



Greenlee Tool XBPSX Module Pull Connect User Manual

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Greenlee Tool XBPSX Module Pull Connect



Product Information

Tool Description

The Greenlee Pull Connect is a pulling accessory with two modes, Endpoint and Repeater, that uses Greenlee IntelliPull™ technology to send out and receive signals that control the starting and stopping of the puller and feeder simultaneously.

Specifications

- **Model Number:** 52094539 REV 01
- **Modes:** Endpoint and Repeater
- **Technology:** Greenlee IntelliPull™

Product Usage Instructions

Safety Symbols Key

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.

- **DANGER!** – This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
- **DANGER** – Indicates a hazardous situation which, if not avoided, **WILL** result in death or serious injury.
- **WARNING** – Indicates a hazardous situation which, if not avoided, **COULD** result in death or serious injury.
- **CAUTION** – Indicates hazards or unsafe practices which, if not avoided, **MAY** result in injury or property damage.
- **Operator's Manual** – This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.
- **Additional Information** – This symbol means additional information can be found here.
- **Safety Glasses** – This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.
- **Electrical Shock** – This symbol indicates the risk of electrical shock.
- **Battery Safety** – This symbol means do not burn the battery or expose to high heat to reduce the risk of fire or explosion.

- **Water or Rain** – This symbol means do not expose the battery to water or rain to reduce the risk of electric shock.
- **Battery Temperature** – This symbol means the battery temperature should not exceed printed temperature to reduce the risk of fire or explosion.
- **Tripping Hazard** – This symbol indicates the risk of tripping.
- **Foot Switch** – This symbol means do not lock foot switch in ON position to reduce the risk of injury from uncontrolled machine movement.

Safety Warnings

Use the correct tool and accessories for your application. The correct tool will do the job better and safer at the rate for which it was designed. Use of the tool for operations different from those intended can result in a hazardous situation. Before operating this tool, read and understand the safety instructions provided in the operator's manual.

Greenlee Contact Information

If you have any questions, need to arrange service, or purchase parts or accessories for this Greenlee product, contact your local Greenlee distributor or Greenlee's Customer Service Center.




- **USA:** 1-800-435-0786
- **Canada:** 800-435-0786
- **International:** 1-815-397-7070
- **Email:** GRNCustomerService@emerson.com
- **Shipping Address:** Greenlee Factory Service Center, 4411 Boeing Dr., Rockford, IL 61109

Additional Copies of the Manual

Additional copies of this manual are available for download at www.greenlee.com.

FAQ

- **Q: How many modes does the Greenlee Pull Connect have?**
A: The Greenlee Pull Connect has two modes, Endpoint and Repeater.
- **Q: What technology does the Greenlee Pull Connect use?**
A: The Greenlee Pull Connect uses Greenlee IntelliPull™ technology.
- **Q: Where can I find additional copies of the manual?**
A: Additional copies of the manual can be downloaded from the Greenlee website at www.greenlee.com.

  	<p>Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.</p> <p>KEEP THIS MANUAL</p>
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Safety Symbols Key

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and

symbols.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Danger

Indicates a hazardous situation which, if not avoided, WILL result in death or serious injury.

Warning

Indicates a hazardous situation which, if not avoided, COULD result in death or serious injury.

Caution

Indicates hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



- This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.



- This symbol means additional information can be found here.



- This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.



- This symbol indicates the risk of electrical shock.



- This symbol indicates the risk of tripping.



- This symbol means do not lock foot switch in ON position to reduce the risk of injury from uncontrolled machine movement.



- This symbol means do not burn the battery or expose to high heat to reduce the risk of fire or explosion.



- This symbol means do not expose the battery to water or rain to reduce the risk of electric shock.



- This symbol means the battery temperature should not exceed printed temperature to reduce the risk of fire or explosion.

Safety Warnings

Warning



Use the correct tool and accessories for your application. The correct tool will do the job better and safer at the

rate for which it was designed. Use of the tool for operations different from those intended can result in a hazardous situation.

Before operating this tool, read and understand

- This operator's manual
- The instructions for any other equipment or material used with this tool
- Markings on the tool
- Required work site safety procedures

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE.

- **Do not lock foot switch in ON position.**

The operator should always be in control of the tool to decrease the risk of injury from uncontrolled movement of the tool.

- **Maintain communication between operators.**

Loss of communication increases the risk of injury and damage to the tool and cable.

- **Do not use Pull Connect in Endpoint**

Mode outside the immediate area of operation. One operator should be located at each endpoint to monitor the pull and control the foot switches to reduce the risk of injury.

- **Keep proper footing and balance at all times.**

This enables better control of the power tool in unexpected situations.

- **Stay alert, watch what you are doing and use common sense when operating a puller or feeder.**

Do not use this equipment while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

- **Do not let familiarity gained from frequent use of these tools allow you to become complacent and ignore tool safety principles.**

A careless action can cause severe injury within a fraction of a second.

- **Use the tool in accordance with these instructions, taking into account the working conditions and the work to be performed.**

Use of the tool for operations different from those intended could result in a hazardous situation.

- **Do not place Pull Connect on ground.**

Pull Connect could be damaged and be a tripping hazard.

- **Do not carry or unplug the foot switch or Pull Connect by the cord.**

Continued abuse can lead to damage to the cords. Damaged cords increase the risk of electric shock.

- **Do not use Pull Connect if wet.**

Moisture near electronics increases the risk of injury and tool damage from a short circuit.

- **Keep handles and grasping surfaces dry, clean and free from oil and grease.**

Slippery surfaces do not allow for safe handling and control of the tool in unexpected situations increasing the risk of injury and tool damage.

