EZEDGE AERODYNAMIC TRAILER SKIRT

INSTALLATION, MAINTENANCE AND REPAIR PROCEDURES MANUAL

EZEDGE-1932B

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ezEDGE Trailer Skirt Installation, Maintenance and Repair Procedures Manual October 2015

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Tel.: (877) 332 3519 Fax: (514) 334-2989 Website: www.edgeskirts.com

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TABLE OF CONTENTS

1. Introduction

1.1 Preface

Congratulations on the purchase of your new Transtex ezEDGE Skirt. Our patent pending design is EPA verified in the 5%+ category and provides up to 7% fuel savings and it is the most impact resistant and resilient product in the industry.

1.2 Purpose

This manual provides installation instructions, safety, maintenance, and repair information for the ezEDGE side skirts. Transtex Composite trains and supports its customers in the installation process to ensure that optimal safety and optimal aerodynamic benefit is achieved with every skirt that goes on the road.
We certify installers, dealerships, and end client maintenance shops.

Important Note: This skirt may be installed on dry vans or reefers, from 53' to 48', depending on your undercarriage configuration

1.3 General information

1.3.1 The Transtex ezEDGE kits were designed for quick installation. It can be easily installed by **two trained technicians in 40 minutes**.

1.3.2 Keep installation checklist (appendix B) in hand during the installation (page 19). Highly recommended

2. Tool list

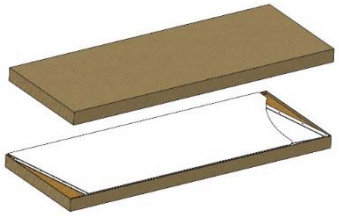
List of all tools and hardware that will be needed to installation

Tool no.	Description	Qty	Tool no.	Description	Qty
1	Drill with 21/64'' drill bit 	1	5	2 ½ hole saw for lights. 	1
2	Impact Gun with ½'' Socket 	1	6	C-clamp or vice grips 	1
3	Jigsaw To cut light holes 	1	7	Philips Screwdriver 	1
4	½" Torque Wrench 	1	8	Measuring tape 	1

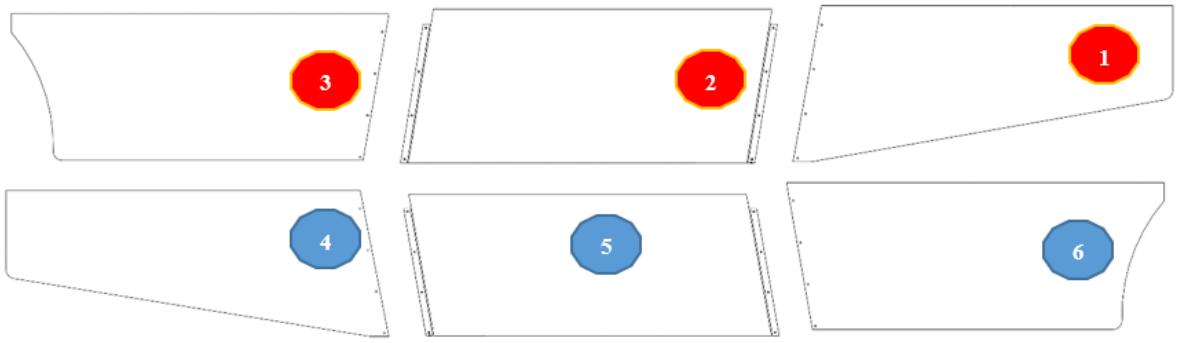
NOTE: Tools and hardware quantities mentioned in the table are required for a two-person team

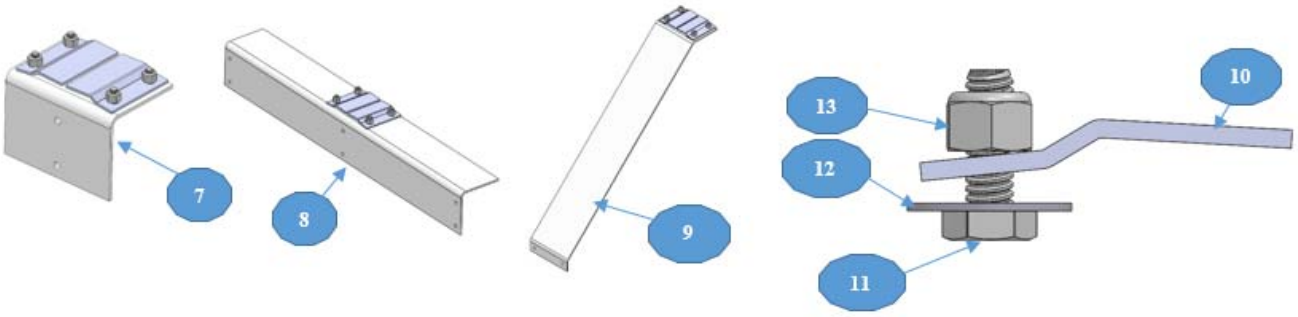
3. BOM (Bill of Material)

