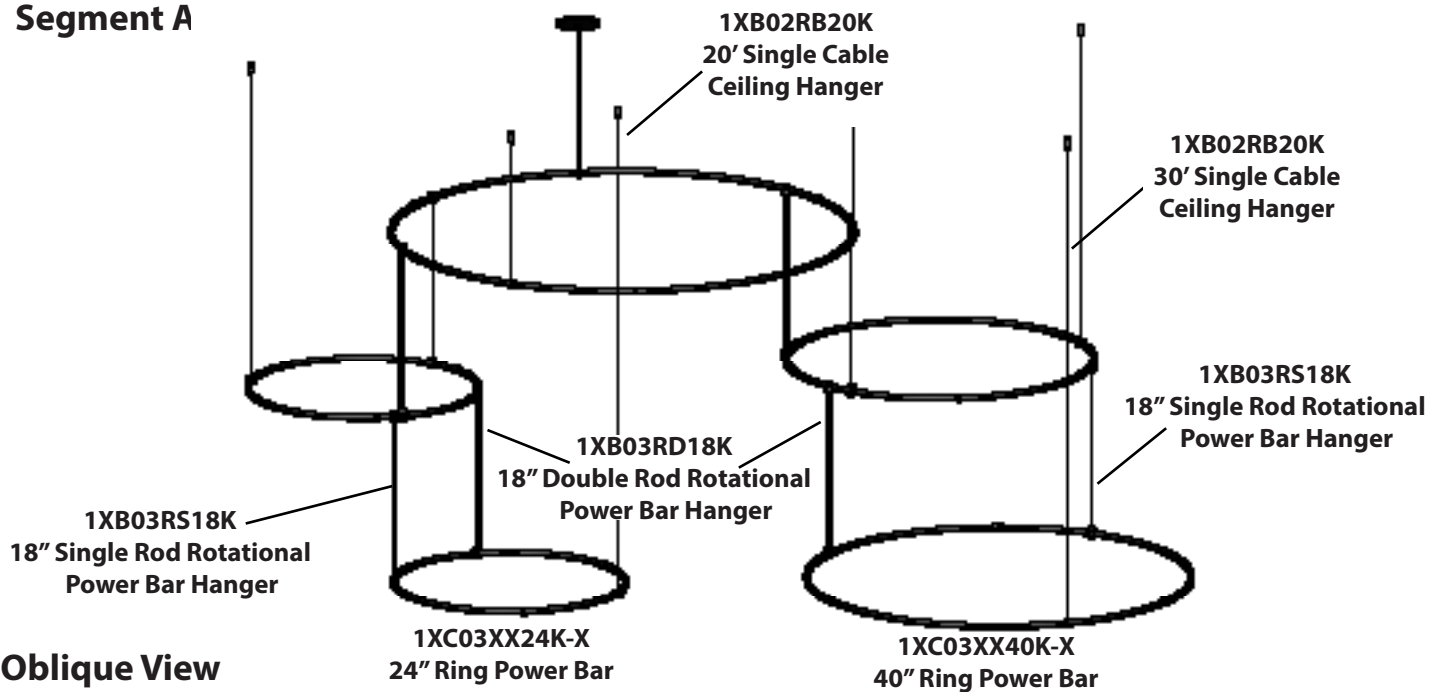


Top View

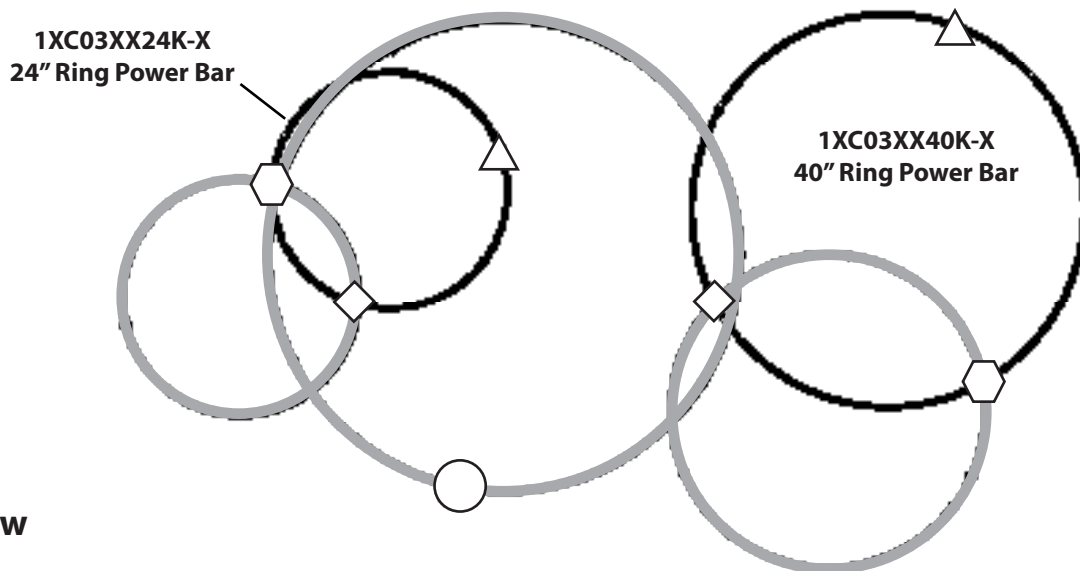
Component	Description	Symbol
1XB03RD18K	18" Double Rod Rotational Power Bar Hanger	◇
1XB03RS18K	18" Single Rod Rotational Power Bar Hanger	⬡
1XB02RB20K	30' Single Cable Ceiling Hanger	△

Hang the **Second-Tier Ring Power Bars** off of the First-Tier Ring Power Bar from three evenly spaced points per Power Bar using (1x) **Double Rod Rotational Power Bar Hanger** (Page 13) and (1x) **Single Rod Rotational Power Bar Hanger** (Page 13) **Ring Power Bar**, and (1x) **Ceiling Hanger** (Page 12)

Segment A



Oblique View



Top View

Component	Description	Symbol
1XB03RD18K	18" Double Rod Rotational Power Bar Hanger	◇
1XB03RS18K	18" Single Rod Rotational Power Bar Hanger	⬡
1XB02RB20K	30' Single Cable Ceiling Hanger	△

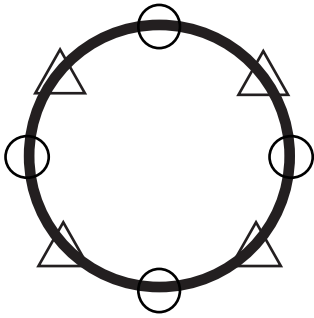
Hang the **Third-Tier Ring Power Bars** off of the Second-Tier Ring Power Bar using (1x) **Double Rod Rotational Power Bar Hanger** (Page 13) and (1x) **Single Rod Rotational Power Bar Hanger** (Page 13) **Ring Power Bar**, and (1x) **Ceiling Hanger** (Page 12).

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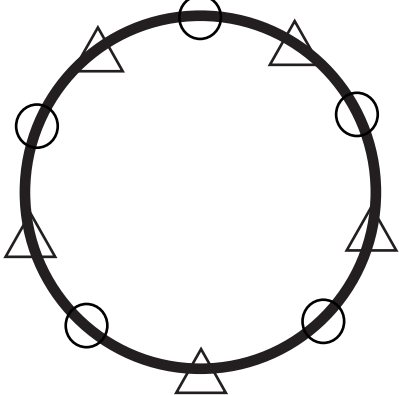
Luminaire Installation

1. Connect the **Luminaire Hangers** to the Ring Power Bars as shown on page 14.
2. Connect the **Luminaires** (2x 1XDXXLL01K per 12" Double Rod Luminaire Hanger and 3x 1XDXXLL01 per 18" Double Rod Luminaire Hanger) to the Luminaire Hangers as shown on page 14.

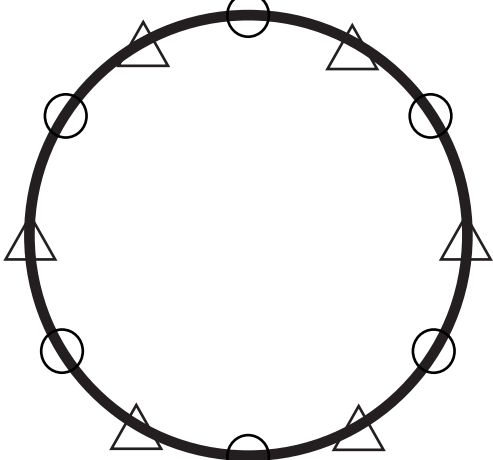
Component	Description	Symbol
1XB04DR12K	12" Double Rod Luminaire Hanger	○
1XB04DR18K	18" Double Rod Luminaire Hanger	△



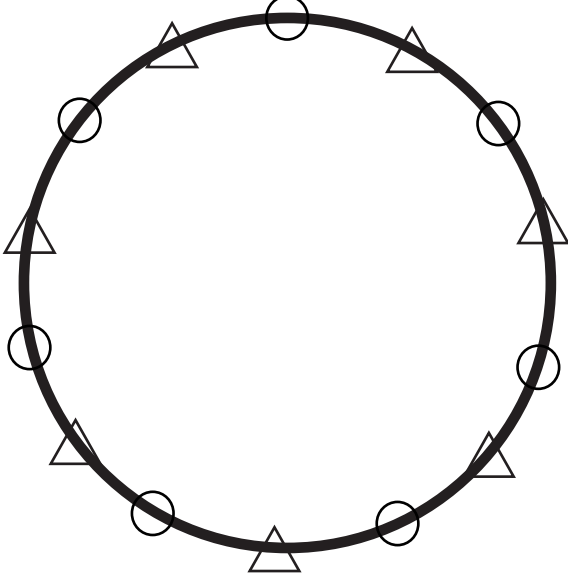
- 1XC03XX24K-X**
24" Ring Power Bar
- 4x 1XB04DR12K
 - 4x 1XB04DR18K



- 1XC03XX32K-X**
32" Ring Power Bar
- 5x 1XB04DR12K
 - 5x 1XB04DR18K



- 1XC03XX40K-X**
40" Ring Power Bar
- 6x 1XB04DR12K
 - 6x 1XB04DR18K



- 1XC03XX48K-X**
48" Ring Power Bar
- 7x 1XB04DR12K
 - 7x 1XB04DR18K

In-Line Double Cord Power Feed Hanger:

1. Cut the cords to the desired length, and remove 10mm (3/8") of insulation from the end of each cord.
2. Twist the wire strands tightly, then insert the exposed wires into the Power Feed bushings. Secure by tightening the set screws with the included Allen key.
3. Press down firmly on the top of the Power Bar, while pressing up on the bottom of the Hanger, until the Power Bar clicks into place. (Fig. 1). Repeat for the second Power Bar.

