

K-Ball Spray Nozzles

K-Ball Clip-On Spray Nozzles & Assemblies

BEX adjustable K-Ball assemblies provide a robust and reliable solution for multi-stage washers and spray wash machines. Simply drill a 9/16" hole into any 1", 1 1/4", 1 1/2", or 2" pipe, and mount the assembly to the pipe using the clip. The spray ball can be swapped out or replaced simply by loosening or tightening the cap, no tools required.

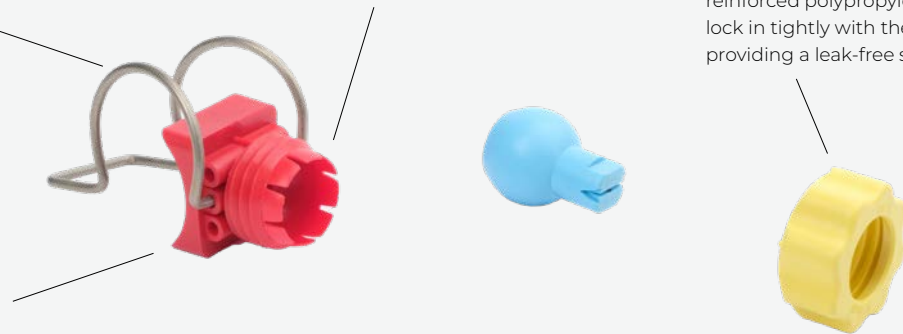


Heavy-duty stainless steel spring clips allow operating pressures up to 100 PSI. A dual-clip system is also available for pressures up to 150 PSI.

Optional **"finger" system** on the K-Body prevents movement of the spray ball while the cap is being tightened.

K-Ball cap is designed with strong threads made of glass-reinforced polypropylene, which lock in tightly with the K-body, providing a leak-free spray.

K-Ball bodies fit securely onto the pipe. Available in Polypropylene for temperatures up to 175°F, and PVDF for temperatures up to 275°F. Includes one standard KOR O-ring for sealing the 9/16" connection hole to the pipe. A KCOR O-ring is also available for sealing 21/32" connection holes.



With a variety of interchangeable spray balls, the K-ball system can support a wide range of spray patterns, flow-rates, and angles.

BF Balls



Flat fan patterns which taper at the edges to permit overlapping of sprays.

Available in angles ranging from zero to 110 degrees, & flow rates from 1 to 15 USGPM at 40 psi.

BFL Balls



A wide, flat shaped spray with low impact. The spray is deflected 75 degrees down from the centerline of the nozzle.

Available in 5 capacity options

BPH Balls



A hollow cone pattern with low impact for phosphating applications.

Available in 3 capacity options

KPLUG

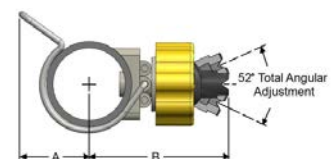


Completely shut off the water flow through a clip-on opening.

K-Ball bodies are compatible with 4 standard pipe sizes. Each is color coded to indicate the pipe size it will fit, and whether the body features "fingers".

