



TYPE "B" SINGLE STAGE CENTRIFUGAL PUMP Bearing Frame Mount

| | |
|--------------------|-----------------|
| Section | FM |
| Page | 190.2 |
| Date | January 1, 2004 |
| Supersedes 12/1/95 | |

CAST IRON IMPELLER

B4JRMBHS

Flanged Case

Mechanical Seal Construction

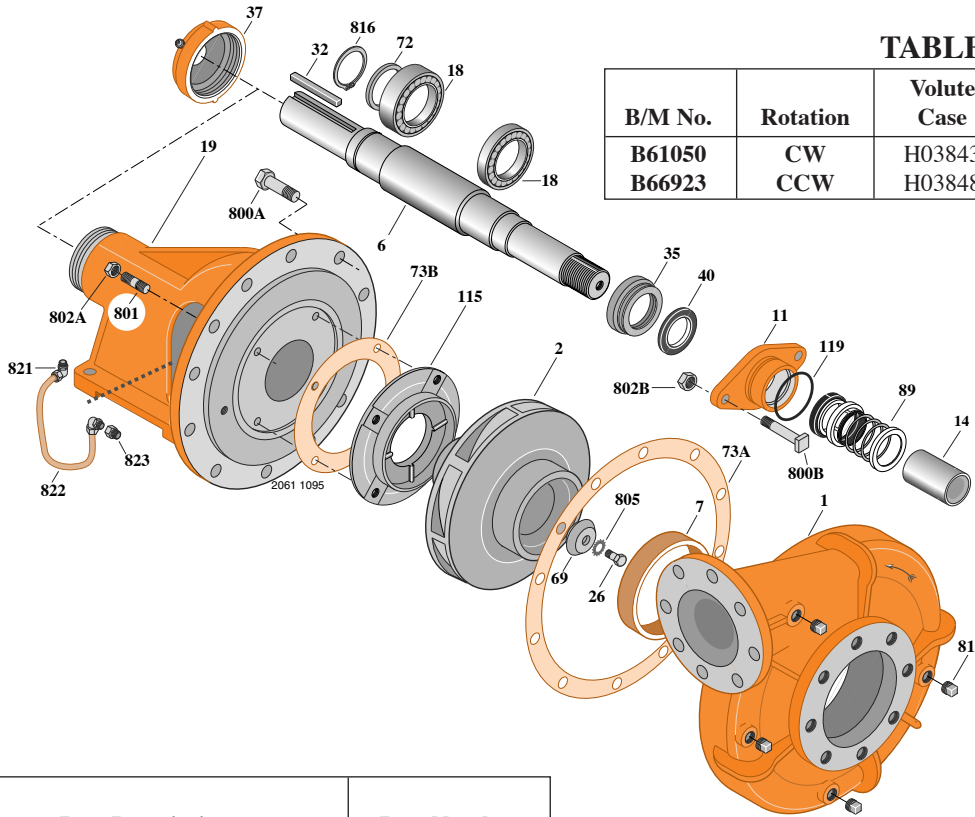


TABLE I

| B/M No. | Rotation | Volute Case | Impeller | Impeller Diameter |
|---------------|------------|-------------|----------|-------------------|
| B61050 | CW | H03843 | L05976 | 13.50" |
| B66923 | CCW | H03848 | L05974 | 13.50" |

| Item No. | Part Description | Part Number |
|----------|---------------------------------|-------------|
| 1 | Case, Volute | See Table I |
| 2 | Impeller | See Table I |
| 6 | Shaft (Not sold separately) | See Note 1 |
| 7 | Ring, Wearing | S02894 |
| 11 | Retainer, Mechanical Shaft Seal | S11452 |
| 14 | Sleeve, Shaft | S05974 |
| 16 | Bearing, Ball | S15604 |
| 18 | Bearing, Ball | S13396 |
| 19 | Frame | H01838 |
| 26 | Screw, Impeller 1/2-13x1" | S23619 |
| 32 | Key, 1/2x4" | S24214 |
| 35 | Inner Bearing Cap | S05928 |
| 37 | Outer Bearing Cap Assembly* | S35277 |
| 40 | Slinger, Water | S10964 |
| 69 | Washer, Impeller | S19275 |
| 72 | Ring, Thrust | S06519 |
| 73A | Gasket, Volute | S06271 |
| 73B | Gasket, Balance Ring | S09943 |
| 89 | Seal, Mechanical Shaft | S32693 |
| 115 | Ring, Balance | S13591 |
| 119 | O-Ring | S26471 |