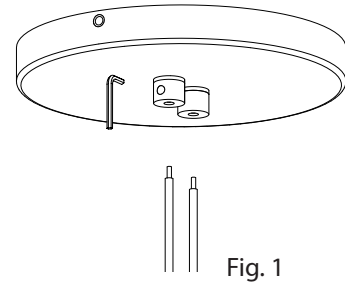


Fig. 1

Ring Cable Ceiling Hanger Assembly:

1. Install the mounting bracket to the ceiling with anchor and screw, then screw the post onto the mounting bracket. (Fig. 1)
2. Pass the Ceiling Hanger cable through the Power Bar, then through the center hole of the cover, making sure the counter-sunk holes on the cover are facing up. Attach the cover to the Ceiling Hanger using the two small Phillips screws. (Fig. 2)
3. Insert the cable into the post and adjust to the desired length: to shorten, push the cable up; to lengthen, push in the plunger while pulling down on the cable, release the plunger to lock. Cut off the excess cable where it exits the post. (Fig. 3)



Fig. 1

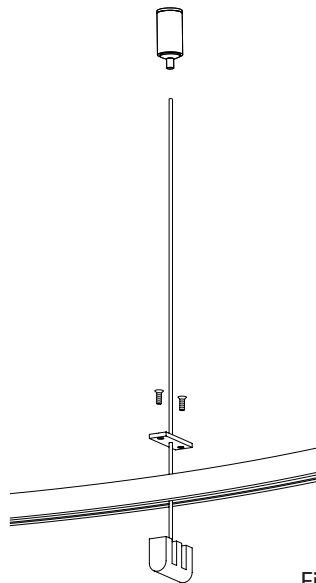


Fig. 2

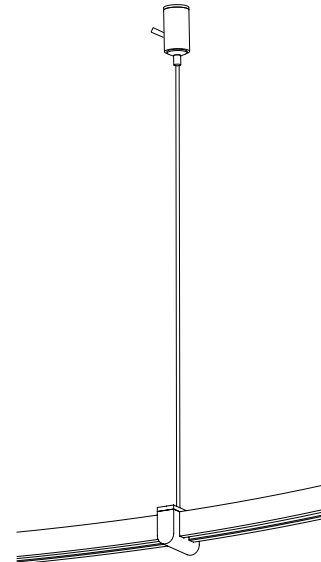
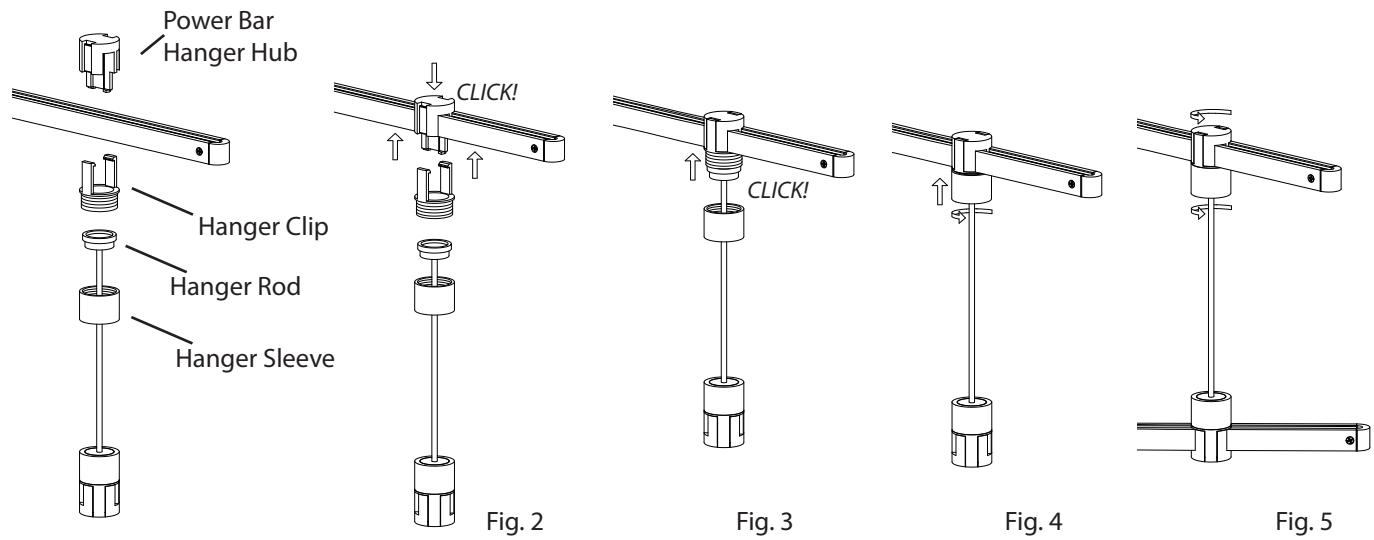


Fig. 3

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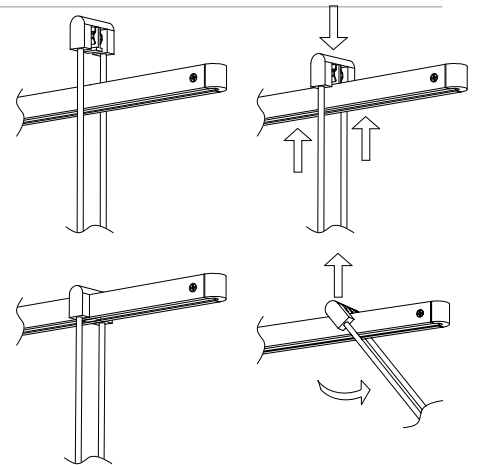
Single and Double Rotational Power Bar Hanger:

1. Press down firmly on the top of the **Power Bar Hanger Hub** while pressing up on the bottom of the Power Bar, until the Power Bar Hanger Hub clicks into place. (Fig. 2)
2. Insert the **Hanger Clip** through the Hanger Hub and press up on the Hanger clip until Hanger Clip clicks into place. (Fig. 3)
3. Press the **Hanger Rod** up against the Hanger Hub and screw in the **Hanger sleeve**. Be sure that the brass contacts on the Power Bar Hanger Hub are touching those on the Hanger Rod. (Fig. 4). NOTE: Do not fully tighten.
4. Rotate Power Bar to the desired position and secure by fully tightening the Hanger sleeve. (Fig. 5)
5. Repeat steps 1-4 for the second Power Bar.



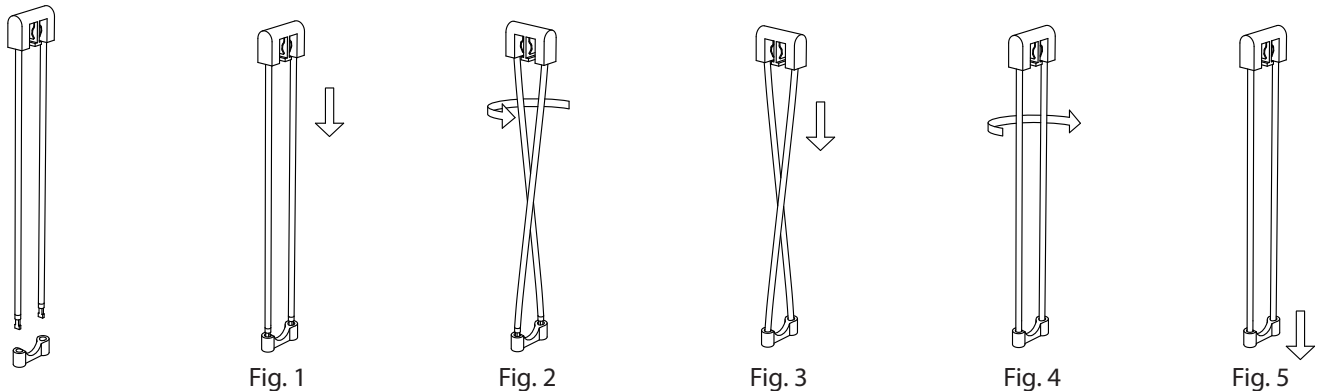
Connecting a Luminaire Hanger to a Power Bar:

1. Place the Luminaire Hanger over the Power Bar.
2. Press down firmly on the top of the Luminaire Hanger, while pressing up on the bottom of the Power Bar, until the Luminaire Hanger clicks into place.
3. To remove, tip the the Luminaire Hanger in the direction of the Power Bar, then lift the Luminaire Hanger off the Power Bar.