- Each kit is composed of 6 skirt panels and 2 small boxes of attachment hardware and supports (right and left). All panels and supports are packed in **one** single big box
- All supports and struts are pre-assembled with hardware



ITEM#	QTY	PART NUMBER	DESCRIPTION
1	1	EZ- FRONT -CURB	CURB SKIRT FRONT PANEL
2	1	EZ-MID-CURB	CURB SKIRT MID PANEL
3	1	EZ- BACK -CURB	CURB SKIRT BACK PANEL
4	1	EZ-FRONT-ROAD	ROAD SKIRT FRONT PANEL
5	1	EZ-MID-ROAD	ROAD SKIRT MID PANEL
6	1	EZ- BACK -ROAD	ROAD SKIRT BACK PANEL
7	8	MFS-9004-2	SKIRT SUPPORT 90 DEG, 4IN. with assembled hardware
8	6	MFS-9024-2	SKIRT SUPPORT 90 DEG, 24IN. with assembled hardware
9	14	MFS-4545-2	SKIRT STRUT 45 DEG. with assembled hardware
10	56	FLANGE-SHDG	GRIP BRACKET
11	112	BOUL-PL5H161	BOLT HEX GR5 PL 5/16-18X1"
12	112	RONPL-5/16	WASHER PL 5/16"
13	112	ECX-PLESN51618	NYLON LOCK PL 5/16-18
14	78 (+2 spare)	BOUL-SST18-8	BUTTON/Philipps. BOLT 5/16-18 X 7/8" (Stainless Steel)
15	78 (+2 spare)	SS-NYLOCK-5/16-18	NYLON LOCK PL 5/16-18 (Stainless Steel with moly slip treatment)
16	78 (+2 spare)	SS-WASHER-5/16	WASHER PL 5/16" (Stainless Steel)
17	1	MFS-RK	Reefer kit. U-seal-24 inch and O seal (2 ½) in rubber
18	2	LOGO-TRANSTEX-B	TRANSTEX STICKER
19	1	Manual	Installation manual

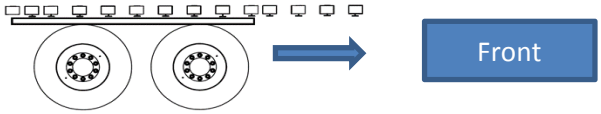




4. Installation preparation

4.1 Remove lights.

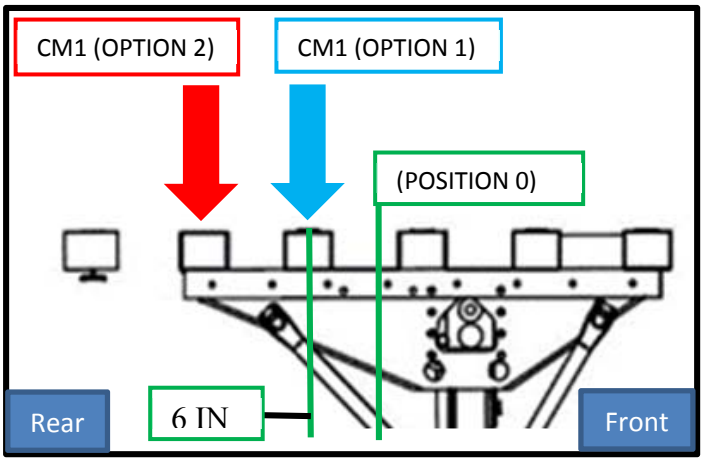
4.2 Move slider to the most forward position.



In case that this step is not done, be certain to take this position in consideration

4.3 Locate the first cross member behind the landing gear center as show in the optimal zone picture below, this is cross member **number 1 (CM1)**. Make sure that that there is enough clearance between:

A. The wing plate and the MFS-9004 or MFS4545 supports.
B. The landing gear handle and the skirt panel.
If there is interference, take the next Crossmember backward (option 2)



4.4 Measure 6” forward from the center of the cross-member (CM1). This position is **position 0**.

4.5 Measure 19 feet from **position 0** to the back of the trailer. Make sure this does not exceed the most forward position of the tire from step 4.2

4.6 For **refrigerated trailers**, an access hole will be cut in the skirt panel in a later step. (Section 6). The fuel tank nozzle should be about 1 inch away from the skirt panel. If the tank is already installed, the tank can be slightly moved if necessary to have proper access.

