

BannerFlex Patent # 4880195

## PLEASE READ THIS FIRST!

See Page 2 for a list of tools required to install KBW BannerFlex Brackets. The buyer assumes full responsibility for determining that the light poles (or other substrates) are able to withstand the increased wind load generated by the installation of one or more banners of a particular size on each pole using top and bottom KBW BannerFlex brackets.

We recommend contacting the pole manufacturer or a structural engineer to assist in making this determination.

For older poles, we suggest visual inspections to determine the current structural integrity of the base connection as well as other portions of the pole, including the luminaire and its components.

If you have any questions concerning bracket installation, contact your KBW Sales Representative or the "Hardware Hotline" at **1-800-525-6424**.

## General Installation Guidelines

- Read these instructions carefully to understand the KBW "canting feature", how to "rock" the arms into place and how the fiberglass arms keep the banners tight.
- The KBW BannerFlex D3 main casting is designed to be attached to poles with bolts, screw-gear banding, or tool-applied Band-It solid banding.
- Always verify that high profile traffic, such as buses and trucks, will not come in contact with the installed brackets.
- "Fluted" poles sometimes do not allow an installation to "face" a particular direction due to the location of the flutes. We have found that slight angles away from perpendicular are not objectionable. Contact your KBW Sales Representative for assistance.
- These instructions specifically explain banding the bracket to the poles. If bolts are used, continue to refer to these instructions for placement and proper use of the "canting feature."

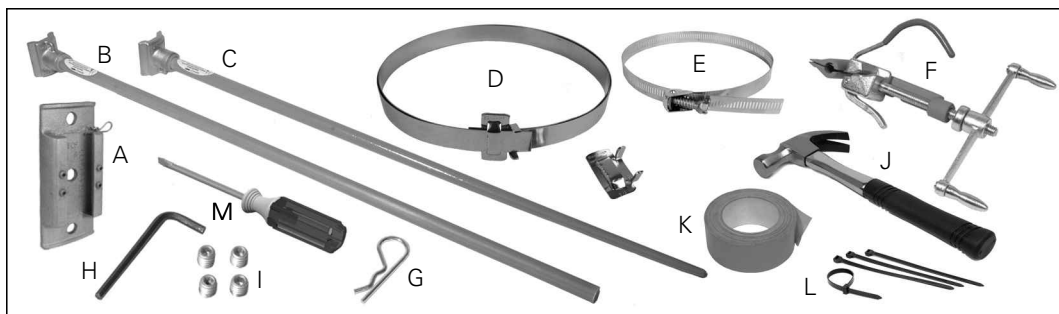
## Maintenance Guidelines

- We recommend new installations be visually inspected 30 days after initial installation to insure brackets are tight and trim, and every 60 days thereafter. Also, inspection should take place after unusually heavy windstorms, as abnormal gusts and flying debris may affect the quality of an installation.
- Banners which "whip" or "flutter" in the wind are not installed properly. This may cause undue wear and tear on the banner and eventually release from the bracket, which can heavily damage the banner. *Avoid this problem with inspections as suggested above. **Repair loosened banners immediately.***
- Banners with puckers or stress lines along the fabric are too tight. Loosen and adjust the lower arm until banner is taut but smooth (see "Troubleshooting").

### The KBW Banding Guideline Chart (© 2007 Consort Display Group)

This is a general guideline for the minimum banding strength necessary for single and double banner installations of various sizes for normal, non-catastrophic winds up to 70mph. Note: The quality of each installation affects the ultimate strength. Be sure bands or bolts are properly applied and at maximum pressure.