Greenlee Contact Information

If you have any questions, need to arrange service, or purchase parts or accessories for this Greenlee product: Contact your local Greenlee distributor or Greenlee's Customer Service Center.

Additional copies of this manual are available for download at www.greenlee.com

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GRNCustomerService@emerson.com
Shipping address:
Greenlee Factory Service Center
4411 Boeing Dr., Rockford, IL 61109

Tool Description

The Greenlee Pull Connect is a pulling accessory with two modes, Endpoint and Repeater, that uses Greenlee Intelli-Pull™ technology to send out and receive signals that control the starting and stopping of the puller and feeder simultaneously.

Features

- Intelli-Pull™ Technology
- **Two Operating Modes:** Endpoint and Repeater
- Compact and Rugged Design
- Magnets for Mounting Unit
- Simple and Easy to Read Control Panel

Specifications

Compatible with 6810 Feeder, UT-10, G10 and G6

- **Dimensions:**.....9.0 in. x 5.0 in. x 1.6 in. (228.6 mm x 127.0 mm x 41.3 mm)
- **Weight:** .
.....
1.00 lb (0.45 kg)
- **Operating Temperature:**..... 5°F to 122°F (-15°C to 50°C)
- **Storage Temperature (long term):**.....50°F to 122°F (10°C to 50°C)
- **Contains FCC ID**.....
2A3WE-XBPSX; SQGBL653
- **Contains IC**.....
28039-XBPSX; 3147A-BL653
- **Internal Li-Ion Battery**
- **Nominal Voltage:**
.....
3.63 V
- **Charging Temperature**.....32°F to 113°F (0°C to 45°C)
- **Est. Charging**

Time.....

5 hrs

• **Est. Operating**

Time.....

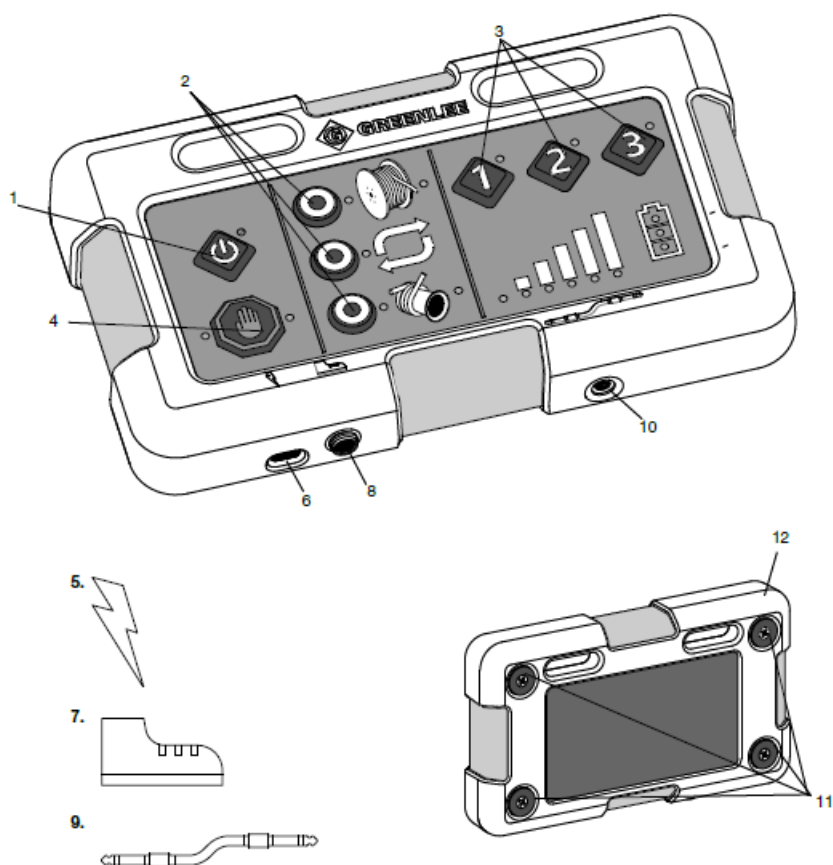
8 hrs

Intelli-Pull™ is a trademark of Greenlee Equipment, Inc.

All specifications are nominal and may change as design improvements occur

Button & Feature Identification

1. Power Button
2. Mode Select Buttons
3. Radio Channel Buttons
4. Stop Button
5. Charger Icon
6. Charger Input Jack
7. Foot Switch Icon
8. Foot Switch Jack
9. Patch Cord Icon
10. Patch Cord Jack
11. Mounting Magnets
12. Housing



LEDs, Icon & Decal Identification

- A. General Status LEDs (GREEN/RED)
- B. Power Status LED (GREEN/RED)
- C. Stop Signal LEDs (RED)
- D. Mode Select LEDs (WHITE)
- E. Feeder Icon
- F. Feeder Foot Switch LED (GREEN)
- G. Repeater Mode Icon
- H. Puller Icon
- I. Puller Foot Switch LED (GREEN)
- J. Radio Channel LEDs (GREEN)
- K. Signal Strength Icons
- L. Signal Strength LEDs (GREEN)
- M. Wireless LED (BLUE)
- N. Battery Icon
- O. Battery LEDs (GREEN/RED)
- P. Product Information Decal