Connecting a Luminaire Hanger Endcap to a Luminaire Hanger:

1. Gently insert the two Luminaire Hanger rods into the holes on the top of the Luminaire Hanger Endcap. (Fig. 1)
2. Rotate the Endcap or Luminaire Hanger 90 degrees. (Fig. 2)
3. Push the Luminaire Hanger rods into the Endcap until the copper on the ends of the rods is no longer visible. (Fig. 3)
4. Rotate the Endcap or Luminaire Hanger back 90 degrees. (Fig. 4)
5. Pull the Endcap down to lock the Endcap. (Fig. 5)



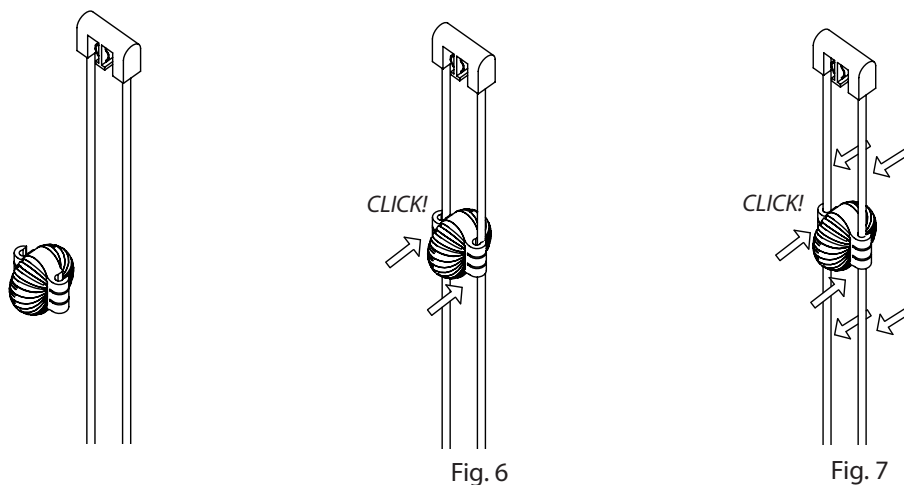
Connecting a Ladder Light onto a Luminaire Hanger:

NOTE: The Luminaire Hanger Endcap or a Luminaire must be installed before connecting a Ladder Light onto a Luminaire Hanger.

1. Gently press both sides of the Ladder Light onto the Luminaire Hanger until the Ladder Light softly clicks into place. (Fig. 6)
2. Confirm the desired position of the Ladder Light on the Hanger, and adjust the position if necessary.

CAUTION! The next step will put a set of small score lines through the paint on the hanger rods.

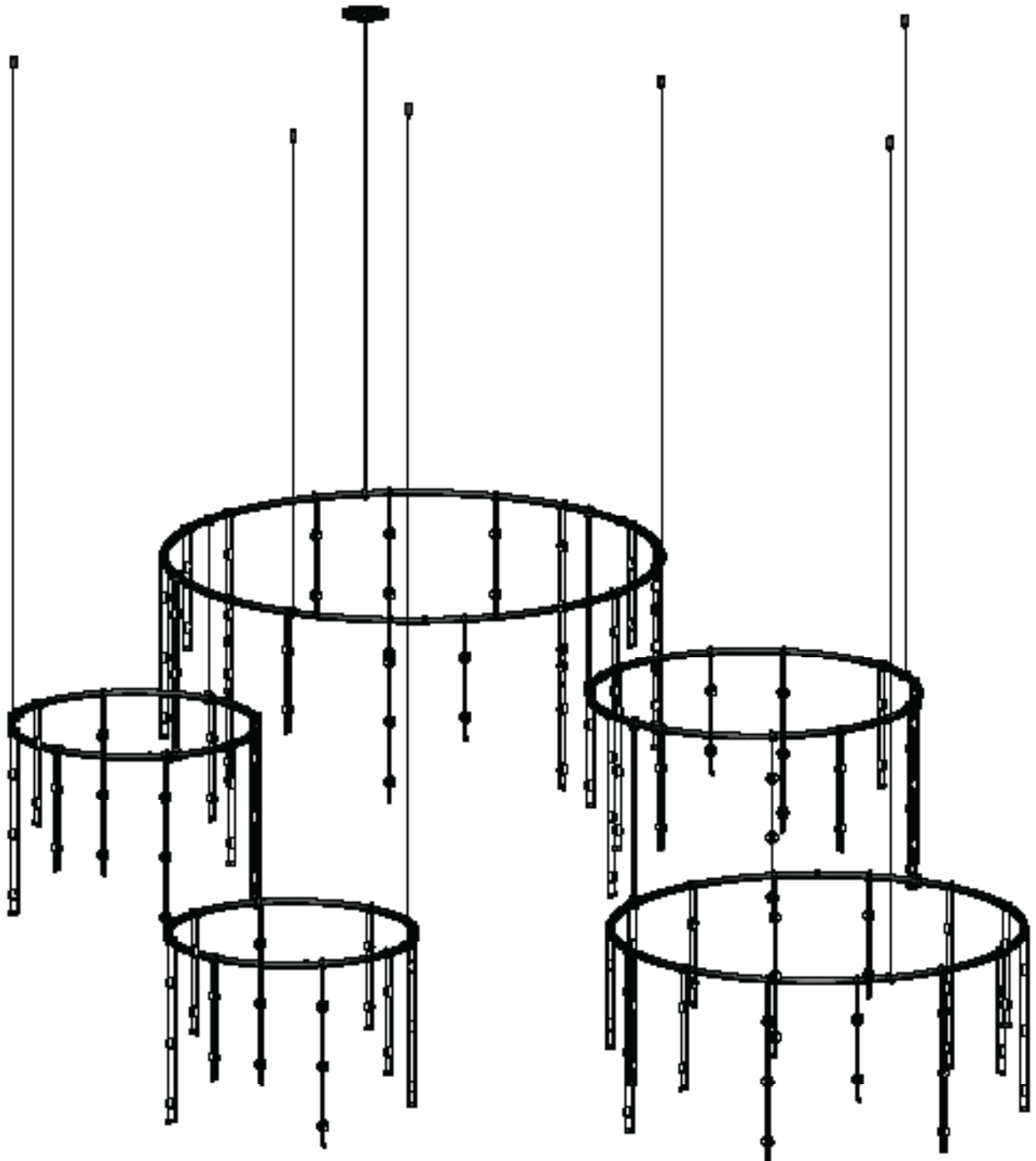
3. Place the index and middle fingers of each hand on the hanger rods on either side of the Ladder Light and press firmly on both sides of the Ladder Light with the thumbs until the Ladder Light fully clicks into place. (Fig. 7)

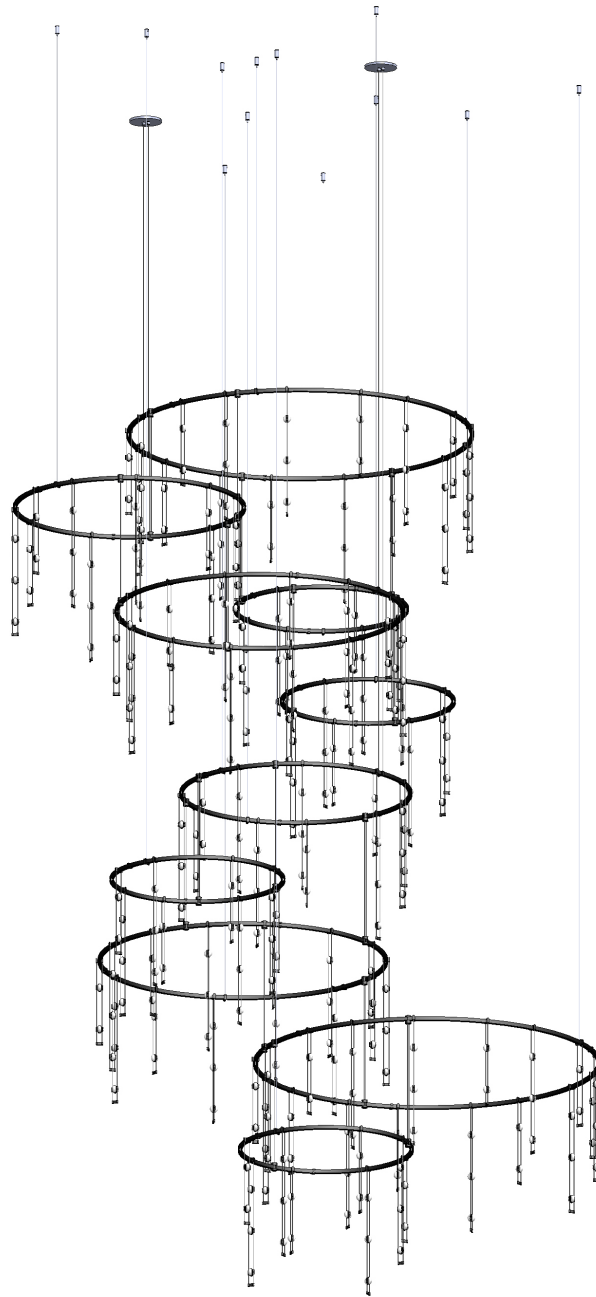


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Segment A Complete

1. Restore power to the outlet box and ensure all of the luminaires light up correctly.
2. Move onto installing segment B on Book B.





