



Installation Guide

DRAGON-LINE® HYBRID SYSTEM V1.01.1 Summer 21'

DRAGON-LINE®

ORANGE MOBILE DRIP IRRIGATION®



PHONE 844-424-3724

WWW.DRAGONLINE.NET

TOOLS NEEDED FOR INSTALL

Make sure to have all tools ready before heading to the field!

Call your Dragon-Line Dealer for tools needed. NO tools are automatically included in a order!

*If time allows pre-cut tubing and install end caps at the shop before installation.

Available through Dragon-Line



43.

PINCH PLIERS



45.

M12 PROPEX
EXPANSION TOOL
5/8" HEAD



51.

DRAGON-LINE
TOOL BOX



44.

TWIST TIE TOOL



42.

HOSE CUTTER



46.

TUBING CART &
COUNTER



50.

V-JACK CABLE
TOOL



54.

BOLT CUTTERS



MEASURING
TAPE



PERMANENT
MARKER



GLOVES



SOCKET WRENCH



6' LADDER

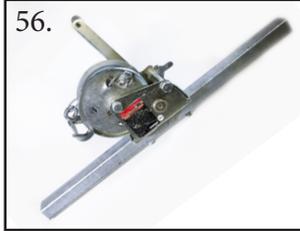


18' EXTENSION
LADDER

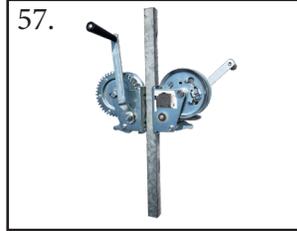
DRAGON-LINE PARTS



55.
CENTER LIFT
WINCH



56.
STARTER WINCH
KIT



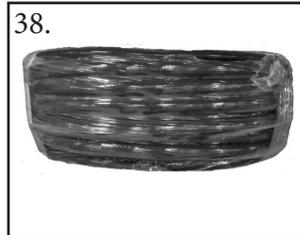
57.
DUAL WINCH
SYSTEM



58.
SINGLE WINCH



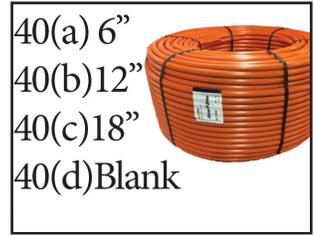
SPACING
(28) 20"
(29) 30"
(30) 40"
(31) 60"
DRAGON-LINE
50' MANIFOLD HOSE
ASSEMBLY



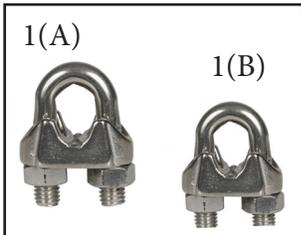
38.
3/4" DROP FLEX
HOSE 250' ROLL



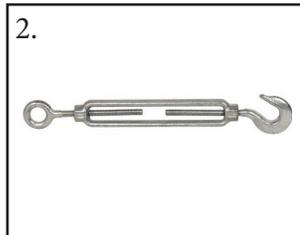
39.
1/2" DRAGON
FLEX HOSE 300' ROLL



40(a) 6"
40(b) 12"
40(c) 18"
40(d) Blank
DRAGON-LINE® 17MM
EMITTER TUBING
1000' ROLL



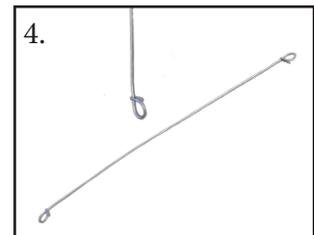
1(A)
1(B)
(A)- 1/4" CABLE CLAMP
(B)- 3/16" CABLE CLAMP



2.
3/8" TURNBUCKLE



3.
1/4" GALVANIZED
AIRCRAFT CABLE



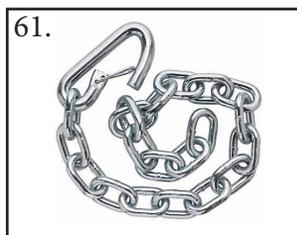
4.
STAINLESS WIRE TIE
16 GAUGE x 10-1/2"