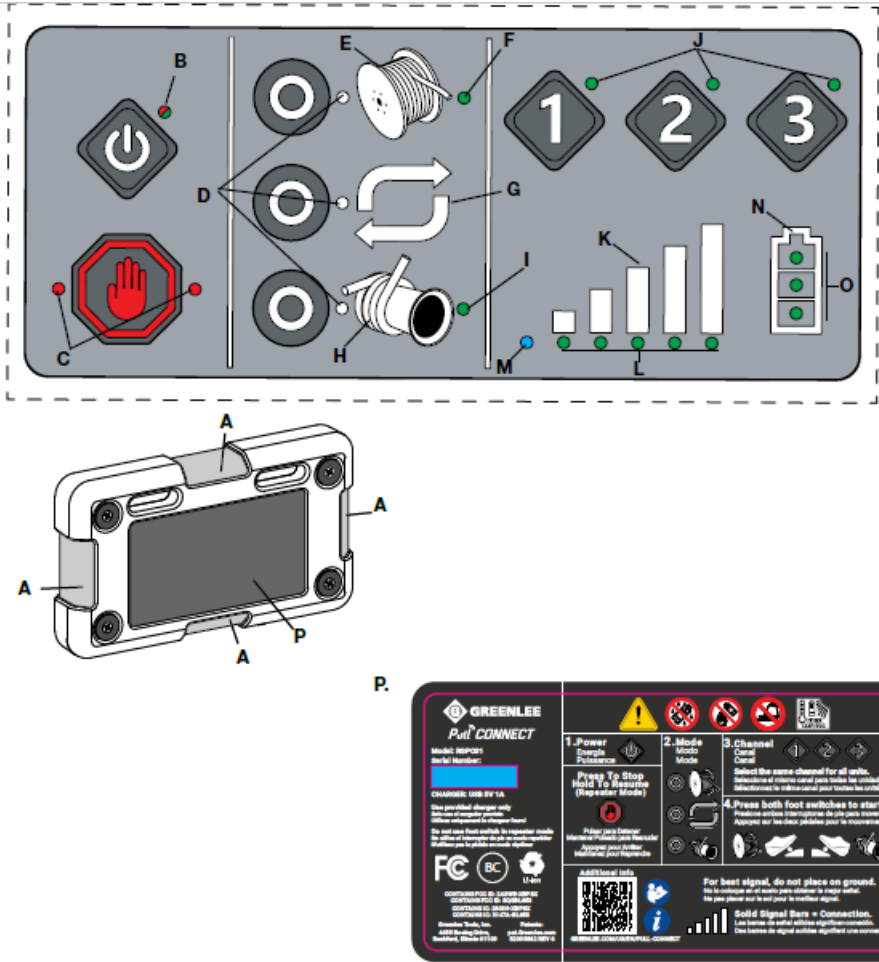





TABLE 1: BUTTON & LED GUIDE

ID	BUTTON	ACTION	LEDs	BEHAVIOR & COL OR	MEANING
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1	Power Button		Press and Hold 4 sec. to turn ON	ALL	All LEDs turn ON then OFF except Power Status, Battery Level & Operating Mode LEDs stay ON.	Start Up Sequence
				Power Status LED	Solid GREEN	Unit is ON
					Flashing RED	See Troubleshooting
				Operating Mode LEDs	3 Flashing White	This unit is waiting for the operator to select a mode.
			Press and Hold 2 sec. to turn OFF	ALL	OFF	Unit is OFF
2	3 Mode Select Buttons		Press Mode Select Button next to Feeder Icon	Feeder Mode LED	Feeder is Solid White and the others are OFF	This unit is set to Feeder Mode.
				Repeater Mode LED	OFF	
				Radio Channel LEDs	All are Flashing GREEN	Operator can select a radio channel.
			Press Mode Select Button next to Puller Icon	Puller Mode LED	Puller LED is Solid White and the others are OFF	This unit is set to Puller Mode.
				Repeater Mode LED	OFF	
				Radio Channel LEDs	All are Flashing GREEN	Operator can select a radio channel.
			Press Mode Select Button next to Repeater Icon	Repeater Mode LED	Solid White	This unit is set to Repeater Mode.
				Feeder/Puller Mode LEDs	Alternating White	
				Radio Channel LEDs	All are Flashing GREEN	Operator can select a radio channel.
3	3 Radio Channel Buttons		Press 1, 2, or 3. Must be the same as other units in system.	Radio Channel LEDs	Selected button LED is Solid GREEN the others are OFF	The radio is broadcasting on this channel.
			Press to Stop Pull.	Stop Signal LEDs	Flashing RED	This unit is broadcasting a STOP signal.
					Solid RED	Another unit is broadcasting a STOP signal. The STOP command can only be cleared on the original unit.


4	Stop Button		Press and hold until flashing Stop Signal LEDs turn OFF.	Stop Signal LEDs	OFF	STOP command is cleared. Operators must step off then back on to foot switch to resume pull.
			Press after start up sequence and before selecting operating mode.	Wireless LED	Flashing BLUE	Connection with Greenlee Link app possible.
					Solid BLUE	Connected with Greenlee Link app.

TABLE 2: GENERAL STATUS LED GUIDE


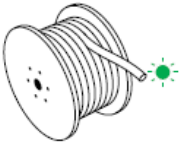

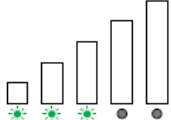
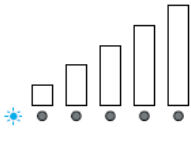
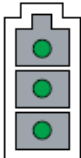
LED ID	LED	BEHAVIOR & COLOR	MEANING
General Status LEDs		Flashing GREEN	<ul style="list-style-type: none"> The Pull Connect is connected to the other endpoint and ready to operate. Equipment is not active.
		Rotating GREEN	Both endpoint foot switches are depressed and equipment is in motion.
		Flashing RED	<ul style="list-style-type: none"> A STOP signal is broadcasting from this unit. All equipment is stopped in system.
		Solid RED	<ul style="list-style-type: none"> A STOP signal is active on another unit in the system. All equipment is stopped in system.
		OFF	No active connections.

