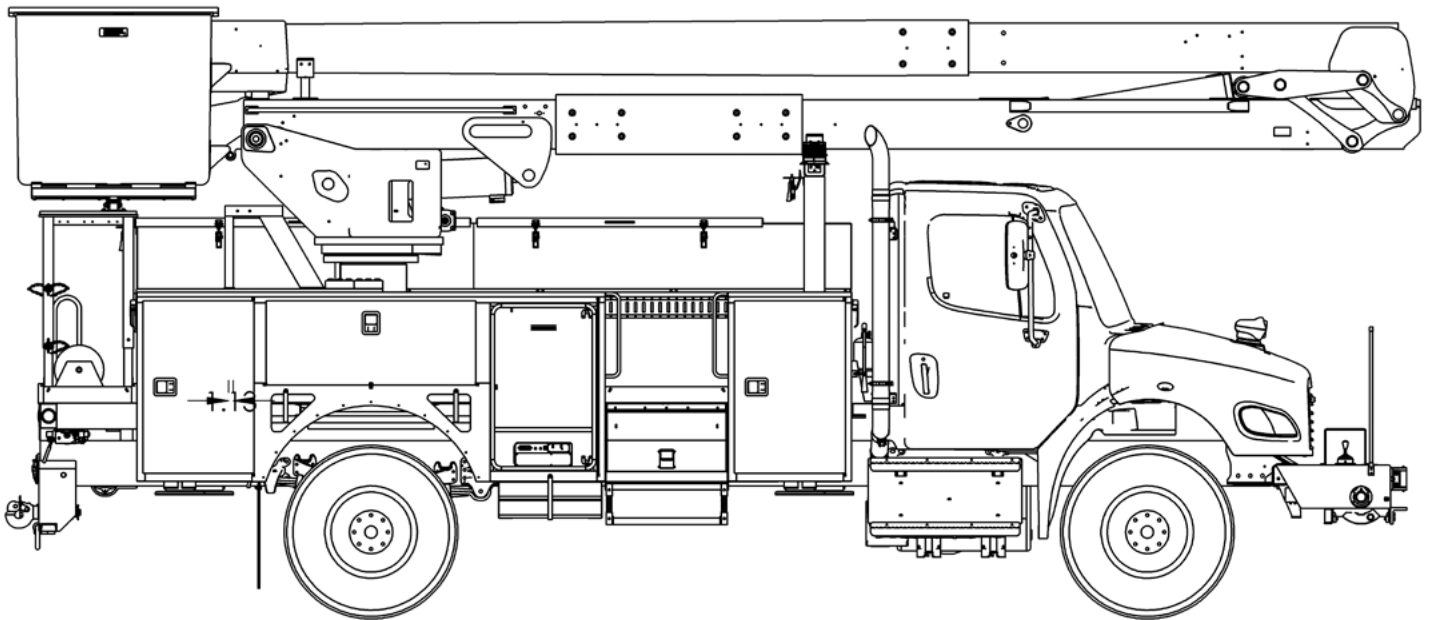




# TECH TIPS

FIBER OPTIC INSTALLATION AND REPAIR

NO. 05



**SERVICE CALL:**  
FIBER OPTIC INSTALLATION AND  
REPAIR



**MODEL(S):**  
HR, HRX, TM, HYPOWER HYBRIDS,  
EATON HYBRIDS



**TOOLS NEEDED:**  
CABLE  
STRIPPER  
BLOCK  
TERMINATION BLOCK  
UTILITY KNIFE

TEREX UTILITIES TECHNICAL SUPPORT TEAM

PHONE: 1-844-TEREX4U (1-844-837-3948) | EMAIL: [UTILITIES.SERVICE@TEREX.COM](mailto:UTILITIES.SERVICE@TEREX.COM)



## **DANGER**

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury.

Many of the hazards identified in the Operator's Manual are also safety hazards when maintenance and repair procedures are performed.