59.
TOWER TERMINATION
KIT



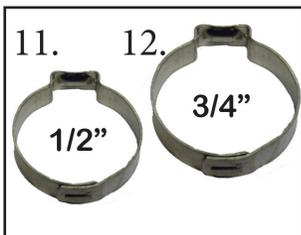
60.
V-JACK HOOK
SUPPORT CABLES



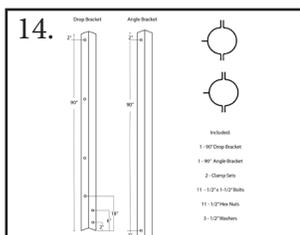
61.
1/4" STEEL CHAIN
W/HOOK



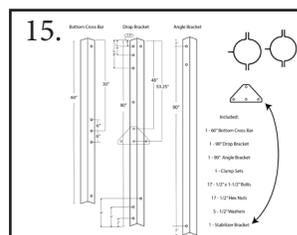
62.
SADDLE CLAMPS



11. 12.
1/2" 3/4"
PINCH CLAMPS



14.
STARTER BRACKET



15.
END BRACKET KIT

DRAGON-LINE PARTS



63.
J-TURBO-CPK 17MM
INSERT COUPLING



64.
J-TURBO
INSERT TEE



22.
RB DRAGON INSERT TEE
HBxHBxHB 17MM



25.
RB DRAGON INSERT
COUPLING HB 17MM



67.
3/4"
MPT x MPT NIPPLE



68.
3/4" MPT x MPT x MPT
3 WAY TEE



69.
3/4" HDPE STREET
ELBOW



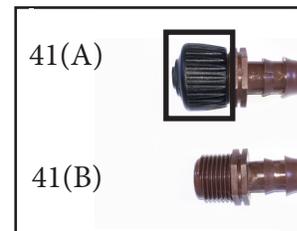
70.
3/4"
3 WAY FEMALE TEE



72.
3/4" PL x CAP



73.
PL x 3/4" FPT x PL



41(A)
41(B)
A- END CAP
B- 1/2" MPTxHB 17MM



21.
DRAGON 24" ADAPTER
MPT x HB 17MM



65.
3/4" BxB
BARB COUPLING



66.
3/4" B x 3/4"
MALE PIPE ADAPTER



27.
3/4" ADAPTER MPT x HB



26.
3/4" ADAPTER FPTxHB



24.
RB ELBOW HB x HB 17MM



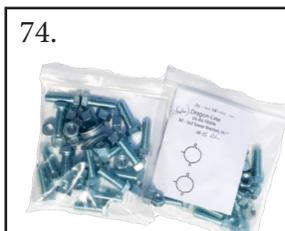
19. SENN BALL VALVE
20. DUAL VALVE ASSEMBLY



71.
3/4" FPT x PL x PL
TEE



23.
DRAGON COMB TEE
17MM x 3/4" FPT



74.
BOLT KIT

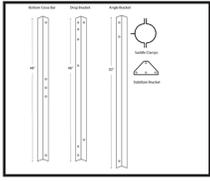


10.
UVR PVC SLEEVE
1" x 24"

2

Identify Drop Downs & Install Clamps, Bolts, Angle Iron

PARTS YOU WILL NEED:



DROP DOWN
KITS



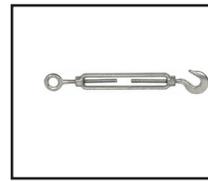
STEEL CHAIN



SINGLE
WINCH



SADDLE
CLAMPS



TURNBUCKLE



BOLT KITS

The First step to installing a Dragon-Line system is to start with the Starter Bracket. (The “END BRACKET” can be completed at the same time with extra crew members). The starter and end bracket is important because it helps secure the Dragon-Line system while also allowing to move the drip lines.

Below is what your end results should look like.

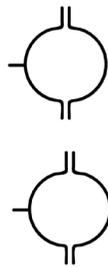
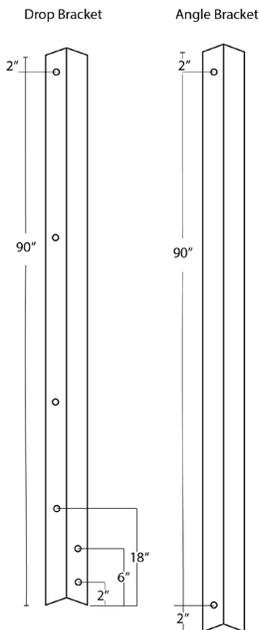


STARTER BRACKET



END BRACKET

**Dragon-Line
DL-B2-TBX96
B2 - 3x3 Tower Bracket, 90"**



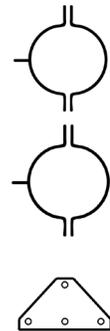
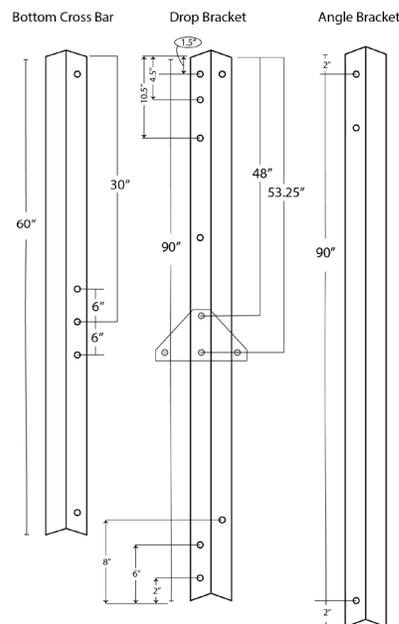
Included:

- 1 - 90" Drop Bracket
- 1 - 90" Angle Bracket
- 2 - Clamp Sets
- 11 - 1/2" x 1-1/2" Bolts
- 11 - 1/2" Hex Nuts
- 3 - 1/2" Washers

3 x 3 x 3/16" Steel
Galvanized Angle

July 2021

**Dragon-Line
DL-C-ETX90"
C - 3x3 End Tee Bracket 60"**



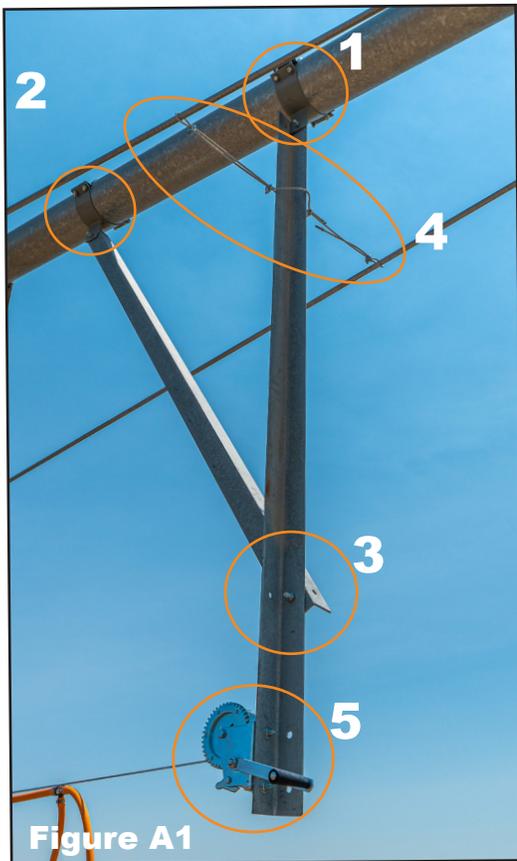
Included:

- 1 - 60" Bottom Cross Bar
- 1 - 90" Drop Bracket
- 1 - 90" Angle Bracket
- 1 - Clamp Sets
- 17 - 1/2" x 1-1/2" Bolts
- 17 - 1/2" Hex Nuts
- 5 - 1/2" Washers
- 1 - Stabilizer Bracket

3 x 3 x 3/16" Steel
Galvanized Angle

July 2021

2 Identify Drop Downs & Install Clamps, Bolts, Angle Iron



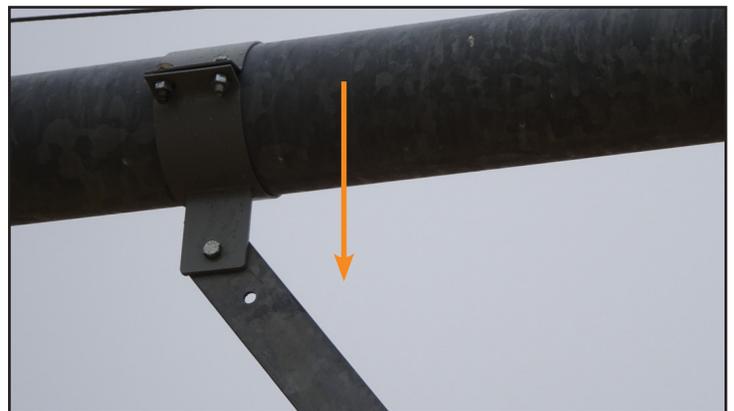
1. Start this process by placing the saddle clamps around the pivot pipe and tightening with bolts. These saddle clamps should be placed in way that both the drop-down angle iron and diagonal support can be connected. After attaching the drop down angle iron. You want the flush side facing the pivot for when you install the winch. (See picture for reference)

2. Attach the second saddle clamp. Do not tighten until angle is attached. Attach the other angle iron and line up the drilled holes and insert your bolt on "3" to hold angle iron in place.

3. Maintain a 90 degree angle and distance and tighten the entire frame. The drop down needs to be straight down.

4. Cable support. Secure one end of the V-Jack rod using steel cable and cable clamps to the other end while the drop down is in between. Using cable clamps secure around the rods and in between the drop downs for a total of 4 clamps.

5. Bolt down the winch with the Locker facing down. It is important to insure that the locker is facing down.



Mount Saddle clamp facing down.



Make sure winch locker is faced down

2

IDENTIFY DROP DOWNS & INSTALL CLAMPS, BOLTS, ANGLE IRON

B) Install end bracket with Tee (Angle Iron) with chain and hook. (Only with overhang)

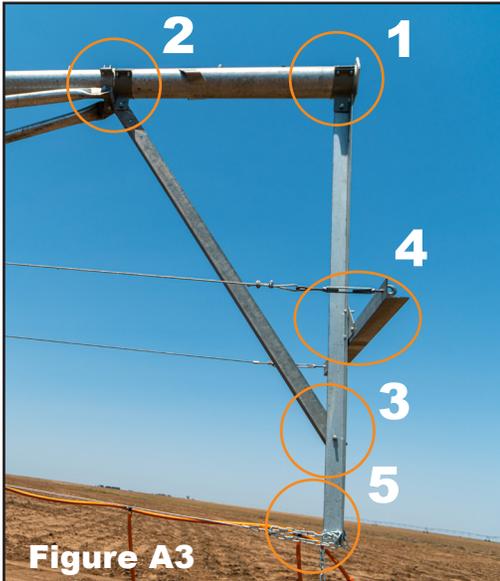


Figure A3

1. Attach saddle clamp at the end of the Pivot, then mount the drop down angle iron.
2. Attach second saddle clamp and use the drilled holes to give you the correct distance before tightening the second clamp. Achieve a 90 degree angle.
3. Securely tighten the entire system.
4. The "T" angle iron is attached next. Make sure you have the Triangle mounting plate that will be used to mount together the angle iron.
5. Attach Chain with 2 washers and 1/2" x 1" 3/4 Long bolt with 2 washers as shown in Figure A4



"T" Angle Iron



Install cables from tower legs to "T" bracket with Turnbuckles

1. Loop steel cable through the eye of the turnbuckle and tie using cable clamp.
2. Unscrew hook end and insert through both ends of the "T". Tighten turnbuckle.

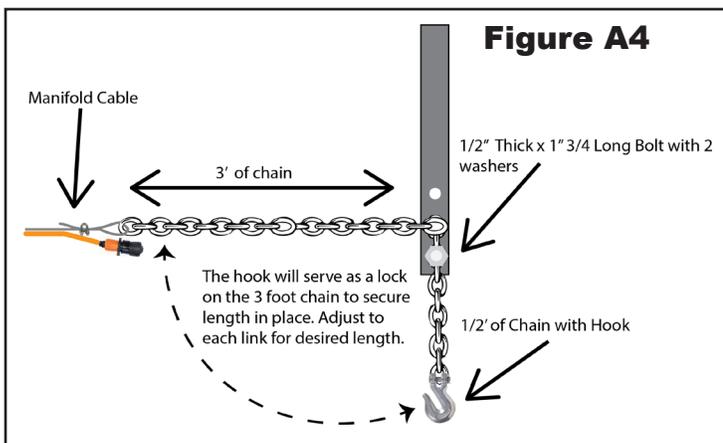
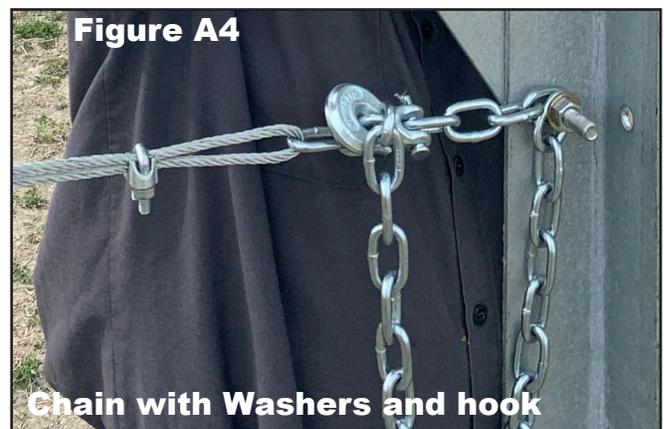