TABLE 3: ICON & LED GUIDE				
LED ID	ICON	BEHAVIOR & COLOR	MEANING	
Feeder Endpoint LED		OFF	The feeding endpoint foot switch is NOT depressed.	
		Solid GREEN	The feeding-endpoint foot switch is depressed.	
		Flashing GREEN	A Pull Connect, on the same channel, is issuing a STOP command.	
Puller Endpoint LED		OFF	The puller endpoint foot switch is NOT depressed.	
		Solid GREEN	The puller endpoint foot switch is depressed.	
		Flashing GREEN	A Pull Connect, on the same channel, is issuing a STOP command.	
Signal Strength LEDs		GREEN LEDs Sweep Back and Forth	This Pull Connect is searching for compatible signals on the selected channel.	
		1 to 5 LEDs Solid GREEN	Shows the connection strength to the other feeder/puller endpoint.	
		Switching Between Different Number of GREEN LEDs	This Pull Connect is in Repeater Mode and shows the connection strength of the indicated Feeder or Puller endpoint.	
Wireless LED		Flashing BLUE	Connection to Greenlee Link app available.	
		Solid BLUE	Connected to Greenlee Link app.	
Battery LEDs		1-3 Segments are Solid GREEN	Shows the battery charge level.	
		Bottom Segment is Rapidly Flashing GREEN	Battery is low, charge this Pull Connect.	
		One or More Segments are Slowly Flashing GREEN	Pull Connect is charging.	

Training & Qualifications

Only workers trained and qualified should use this tool, especially in a live line environment. It is recommended at least a second trained and qualified person is present at appropriate distance to respond if needed. Follow all training and proper job site safety precautions outlined by your industry, government and employer.

Pre-Operation Inspection

Warning

- Daily before use, inspect the tool and correct any problems before using. If any problems are found, do not use this tool until the problems have been fixed. Failure to follow these steps increases the risk of injury.
 - Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
1. Clean any oil, grease, or dirt from the body and buttons. A clean tool aids inspection and helps the operator observe the lights to see the status of the tool.
 2. Look for wear or damage, such as cracks, gouges, or chips to housing.
 3. Check for the presence and condition of decals.
 4. Inspect the patch and foot switch cords for damage and disentangle before use. Never use the cord for carrying, pulling or unplugging from equipment. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
 5. For Endpoint mode: Check that the foot switch is present and in good condition and does not stick when depressed on.
 6. Inspect any other equipment in the system according to their instruction manuals.
 7. Check work area for adequate lighting, a clear, level, stable and dry place for all equipment.

Wireless Mode

The blue Wireless LED indicates information related to wireless connection status. The Pull Connect wireless technology connects to the Greenlee®Link app using a smartphone or tablet running iOS or Android operating systems.

To enable wireless connection to the Greenlee® Link app

1. Download the appropriate Greenlee® Link app to your device by going to [Greenlee.com/apps](https://www.greenlee.com/apps), the Google Play Store or the Apple App Store.
2. Turn ON Pull Connect, wait for start up sequence to finish and Mode Select LEDs start flashing white. Do not press any of the Mode Select Buttons.
3. Press the Stop Button. When the blue Wireless LED starts flashing the unit is able to connect to the app.(Fig. 1)



Figure 1

4. Go into the Greenlee Link app and follow the instructions to select the serial number of the Pull Connect in

Wireless Mode to start pairing.

5. Wait for the Wireless LED to become solid blue signaling the unit is connected. The Greenlee Link app can be used to view data from the Pull Connect and initiate firmware updates.

The Pull Connect cannot be used for Connected Pulling while in Wireless Mode. Turn OFF Pull Connect to exit Wireless Mode. When next turned ON follow the instructions for the Connected Pulling Modes shown in this manual.

Tool Set Up & Operation

Warning



- **Do not lock foot switch in ON position.**

The operator should always be in control of the tool to decrease the risk of injury from uncontrolled movement of the tool.

- **Maintain communication between operators.**

Loss of communication increases the risk of injury and damage to the tool and cable.

- **Do not use Pull Connect in Endpoint Mode outside the immediate area of operation.**

One operator should be located at each endpoint to monitor the pull and control the foot switches.

- **Keep proper footing and balance at all times.**

This enables better control of the tool in unexpected situations.

- **Stay alert, watch what you are doing and use common sense when operating a puller or feeder.**

Do not use this equipment while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

- **Do not place Pull Connect on ground.**

Pull Connect could be damaged and be a tripping hazard.

- **Do not carry or unplug the foot switch or Pull Connect by the cord.**

Continued abuse can lead to damage to the cords. Damaged cords increase the risk of electric shock.

- **Do not use Pull Connect if wet.**

Moisture near electronics increases the risk of injury and tool damage from a short circuit.

The Pull Connect is an accessory that equips select models of pullers (UT-10, G6 and G10) and the 6810 feeder with Connected Pulling. The purpose of Connected Pulling is to quickly and accurately deliver, using radio signals, start and stop commands to both sides of the pull. With this feature, the pull will not start unless the feeder and puller foot switches are pressed. This removes the delay of sending stop commands over hand radios. The operators are still expected to monitor the pull and adjust settings as needed while Connected Pulling.

The Pull Connect has two modes

- **Endpoint Mode:** Turns the Pull Connect into an endpoint attached to the puller/feeder that controls the start and stop of the pulling system.
- **Repeater Mode:** A Pull Connect set in this mode is placed between Pull Connects in Endpoint Mode to extend the range or avoid obstructions.