## **DO NOT PERFORM MAINTENANCE UNLESS:**

- ✓ You are trained and qualified to perform maintenance on this machine.
- ✓ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ✓ You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this Tech Tip is a supplement to the Service Manual. Consult the appropriate Service Manual of your machine for safety rules and hazards.



TECH TIP 05 | RELEASED 02.08.2022 | VERSION 1.0  
©TEREX UTILITIES. ALL RIGHTS RESERVED

# CONTENTS

## TECH TIP#05

4

| *Tool Part Numbers*

| *Remove orange jacket from f/o cable*

**INTRODUCTION**  
**STEP 1 - STEP 3**

5

| *Split black cable*

| *Use termination block to cut cable*

| *Inspect cable ends*

**STEP 4 - STEP 8**

6

| *Test fiber optic signal*

**STEP 9**

7

| *24V systems*

**APPENDIX A**

8

| *Examples of good and bad ends*

**APPENDIX B**

## INTRODUCTION

Tools available from [www.bohlinger.biz](http://www.bohlinger.biz)

Cable: Terex P/N 453830

Stripper Block: P/N 65-020-01

Termination Block: P/N 65-020-02

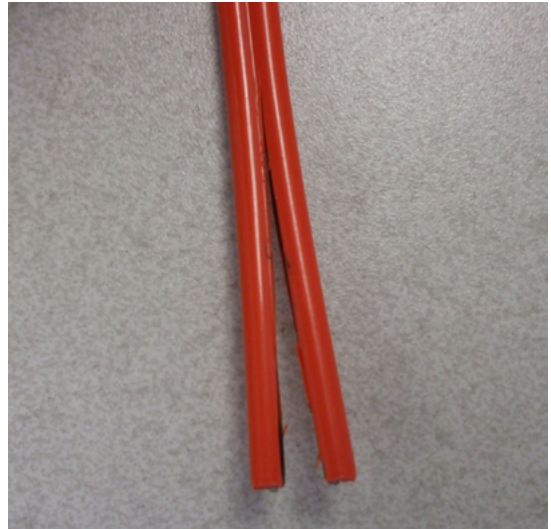
Utility Knife

## STEP 1

Using a utility knife, cut the orange jacketing in the center, between the two black wires.

Termination: Approx. 3 ½”

Transceiver Termination: Approx. 1”



**FIGURE 1**

## STEP 2

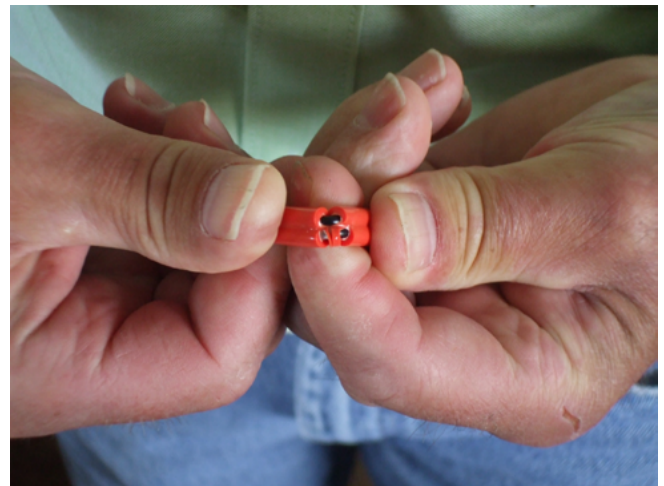
Score the orange jacketing using the stripper block or a coax cable stripper.



## STEP 3

After scoring, gently bend the jacket to break it loose on both sides.

Bending the cable too sharply can damage or break the fiber optic cable.