Figure A4



Chain with Washers and hook

3 INSTALL TERMINATION CABLE AT ALL TOWERS WITH OPTIONAL DUAL WINCHES (This can be done at the same time as Step 2 if you have extra crew members)

PARTS YOU WILL NEED:



DUAL WINCH



1/4" Cable
Clamp



TOWER
TERMINATION
CABLE



TURNBUCKLE

Install the tower termination kits at each tower.

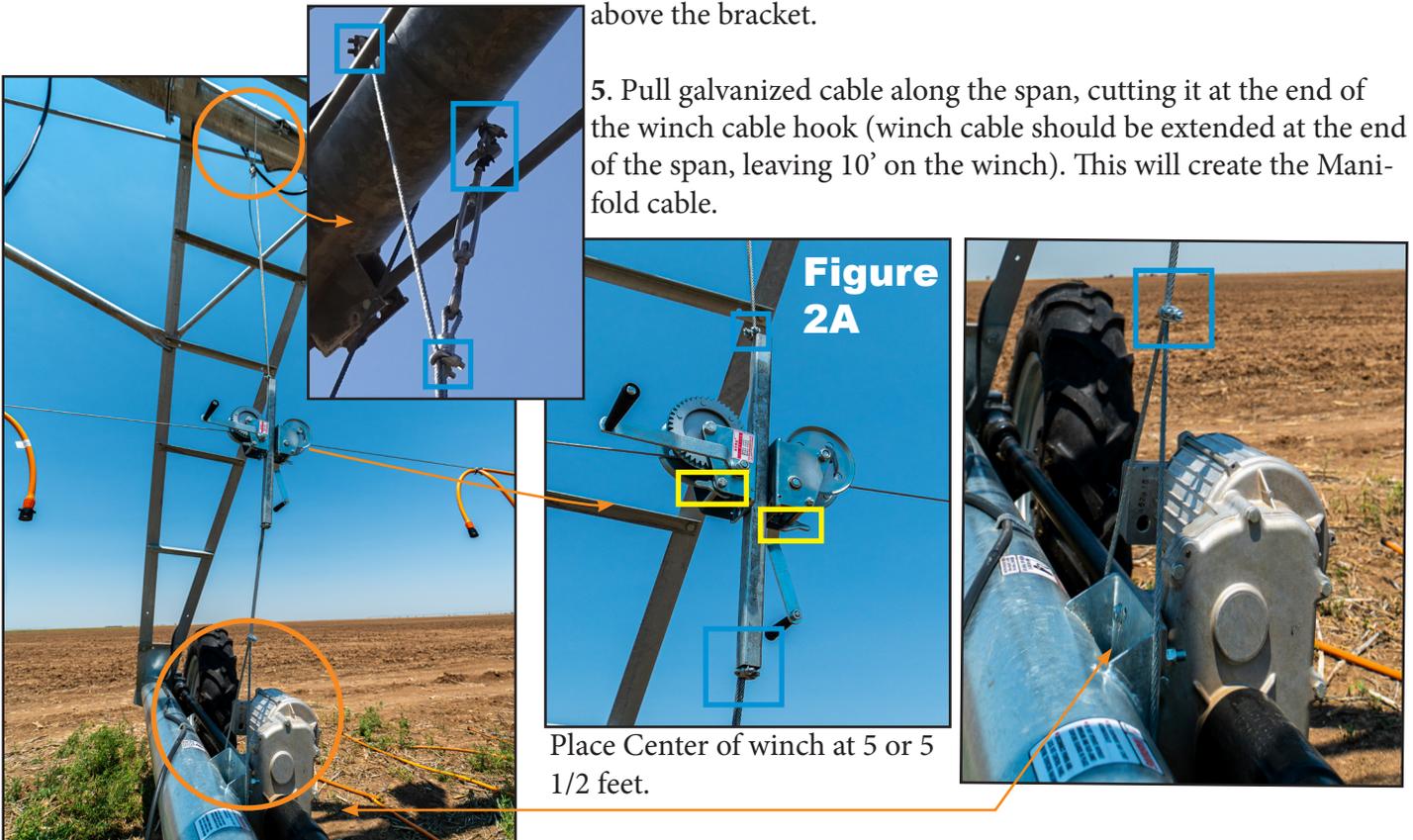
1. The first step to installing a tower termination kit is to take the attached turn buckle over the pivot pipe. The other end of the tower termination kit should then be threaded through the bracket of the dual winch assembly tubing (see figure 2A) of turnbuckle before being wrapped around center gear motor mounting bracket.

2. The first 1/4 inch cable clamp needs to be placed above the motor mounting bracket (1 1/2 or 2 feet high), leave this clamp loose, do not tighten. The second cable clamp placed directly underneath where the hook of the turnbuckle and loop connect. This will keep the cable straight and allow for more movement of the dual winch up and down the tower termination. This allows the height of the dual winch to become fully adjustable.