SLS0163 - Booklet B

A delicately scaled, modular system of interconnected elements and suspended LED luminaires.

suspenders[®]

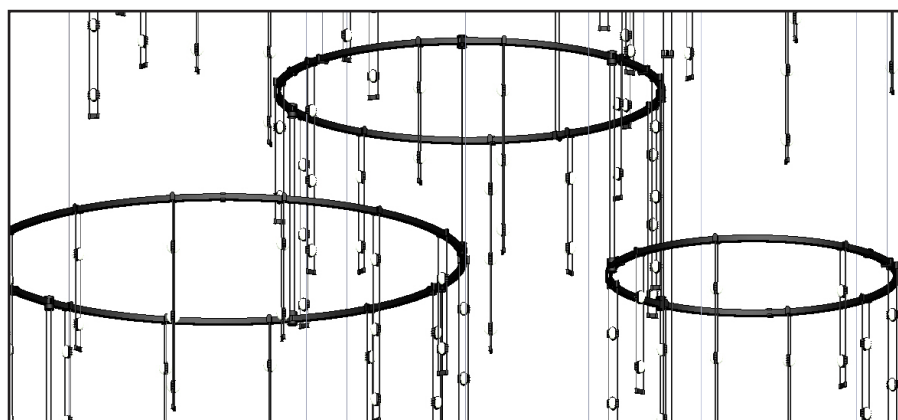
assembly instructions

SONNEMAN[®]
A WAY OF LIGHT

Suspenders® Product Information and Warnings

Important

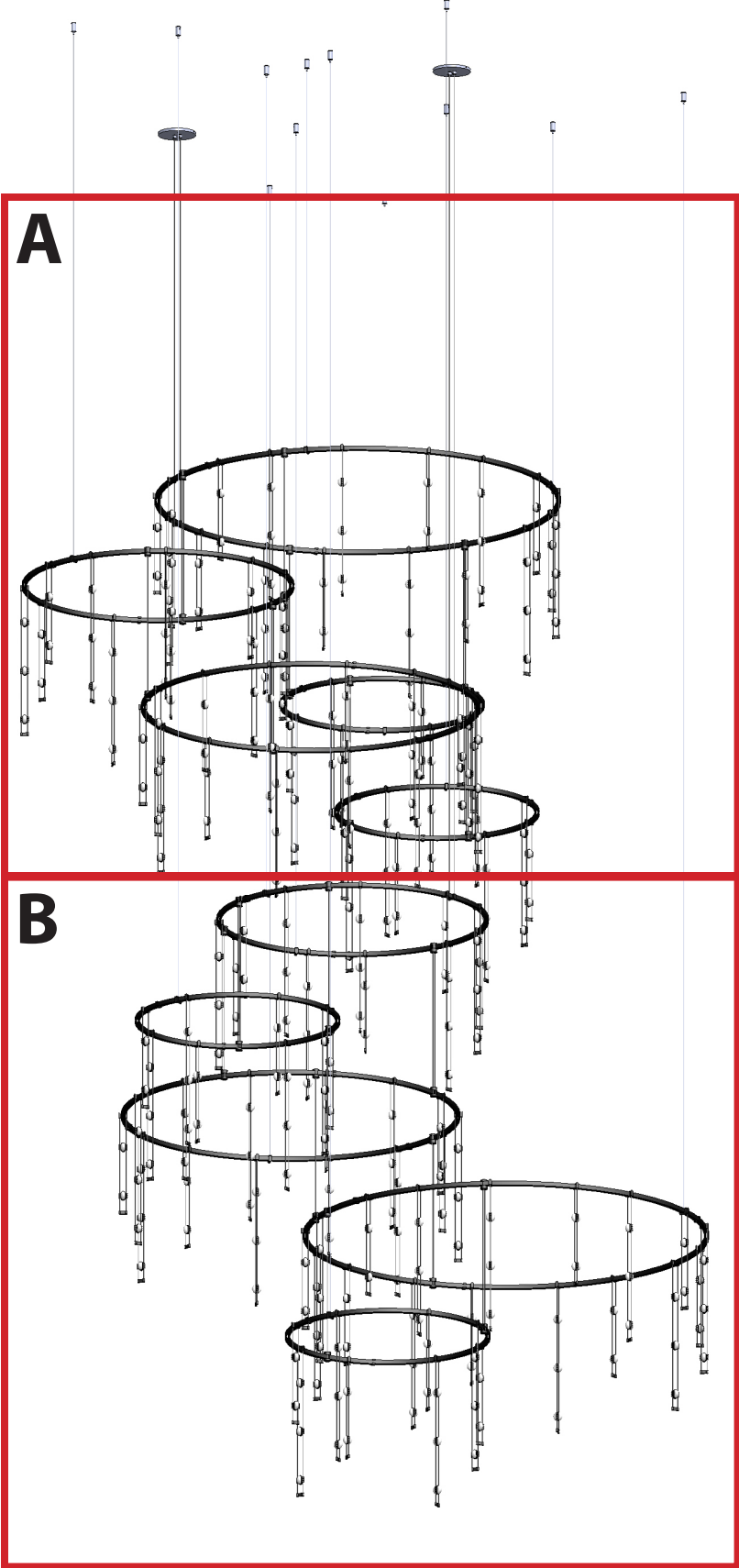
- **Always disconnect the power before installing or replacing Luminaires and before cleaning or other maintenance.**
- **Consult a qualified, licensed electrician to ensure correct branch circuit conductor.**
- Please read all included assembly instructions and warnings carefully before installation. Contact Customer Service if you have any questions or concerns. Before installation, please confirm that the fixture is compatible with your supply voltage and dimming system, if present.
- LEDs are highly sensitive electronic devices, and must be treated with care. Do not open any factory sealed compartments, and avoid touching the LEDs with your hands or any object.
- Although all our fixtures are equipped with protective devices, LED electronic systems are vulnerable to power surges and supply variations. Do not install LED fixtures on the same circuit as any motors, appliances, or HVAC systems.
- Do not remove or bypass any LED Driver or Transformer that is provided with the fixture, and do not replace or substitute with another power supply.
- Remote Transformer installation must be done by a licensed electrician and in accordance with local building and electrical codes. Remote installations should be in an accessible location, as close to the fixture as possible. The appropriate wire gauge must be used to limit the voltage drop to no more than 5%.
- Fixtures must be wired in parallel on independent leads; do not "daisy chain" multiple fixtures together or wire them in series.
- All factory-made splices and connections must remain intact. LED circuits are carefully designed and built, and improper connections may damage the fixture.
- Any mounting hardware is provided for your convenience and should be used with discretion. Always use the appropriate hardware for the mounting surface.
- Suspenders® transformers can be loaded up to 80% of their rated wattage.
- Suspenders® transformers feature short-circuit protection with automatic recovery, and will resume operation once the short-circuit condition is removed.
- Suspenders® transformers have 24VAC output
- Suspenders® must be installed in dry locations ONLY.



Configuration Assembly

October 19, 2017

SLS0163 Breakdown



A

**SLS0163 Segment A
See Book A**

B

**SLS0163 Segment B
See Page 6**

Shallow Single Double Power Feed Installation (Fig. 1):

1. Install 3 **power feeds**, see page 5 for power feed location.
2. Shut off power to the **outlet box**.
3. **For remote transformer use:** The **Transformer** must be installed in an accessible location in accordance with local electrical codes. You must use the appropriate wire gauge from the transformer to the Power Feed to limit the voltage drop to less than 5%.
4. Make appropriate electrical connections using wire nuts:
 - a. Connect the **Transformer's** live wire (black) to the live outlet box wire.
 - b. Connect the Transformer's neutral wire (white) to the neutral outlet box wire.
 - c. Connect the ground outlet box wire (green or uncoated) to the mounting plate using the green screw.
 - d. Connect one of the black **Power Feed** wires to one of the transformer output wires. Connect the other black Power Feed wire to the second transformer output wire.
 - e. Carefully place connections in outlet box.
5. Attach the **mounting plate** to the outlet box using the two (2) **screws**.
6. Attach Power Feed to mounting plate. Secure using **set screws** and included **Allen key**.
7. To adjust orientation of bushings:
Loosen set screws using included Allen key and rotate Power Feed to the desired position.