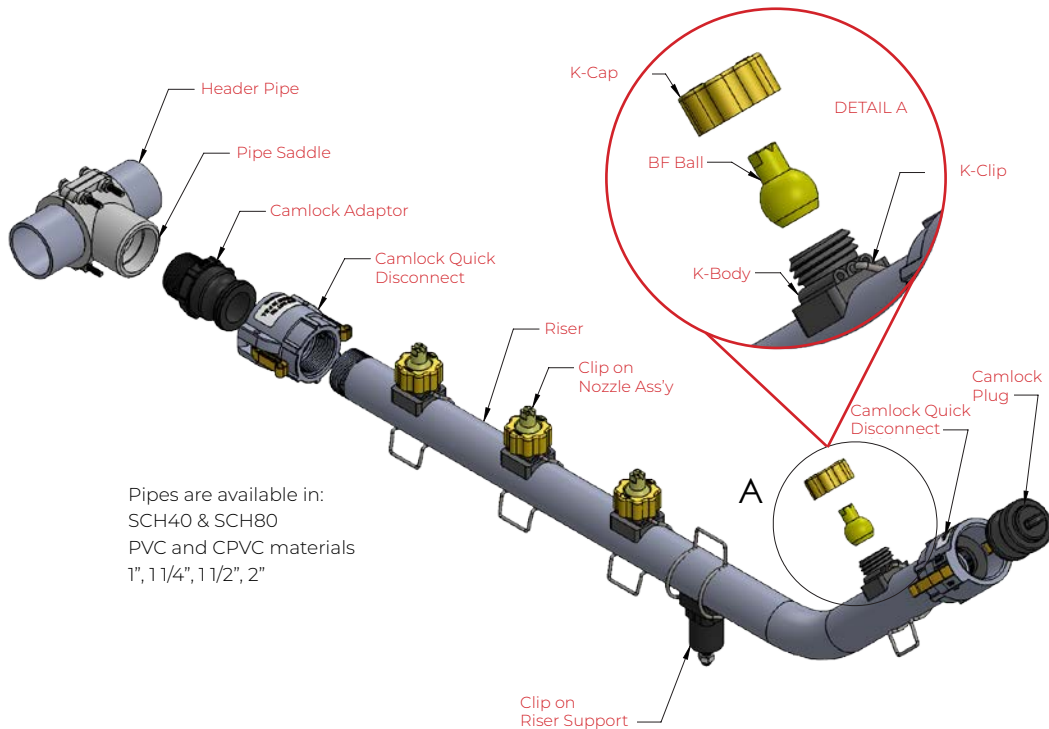
| Pipe Sizes | Standard Body | Body with Fingers |
|------------|---------------------|-----------------------|
| 1" | 1K (white) | 1KF (green) |
| 1-1¼" | 1.2K (grey) | 1.2KF (yellow) |
| 1-1½" | 1.5K (black) | 1.5KF (red) |
| 2" | 2K (tan) | 2KF (blue) |

| Pipe Size | Dim A. | Dim B. |
|-----------|------------|------------|
| 1" | 1¾ (45 mm) | 2⅞ (73 mm) |
| 1¼" | 2 (51 mm) | 3 (77 mm) |
| 1½" | 2⅜ (54 mm) | 3⅜ (80 mm) |
| 2" | 2⅞ (61 mm) | 3½ (89 mm) |



K-Risers Complete Custom-Built Riser Assemblies

Whether it be a straight-forward single-stage riser assembly, or a complex multi-stage washing system, BEX will collaborate with you to design and assemble a complete risers system tailored to your unique needs.



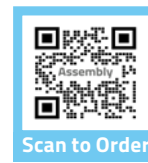
How to Order K-System Risers

BEX sales support can assist you with any questions you have.

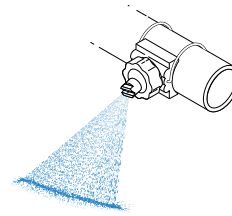
- 1 DESIGN:** Provide us with a rough sketch of your desired layout, including the following details:
Pipes: Length, quantity, spec (eg. 1" sched 40 PVC), number of bends and angle of bends
Nozzles: Quantity, flow rate, angle and spray type
Accessories: Tees, caps, elbows, riser clamps, cam locks, saddles.
- 2 APPROVAL:** A quote and drawing will be provided to you for approval.
- 3 PRODUCTION:** Once approved, a unique riser part number will be assigned and production will begin. Risers are inspected, nozzles are tested, and the assembly is packaged and shipped.



BF Ball Assembly



Spray density tapers off toward the outside to permit overlapping of the spray patterns, while maintaining uniform spray density. Balls are color coded to make it easier to identify spray characteristics.