Fuel tank location

5 Installation of the side supports

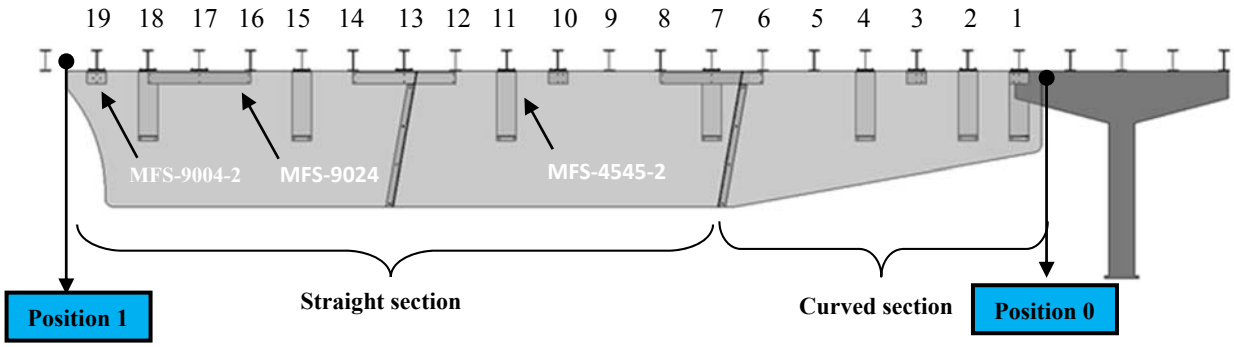
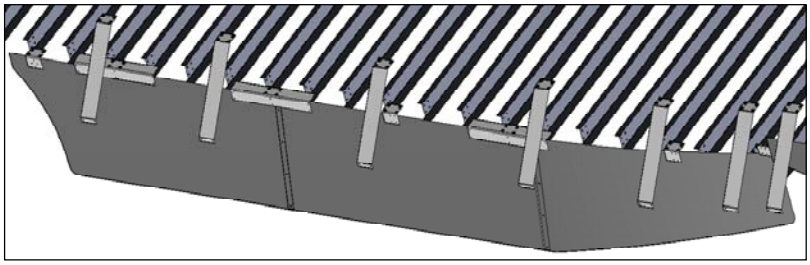


Figure 1: Layout of 12''distance between cross members

Please note that there is one 9004-2 and one strut MFS-4545-2 on ***crossmember no 1***



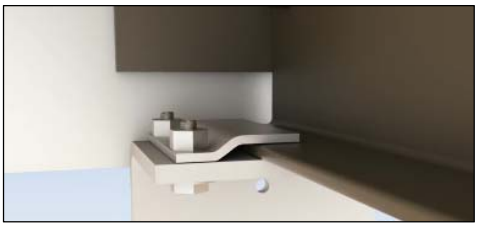
IMPORTANT NOTE

Use Figure 1 as a template only if you install **ez-Edge-1932B** on a trailer with **12''**center to center between cross members otherwise, use the appropriated layout recommended by Transtex based on your trailer's specifications. **See appendix A**

WARNING

The composite panels and brackets contain fibreglass particles that can irritate sensitive skin. It is recommended to wear protective eyewear and gloves.

5.1 Loosely attach all supports (items no: 7, 8 and 9 from BOM above) on the trailer cross members as shown in **figure 1** above. To place support, remove one of the two bolts on the flange, slide support on cross member, rotate released flange and re-insert back bolt.

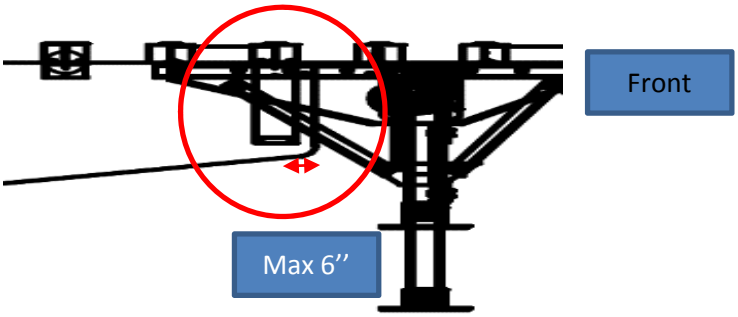


IMPORTANT NOTE

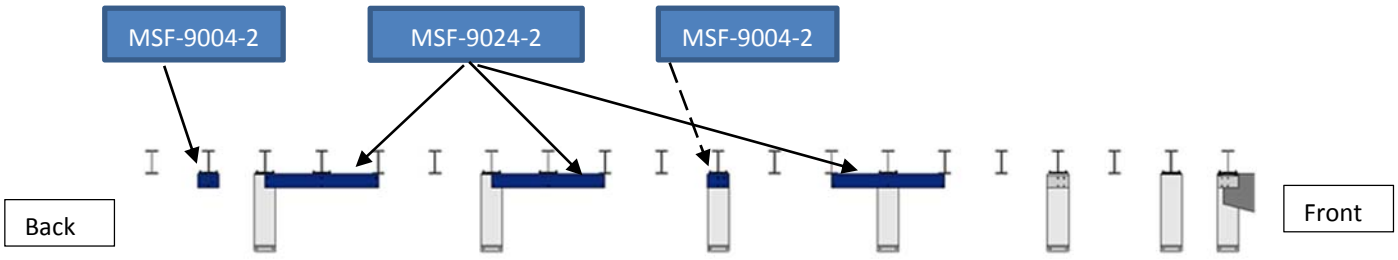
The struts and supports may be moved to slightly different cross members if obstacles like reefer tanks interfere. It's imperative to follow below criteria.