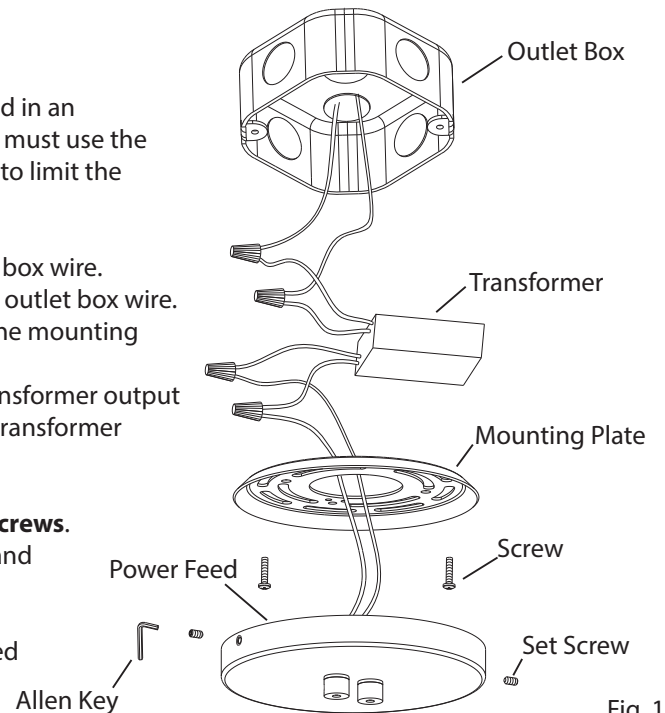
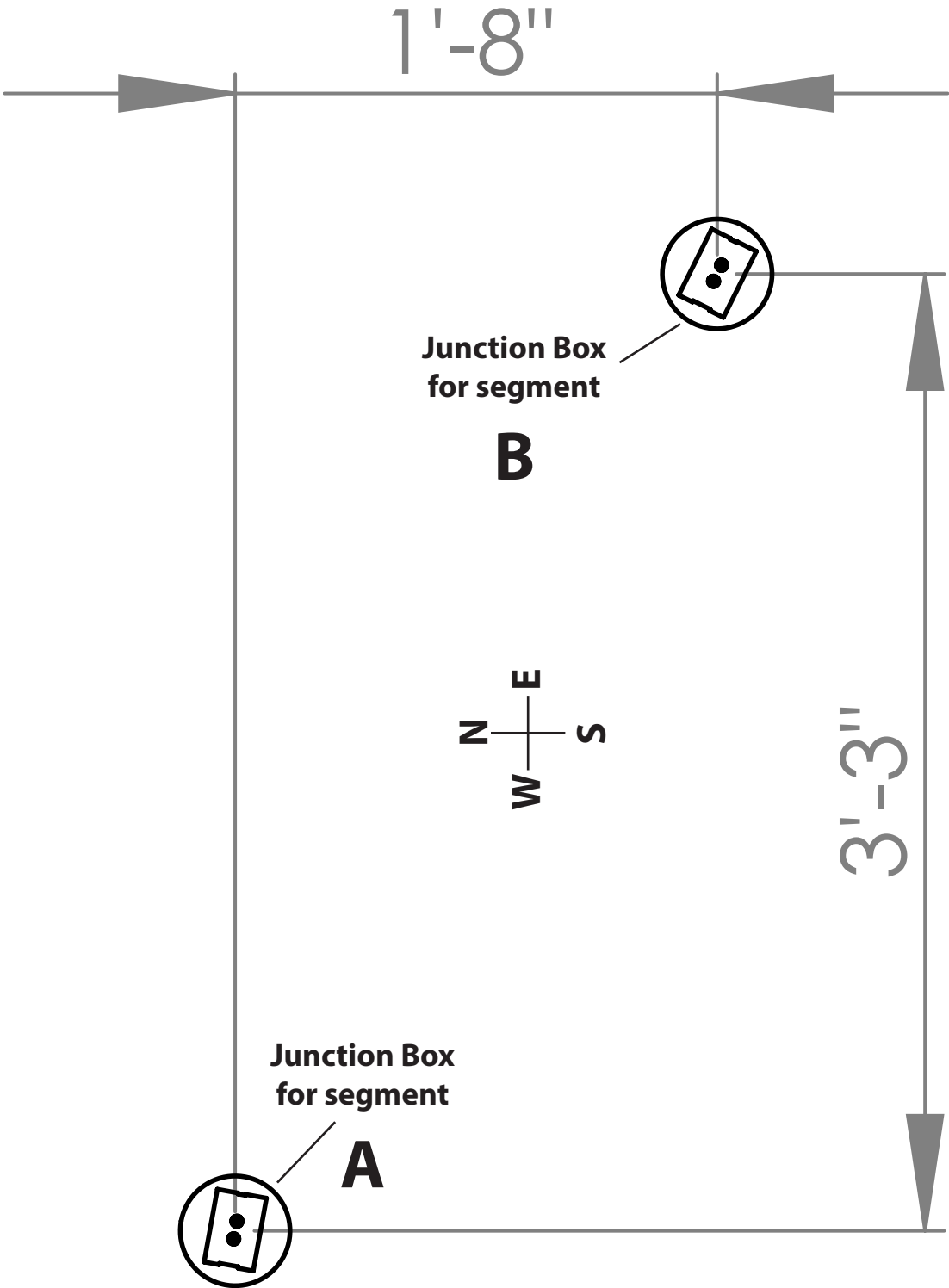