See Endpoint or Repeater Mode sections for set up instructions.

A Connected Pulling system needs a Pull Connect in Puller Endpoint Mode and a Pull Connect in Feeder Endpoint Mode to function. Pull Connect signals can only connect to one opposite endpoint signal per channel (Fig. 2).

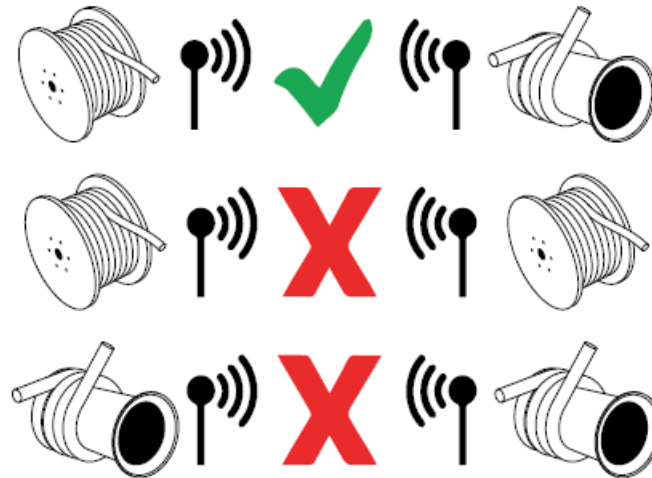
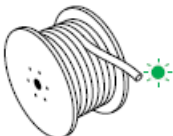




Figure 2

See below for suggested set ups and combinations of equipment. (Fig. 3)

CONNECTED PULLING SYSTEM		
Feed Side Endpoint	Middle Repeater	Pull Side Endpoint
		
Pull Connect (Endpoint Mode) + Greenlee 6810 Cable Feeder	Optional: *Up to 2 Pull Connects (Repeater Mode)	Pull Connect (Endpoint Mode) + UT-10, G6 or G10
Pull Connect (Endpoint Mode) + Foot Switch		

Adding more than 2 Pull Connects to the system in Repeater Mode may cause noticeable delays in the signal.

The pull can be stopped at any time by lifting a foot off a foot switch or by pressing the STOP button (Fig. 4) on any Pull Connect in the system.



Figure 4

The Pull Connect broadcasting the stop signal will have the STOP Signal and General Status LEDs flashing red. Other units in the system will only show solid red General Status LEDs and no Stop Signal LEDs(Fig. 5).

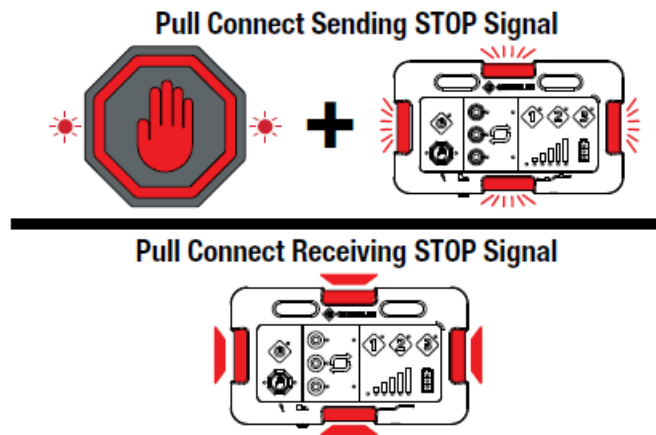


Figure 5

The STOP command can only be disabled from the unit that is sending the signal. If the STOP command is coming from the unit set for the puller endpoint then that is the unit that has to be cleared to resume. To clear the stop command and resume pulling

1. Press and hold the STOP button until all the red LEDs turn OFF and the General Status LEDs return to green.
2. The puller and feeder operators then release and depress their foot switches again. The equipment will not start moving if the foot switch is still depressed after the STOP signal is disabled.

During operation, all the status lights will slowly flash green when idle, indicating that the Pull Connect is receiving and repeating signals. When the equipment is in motion the green General Status LEDs will circulate. (Fig. 6)

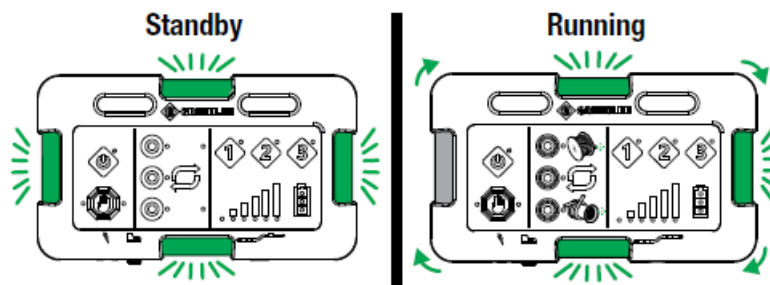


Figure 6

Endpoint Mode Set Up

This mode is used when the Pull Connect is controlling the start/stop operation on the ends of the pull through the foot switch. When both foot switches are pressed, the puller/feeder will move and when one operator steps off the foot switch, both will stop.

To set up the Pull Connect for Endpoint Mode

1. Before turning ON puller/feeder, attach Pull Connect to the equipment's frame near the control panel using the mounting magnets. Make sure all lights and icons are visible on the Pull Connect and puller/feeder. For the best performance, do not place Pull Connect on the ground or in direct sunlight. If a unit has to be in the sun, avoid laying unit flat to reduce the risk of overheating.
2. Plug a Greenlee foot switch into the Pull Connects foot switch jack. The jack is labeled with this figure (Fig.7).
- 3.