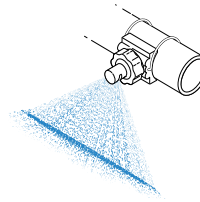


| Model | Ball Color | Equivalent Orifice Diameter (inches) | Capacities at Various Pressures USGPM | | | | | | | | | | | | | Spray Angle | |
|---------|------------|--------------------------------------|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|-------------|--------|
| | | | 5 psi | 7 psi | 10 psi | 15 psi | 20 psi | 25 psi | 30 psi | 40 psi | 50 psi | 60 psi | 80 psi | 100 psi | 150 psi | 20 psi | 40 psi |
| BF11060 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 107° | 110° |
| BF9530 | Purple | 0.129 | 1.06 | 1.26 | 1.50 | 1.84 | 2.12 | 2.37 | 2.60 | 3.00 | 3.4 | 3.7 | 4.2 | 4.7 | 5.8 | 63° | 95° |
| BF9540 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 63° | 95° |
| BF9550 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 63° | 95° |
| BF9560 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 63° | 95° |
| BF8010 | Black | 0.074 | 0.35 | 0.42 | 0.50 | 0.61 | 0.71 | 0.79 | 0.87 | 1.00 | 1.12 | 1.22 | 1.41 | 1.58 | 1.94 | 75° | 80° |
| BF8020 | Lt. Blue | 0.105 | 0.71 | 0.84 | 1.00 | 1.22 | 1.41 | 1.58 | 1.73 | 2.00 | 2.24 | 2.45 | 2.83 | 3.2 | 3.9 | 63° | 80° |
| BF8030 | Purple | 0.129 | 1.06 | 1.26 | 1.50 | 1.84 | 2.12 | 2.37 | 2.60 | 3.00 | 3.4 | 3.7 | 4.2 | 4.7 | 5.8 | 63° | 80° |
| BF8040 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 76° | 80° |
| BF8050 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 77° | 80° |
| BF8060 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 77° | 80° |
| BF8070 | Red | 0.197 | 2.47 | 2.93 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 7.0 | 7.8 | 8.6 | 9.9 | 11.1 | 13.6 | 78° | 80° |
| BF80100 | Brown | 0.238 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 75° | 80° |
| BF6520 | Lt. Blue | 0.105 | 0.71 | 0.84 | 1.00 | 1.22 | 1.41 | 1.58 | 1.73 | 2.00 | 2.24 | 2.45 | 2.83 | 3.2 | 3.9 | 63° | 65° |
| BF6530 | Purple | 0.129 | 1.06 | 1.26 | 1.50 | 1.84 | 2.12 | 2.37 | 2.60 | 3.00 | 3.4 | 3.7 | 4.2 | 4.7 | 5.8 | 63° | 65° |
| BF6540 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 63° | 65° |
| BF6550 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 63° | 65° |
| BF6560 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 63° | 65° |
| BF6570 | Red | 0.197 | 2.47 | 2.93 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 7.0 | 7.8 | 8.6 | 9.9 | 11.1 | 13.6 | 63° | 65° |
| BF65100 | Brown | 0.238 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 58° | 65° |
| BF5020 | Lt. Blue | 0.105 | 0.71 | 0.84 | 1.00 | 1.22 | 1.41 | 1.58 | 1.73 | 2.00 | 2.24 | 2.45 | 2.83 | 3.2 | 3.9 | 63° | 50° |
| BF5030 | Purple | 0.129 | 1.06 | 1.26 | 1.50 | 1.84 | 2.12 | 2.37 | 2.60 | 3.00 | 3.4 | 3.7 | 4.2 | 4.7 | 5.8 | 63° | 50° |
| BF5040 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 43° | 50° |
| BF5050 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 43° | 50° |
| BF5060 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 43° | 50° |
| BF5070 | Red | 0.197 | 2.47 | 2.93 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 7.0 | 7.8 | 8.6 | 9.9 | 11.1 | 13.6 | 43° | 50° |
| BF50100 | Brown | 0.238 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 44° | 50° |
| BF4040 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 33° | 40° |
| BF4050 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 35° | 40° |
| BF4060 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 37° | 40° |
| BF4070 | Red | 0.197 | 2.47 | 2.93 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 7.0 | 7.8 | 8.6 | 9.9 | 11.1 | 13.6 | 35° | 40° |
| BF40100 | Brown | 0.238 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 33° | 40° |
| BF2540 | Green | 0.149 | 1.41 | 1.67 | 2.00 | 2.45 | 2.83 | 3.2 | 3.5 | 4.0 | 4.5 | 4.9 | 5.7 | 6.3 | 7.7 | 22° | 25° |
| BF2550 | Yellow | 0.167 | 1.77 | 2.09 | 2.50 | 3.06 | 3.5 | 4.0 | 4.3 | 5.0 | 5.6 | 6.1 | 7.1 | 7.9 | 9.7 | 20° | 25° |
| BF2560 | Blue | 0.183 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 7.3 | 8.5 | 9.5 | 11.6 | 18° | 25° |
| BF2570 | Red | 0.197 | 2.47 | 2.93 | 3.5 | 4.3 | 4.9 | 5.5 | 6.1 | 7.0 | 7.8 | 8.6 | 9.9 | 11.1 | 13.6 | 19° | 25° |
| BF25100 | Brown | 0.236 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 21° | 25° |
| BF15100 | Brown | 0.236 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 11.2 | 12.2 | 14.1 | 15.8 | 19.4 | 13° | 15° |
| BF15120 | Black | 0.258 | 4.2 | 5.0 | 6.0 | 7.3 | 8.5 | 9.5 | 10.4 | 12.0 | 13.4 | 14.7 | 17.0 | 19.0 | 23.2 | 12° | 15° |
| BF15150 | Black | 0.289 | 5.3 | 6.3 | 7.5 | 9.2 | 10.6 | 11.9 | 13.0 | 15.0 | 16.8 | 18.4 | 21.2 | 23.7 | 29.0 | 12° | 15° |