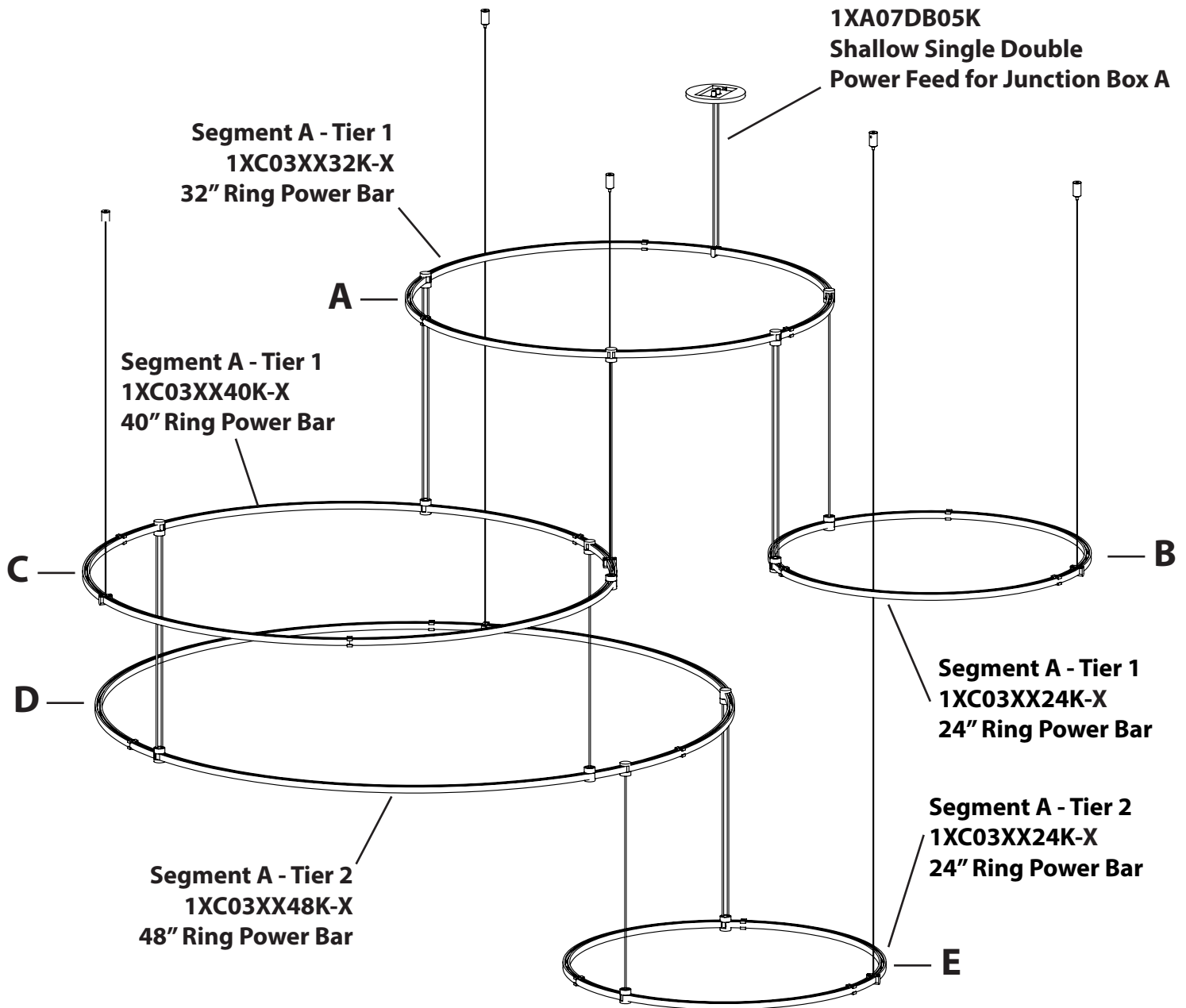
Fig. 1

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Power Feed Location



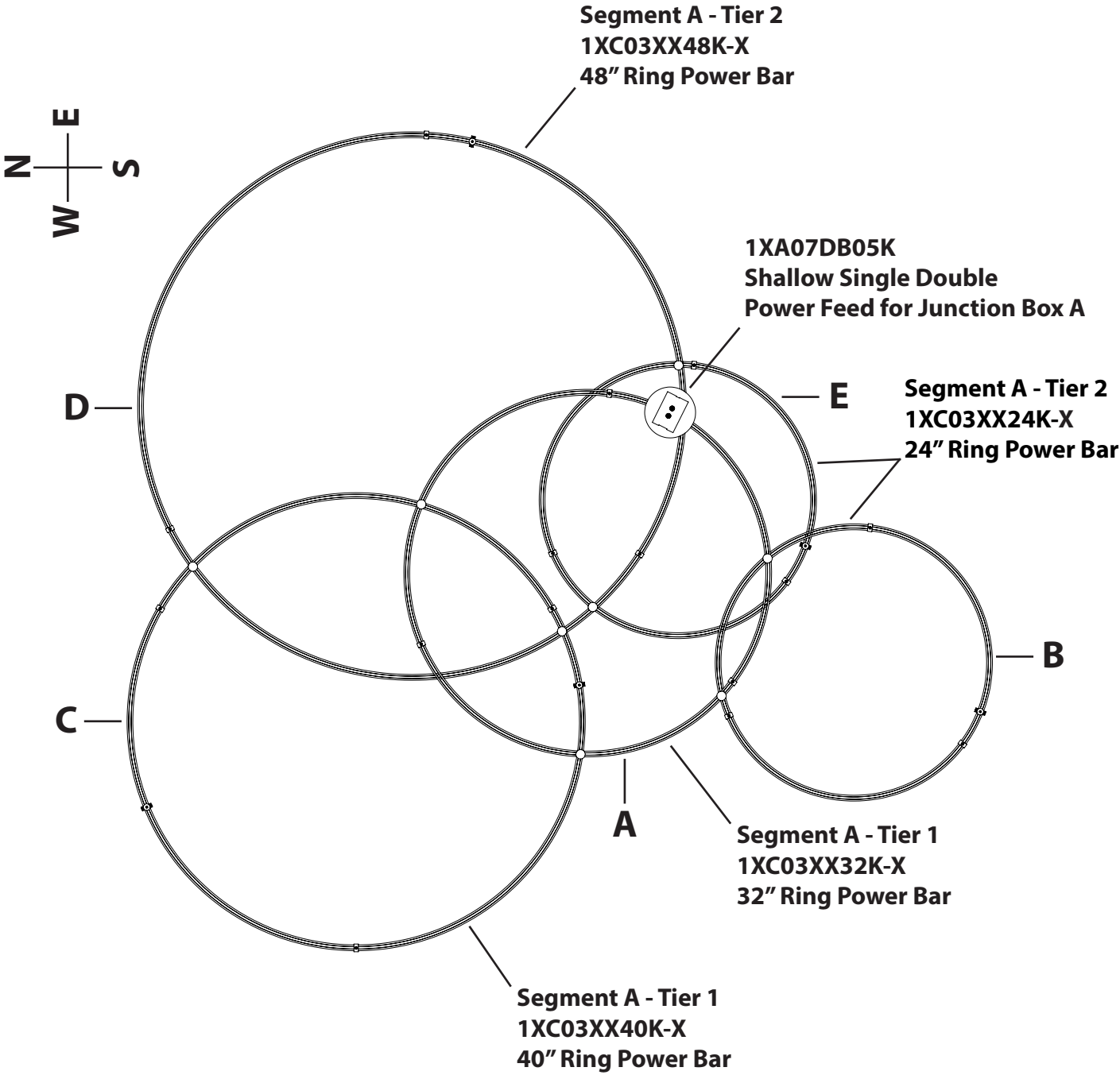
Segment B - Oblique View



Segment B
Assembly

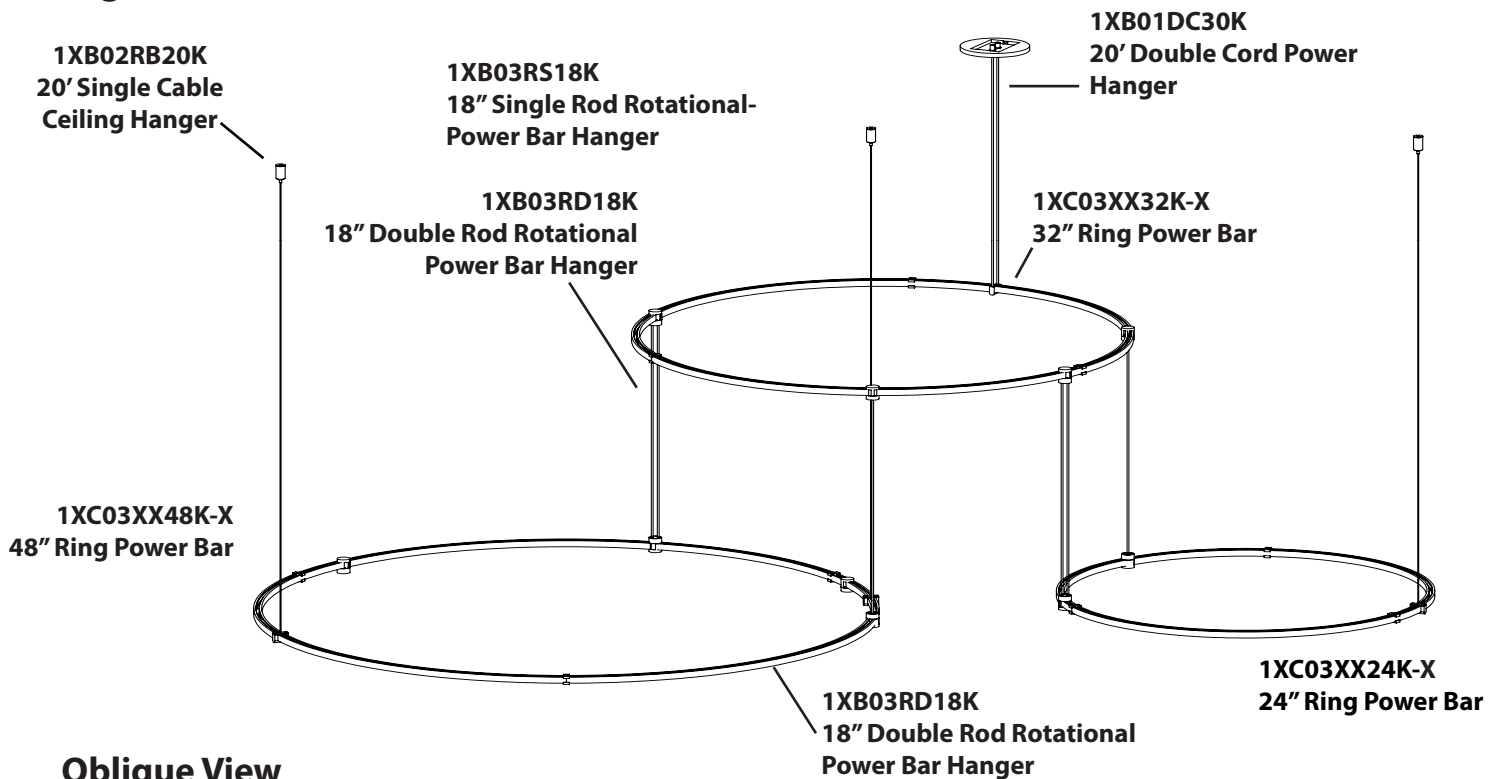
October 19, 2017

Segment B - Plan View



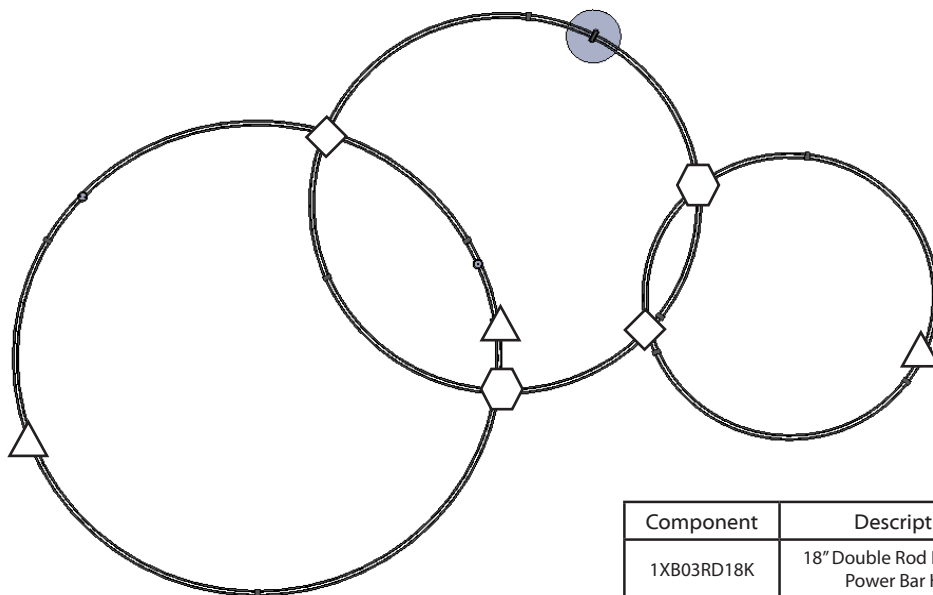
Segment B
Assembly

Segment B - Tier 1



Oblique View

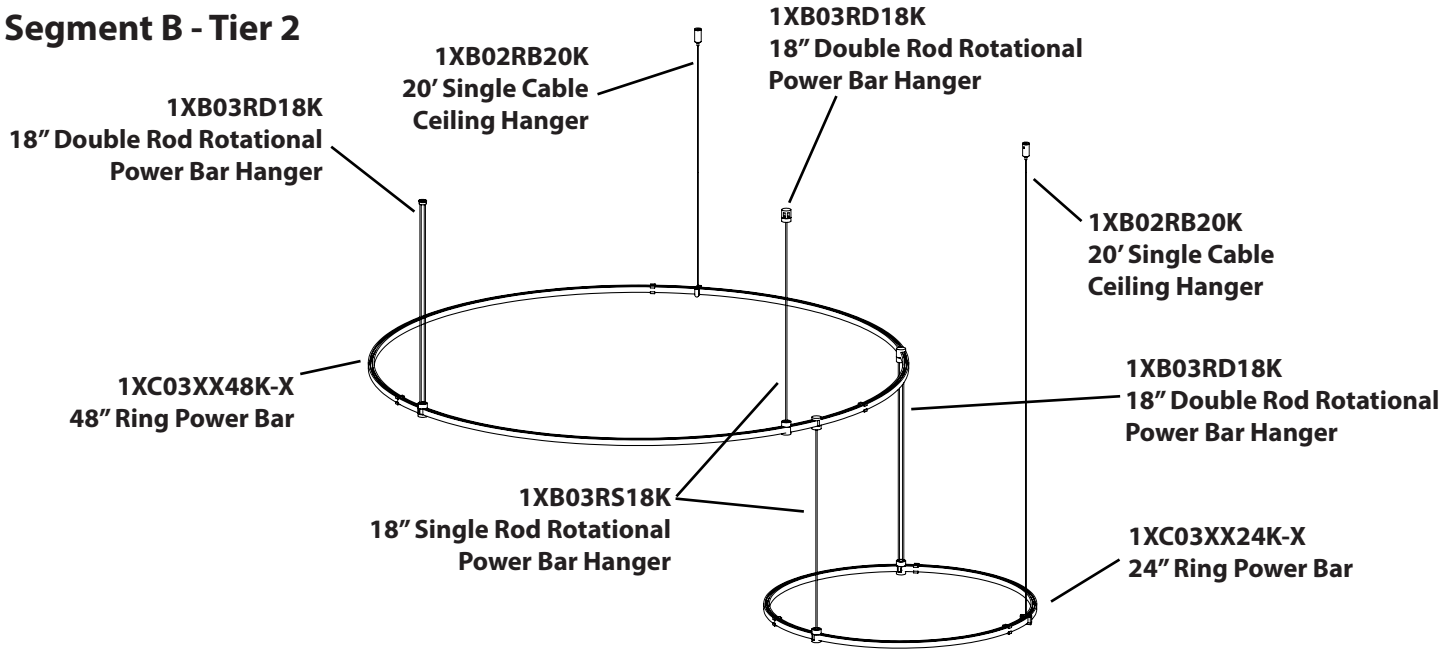
1. Shut off power to the outlet box.
 2. Hang the First-Tier Ring Power Bar from three evenly spaced (2x) **Ceiling Hangers** and (1x) **Power Feed Hanger** (Page 12).
- NOTE: The exact location of each Ring Power Bar and its ceiling hangers is flexible. It is only important that the cables and cords hang straight from the ceiling.