| Item No. | Part Description | Part Number |
|----------|---------------------------------------|-------------|
| 800A | Capscrew, Hex 5/8-11x1-1/2" (12 Req.) | S26999 |
| 800B | Bolt, Sq. Head 1/2-13x2-1/4" (2 Req.) | S23792 |
| 801 | Stud, 3/8-16x1-1/2" (4 Req.) | S23995 |
| 802A | Nut, Hex 3/8-16" (4 Req.) | S23103 |
| 802B | Nut, Hex 1/2-13x7/16" (2 Req.) | S23347 |
| 805A | Washer, Lock | S23038 |
| 810 | Plug, Pipe 1/2 NPT (4 Req.) | S23717 |
| 811 | Fitting, Grease | S23670 |
| 816 | Ring, Retaining | S23016 |
| 821 | Elbow, Comp. Fitting (2 Req.) | S24128 |
| 822 | Tubing, Copper | S20677 |
| 823 | Bushing, Pipe | S24544 |

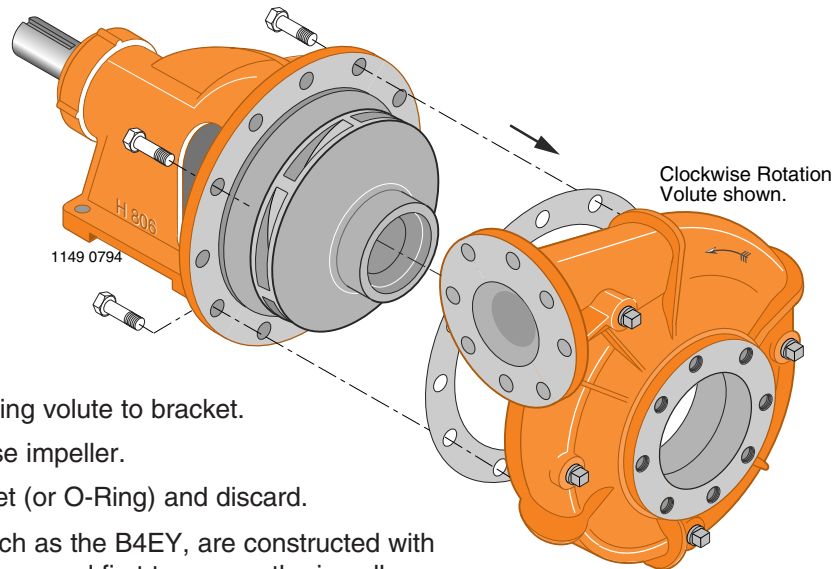
- Shaft Replacement Kit** available for this model. Berkeley part number **B07596** for CW, **B07597** for CCW. Pump Shaft sold in shaft replacement kit only.

* Includes grease fitting.