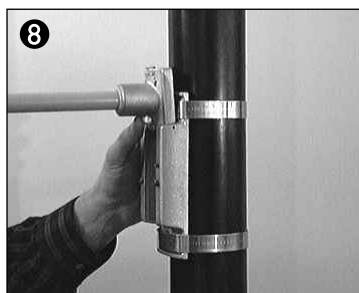
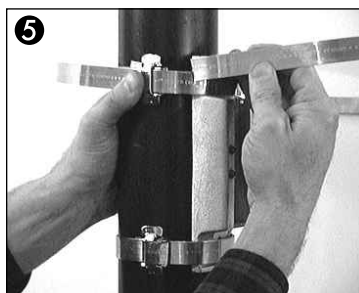
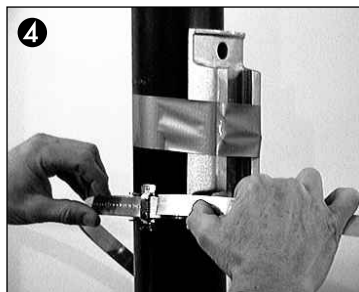
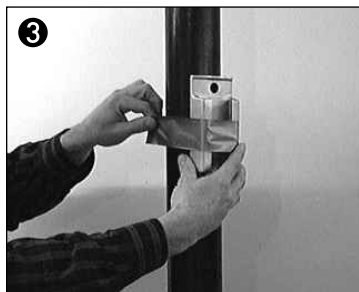
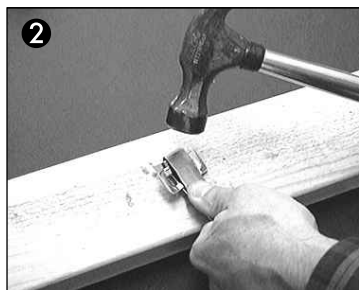
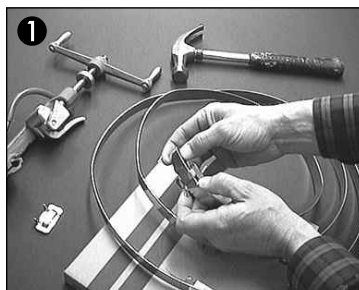
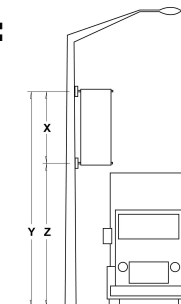
|                |                  | Banding Options  |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     | Bolting Options                            |  |
|----------------|------------------|--|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|-----------|-----|--|--|
|                |                  | 1/2", 9/16" or 5/8" Screw Gear Bands (SGB)                                   |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     | Brackets may be bolted in lieu of banding. |  |
|                |                  | Single wrap of 3/4" tool-applied banding (9 poles/100' box)                  |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     | See chart.                                 |  |
|                |                  | Double wrap of 3/4" tool-applied banding (5 poles/100' box)                  |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                |                  | yes - combination will work successfully in typical wind conditions (70 mph) |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                |                  | no - combination will not perform in typical, long-term conditions           |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                |                  | n/a - does not apply; size combination impossible                            |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                |                  | N/R - combination will work, but is not recommended                          |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                |                  | Max Total - the maximum total sq ft banner fabric for 2 banners/pole         |     |          |     |          |     |          |     |          |     |          |     |          |     |           |     |  |  |
|                | # banners        | 18"x 36"   |     | 24"x 48" |     | 30"x 60" |     | 30"x 72" |     | 30"x 84" |     | 30"x 94" |     | 46"x 94" |     | 30"x 120" |     | Maximum Single Banner Size                 | Maximum Total Sq Ft for 2 Banners Per Pole |
| KBW-D3         | 1/2" SGB         | N/R  | N/R | N/R      | N/R | No       | No  | No       | No  | No       | No  | No       | No  | No       | No  | No        | No  | n/a  | 10   |
|                | 9/16" SGB        | N/R  | N/R | N/R      | N/R | No       | No  | No       | No  | No       | No  | No       | No  | No       | No  | No        | No  | n/a  | 16   |
|                | 5/8" SGB         | N/R  | N/R | N/R      | N/R | Yes      | No  | No       | No  | No       | No  | No       | No  | No       | No  | No        | No  | 30"x 60"                                   | 16   |
|                | Single Wrap 3/4" | N/R  | N/R | N/R      | N/R | Yes      | No  | Yes      | No  | Yes      | No  | Yes      | No  | No       | No  | No        | No  | 30"x 72"                                   | 25   |
|                | Double Wrap 3/4" | N/R  | N/R | N/R      | N/R | Yes      | Yes | Yes      | Yes | Yes      | Yes | Yes      | Yes | Yes      | Yes | N/R       | Yes | N/R  | 30"x 120"                                  |
| KBW-D3 w/Airow | 1/2" SGB         | n/a  | n/a | N/R      | N/R | No       | No  | No       | No  | No       | No  | No       | No  | n/a      | n/a | No        | No  | 30"x 54"                                   | 16   |
|                | 9/16" SGB        | n/a  | n/a | N/R      | N/R | Yes      | No  | Yes      | No  | No       | No  | No       | No  | n/a      | n/a | No        | No  | 30"x 60"                                   | 18   |
|                | 5/8" SGB         | n/a  | n/a | N/R      | N/R | Yes      | No  | Yes      | No  | Yes      | No  | No       | No  | n/a      | n/a | No        | No  | 30"x 94"                                   | 20   |
|                | Single Wrap 3/4" | n/a  | n/a | N/R      | N/R | Yes      | Yes | Yes      | Yes | Yes      | No  | Yes      | N/R | n/a      | n/a | Yes       | No  | 30"x 108"                                  | 35   |
|                | Double Wrap 3/4" | n/a  | n/a | N/R      | N/R | Yes      | Yes | Yes      | Yes | Yes      | Yes | Yes      | Yes | Yes      | n/a | n/a       | Yes | Yes  | 30"x 120"                                  |