INSTRUCTIONS TO RESPECT

- MFS-4545-2: **Maximum 48''** between 2 struts. It is 4 cross members apart in case of for 12'' distance. **(for straight section)**
- MFS-4545-2: **Maximum 36''** between 2 struts. It is 3 cross members apart in case of for 12'' distance. **(For curved section)**
- MFS-9024-2: **Maximum 48''** between 2 struts. It is 4 cross members apart in case of for 12'' distance.
- Distance between skirt front edge and the MFS-4545 strut should **not exceed more than 6 inches**.
- MFS-4545-2: Must have 3 x 45 degree brackets (item 9) attached to the front panels (1 and 4)



5.2 Starting from the back of the trailer, **ONLY tighten** the first two MFS-9004-2 on cross member 19 and all three MFS-9024-2 and leave all MFS-4545-2 struts loose



Brackets to be tightened using the guide. (3 X MFS-9024-2 and 2 X MFS-9004U-2)

Using the guide provided, align the MFS-9004-2 and MFS-9024-2 before you tighten them. **Guide should be flush with trailer edge**. This is to ensure that once installed, the skirt panel will be flush with the outside of the trailer. **THIS STEP IS CRITICAL AND NEEDS TO BE DONE CAREFULLY IN ORDER TO OBTAIN A PERFECT ALIGNMENT.**

Alignment

Impact gun with 1/2'' socket and ½" wrench

Tightening level (torque)

Should be at least 17 foot-pounds and doesn't exceed 21 Foot-pounds. Please ensure that your torqueing tool is calibrated to meet this torque

6 Skirt installation *(Straight section)*

TOOLS

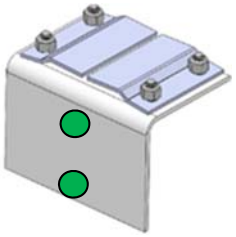
Drill, 21/64” drill bit, impact gun with ½ socket and ½” wrench

6.4 Measure 6” back from the middle of cross member 19 and mark **position 1**. (See layout).

6.5 Take rear panel (no.3) and align with position 1 and the edge of the trailer. Use the C-clamp to hold the panel at the right position as shown in the picture. **Make sure the panel does not pinch anywhere against the bottom trailer, keeping a 1/16” between the panel and the bottom edge of the trailer.**

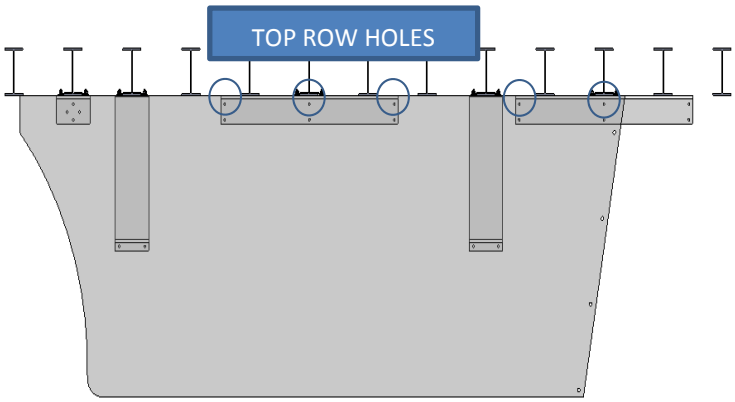
6.6 Align the back of rear panel (no. 3) with the trailer and position 1, **keeping a consistent 1/16” gap between the panel and the bottom edge of the trailer.** Inside technician drills the upper hole located at the predrilled location of the MFS-9004-2 support **(Cross member 19)** and tighten a bolt/washer/nut. To tighten, the outside tech to hold the bolt using a screwdriver and the inside tech to tighten using an impact gun.

6.7 Drill the second available hole located at the predrilled location of the MFS-9004-2 support **(Cross member 19)** and tighten a bolt/washer/nut.