MAINTENANCE

Impeller Replacement

Threaded Shaft – Frame Mount

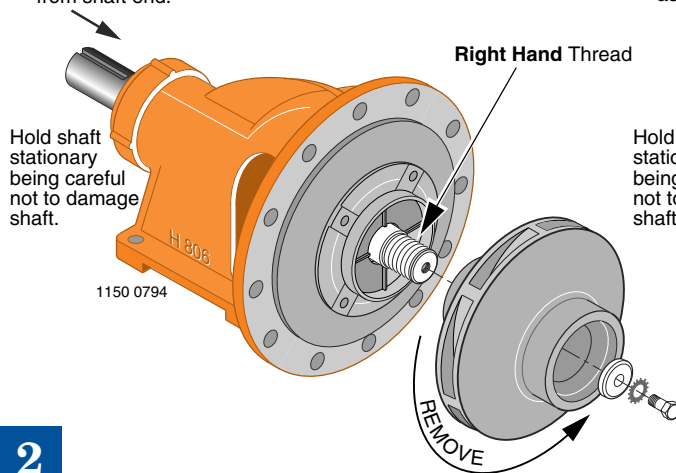


1

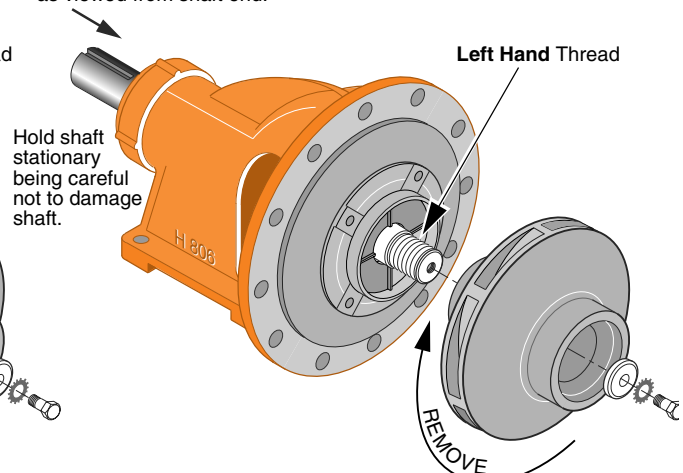
- Unfasten hardware holding volute to bracket.
- Remove volute to expose impeller.
- Peel off old volute gasket (or O-Ring) and discard.

NOTE: Certain models such as the B4EY, are constructed with a suction flange which is removed first to access the impeller.

Clockwise rotation as viewed from shaft end.



Counter-Clockwise rotation as viewed from shaft end.



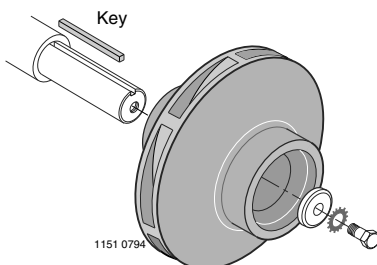
2

- Hold impeller stationary and remove impeller screw and associated hardware.
- Hold shaft stationary and remove impeller by turn-

ing in the direction shown for either clockwise or counter-clockwise pump rotation.

NOTE: Do not use impeller vanes for leverage.

Keyed Shaft

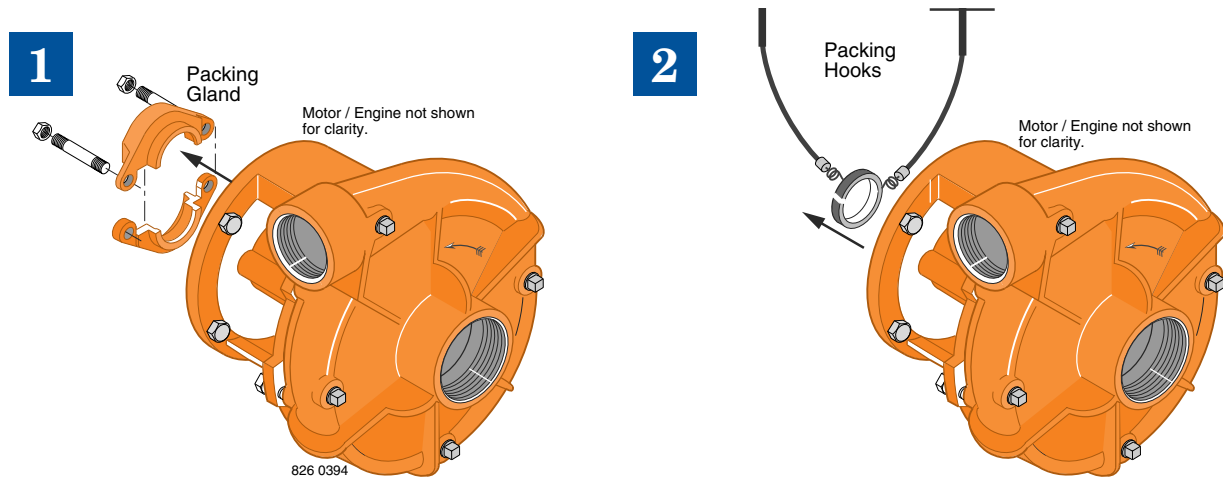


- If motor drive with keyed shaft, refer to mechanical seal disassembly drawing.
- For bearing frame pumps with keyed shaft, consult with factory for approved method of impeller removal.