## STEP 4

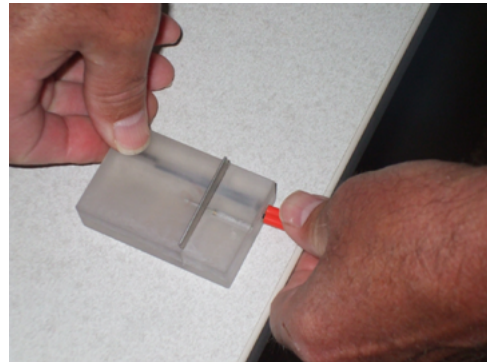
Slide the orange jacketing off the cable, exposing the black cables.



## STEP 5

Insert the cable into the holes on the side of termination block, splitting the cable evenly. Make sure the razor blade is sharp; a dull razor blade may result in chipped or uneven cuts.

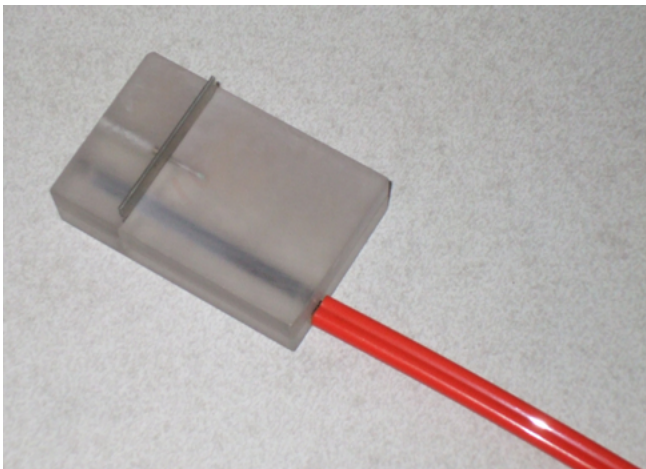
Transceiver termination: (short side of block). Push block tight against orange jacketing and depress razor blade, cable is now cut to proper length and square.



## STEP 6

Switch Termination: (long side of block)

Push block tight against orange jacketing and depress razor blade, cable is now cut to proper length and square.



## STEP 7

Inspect the ends of the fiber optic cable, verifying that the cuts are square and clean.

\*Examples of correctly and incorrectly cut fiber optic cables can be found in Appendix A.

## STEP 8

Install the finished fiber optic cables into the mounted transceiver and switch.

## STEP 9

Test the fiber optic signal.

Indicator light on the transceiver:

Red - Indicates the transceiver has power and is capable of operating

Green - Indicates that a signal from the fiber optic switch is being received

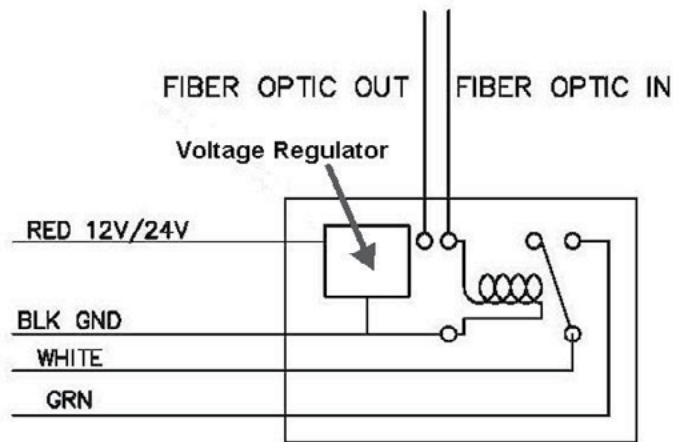
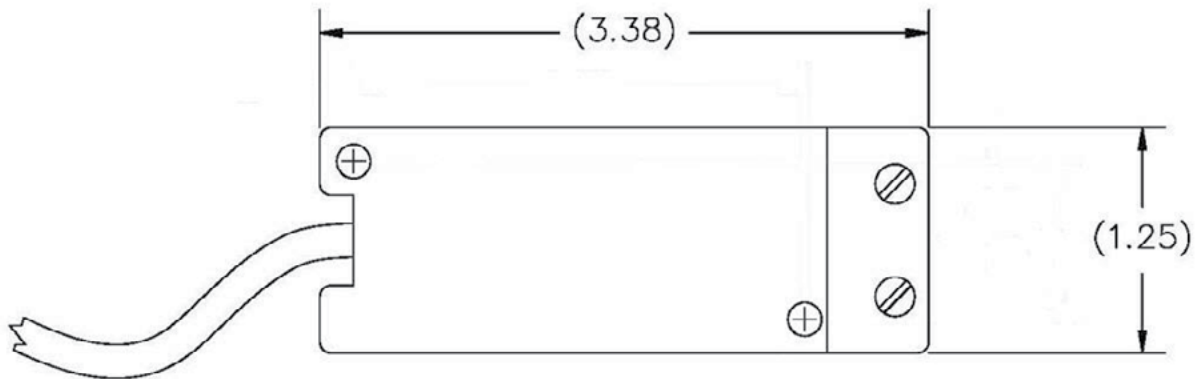
A schematic of the transceiver is available in Appendix B at the end of this tech-tip.