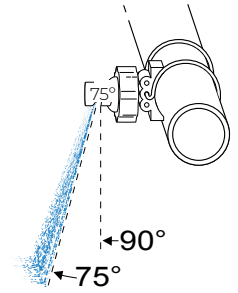
BFL Ball Assembly



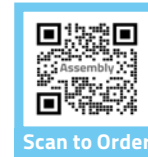
BFL series nozzles produce a wide, flat fan-shaped spray with low impact. The spray is deflected 75° away from the centerline of the pipe connection



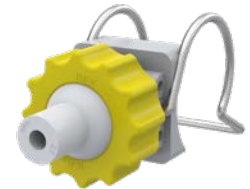
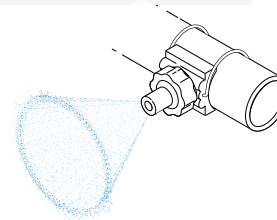
| Model | Equiv. Orif. Dia. (inches) | Capacities at Various Pressures USGPM | | | | | | | | | | Spray Angle | |
|-------|----------------------------|---------------------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|
| | | 3 psi | 5 psi | 7 psi | 10 psi | 15 psi | 20 psi | 25 psi | 30 psi | 40 psi | 50 psi | 7 psi | 20 psi |
| BFL5 | 0.076 | 1.04 | 0.35 | 0.42 | 0.50 | 0.61 | 0.71 | 0.79 | 0.87 | 1.00 | 1.12 | 114° | 130° |
| BFL10 | 0.110 | 0.55 | 0.71 | 0.84 | 1.00 | 1.22 | 1.41 | 1.58 | 1.73 | 2.00 | 2.24 | 134° | 146° |
| BFL18 | 0.149 | 0.99 | 1.27 | 1.51 | 1.80 | 2.20 | 2.55 | 2.85 | 3.12 | 3.6 | 4.0 | 130° | 142° |
| BFL24 | 0.167 | 1.31 | 1.70 | 2.01 | 2.40 | 2.94 | 3.4 | 3.8 | 4.2 | 4.8 | 5.4 | 121° | 136° |
| BFL30 | 0.183 | 1.64 | 2.12 | 2.51 | 3.00 | 3.7 | 4.2 | 4.7 | 5.2 | 6.0 | 6.7 | 120° | 133° |
| BFL40 | 0.218 | 2.19 | 2.83 | 3.3 | 4.0 | 4.9 | 5.7 | 6.3 | 6.9 | 8.0 | 8.9 | 130° | 144° |



