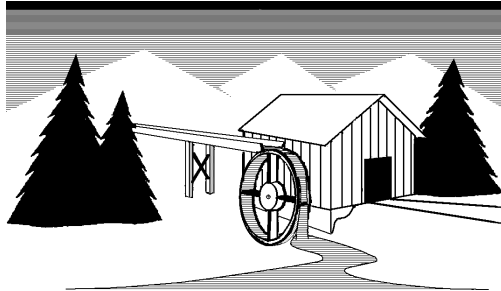


**North Creek**



**Music Systems**

**Echo**

**Crossover Assembly Manual**

**A monitor loudspeaker featuring  
North 13W-06S and North D25-06S  
in an acoustic suspension cabinet.**

# **North Creek Music Systems**

## **Echo Crossover Parts**

| Qty                | Part   |
|--------------------|--|
| (woofer)           |  |
| 2                  | 2.20mH 16 AWG inductor                       |
| 2                  | 20.0uF Blue film capacitor                   |
| 2                  | 2.74 Ohm NORTH resistor                      |
| (tweeter)          |  |
| 2                  | 8uF Yellow film capacitor                    |
| 2                  | 0.56mH 16 AWG inductor                       |
| 2                  | 3.32 Ohm NORTH resistor                      |
| 2                  | 6.19 Ohm NORTH resistor                      |
| (connectors, etc.) |  |
| 8                  | Big Ring Jr                                  |
| 20                 | #10-10 AWG ring tongues                      |
| 2                  | large crimp barrels                          |
| 4                  | 0.25" quick connects                         |
| 4                  | 0.110" quick connect                         |
| 8                  | long black tie wraps                         |
| 2                  | 4" x 5" pegboard                             |
| 2                  | 4" x 3" pegboard                             |
| 1                  | 8" buss bar                                  |
| 18                 | brass screws                                 |
| 18                 | brass nuts                                   |
| 2 foot             | solder                                       |
| 2 each             | Red, Black, White, Blue 3/8 x 1" shrink tube |
| (wire, inches)     |  |
| 16                 | 18 awg insulated jumper wire                 |
| 32                 | black Tef-Flex                               |
| 32                 | Black Lex                                    |
| 32                 | Red Lex                                      |
| 96                 | (8 ft) Blue Tef-Flex                         |
| 64                 | (5 ft 4") White Tef-Flex                     |

## **Required Tools:**

These are the basic tools required to complete this project. The items listed below are all available from MCM Electronics, [www.mcmonline.com](http://www.mcmonline.com), 800-453-4330. The tools suggested are the least costly that will do the job. There are certainly better quality tools out there for considerably more money. The brands that seem to be the best are Xcelite, Ideal and Klein. MCM also carries all of these brands.

Always solder in a well ventilated area.

| Tool:                    | MCM Part Number | MCM \$   |
|--------------------------|-----------------|--|
| Wire Cutter/Stripper     | 22-1635         | \$ 4.99  |
| Crimper                  | 22-1780         | 10.05 (#22-1795 by Klein is better, twice the price) |
| Soldering Iron (80 Watt) | 21-4345         | 8.23   |
| Soldering Iron Holder    | 21-3525         | 1.49   |
| Heat Gun                 | 21-7315         | 17.95  |

3/8" nut driver or flat head screw driver

colored nail polish

## **Wire Prep:**

Cut the wire to the appropriate length, strip 1/2" from all ends, and either leave bare or attach, crimp and solder the appropriate connection as indicated by the table below.

| Quantity | Material        | Length  | one end   | other end   |
|----------|-----------------|---------|-----------|---|
| 2        | black Tef-Flex  | 16"     | 1/2" bare | 1/2" bare   |
| 2        | black Lex       | 16"     | 1/2" bare | 0.110" quick connect  |
| 2        | red Lex         | 16"     | 1/2" bare | 0.110" quick connect  |
| 2        | blue Tef        | 16"     | 1/2" bare | 0.250" quick connect  |
| 4        | blue Tef        | 16"     | 1/2" bare | 1/2" bare   |
| 2        | white Tef       | 16"     | 1/2" bare | gold Big Ring Jr.   |
| 2        | white Tef       | 16"     | 1/2" bare | 0.250" quick connect  |
| 2        | 2.2mH inductor  | long    | 1/2" bare | gold Big Ring Jr on long inner lead   |
| 2        | 0.56mH inductor | 5" both | 1/2" bare | 1/2" bare   |
| 4        | 18 awg jumper   | 4"      | 1/2" bare | 1/2" bare   |
| 2        | buss bar        | 4"      | all bare  | <i>the easy way to strip the buss bar is to slice off the insulation with a drywall knife</i> |