# APPENDIX: A

- Normally Open Relay
- Red Wire – 12V+
- Black Wire – Ground
- Green and White Wires – Relay

Voltage Regulator – Converts 12V/24V signal into a 5V to power the transceiver

On 24V systems, install a 100 ohm ½ Watt resistor between the power source and the red wire. The green wire should be installed directly to the power supply.



# APPENDIX: B

The following pictures and illustrations provide examples of correct and incorrect fiber optic ends – always examine the ends of the fiber optic cable to make sure the cuts are square and the fiber optic cable is not damaged.

## Good Fiber Optic Examples – magnified 60x



FIGURE 1 - Good Example



FIGURE 2 - Good Example



Bad Fiber Optic Examples – magnified 60x

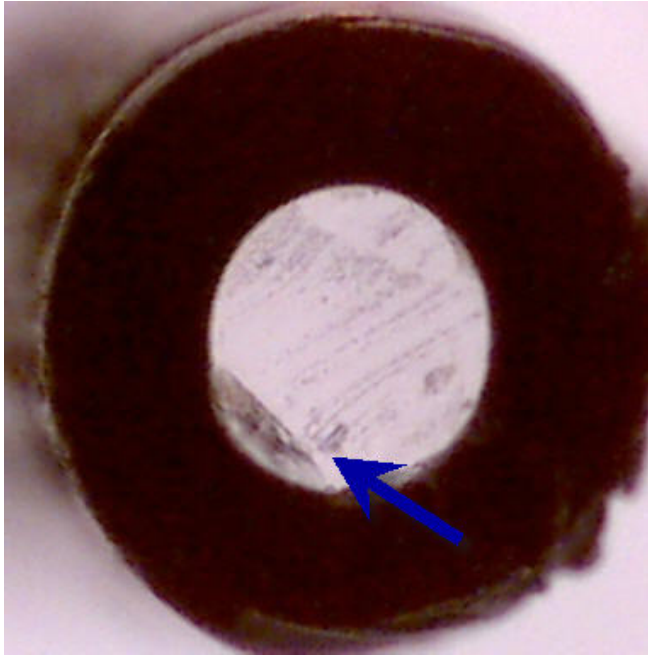


FIGURE 3 - Chipped

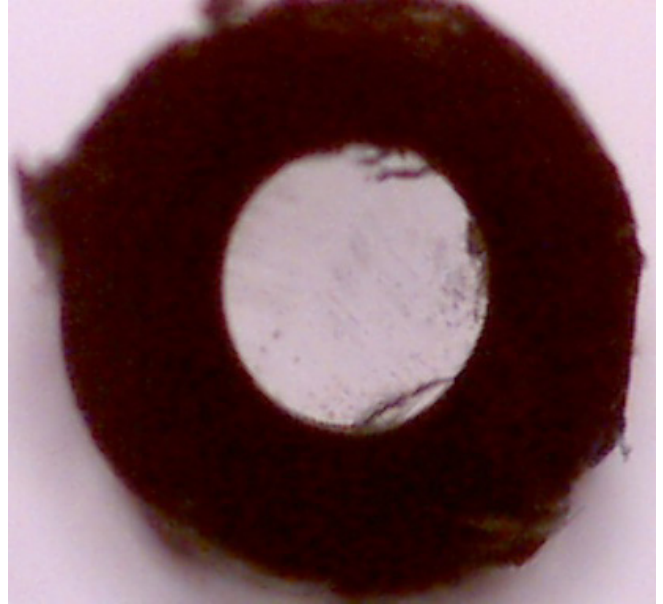


FIGURE 4 - Cut Marks

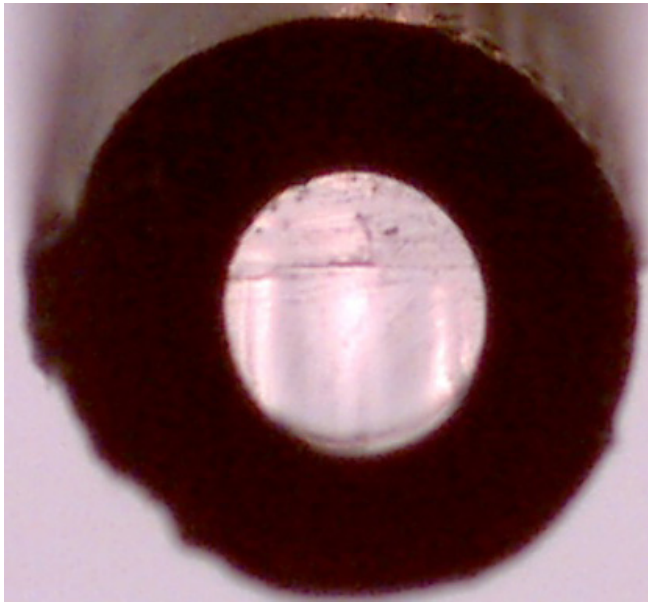
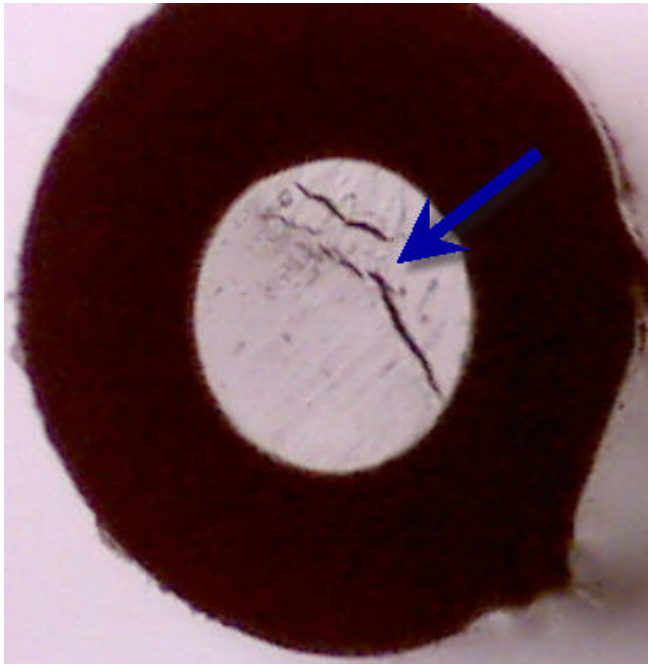