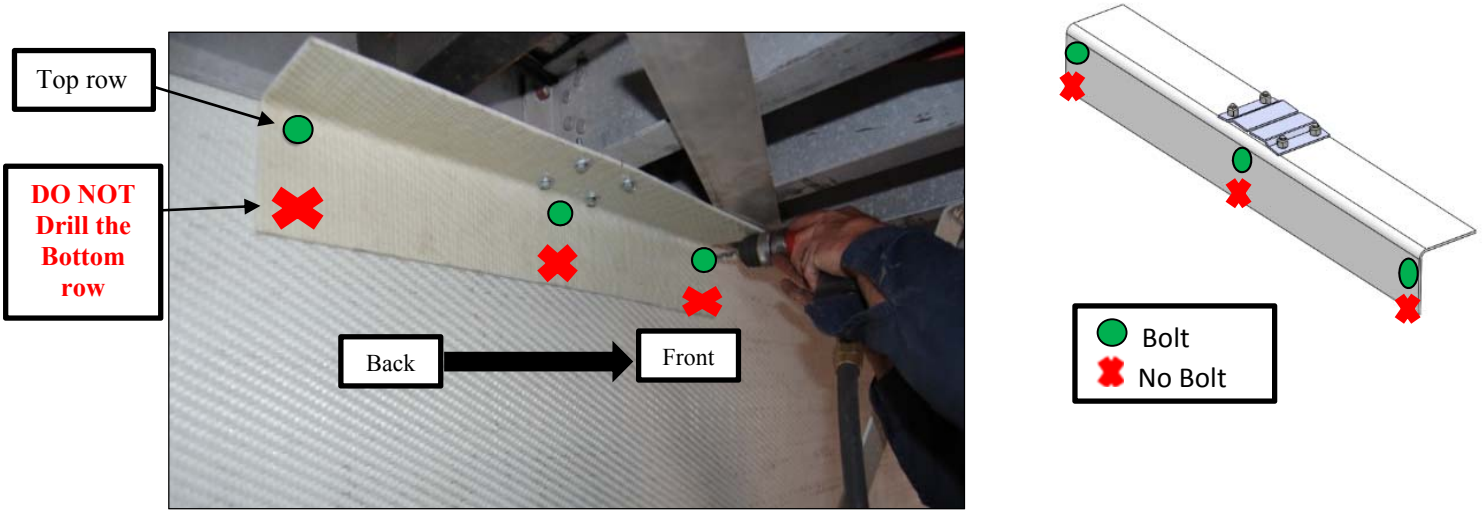


Important note

For the complete installation, always tighten supports and struts on cross members before assemble with the panel

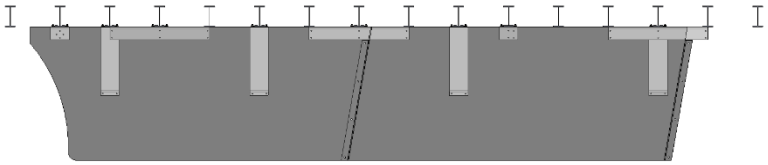


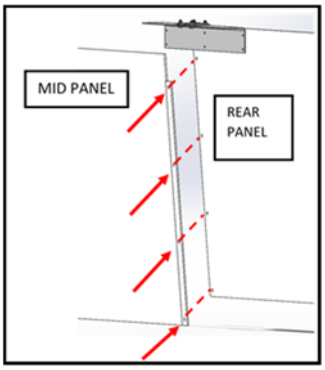
6.8 Now that panel no 3 is held up in the right position, <u>from back to front,</u> inside technician will drill the remaining holes on the upper row of MFS-9024-2 supports and tighten the bolts/nuts/washers. **During this step, outside tech needs to ensure that panel gap is still about 1/16'' while apply pressure using the Philips screwdriver against the panel to facilitate drilling.**



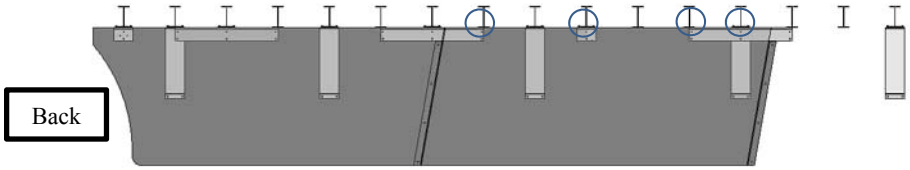
Bolts utilized on MFS-9024-2 supports

6.9 Take middle panel (no.2) and align with rear panel. Place all 4 bolts/washers/nuts to join two panels **loosely**. (To simplify handling, have the technician under the trailer place the bottom bolt first. This will allow you to align the remaining bolts with ease.). Use the C-clamp to hold the panel





6.10 Now that panel no 2 is held up in the right position, <u>from back to front,</u> inside technician will drill the remaining holes on the <u>upper row</u> of MFS-9024-2 supports and tighten the bolts/nuts/washers. **Outside tech needs always to ensure that panel gap is still about 1/16'' while apply pressure using the Philips screwdriver against the panel to facilitate drilling.**



6.11 Tighten the 4 bolts on the joint

6.12 From back to front of the trailer, tighten the four MFS-4545-2 on the cross member. Before tightening, make sure that the upper mounting face is fully in contact with the cross member (Pic A) that the bottom mounting face is parallel to the skirt (Pic B)