3. Slide 24' feet of cable steel through the terminal tubing with the winch lockers facing DOWN.

4. Using cable clamps to secure the winch terminal, measure from the ground, 5 feet or 5 1/2 (Optional) by tightening a cable clamp underneath the bracket to hold the winch at a set height above the ground and secured by tightening a second clamp above the bracket.

5. Pull galvanized cable along the span, cutting it at the end of the winch cable hook (winch cable should be extended at the end of the span, leaving 10' on the winch). This will create the Manifold cable.

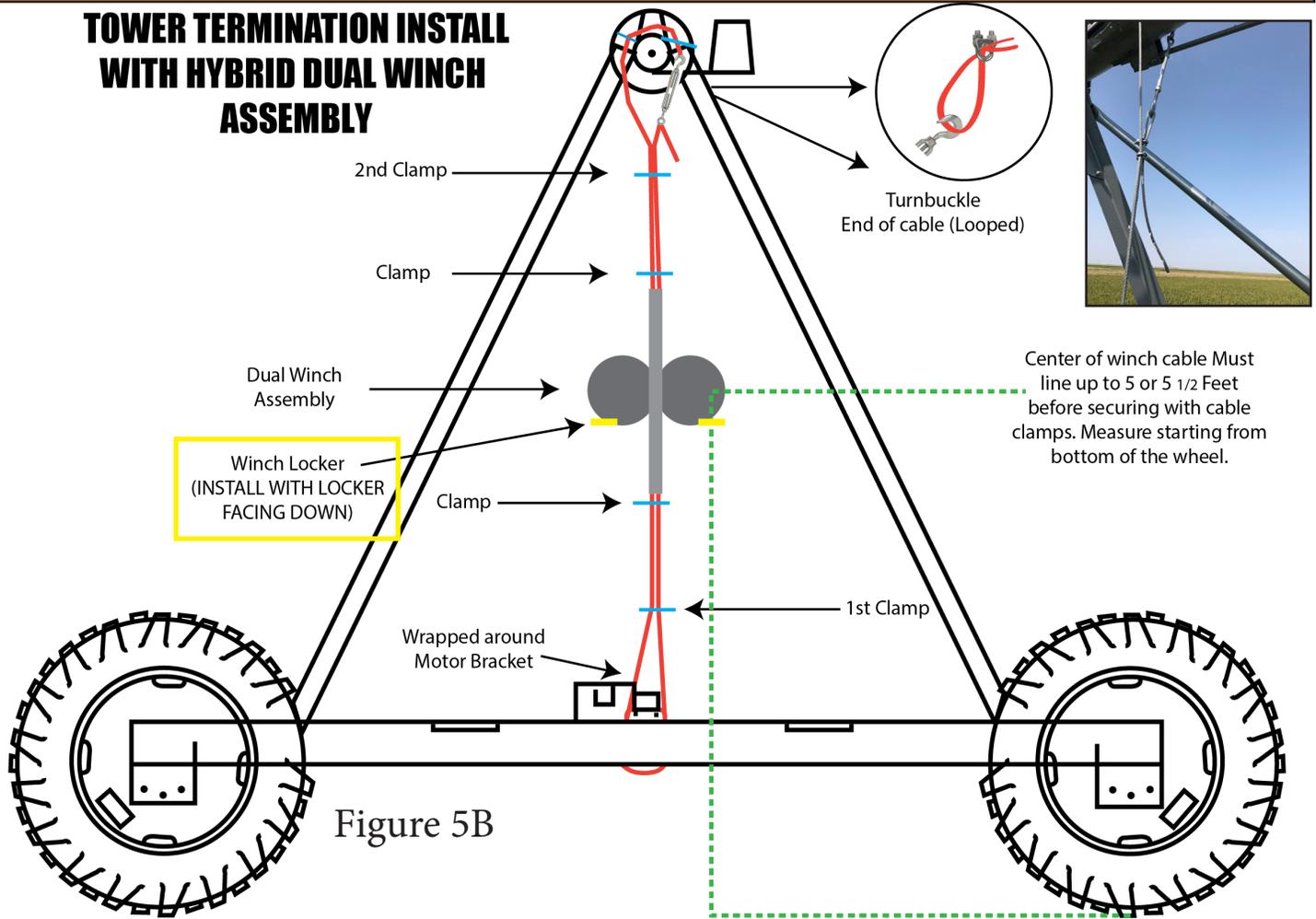


Place Center of winch at 5 or 5 1/2 feet.

3

INSTALL TERMINATION CABLE AT ALL TOWERS WITH OPTIONAL DUAL WINCHES

TOWER TERMINATION INSTALL WITH HYBRID DUAL WINCH ASSEMBLY



MAKE A LOOP AT THE END OF THE MANIFOLD CABLE AND USING CABLE CLAMPS TO SECURE YOUR LOOP.



1. With the two brackets and tower terminations in place a cable can now be stretched to connect the two winches/turnbuckles at each end of a span. These cables should measure the length between the tower terminations. After being cut to length, the cable should then be attached to the hook of winch by creating a loop with the cable (be sure to use two cable clamps to create stronger loop). Tighten the winches until the center of the cable is roughly 6 to 12 inches off the ground. (Note, the process can be different when connecting cable to brackets as cable can attached to a hook and chain or winch mounted directly to the bracket).

4

INSTALL V-JACK CABLES ASSEMBLY, CENTER SPAN LIFT WINCHES

PARTS YOU WILL NEED:



V- JACK HOOK
CABLES



CABLE CLAMP

INSTALL V-JACK CABLE TIES WITH CABLE CLAMPS



1. With the Manifold cable now in place V-Jack cable hooks should be installed and attached to the cable across the systems length. The hook should rest in the V-Jack pocket or wrap around the junction of V-Jack.