MAINTENANCE

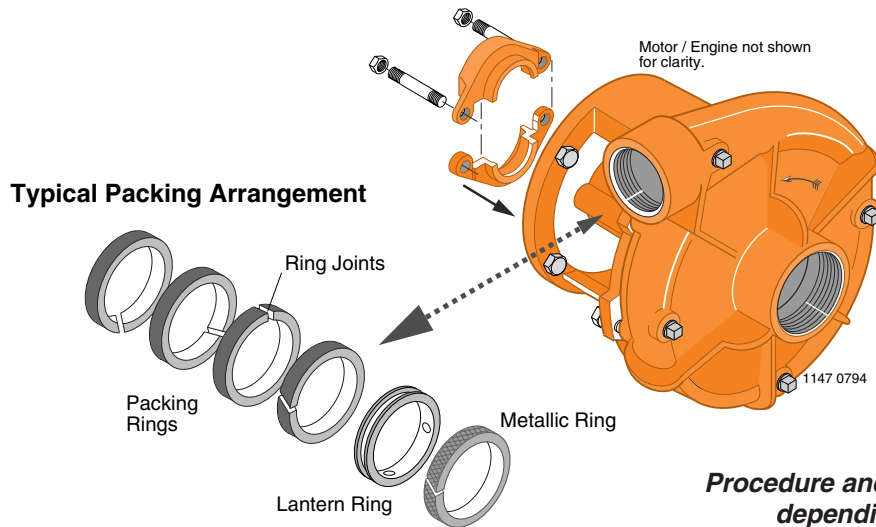
Packing Ring Replacement

Removal



- Unfasten hardware holding Packing Gland in place and slide back on shaft to expose packing rings. A split Packing Gland with threaded studs is shown.
- Remove packing rings from stuffing box using two commercially available Packing Hooks as shown.
- Slide Lantern Ring (if used) back to expose any remaining rings, including metallic. Remove them in the same manner.

Installing New Rings



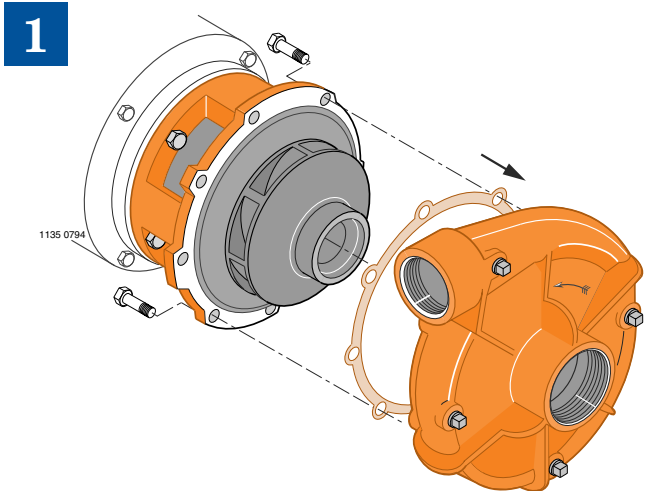
Procedure and parts will vary slightly depending on pump style.

- Clean shaft sleeve and Packing Gland.
- Inspect shaft sleeve for wear, replace if needed.
- Install new packing rings in stuffing box by placing over shaft sleeve and pushing them in as far as they will go.
- Rotate ring joint 90 degrees when installing each ring as shown.
- Slide packing gland into position, then gently and evenly tighten nuts to force rings into place and seat (do not overtighten). Loosen nuts again to hand tight.
- Start primed pump and allow packing to leak liberally.
- Evenly tighten gland nuts one complete turn at a time until leakage is reduced to 40 to 60 drops per minute.