- A. Main Pole Casting
- B. Standard Arm/Arm Castings
- C. Premium Airow Rod
- D. Band-It Banding & Buckle
- E. Screw Gear Banding
- F. Band-It Tool
- G. Hitch Pin
- H. Hex/Allen Wrench
- I. 4 Dacromet® Set Screws
- J. Hammer
- K. Duct Tape
- L. Nylon Cable Ties
- M. Screwdriver/Powerdriver

## PLEASE READ COMPLETELY BEFORE BEGINNING INSTALLATION:

Start with the top banner bracket by mounting upper Main Casting(s) (A) first and complete all "top" procedures, including mounting the banner(s) and Nylon Cable Ties (L), before mounting lower casting(s). The upper castings must be mounted at a height that prevents any portion of the completed banner installation from being hit by vehicular traffic or pedestrians (see diagram right). You may use these instructions for both single and double banner per pole installations. First, inspect every pole to see if anything on the pole would wear against the banner fabric. Items to look for include signs and banding, flag pole holders, power or telephone lines or any other obstructions on the pole that might come into contact with the banner. Any object contacting a banner will eventually damage the banner, or the object, or both.



**1** Slide buckle onto Band-It (D) by feeding buckle onto band "teeth" first" (see Band-It instructions included with tool).

**2** Bend end of band under buckle about 2". You can use a hammer to crease band end down.

**3** Using Duct Tape (K), temporarily hold casting(s) in place against utility pole at desired height. The word "TOP" on the Main Pole Casting (A) must be pointing up at ALL times for both Main Castings at both upper and lower locations.

**4** Double wrap Band-It completely around pole at both the top part of the pole casting and the bottom part of the pole casting.

**5** Be sure you understand double wrapping before proceeding.

**6** Tighten the banding according to the instructions provided with the Band-It tool (F). Cut off excess banding with Band-It tool (F).

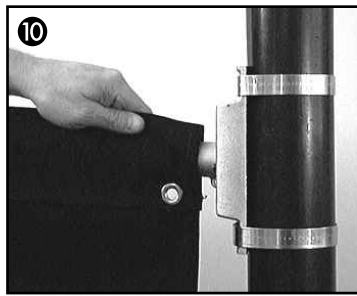
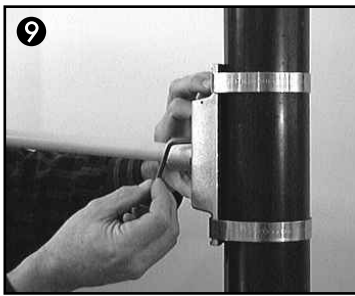
**7** Pound Band-It down over buckle and pound buckle tabs over banding to secure each double wrapped band in place. Remove the duct tape.

**8** Remove Hitch Pin (G) from Main Casting and install upper Arm Casting (B or C) so the "BANNER" points toward where the banner will be located. Position the Arm Castings in the center of the Main Casting – this will allow some minor length adjustment either up or down, should the banners require adjustment. Re-install Hitch Pin.