### Capacitor Prep:

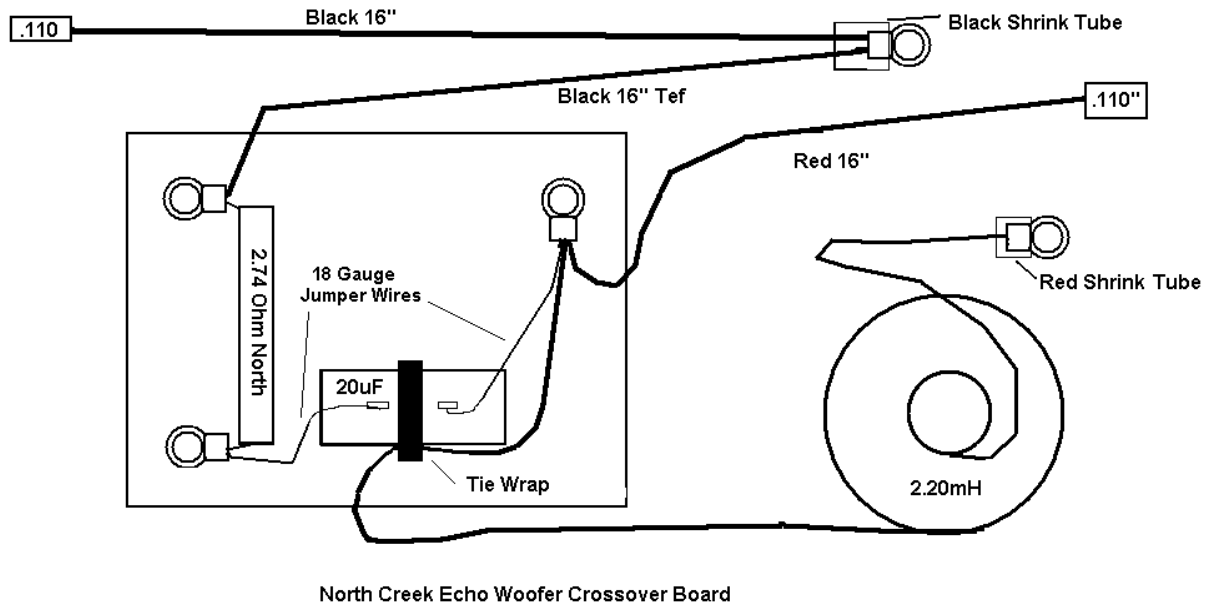
For the 20uF blue cap, attach one piece of jumper wire to each solder terminal

### Resistor Prep:

With the label up, bend both leads straight down, then bend 1/4" of each end straight out (into an "L"). This method allows the legs to function both as the connectors and as the means of suspending the resistor body above the board.

Please read the *North Creek Wiring Guide*, included with the kit package

### Woofers Network Assembly



Closely inspect our crossover assembly diagram. This is built on a 3x4 board.

**"Attach" means "slide all leads into a single ring tongue crimping section, crimp, and solder**

Attach the 16" black Tef-Flex wire to one lead of the 2.74 Ohm resistor.

Attach the other end of the 2.74 Ohm resistor and one end of the 20uF Blue cap.

Attach the two remaining lead of the 20uF, the outside lead from the 2.20mH inductor, and the 16" red woofer lead in a single ring tongue.

Attach the 16" black Tef wire and the stripped end of the 16" black Lex wire with a single gold Big Ring Jr.

When everything cools down, drop three brass screws through the rear of the pegboard as indicated on the assembled crossover diagram. Flip the board over and drop the ring sections over the screws, attach with the nuts, tighten, and drop nail polish on the exposed threads.