A. Verifying proper contact with cross

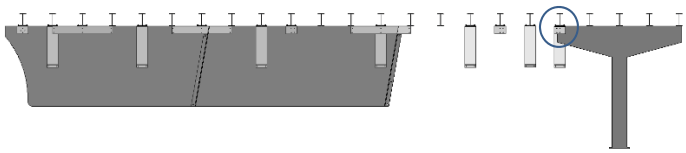
B. Verifying that bottom is parallel

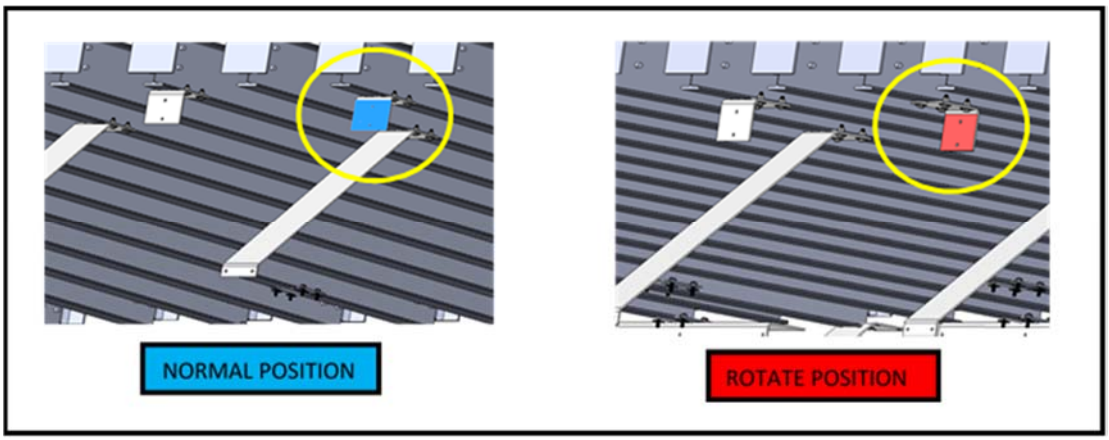
C. Tightening

6.13 You can now assemble the MFS-4545-2 with the 2 first panels. Use the predrilled holes to drill. Insert bolt, washer and nut and tighten. **WORK FROM BACK TO FRONT AND HAVE THE OUTSIDE TECHNICIAN WATCH THE SKIRT PANEL TO MAKE SURE IT DOESN'T BOW IN OR OUT DURING THIS STEP.** (Using a level as tool is easy and very recommended in order ensure a good alignment and decrease stress on Struts)

7 Skirt panel installation *(Front curved section)*

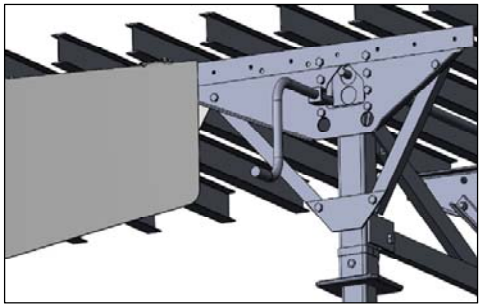
7.1 Position the front-most MFS-9004-2 support between 5 and 7 inches from the side of the trailer. Tighten it in place on the trailer cross member. If the wing plate is too close to the edge, rotate the MFS-9004-2 support 180 degrees (mirror effect) to provide additional space.





7.2 Lift up the front panel (no 1) and loosely place all 4 bolts to join it with panel number 2

7.3 Assemble front side of panel (no 1) with front most MFS-9004-2. Drill, insert bolt, washer and nut in 2 holes and tighten. This will create a smooth curve.



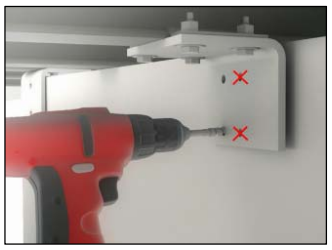
CAUTION!

Front side of the skirt should be outside of the landing gear

7.4 Tighten the 4 bolts on the joint

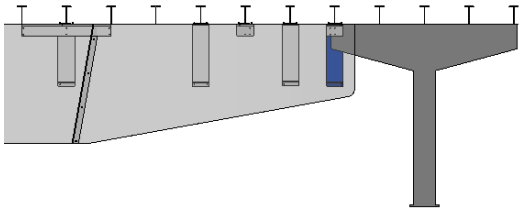
7.5 Slide the other two MFS-9004-2 supports smoothly up against the skirt panel and tighten them to the cross members (it is normal if they are at an angle to the cross members).

7.6 Assemble both MFS-9004-2 with panel (no 1)



Note: for step 4.4 and 4.6, If support is not completely parallel with the skirt, you can drill two other holes (other than pre-drilled ones) used to ensure a better contact. See picture

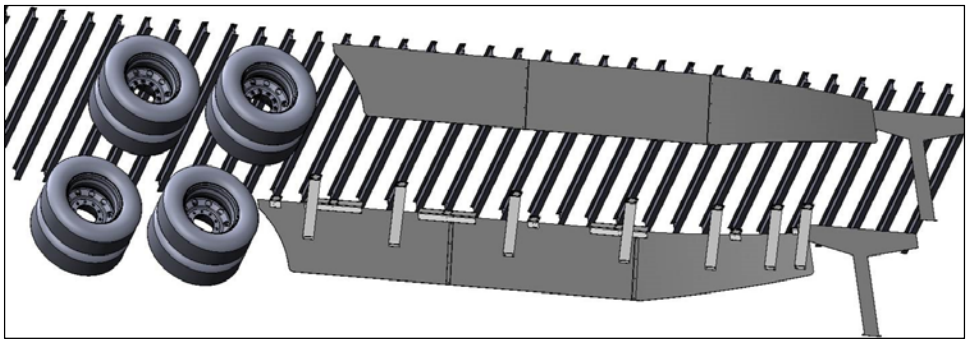
7.7 Tighten the first front MFS-4545-2 on the cross member. Then assemble with the panel.