*Note: BannerFlex Arms are "canted" to put the banner in tension. This means that without a banner installed the upper arms will angle up slightly and the bottom arms will angle down slightly. When the banner is properly installed, the installation will be taught and trim. The fiberglass will bend down at the top and up at the bottom to make the banner appear square and stretched. This allows the wind to be immediately transferred to the fiberglass for deflection.*

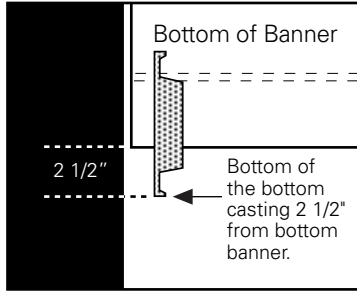
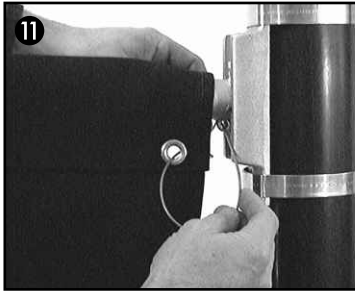
**9** Tighten the Dacromet® Set Screws (I) with the appropriate Allen Wrench (H). Power tools are recommended here as well, for a speedy installation.

**10** Slide top banner hem over fiberglass arm, grommet side first. Grommet side is closest to the pole. Allow banner to unfurl. Place banner hem up to (or over) the Arm Casting. Either look is acceptable but we recommend each banner be installed the same way for best appearance.



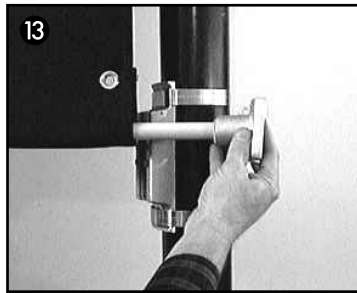
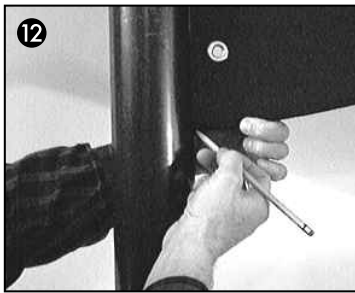
**11** Slide second banner on opposite arm if mounting two banners per pole. Feed the Nylon Cable Tie (L) [or 18 gauge or larger galvanized wire] through the banner grommet and through the "eye" hole in the Arm Casting. This attachment is required to prevent the banner from sliding off.

Top portion of installation is now finished. Now you are ready to install the bottom Main Castings.



**12** Pull banner down to mark pole for location of bottom casting/arm assembly - Mount bottom casting so that lowest edge of casting is approximately 2 1/2" lower than the bottom edge of the banner.

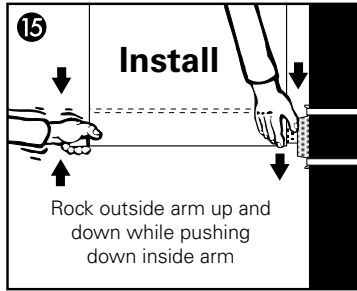
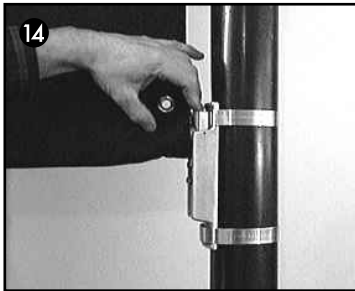
Repeat steps 1 through 7 to mount lower Main Castings in place.



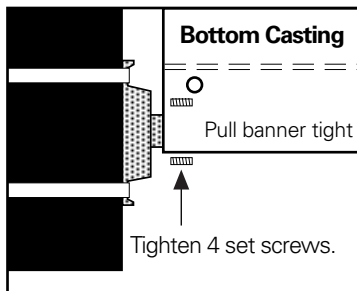
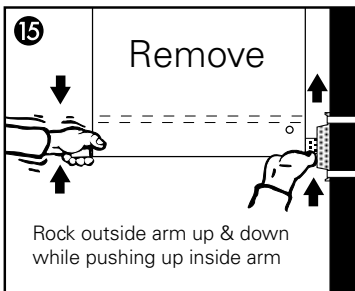
**13 14** Before putting Arm Castings into Main Castings, slide banner over the fiberglass arm. Important: see illustration on this page to understand how to slide arm casting into pole casting. When inserted correctly, bottom arms display a downward "cant" until banner is tightened between each arm. It will "bind up". See note in step #15 and illustrations at left for proper method. Be sure the banner arrows point towards the banner.

### These next steps are very important! Please read carefully!

**DO NOT USE EXCESSIVE FORCE OR TOOLS! IT IS NOT NECESSARY** - Refer to illustration 15 to understand how to slide the Arm Casting into the Main Casting. Use a rocking action to position the Arm into place. Rock the Arm Casting until it is as far down into the Main Casting as possible and banner is taut and trim. If the banner(s) appear "pigeon-toed" or "fanned out", please see TROUBLESHOOTING.