2. The first V-Jack cable hook assembly in the center of the span should be installed first and set to the same desired height as the dual winches. From here the V-Jack hook assemblies should be installed from the center out to the towers to ensure the cable is evenly off the ground.

Note: The included 1/4 inch cable clamps should be on either side of the cable. This will create a loop under the main cable. This loop can either be left in place or tied to the main cable with twine/zip ties etc.

3. Once all V-Jack cable hooks are installed and the clamps below the cable connecting the tower terminations are tight, it should then be stretched using the winches/ turnbuckles until it is tight enough to eliminate sagging between V-Jack hook cable assemblies.



Two cable clamps are used to
secure the manifold cable to the
V-jack cable.



V-Jack cable
Hook

4. With the cable in place, the manifolds with leader lines of Dragon Flex hose should now be unrolled and attached to the cable.



5 INSTALL CENTER LIFT SPAN WINCH

PARTS YOU WILL NEED: **Add Center Lift Span Winch**

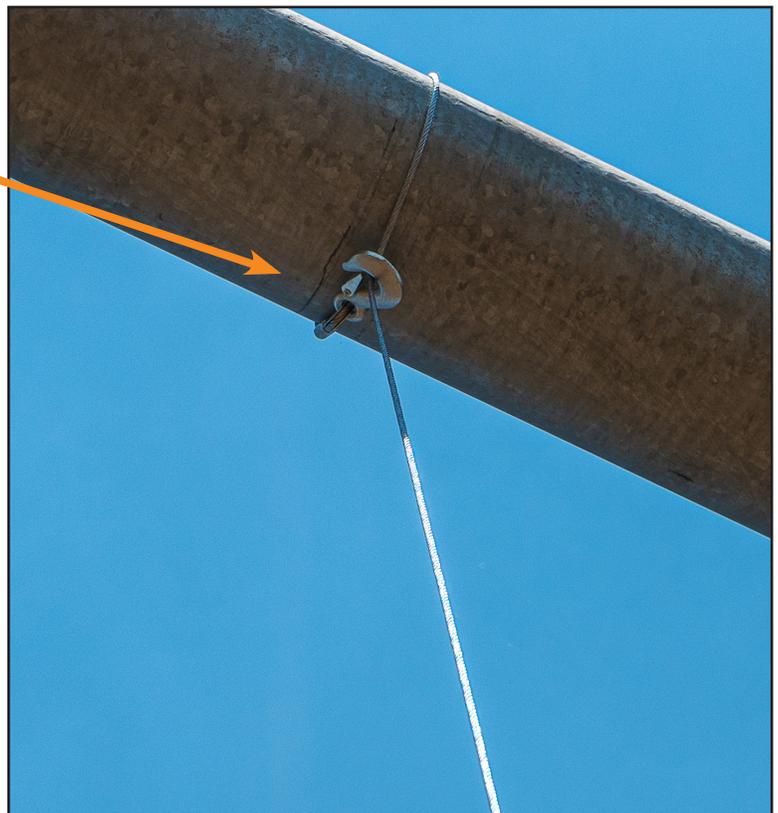


CENTER LIFT-
WINCH

1. The Center Lift Winch is installed at the center of each span. The center lift span winch should have a short chain with a cable tie at the end, if not on the back of the winch install a chain and cable clamp to secure to the manifold cable.

2. Unroll the winch cable and wrap around the top of the pivot, securing the hook around the cable.

3. Reel in the winch cable till center is at desired height.



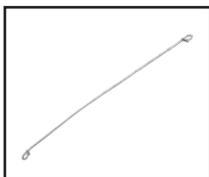
6

INSTALL MANIFOLD

PARTS YOU WILL NEED:



Twist Tie Tool



Stainless Wire Tie
16 Gauge x 10-1/2"



Marker



MEASURING
TAPE

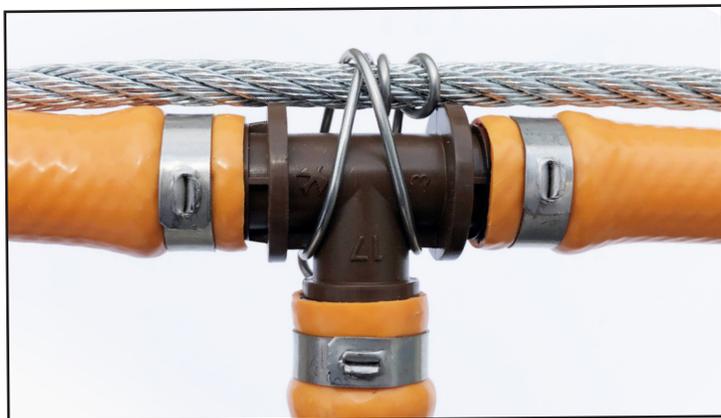


1. START MEASURING AT FIRST TOWER GOING TOWARDS THE PIVOT. Start measuring at the center drive motor or center of the wheel track. Manifold cable needs marked to match nozzle chart. Using a permanent marker and a measuring tape to help mark each exact location according to nozzle chart.