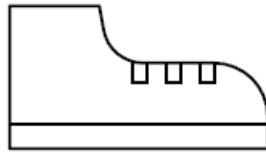


Figure 7

Plug the smaller end of the patch cord into the patch cord jack on the Pull Connect. The jack is labeled with this figure (Fig.8).



Figure 8

4. Plug the larger end of the patch cord into the feeder/puller's foot switch jack. The Pull Connect can be used alone with a foot switch when hand-feeding cable. The operator should be in full control of the start and stop of the equipment at all times.
5. Press and hold the Power Button (Fig.9) for 4 seconds to turn ON Pull Connect. All the LEDs on the Pull Connect will light up and then turn OFF except for the Power Status, Battery and Mode Select LEDs.



Figure 9

See Troubleshooting Tables if Power Status LED is solid or flashing red. The unit does not begin to listen or repeat signals until a channel has been selected.

6. When the Mode Select LEDs next to the Mode Select Buttons start flashing white, select Puller or Feeder endpoint indicated by the icons (Fig. 10).

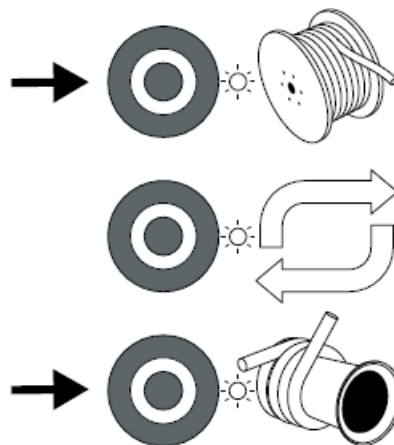


Figure 10

The Mode Select LED next to the button pressed will be solid white, and the others will turn OFF.

7. When the Radio Channel LEDs next to the numbered Radio Channel Buttons start flashing green, press the button for the channel that matches the other units in the system. (Fig.11)



Figure 11

The Radio Channel LED next to the button pressed will turn solid green, and the LEDs for the unused radio channels will turn OFF.

8. Radio the other side of the pull to verify their unit is set up and on the same channel. All units in the system must be on the same channel for the signals to connect and the endpoint designations must not be the same. If there is already the same kind of endpoint signal on the channel, the units will not connect.
9. After selecting the radio channel, wait for the Signal Strength LEDs to stop sweeping back and forth. 1 to 5 solid green LEDs means a connection has been made and indicates the strength of the signal (Fig.12).

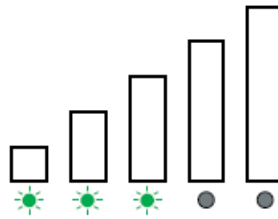


Figure 12

If the signal bars continue sweeping, the signal may be blocked or the pulling equipment is too far apart. Move any obstructions or add Pull Connects in Repeater Mode to extend or divert the signal around the obstruction until the bars turn solid.

10. Set up operate the puller/feeder according to their instruction manuals.
11. Depress the foot switch on the puller/feeder, the green Endpoint LED will light up next to the Puller or Feeder icon.(Fig.13)

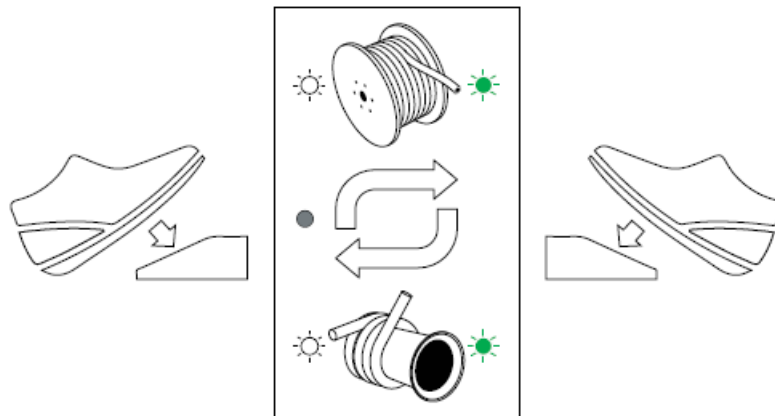


Figure 13

Both the Puller and Feeder Endpoint LEDs have to be lit to start the pull; this indicates both operators are on their foot switches and ready. Stop the pull by releasing the foot switch or pressing the STOP button.

Operators should be in control of the foot switch at all times and be positioned to remove their foot quickly to reduce the risk of injury and equipment damage.

During operation, when the Pull Connect is receiving and repeating signals but the equipment is not in motion, the General Status LEDs will all flash green. When the equipment is in motion, the green General Status LEDs will circulate clockwise.

The Pull Connect broadcasting a STOP signal will have the STOP button and General Status LEDs flashing red. Other units in the system will have the General Status LEDs lit solid red.

Repeater Mode Set Up

Repeater Mode is best used when weak signals are detected on Pull Connects in Endpoint mode or a connection cannot be made because the endpoints are too far apart or blocked.

It is recommended, no more than two Pull Connects in Repeater Mode be added to the system. Adding more than two Pull Connects between endpoints will start adding noticeable delay into the system.

1. Before setting up a Pull Connect in Repeater Mode, check that the puller and feeder side Pull Connects are active and sending out signals.
2. Identify a clear, dry place, off the ground between the feeder and puller to place the Pull Connect. The magnets allow for the Pull Connect to attach to a metal support, equipment or table. For the best performance, do not place Pull Connect on the ground or in direct sunlight. If a unit has to be in the sun, avoid laying unit flat.
3. Press and hold the Power Button for 4 seconds (Fig. 14). All the LEDs on the Pull Connect will light up and then turn Off leaving the Power Status LED solid green.