**15** **ROCKING THE ARM INTO PLACE - VERY IMPORTANT!** Each bottom arm can be easily "rocked" into position -see illustrations. Rock the arm assembly in the casting slot by pushing down on the outer end of the fiberglass arm and at the same time pressing the top of the Arm Casting downward with a thumb. Keep rocking the arm until it is seated as far down as it will go and the banner is taut. The arm should remain in position to tighten the Dacromet Set Screws (I). **Note: excessive hammering may damage the Casting and voids the KBW warranty.**



Secure the bottom of the banner to Main Casting with a Nylon Cable Tie (L) [or 18 gauge or larger galvanized wire] through the banner grommet and through the "eye" hole in the Arm Casting. This attachment is required to prevent the banner from sliding off.

CONGRATULATIONS! The banner installation is complete! If the banners appear "pigeon-toed" or "fanned out", please see TROUBLESHOOTING.

## TROUBLESHOOTING for Banner Installation and Maintenance

### A ) Are banners "pigeon-toed" or not square or perpendicular to pole?

This indicates that either the upper or lower Arm Castings are not "seated" properly in the Main Castings. The pigeon-toed look can be fixed by spreading the upper and lower arms apart more. Either lower the bottom Arm Casting further into the Main Casting, or raise the upper Arm Casting further into the top Main Casting. If there is not enough space in the Main Castings for this, either raise the upper Main Casting or lower the bottom Main Casting on the pole.

### B ) Is either the top of the banner slanted down significantly or the bottom of the banner slanted up significantly, or both?

This indicates that one or both of the arms are installed upside down. Make sure that the arrows beside the word, "BANNER" on the Arm Casting are pointed toward the actual banner.

### C ) Is the banner loose or flapping around?

This usually indicates that the Arm Castings are not seated properly to keep the banner trim and tight. Review numbers 10 through 14 in the Installation Instructions.

## Troubleshooting (continued)

### **D ) Are the banners puckered or do they have stress lines in them?**

This may occur with certain fabrics and certain size banners. It results from the banner being stretched too tightly or the arms not being parallel (see "A" and "B" above). We recommend sliding the banner hem further over the Arm Casting's aluminum stub to relieve some of the puckering.

### **E ) Are you seeing tearing or ripping of the banner fabric?**

With the high-quality KBW banner fabrics, warranted for 2 years, you should never see this unless something is rubbing against the banner or if the installation has been allowed to flap around, without proper maintenance for two or more weeks. Other non-KBW banner fabrics may simply be too weak for exterior use. Call KBW or your dealer for advice on this topic.

First, check to see if installation is trim and tight. Next, see if anything on the utility pole has been allowed to wear against the banner fabric. This could be a sign, flag pole holder, power or telephone line or other abutment on the pole. Anything like this will always, eventually damage the banner.

### **F ) My poles are tapered. How can these be installed on tapered poles?**

See item G directly below

### **G ) Are the Main Castings loosening on the pole and/or "crawling" up a tapered pole?**

Any time a Main Casting is loose it is typically a result of three causes. First and usually, it may be that the fastening, such as Band-It Banding or Screw-Gear Banding is not applied properly and is not tight enough. With larger banner installations where "double wrapping" of 3/4" Band-It Banding is specified, double wrapping means the band needs to go around the pole twice before the Band-It Buckle is clamped. For screw-gear applications be sure that the correct size and strength of band has been applied and that it has been tightened properly. Note: almost every light pole is tapered. When the KBW bracket system has been correctly applied it will not loosen or crawl up a tapered pole.

The second most common reason an installation may loosen is if it has been hit by a truck, bus, fire engine or other such vehicle that has come in to contact with the bottom arm.

Third, an unusual or catastrophic windy condition may cause loosening or damage by flying objects hitting the installation.

---

## **KBW BannerFlex Warranty**

---

KBW BannerFlex banner brackets are guaranteed for ten (10) years against defects in material and workmanship when installed according to KBW installation instructions. *Important: Bracket must be installed according to these instructions and banding method must be tight and secure at all times.* Also, inspect your bracket installation 30 days after initial installation and every 60 days thereafter, making any necessary adjustments immediately. Brackets which have been damaged by trucks, buses, etc. or flying debris are not warranted against that type of abuse.