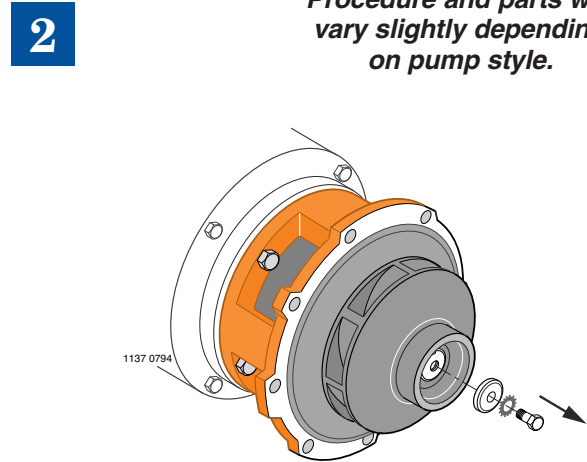
MAINTENANCE

Mechanical Seal Replacement

Disassembly - Motor Drive

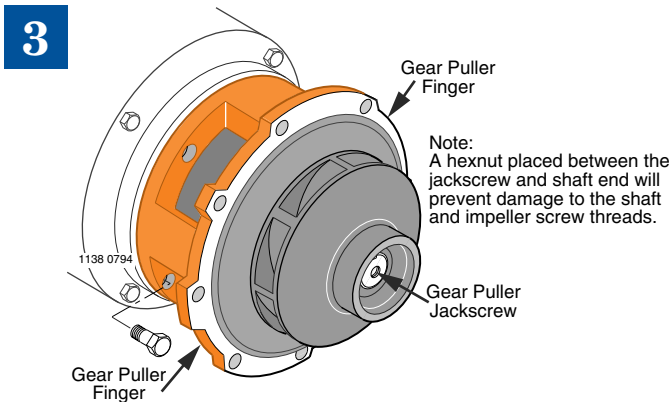


- Unfasten hardware holding volute to bracket.
NOTE: For model B4EY, consult factory for special instructions.
- Remove volute case to expose impeller.

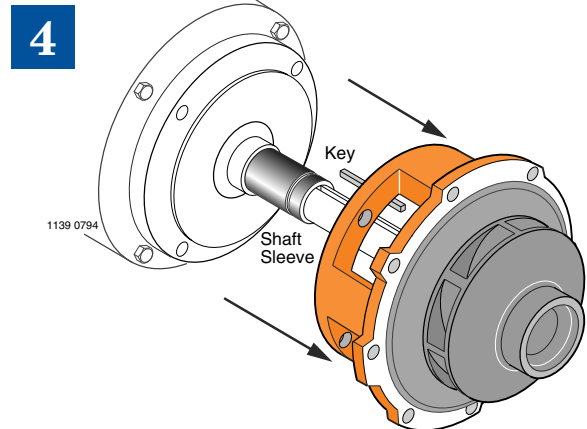


- Peel off old gasket or O-Ring and discard.
- Hold impeller stationary and remove impeller screw and associated hardware.

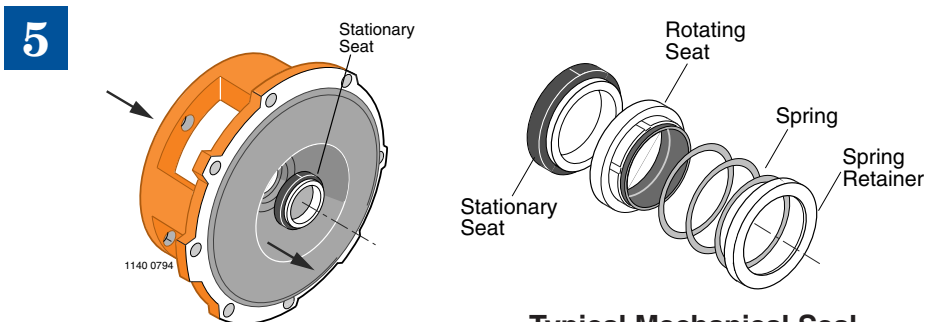
Procedure and parts will vary slightly depending on pump style.



- Remove capscrews holding bracket to motor.
- Install a standard gear puller to shaft end and motor bracket placing puller fingers in the area shown.
- Rotate gear puller jackscrew until impeller clears



- shaft. Mechanical shaft seal will come off with motor bracket.
- If a seal retaining ring is part of the assembly, it will need to be replaced.



- Push stationary seat out of seal cavity from the back of bracket.
- Clean seal cavity in bracket thoroughly.