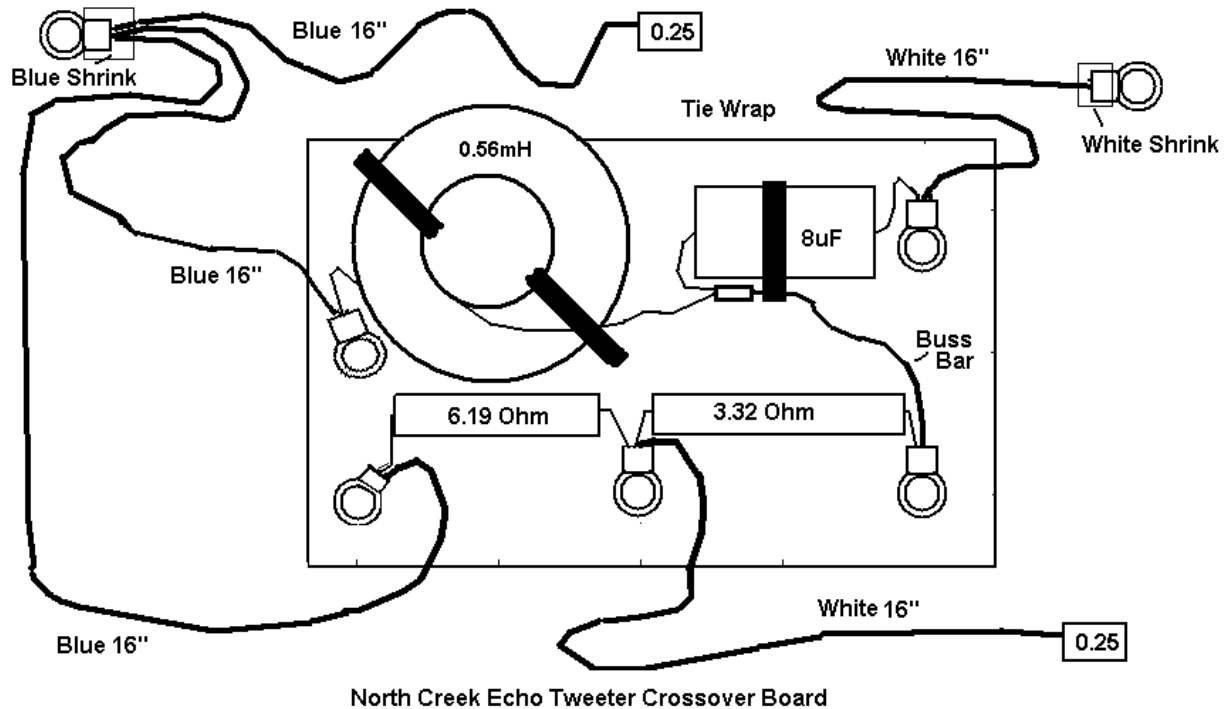
Shoot a little silicone under the capacitor and bind it and the inductor lead to the pegboard with a single tie wrap as shown on our diagram. **It is very important that the inductor lead is secured under the tie wrap and in the silicone.**

Shrink black shrink tube over the crimped section of the gold Big Ring Jr that holds the two black wires.

Shrink red shrink tube over the crimped section of the gold big Ring Jr that is attached to the 2.20mH inductor.

Carefully inspect the assembly to make sure everything is exactly as our assembled crossover diagram.

## Tweeter Network Assembly



Carefully inspect our assembled network diagram. This is a 4x5 board.

**"Attach" means "slide all leads into a single ring tongue crimping section, crimp, and solder**

Attach the stripped end of the 16" white wire to the gray leads of the 8uF Yellow cap with a single ring tongue

Attach one 16" blue wire to the outside lead of the 0.56mH inductor

Attach one 16" blue wire to one lead of one of the 6.19 Ohm resistor

Attach the stripped 3" buss bar to one lead of the other 3.32 Ohm resistor

Attach the free leads of both resistors and the 16" white Tef wire with a single ring tongue.

When everything cools down, attach the resistor sub-assembly to the peg board and tighten down the brass nuts to hold everything in place.

Attach the capacitor sub-assembly to the pegboard as indicated on our crossover diagram.

Attach the free end of the buss bar, the free end of the 0.56mH inductor, and the free lead from the 8uF Yellow cap with a single large crimp barrel.

When everything cools down, shoot a little silicone under the capacitor and secure it and the buss bar/capacitor/inductor connection point with a long tie wrap. Make sure the buss bar is not touching any other connection, and coat it with silicone.

Drop the inductor into place on the pegboard, loosely secure with tie wraps, add a little silicone under the inductor, tighten the tie wraps, trim excess

Attach the inductor-blue wire ring tongue to the pegboard

Attach the stripped ends of all three 16" blue leads with a single gold Big Ring Jr.

Heat shrink white shrink tube over the crimp section of the Big Ring Jr attached to the 16" white lead.

Heat shrink blue shrink tube over the crimp section of the Big Ring Jr attached to the three blue wires.

Carefully inspect the assembly to make sure everything is exactly as our assembled crossover diagram.

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