7.8 Tighten and assemble the other 2 MFS-4545-2

Tightening level (torque)

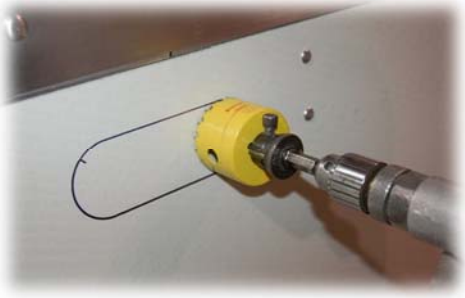
Should be at least 17 foot-pounds and doesn't exceed 21 Foot-pounds. Please ensure that your torqueing tool is calibrated to meet this torque



Installed skirt

8. Installation of the side turn lamp (*if required*)

Tools
2 ½'' Hole saw
Jigsaw



8.1 Trace the shape of the light fixture and use 2 ½'' Hole Saw to drill the two circles.

8.2 1.1 Use a jigsaw to cut the straight lines between the circles.

8.3 Install the light and set a new frame for it in place using two standard rivets or bolts. Connect all wires

9. Cutting out fuel tank nozzle and gage indicator *(for reefer trailer)*

NOTE: Do this following task only when the skirt and the fuel tank are installed

TOOLS

4 ½ hole saw
2 3/4 hole saw
jigsaw

IMPORTANT NOTE
To be CARB (California Air Resources Board) Complaint, following instructions must be respected

- **Maximum** dimension of round opening hole should be 5 inches
- **Maximum** dimension of U opening should be 5 X 8 inches
- **Maximum** dimension of gage indictor hole should be 3 inches

9.1 Use a 4 ½ hole saw to make a round opening for the tank nozzle or you can make ''U'' if you think it would be hard for the driver to access the nozzle.

9.2 Place trim seal provided by Transtex to protect opening edges. Item 15

9.3 Use a 2 ¾ '' hole saw to make a round opening for the gage indicator. Insert the 2.5'' round seal provided by Transtex. Item 15

10. Periodic maintenance & inspection

The Transtex ez-EDGE Skirt is designed to stay on the trailer, maintain its shape, and not require special care for the lifetime of the trailer. However, we understand that the trailer and side skirt will be subject to minor or significant damage that may affect the appearance of the skirt panel or the integrity of the attachments and struts.

Routine inspections conducted **every six (6) months** on the trailer as part of a periodic maintenance (PM) program should include a visual inspection of the following components:

Outside

- Look for holes, deep scratches, delamination at edges, and major changes in panel shape
- Bolt or rivet heads should not be missing or damaged to the point of failure
- If panel alignment is not straight due to a hit or accidental impact, loosen the 4 bolts on the 2 joints, this will allow the panel to take its original straight shape and then re-tighten all 8 bolts

Inside

- Look for holes, deep scratches, or creases in the 45° struts and 90° supports, and especially observe if any are missing or broken.
- Check tightness of flange bolts clamping supports and struts to trailer cross-members-Tighten loose bolts/nuts if required

NOTE

The standard inspection time should be 10 minutes. Consult the section below for recommended practices on repairing any of the above damage

11. Technical inquiries & Spare parts

It will be our pleasure to assist you with any *technical inquiries* you may have. For immediate assistance, please contact:

Support
Office: (514) 334-3519
Office: (877) 332-3519
Cell phone: (514) 835-6200

Installation@transtexcomposite.com

Should you require *replacements parts*, please contact Transtex to place an order or visit our website: www.edgeskirts.com to find your nearest authorized dealers:

Customer Service
Office: (514) 334-3519 ext. 109
Office: (877) 332-3519 ext.109

info@transtexcomposite.com

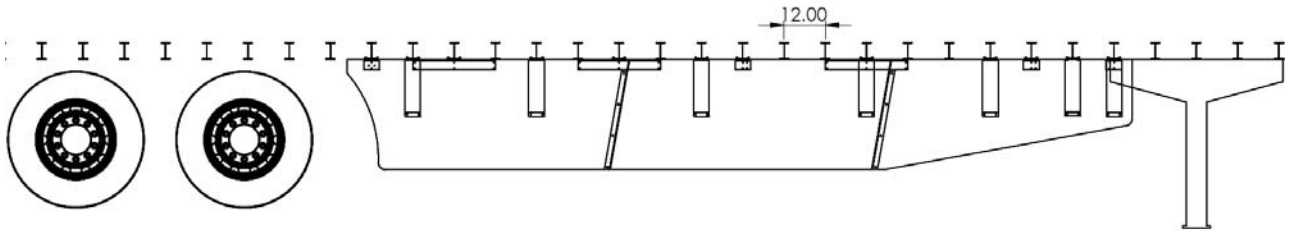
Transtex Composite
6200 W. Henri Bourassa
Montreal, Quebec H4R 1C3