Typical Mechanical Seal

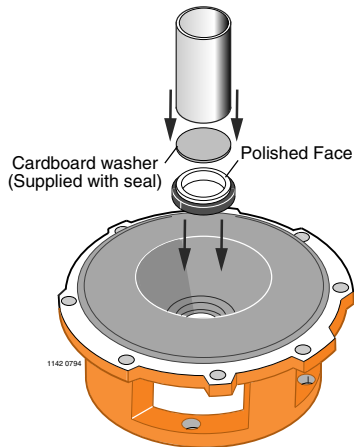
MAINTENANCE

Mechanical Seal Replacement

Reassembly – Motor Drive

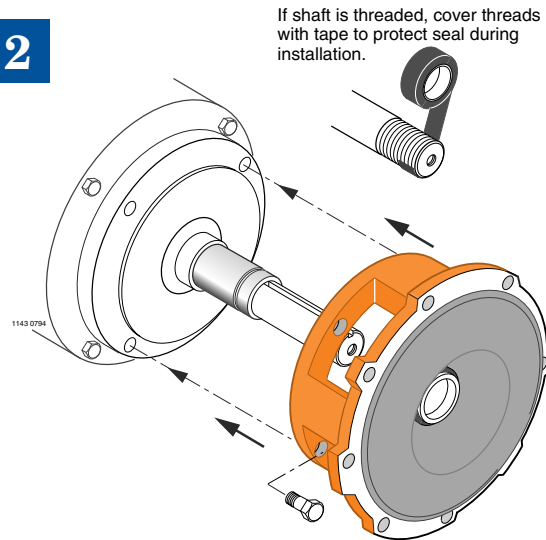


1



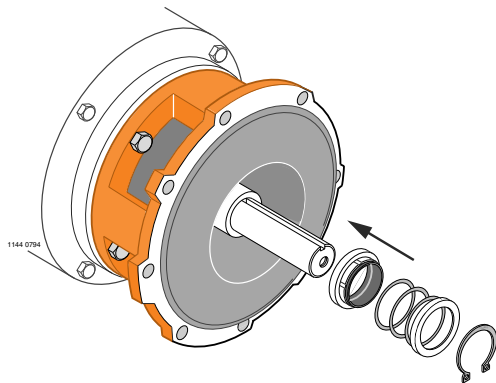
- Place bracket on a smooth, flat surface, pump side up.
- Apply a small amount of mineral oil to O-Ring on stationary seat and press into seal cavity. Cover ceramic face with cardboard washer and press

2



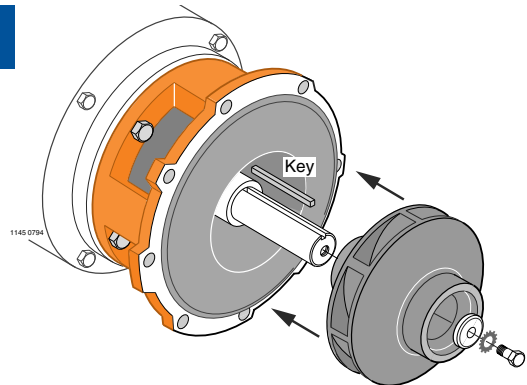
- straight in using a piece of pipe or tubing.
- Reinstall bracket on motor using extreme care not to scratch or chip ceramic face of seal with shaft.

3



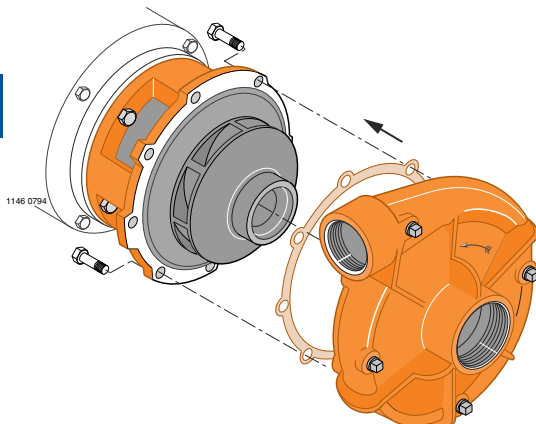
- Apply a small amount of mineral oil to inside diameter of rubber ring in rotating seat and outside of shaft sleeve. Slide rotating seat onto shaft, polished face first, until it is tight against ceramic face.
- Compress seal spring, and install retaining ring (if used) in shaft sleeve groove.

4



- Place impeller key in motor shaft keyway. Slide impeller on to shaft as far as possible.
- Apply non-permanent thread adhesive to impeller capscrew and shaft threads.
- Install impeller washer, shakeproof lockwasher, and capscrew.

5



- Install new gasket or O-Ring and volute case onto bracket.
- Install new O-Ring gasket and volute case on to bracket.
- Apply anti-seizing compound to capscrews and tighten securely.

Procedure and parts will vary slightly depending on pump style.