FIGURE 5 - Lines from Blade

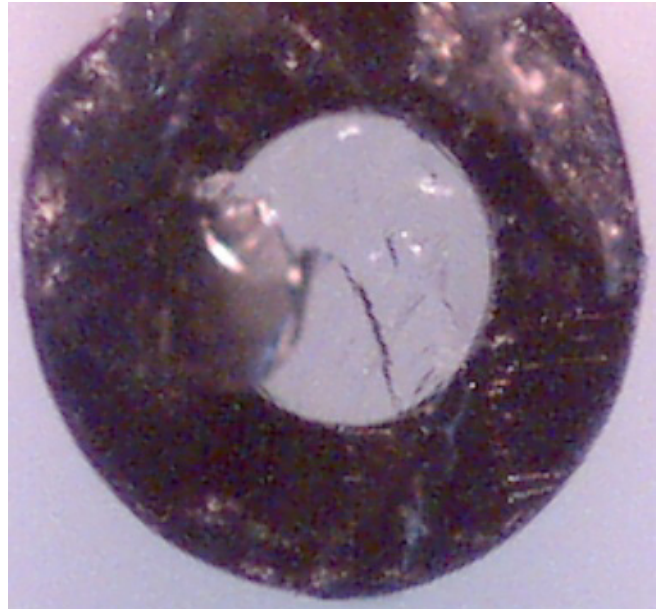


FIGURE 6 - Shattered

**Bad Fiber Optic Examples – magnified 60x**



**FIGURE 7 - Shattered**



**FIGURE 8 - Shattered**

---

**(The outer black coating has been removed from these illustrations to make the fiber optic cable easier to see)**

Bad Fiber Optic Examples – magnified 60x



FIGURE 9- Clean Square Cut



FIGURE 10 - Cable cut at angle (Incorrect)

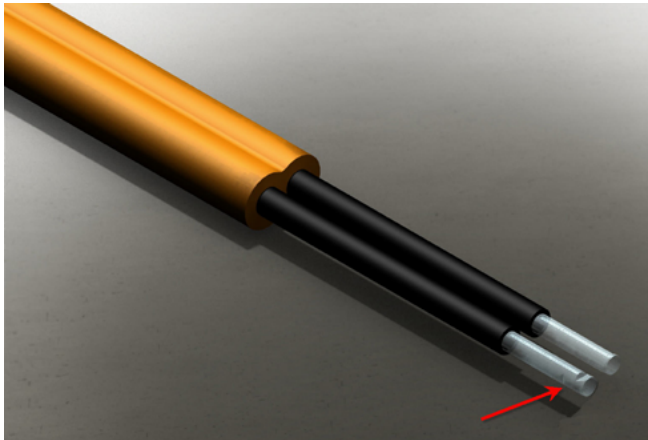


FIGURE 11 - Fiber Optic Cable Chipped

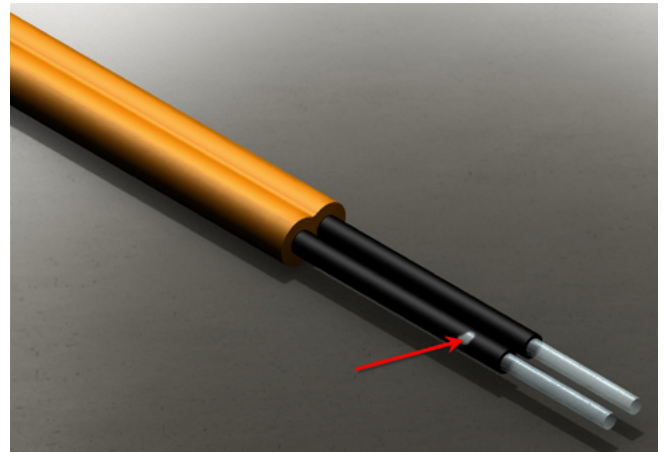


FIGURE 12 - Black Coating Damaged



FOR FURTHER ASSISTANCE,  
CONTACT THE TEREX UTILITIES TECHNICAL SUPPORT TEAM  
PHONE: **1-844-TEREX4U (1-844-837-3948)** | EMAIL: **[UTILITIES.SERVICE@TEREX.COM](mailto:UTILITIES.SERVICE@TEREX.COM)**

---