2. Tie Manifold Tee to match cable markings.

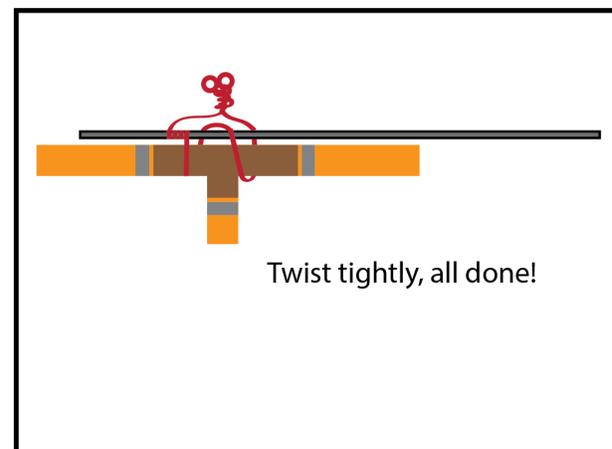
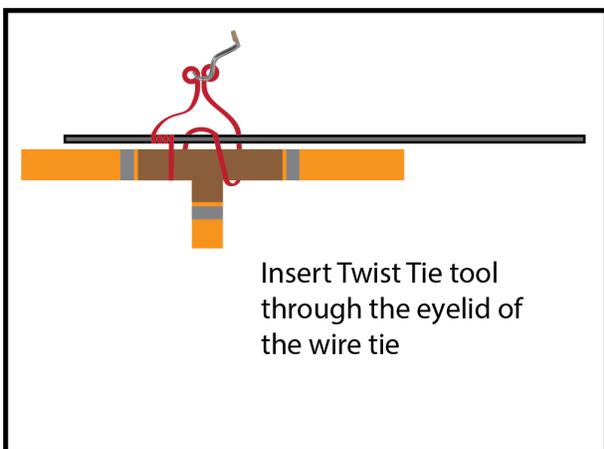
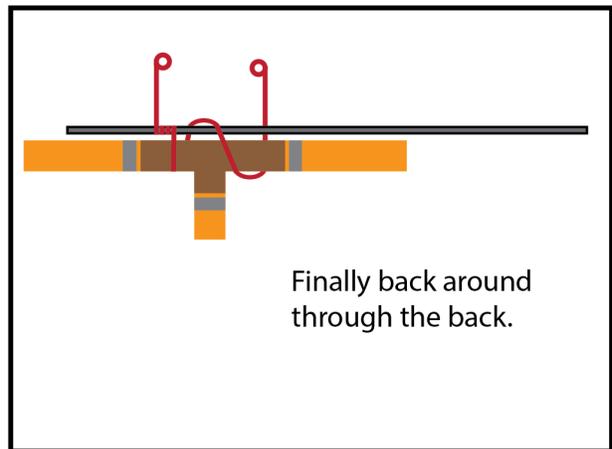
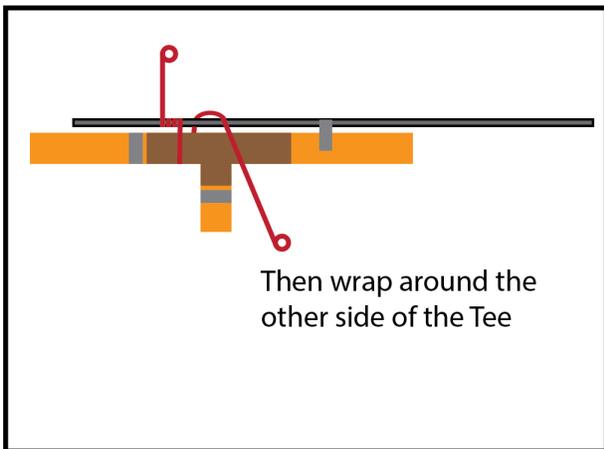
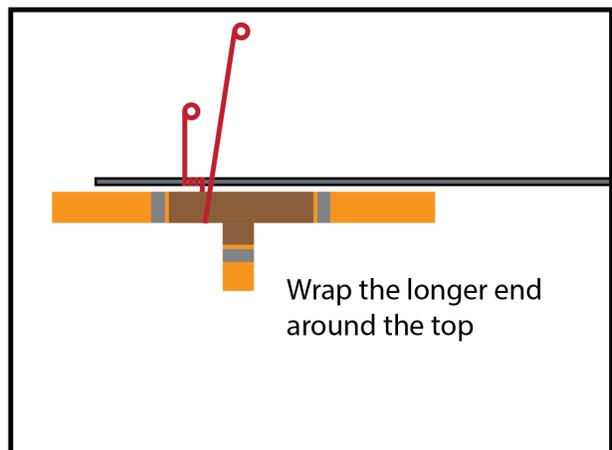
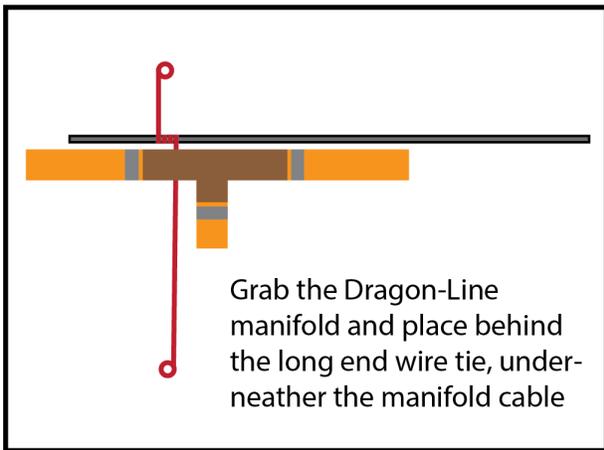
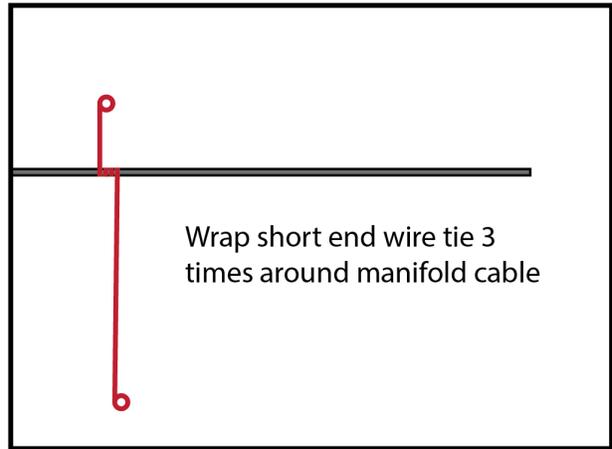
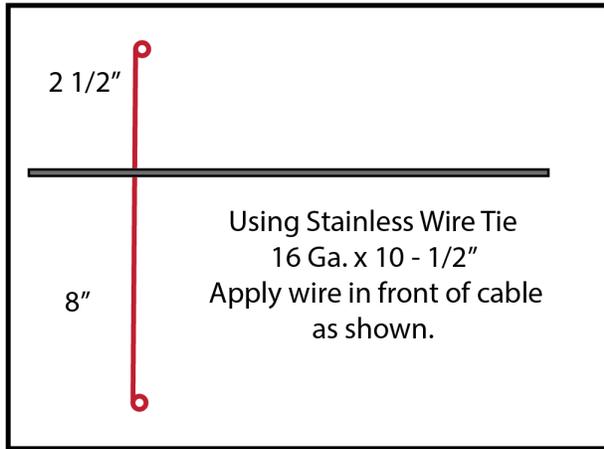
Hang the manifolds to the cable loosely with wire or other device to allow for easier handling. Using the wire ties provided, the manifold should be tied to the cable at each tee and each adapter tee used to feed water to manifold. Wire ties should wrap around the cable three times before twisting them tight around the fitting. Each wire tie should be tight to prevent slipping as this will alter spacing of drip lines.