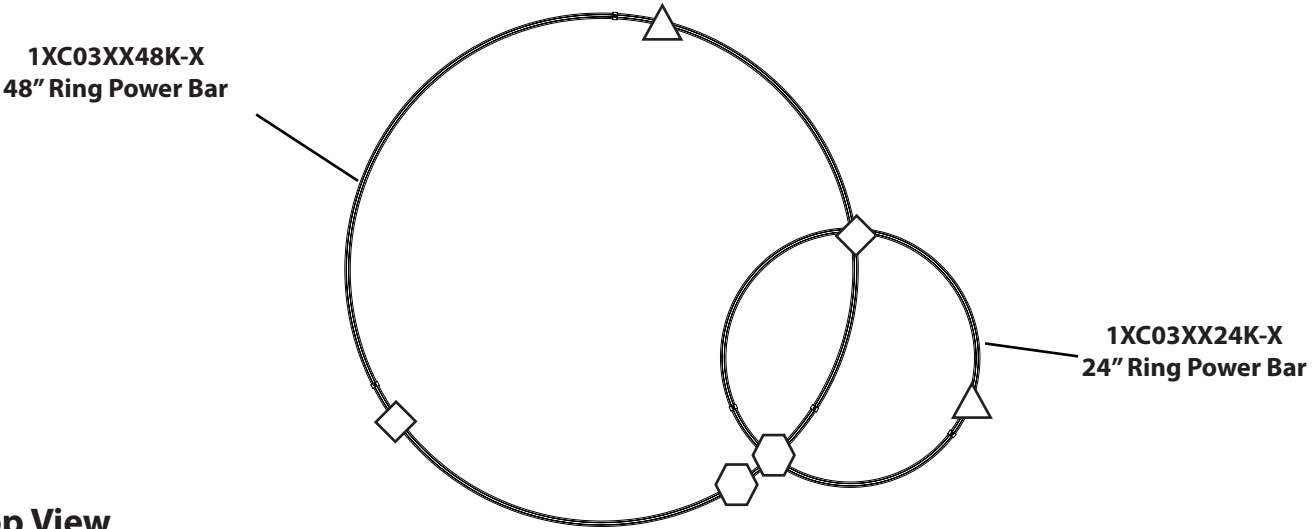
Component	Description	Symbol
1XB03RD18K	18" Double Rod Rotational Power Bar Hanger	◇
1XB03RS18K	18" Single Rod Rotational Power Bar Hanger	⬡
1XB02RB20K	20' Single Cable Ceiling Hanger	△

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Segment B - Tier 2



Oblique View



Top View

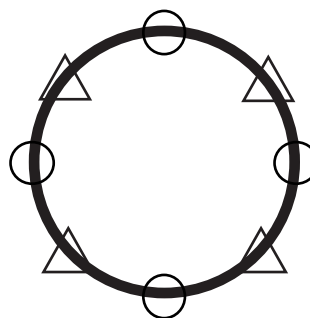
Component	Description	Symbol
1XB03RD18K	18" Double Rod Rotational Power Bar Hanger	◇
1XB03RS18K	18" Single Rod Rotational Power Bar Hanger	⬡
1XB02RB20K	20' Single Cable Ceiling Hanger	△

Hang the **Second-Tier Ring Power Bars** off of the First-Tier Ring Power Bar from three evenly spaced points per Power Bar using (1x) **Double Rod Rotational Power Bar Hanger** (Page 13) and (1x) **Single Rod Rotational Power Bar Hanger** (Page 13) **Ring Power Bar**, and (1x) **Ceiling Hanger** (Page 12)

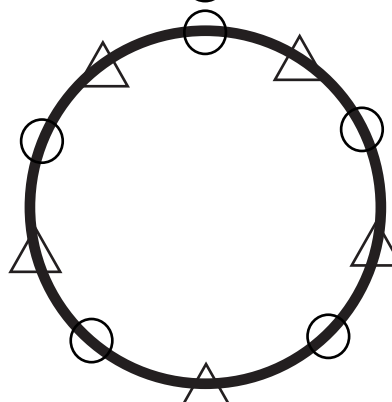
Luminaire Installation

1. Connect the **Luminaire Hangers** to the Ring Power Bars as shown on page 14.
2. Connect the **Luminaires** (2x 1XDXXLL01K per 12" Double Rod Luminaire Hanger and 3x 1XDXXLL01 per 18" Double Rod Luminaire Hanger) to the Luminaire Hangers as shown on page 14.

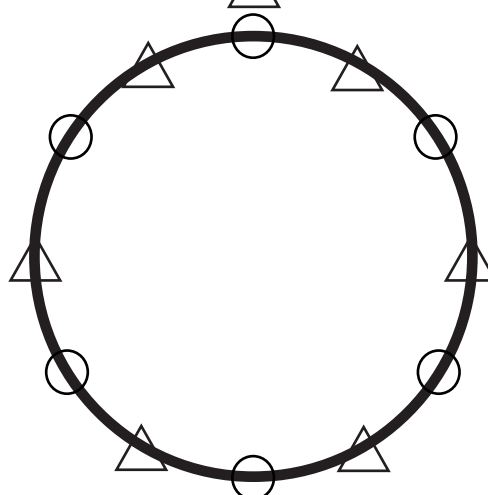
Component	Description	Symbol
1XB04DR12K	12" Double Rod Luminaire Hanger	○
1XB04DR18K	18" Double Rod Luminaire Hanger	△



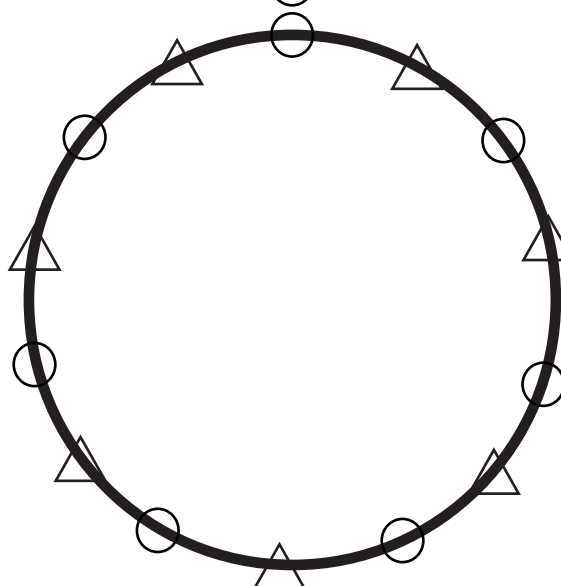
- 1XC03XX24K-X**
24" Ring Power Bar
- 4x 1XB04DR12K
 - 4x 1XB04DR18K



- 1XC03XX32K-X**
32" Ring Power Bar
- 5x 1XB04DR12K
 - 5x 1XB04DR18K



- 1XC03XX40K-X**
40" Ring Power Bar
- 6x 1XB04DR12K
 - 6x 1XB04DR18K



- 1XC03XX48K-X**
48" Ring Power Bar
- 7x 1XB04DR12K
 - 7x 1XB04DR18K

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In-Line Double Cord Power Feed Hanger:

1. Cut the cords to the desired length, and remove 10mm (3/8") of insulation from the end of each cord.
2. Twist the wire strands tightly, then insert the exposed wires into the Power Feed bushings. Secure by tightening the set screws with the included Allen key.
3. Press down firmly on the top of the Power Bar, while pressing up on the bottom of the Hanger, until the Power Bar clicks into place. (Fig. 1). Repeat for the second Power Bar.

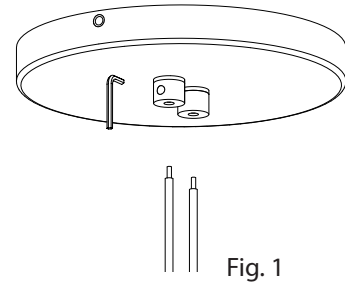


Fig. 1

Ring Cable Ceiling Hanger Assembly:

1. Install the mounting bracket to the ceiling with anchor and screw, then screw the post onto the mounting bracket. (Fig. 1)
2. Pass the Ceiling Hanger cable through the Power Bar, then through the center hole of the cover, making sure the counter-sunk holes on the cover are facing up. Attach the cover to the Ceiling Hanger using the two small Phillips screws. (Fig. 2)
3. Insert the cable into the post and adjust to the desired length: to shorten, push the cable up; to lengthen, push in the plunger while pulling down on the cable, release the plunger to lock. Cut off the excess cable where it exits the post. (Fig. 3)