Figure 14

See Troubleshooting Tables if Power Status LED is solid or flashing red. The unit does not begin to listen or repeat signals until a channel has been selected.

4. When the Mode Select LEDs next to the Mode Select Buttons start flashing white, select Repeater Mode endpoint indicated by the icon (Fig. 15).

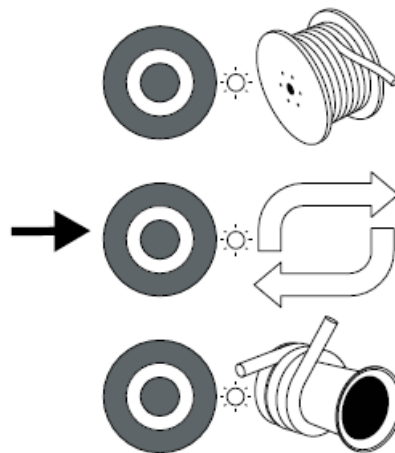


Figure 15

The Mode Select LED next to the button pressed will be solid white, and the others will turn OFF.

5. When the Radio Channel LEDs next to the numbered Radio Channel Buttons start flashing green, press the button for the channel that matches the other units in the system. (Fig.16)



Figure 16

The Radio Channel LED next to the button pressed will turn solid green, and the LEDs for the unused radio channels will turn OFF.

6. After selecting the radio channel, wait for the Signal Strength LEDs to stop sweeping back and forth. 1 to 5

solid green LEDs means a connection has been made and indicates the strength of the signal (Fig.17).

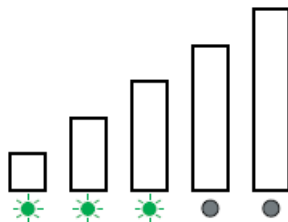


Figure 17

If the signal bars continue sweeping, the signal may be blocked or the pulling equipment is still too far apart.

Set up a second Pull

Connect in Repeater Mode. Once the Repeater unit is connected to the Endpoint units, the Repeater unit's Mode LEDs for the Endpoints will alternate turning ON and OFF and the Signal Strength LEDs will change to reflect the signal strength from the Endpoint illuminated.

Connected Pulling works best with a line of sight between each piece of equipment; this will create the strongest connection. If signals need to pass through walls, place the Pull Connect near the wall closest to the next Pull Connect.

When the Pull Connect is receiving and repeating signals but the equipment is not in motion, the General Status LEDs will all flash green. When the equipment is in motion, the General Status LEDs will circulate clockwise green. The Pull Connect broadcasting a STOP signal will have the STOP button and general status lights flashing red. All other units will only have the General Status LEDs lit solid red.

Transportation & Storage

Store the Pull Connect, turned OFF and in the provided carrying bag. Store in a cool, dry place. If left in the car on a hot day allow a few minutes for the unit to cool before turning ON or charging. The unit will not work if it is overheated. Do not store outdoors where the carrying bag can get wet, it is not waterproof.

Charging

Warning



- **Do not expose a battery pack or tool to fire or excessive temperature.**

Exposure to fire or temperature above 265°F (130°C) may cause explosion.

- **Do not charge tool if wet or in a wet environment.**

Moisture near electronics increases the risk of a short circuit causing a fire.

- **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the specifications.**

Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

- **Recharge only with the charger specified by the manufacturer.**

A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

If the lowest segment of the battery icon is flashing rapidly, the battery is low and needs to be charged. When

charging, each segment will go from flashing to solid as the battery charge level increases. When the battery is fully charged, all three segments will be solid green. (Fig.18)

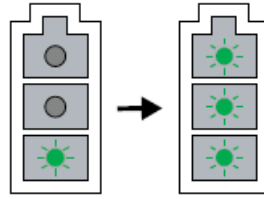


Figure 18

To charge, plug the power cord into the port marked with the lightning bolt (Fig.19) then plug into a wall socket using a USB wall adapter. The Pull Connect can be operated while charging but the time to full charge will be extended.



Figure 19

If the product fails to charge or turns off unexpectedly, refer to Troubleshooting section. Do not attempt to open the Pull Connect to change the battery.

Cleaning

Warning

Do not attempt to open the tool. It contains no user-serviceable parts.

Make sure that all lights are clean and visible at a distance. Do not use alcohol or other solvents to clean the device. Wipe the device with a water damp cloth. Allow to dry completely before turning ON and using.

Service

Warning

- **Tool service must be performed only by qualified repair personnel.**

Service or maintenance performed by unqualified personnel could result in a risk of injury.

- **When servicing a tool, use only identical replacement parts.**

Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

- **Do not perform any service or maintenance other than as described in this manual.**

Personal injury or damage to the tool may result.

Disposal



Li-ion

This tool contains a lithium-ion battery and can be recycled. Do not dispose of this item with regular waste.



Parts of these tools contain valuable materials and can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.