If you have extra help. One person walks ahead attaching the wire on the pre-marked locations wrapping around 3 times the short end. While two others attach the manifold and use the twist tie tool.



Watch wire tying video on Dragon-Line YouTube Channel to see best way to attach to cable, scan QR code using smart phone camera. Click on the link as it pops up.

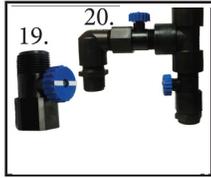




7

INSTALL DUAL VALVES

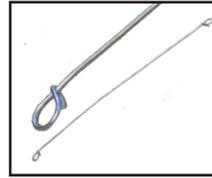
PARTS YOU WILL NEED:



19. SENN BALL VALVE
20. DUAL VALVE ASSEMBLY



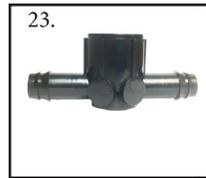
11. PINCH CLAMPS
12. 3/4"



16 GAUGE x 10-1/2"



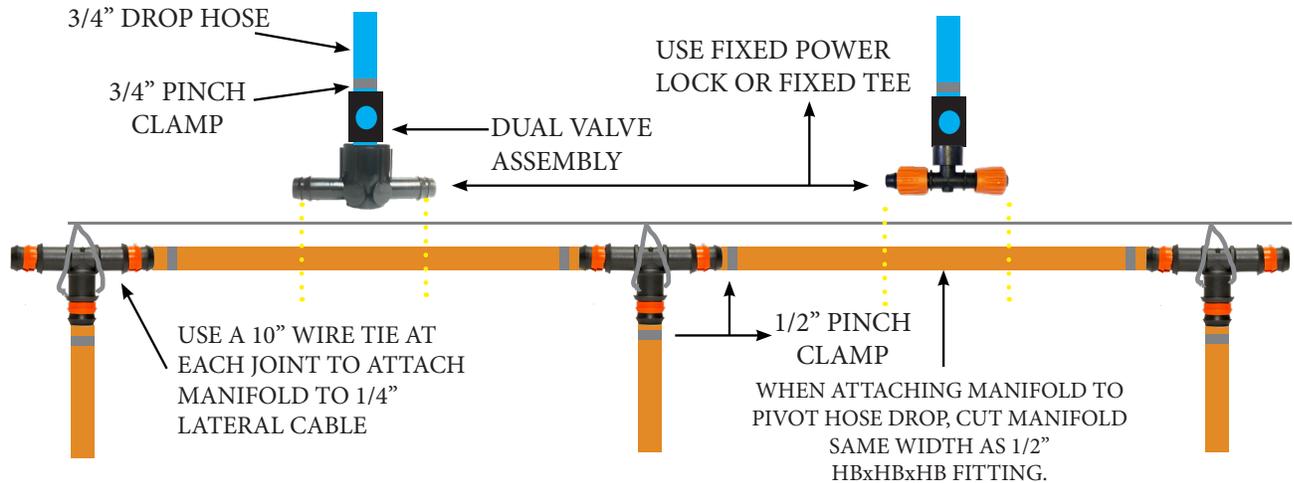
24. ELBOW
HB x HB 17MM



23. DRAGON COMB TEE
17MM x 3/4" FPT



3/4" FPT x PL x PL
TEE



A) Find location of existing drop hose and cut 1-2" on manifold spacing.
(Cut length varies depending on the Tee fitting).



B) Install manifold hose into power-lock fittings and wire tie.



C) Cut to length 3/4 inch hose and connect to barb fitting on top of dual valves it with 3/4 inch clamp



72. .55 POWER-LOCK X 3/4" PLUG

D) Install power-lock plug at end of manifold on each span.

DUAL VALVES & ADAPTERS

3 STYLES OF DUAL VALVES ADAPTERS



DRAGON-LINE CAN BE INSERTED INTO THREE DIFFERENT APPLICATIONS, DEPENDING ON FARMERS NEEDS.