Fig. 1

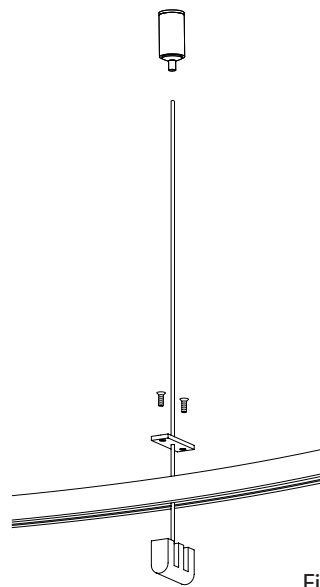


Fig. 2

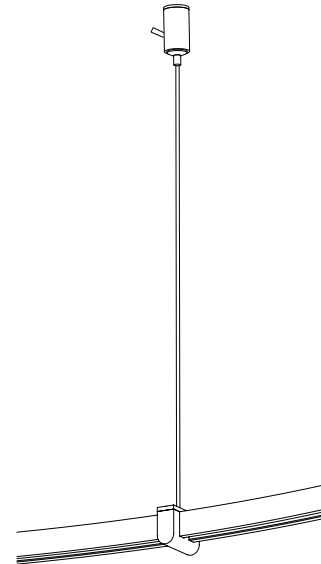
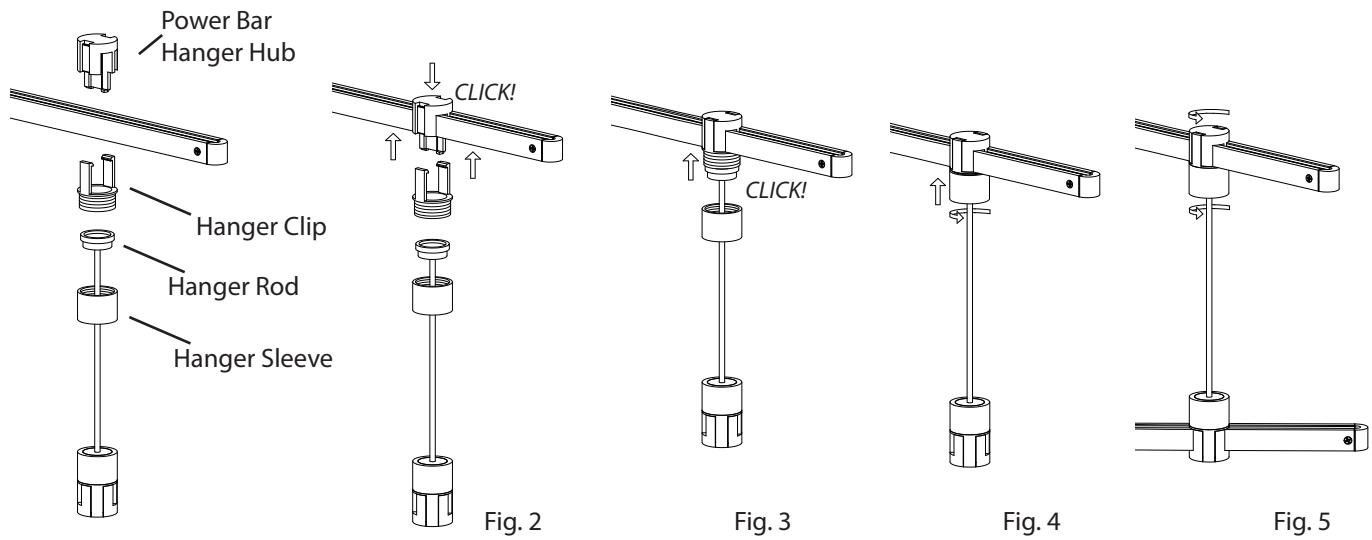


Fig. 3

Single and Double Rotational Power Bar Hanger:

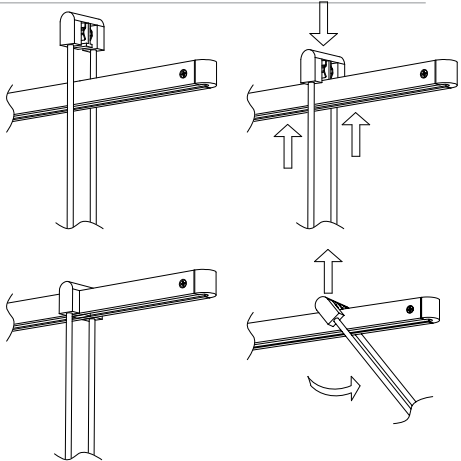
1. Press down firmly on the top of the **Power Bar Hanger Hub** while pressing up on the bottom of the Power Bar, until the Power Bar Hanger Hub clicks into place. (Fig. 2)
2. Insert the **Hanger Clip** through the Hanger Hub and press up on the Hanger clip until Hanger Clip clicks into place. (Fig. 3)
3. Press the **Hanger Rod** up against the Hanger Hub and screw in the **Hanger sleeve**. Be sure that the brass contacts on the Power Bar Hanger Hub are touching those on the Hanger Rod. (Fig. 4). NOTE: Do not fully tighten.
4. Rotate Power Bar to the desired position and secure by fully tightening the Hanger sleeve. (Fig. 5)
5. Repeat steps 1-4 for the second Power Bar.



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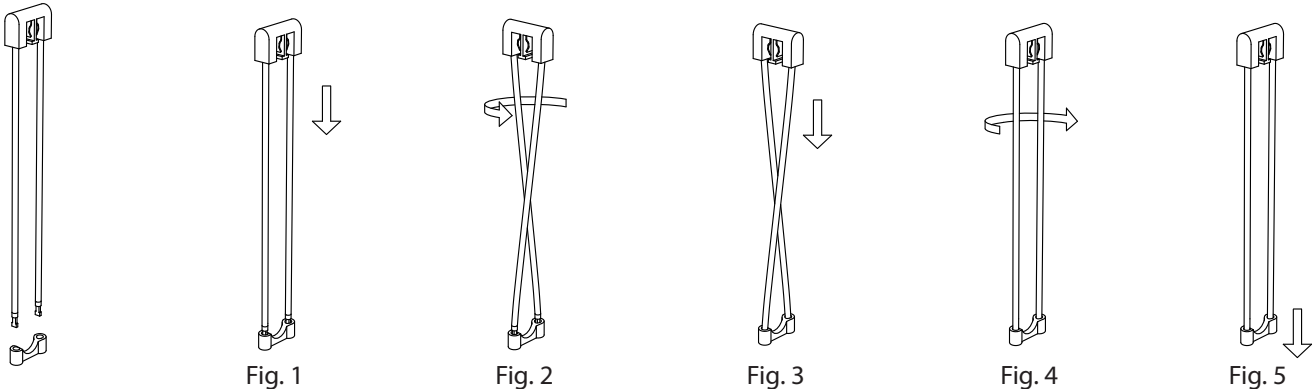
Connecting a Luminaire Hanger to a Power Bar:

1. Place the Luminaire Hanger over the Power Bar.
2. Press down firmly on the top of the Luminaire Hanger, while pressing up on the bottom of the Power Bar, until the Luminaire Hanger clicks into place.
3. To remove, tip the the Luminaire Hanger in the direction of the Power Bar, then lift the Luminaire Hanger off the Power Bar.



Connecting a Luminaire Hanger Endcap to a Luminaire Hanger:

1. Gently insert the two Luminaire Hanger rods into the holes on the top of the Luminaire Hanger Endcap. (Fig. 1)
2. Rotate the Endcap or Luminaire Hanger 90 degrees. (Fig. 2)
3. Push the Luminaire Hanger rods into the Endcap until the copper on the ends of the rods is no longer visible. (Fig. 3)
4. Rotate the Endcap or Luminaire Hanger back 90 degrees. (Fig. 4)
5. Pull the Endcap down to lock the Endcap. (Fig. 5)



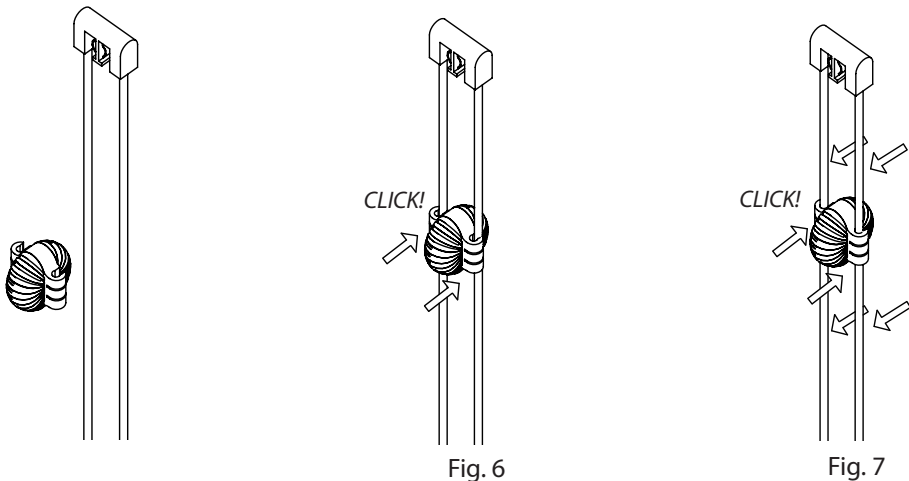
Connecting a Ladder Light onto a Luminaire Hanger:

NOTE: The Luminaire Hanger Endcap or a Luminaire must be installed before connecting a Ladder Light onto a Luminaire Hanger.

1. Gently press both sides of the Ladder Light onto the Luminaire Hanger until the Ladder Light softly clicks into place. (Fig. 6)
2. Confirm the desired position of the Ladder Light on the Hanger, and adjust the position if necessary.

CAUTION! The next step will put a set of small score lines through the paint on the hanger rods.

3. Place the index and middle fingers of each hand on the hanger rods on either side of the Ladder Light and press firmly on both sides of the Ladder Light with the thumbs until the Ladder Light fully clicks into place. (Fig. 7)



Segment B Complete

1. Restore power to the outlet box and ensure all of the luminaires light up correctly.
2. Move onto installing segment B on Book B.