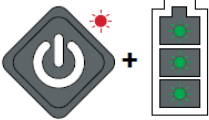

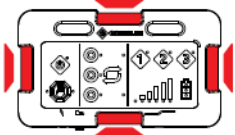

Table 4: Unit Troubleshooting

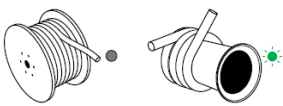
Problem	Possible Cause	Solution
Pull Stopped	One of the operators has released their foot switch.	That operator depresses foot switch again while other operator is on their foot switch.
	One of Pull Connects or pulling equipment has lost power.	<ol style="list-style-type: none"> 1. Release foot switch and contact other side. 2. Resolve issue and turn the unit or equipment back ON. 3. Follow instructions to set up Connected Pulling. 4. Wait for the connection. 5. Both operators release then depress the foot switch to continue.
	Depleted Battery	Charge battery or replace with fully charged unit.
	The Pull Connect signal is lost or blocked.	Clear the obstruction and wait for the connection to reestablish. Release then depress the foot switch to continue.
		<ol style="list-style-type: none"> 1. Move the Pull Connect to another location until signal bars are lit and stable. 2. Both operators release then depress the foot switch to continue.
Buttons on Pull Connect will not react and Blue Wireless LED is ON.	Pull Connect is in wireless mode.	Turn OFF Pull Connect to exit Wireless Mode.
Weak Signal between Pull Connect units in Endpoint Mode.	Pull Connects are too far apart.	Add up to two Pull Connects in Repeater Mode into system.
	Battery in one or more Pull Connects is low.	Charge battery or replace with fully charged unit.
Signal bars continue sweeping after 20 seconds without making	Signal may be blocked.	<ol style="list-style-type: none"> 1. Move any obstructions or add Pull Connects in Repeater Mode to divert the signal around the obstruction. 2. Wait for the bars turn solid.

g a connection.	Pulling equipment is too far apart.	<ol style="list-style-type: none"> 1. Add Pull Connects in Repeater Mode to extend the signal. 2. Wait for the bars turn solid.
	Battery Low	Charge battery or replace with fully charged unit.
Signal bars are alternating between two different signal strengths in Endpoint Mode.	Multiple weak signals are being detected.	<ol style="list-style-type: none"> 1. Move the Pull Connect and pulling equipment closer together or add up to two Pull Connects in Repeater Mode between endpoints. 2. Adjust position until the Signal Strength LEDs are solid.
Unit will not turn ON	Unit is overheated.	<ol style="list-style-type: none"> 1. Move Pull Connect to shade and allow to cool. 2. After 5 minutes try to turn unit ON again.
	Internal Issue	Send in for service.
	Depleted Battery	Charge battery or replace with fully charged unit.


Table 5: LED Troubleshooting

Problem		Cause	Solution
 <p>Power Status LED flashes RED twice every 3 seconds.</p>		Unit temperature almost outside (within 5 °C) operating temperature.	Move unit somewhere cooler/warmer and wait for LED to turn Green again. Do not place in direct sunlight or in a place with excessive heat/ cold.
Press Power Button to turn ON unit.	 <p>Power Status LED flashes RED twice then unit turns OFF.</p>	<ul style="list-style-type: none"> • Unit is too hot. • Battery outside of operating temperature (-15 °C to 50 °C) 	Move unit somewhere out of the heat and allow to cool. Wait for unit to cool down before attempting to turn ON again. Avoid placing unit in direct sunlight.
		<ul style="list-style-type: none"> • Unit is too cold. • Battery outside of operating temperature (-15 °C to 50 °C) 	Move unit to temperature controlled location. Wait for unit to warm up before attempting to turn ON again. Do not use in freezing temperatures.

<p>Pull Connect will not charge when plugged in.</p>	 <p>Power Status LED flashes RED and all three Battery Level LEDs flash GREEN every second.</p>	<ul style="list-style-type: none"> Unit is too hot/cold. Battery temperature outside of battery charging temperature (0 °C to 45 °C) 	<p>Unplug from charger and move unit to a temperature controlled environment. Do not charge in direct sunlight or in places with excessive heat/cold.</p>
<p>Pull Connect stops working during operation.</p>		<ul style="list-style-type: none"> Turn unit OFF then ON to reset. If after reset the unit still doesn't work and LEDs are still flashing, send in for service. 	
<p>Pull Stopped or Will Not Start after pressing foot switch.</p>	 <p>Both Stop Signal and General Status LEDs are flashing RED.</p>	<p>STOP button on this Pull Connect is pressed.</p>	<ol style="list-style-type: none"> Determine the reason for the STOP signal and resolve issue. Press and hold the STOP button until Stop Signal LEDs turn OFF and General Status LEDs return to flashing GREEN. Both operators release then depress the foot switch to continue.
	 <p>General Status LEDs are solid RED.</p>	<p>STOP button on another Pull Connect is pressed.</p>	<ol style="list-style-type: none"> Determine the reason for the STOP signal and resolve issue. Locate the Pull Connect with flashing RED LEDs to clear STOP signal. Both operators release then depress the foot switch to continue.
		<p>Loss of power on another Pull Connect in the system.</p>	<ol style="list-style-type: none"> Replace Pull Connect with new unit. Turn all Pull Connects OFF then ON again to reset. Set up Connected Pulling for all units. Both operators release then depress the foot switch to continue.
	 <p>Feeder Endpoint Puller Endpoint LED ON LED OFF</p>	<p>The other endpoint operator is not depressing their foot switch.</p>	<ul style="list-style-type: none"> Wait for other LED to turn ON to complete signal to start Puller and Feeder moving. If a significant time passes without the other Endpoint being lit, release foot switch.

	 <p>Feeder Endpoint Puller Endpoint LED OFF LED ON</p>	t switch.	<p>witch and use hand radio to contact other end for status update. Both operators must release and depress their foot switches when ready to continue.</p>
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Documents / Resources

	<p>Greenlee Tool XBPSX Module Pull Connect [pdf] User Manual XBPSX Module Pull Connect, XBPSX, Module Pull Connect, Pull Connect, Connect</p>
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References

- [Patents | Greenlee](#)
- [Professional. Nothing Less.™ | Greenlee](#)
- [User Manual](#)