www.edgeskirts.com

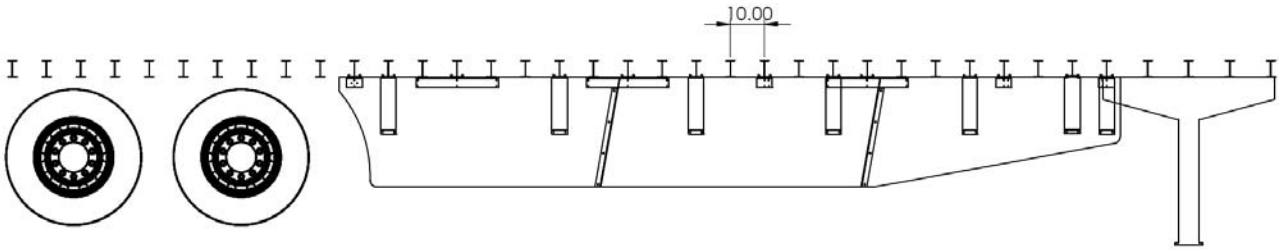
APPENDIX A

CROSS MEMBERS LAYOUTS

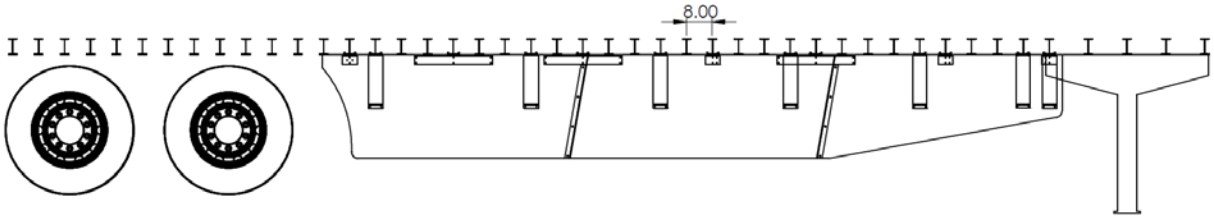
DISTANCE 12 inches



DISTANCE 10 inches



DISTANCE 8 inches



NOTE: If layouts above don't apply to your trailer: please contact us or follow the instructions at page 8 to locate your supports properly

APPENDIX B

Installation checklist

This section can help to ensure that all criticals steps are validted in order to obtain a compliant installation. All questions in the table below should be answered by (Yes)

TO VERIFIY	YES(X)	NO (X)
1. The trailers' rear tires and bogies are moved to their forward most position before installation? In case that this step is not done, be certain to take this position in consideration		
2. Crossmember no 1 was determined carefully behind landing gear center and enough clearance to install a support 4545-2 and 9004-2?		
3. An appropriate layout to position supports was chosen from Appendix A?		
4. MFS-9024-2 and MFS 9004-2 supports were aligned carefully with the provided guide support in order to obtain a flush skirt panel with the outside of the trailer? (straight section)		
5. The top edge of the 3 panels isn't pinched anywhere against the bottom of the trailer?*(This can cause waviness and undue tension)* (slight gap should be leaved, Maximum 1/16 between the panel and the bottom edge of the trailer)		
6. All MFS9024-2 supports were bolted from back to the front of the trailer? (Steps 6.8 and 6.10)		
7. Before tightening the <u>loose</u> MFS-4545-2 struts on the cross member, is the bottom mounting face parallel to the skirt and the upper mounting face is fully in contact with cross member? (Step 6.12)		
8. While drilling <u>and</u> bolting MFS-4545-2 struts from the back to the front of the trailer, is an outside technician watching the skirt panel to make sure it doesn't bow in or out? (step 6.13)		
9. On the front curved section, is the front-most MFS-9004-2 support 5 inch- 7 inch from the side of the trailer? If the landing gear is too close to the edge, rotate the MFS9004-2 support 180 deg (mirror effect) to provide additional space. For better fuel savings, try to install it as close to 7''as possible. (Step 7.1)		
10. On the front curved section, <u>if</u> the bottom mounting of MFS-9004-2 support is not completely parallel with the skirt, were two other holes (other than pre-drilled ones) used to ensure a better contact?		
11. Are the skirts on each side aligned and show no waves?		
12. Are all supports and struts exactly symmetric on each side of the trailer (Quantity, location)? For standard dry box trailers *Note: in case when a tank fuel or any other object interferes, struts and support can be slightly moved in the condition that doing so does not weaken the skirt's structural integrity.* (guidelines at step 5.1)		
13. Did you torque bolts with a force of 23 to 28 ft-lbs?		
14. For reefer trailers: **Is the <u>maximum</u> round opening hole is 5 inches?** **Is the maximum U opening 5'' X 8''?** **Is the maximum gage indicator hole 3 inches?** (Important to be CARB compliant, see installation manual, section 9)		
15. Are the tank nozzles and gage indicator holes protected with appropriated seals?		