BPH Ball Assembly



A hollow cone pattern with low impact. Designed specifically for phosphate stages. This large droplet, low impact spray results in a tighter and more consistent phosphate crystalline structure. It minimizes the misting of phosphate spray, thus reducing 'precoating', streaking, and carries over to adjacent stages.



| Model | Ball Color | Maximum Free Passage (inches) | Capacities at Various Pressures USGPM | | | | | | | | | | Spray Angle | | | |
|-------|------------|-------------------------------|---------------------------------------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------------|--------|--------|--|
| | | | 3 psi | 5 psi | 7 psi | 10 psi | 15 psi | 20 psi | 25 psi | 30 psi | 40 psi | 5 psi | 7 psi | 10 psi | 20 psi | |
| BPH28 | White | 0.191 | 5.8 | 1.98 | 2.34 | 2.80 | 3.4 | 4.0 | 4.4 | 4.8 | 5.6 | 44° | 52° | 53° | 55° | |
| BPH51 | Grey | 0.280 | 2.74 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 37° | 40° | 42° | 48° | |
| BPH53 | Black | 0.280 | 2.74 | 3.5 | 4.2 | 5.0 | 6.1 | 7.1 | 7.9 | 8.7 | 10.0 | 62° | 70° | 71° | 73° | |


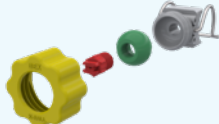

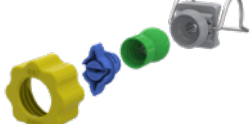





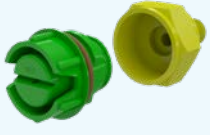


K-Plug Assembly

The K-PLUG nozzle ball is used in place of a standard nozzle to completely shut off the flow of the nozzle. A practical alternative to replacing the pipe when the hole positioning has to change.



K-Ball Nozzle Adapters

By using a K-Ball adapter, practically any nozzle in the BEX catalogue can be used in a K-Ball assembly. Threaded nozzles and Zip-Tip quick disconnect nozzles can be attached to the ball, opening up thousands of possibilities for spraying applications.

| Nozzle Connection | Pipe Connection | Adapter | Adjustable Position? | Assembled Image | Exploded Image | Compatible Spray Categories |
|-------------------|-----------------|------------------|----------------------|---|---|--|
| Threaded | Clip-On | K-Ball Adapter | ✓ |  |  | Flat Fan (F, FP, FL) Full Cone (S) Hollow Cone (H) Solid Stream (FO) Tank Mixing Eductor |
| Zip-Tip | Clip-On | KZBD | ✓ |  |  | Flat Fan (ZF, ZFP, ZFL) Full Cones (ZS) Hollow Cone (ZH) Solid Stream (ZFO) |
| Threaded | Clip-On | Threaded Adapter | ✗ |  |  | Flat Fan (F, FP, FL) Full Cone (S) Hollow Cone (H) Solid Stream (FO) Tank Mixing Eductor |
| Ball | Threaded | Threaded K-Ball | ✓ |  |  | Flat Fan (BF, BFL) Hollow Cone (BPH) Plug (KPLUG) |
| Zip-Tip | Threaded | ZBD | ✗ |  |  | Flat Fan (ZF, ZFP, ZFL) Full Cone (ZS) Hollow Cone (ZH) Solid Stream (ZFO) |
| Ball | Clip-On | K-Ball Assembly | ✓ |  |  | Flat Fan (BF, BFL) Hollow Cone (BPH) Plug (KPLUG) |



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