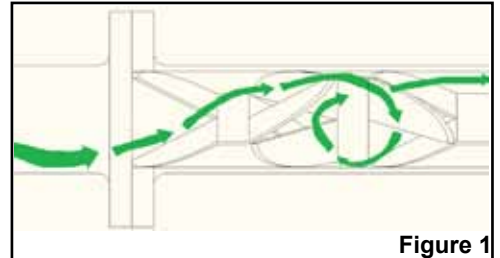


**Special features provide effective mixing.**

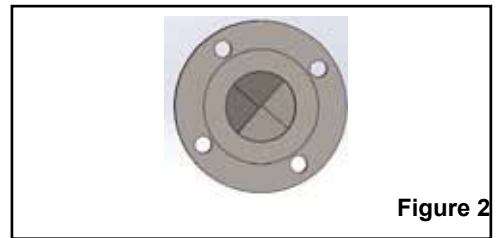
The MXR CM mixer was specially designed to solve conventional custody transfer mixing problems. The CM mixer may be installed in a horizontal or vertical pipeline. In a horizontal line, the first mixing element is set 30 degrees off the centerline so the bottom mixing element ear acts as a ramp, forcing the bottom water up into the crude (refer to Figures 1 and 2). The internal vortices or back-mixing created by the MXR mixing elements also rotate the blend backwards from wall to wall of the pipe as shown in Figure 1. This exclusive back-mixing eliminates any wall streaming and produces a very uniform distribution and small water droplet size in the crude.

A very important feature of the MXR CM mixers is the addition of a special, last mixing element that cancels all of the axial rotation of the flow downstream of the mixer. Violent rotation of the stream would cause the centrifuging problem of the water to re-occur.

The automatic sampler is located two to four pipe diameters downstream of the mixer. The resulting samples provide highly reliable net and repeatable crude oil measurements.

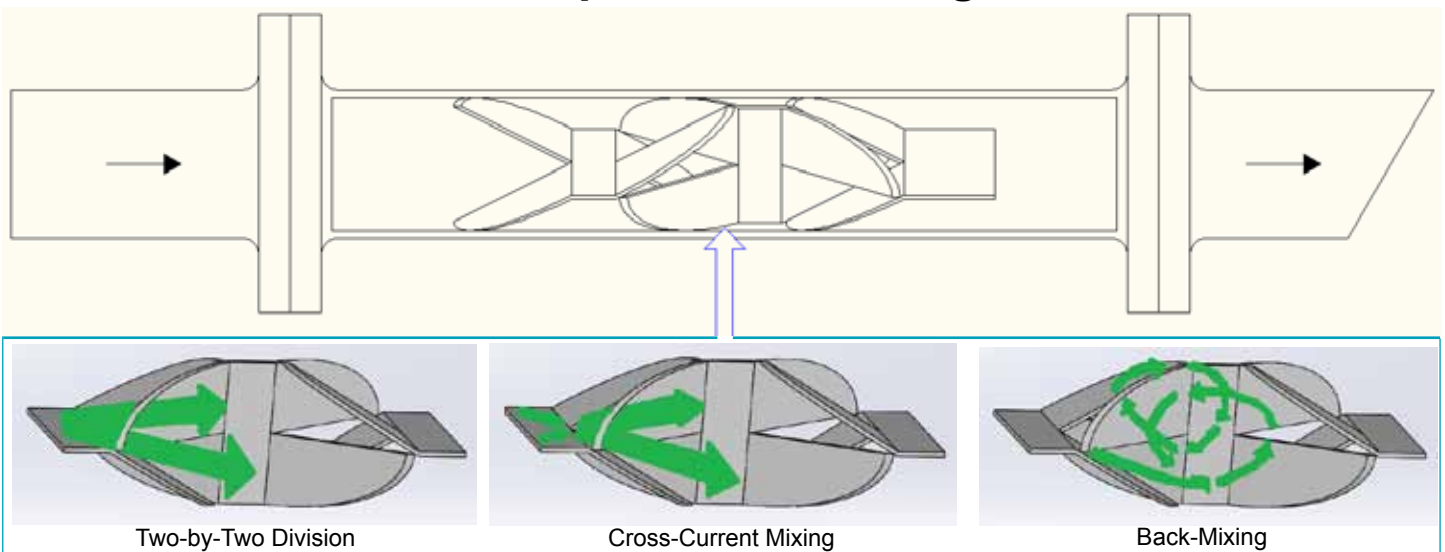


**Figure 1**



**Figure 2**

**Multiple-Action Mixing**



Two-by-Two Division

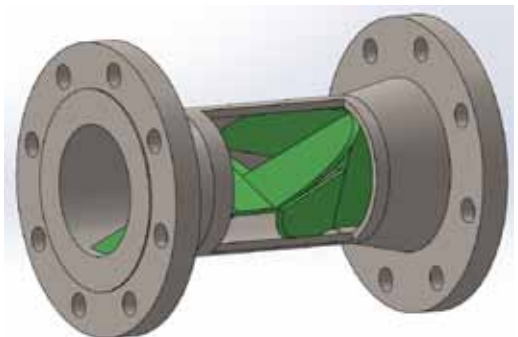
Cross-Current Mixing

Back-Mixing

**MXR CM Static Mixers**

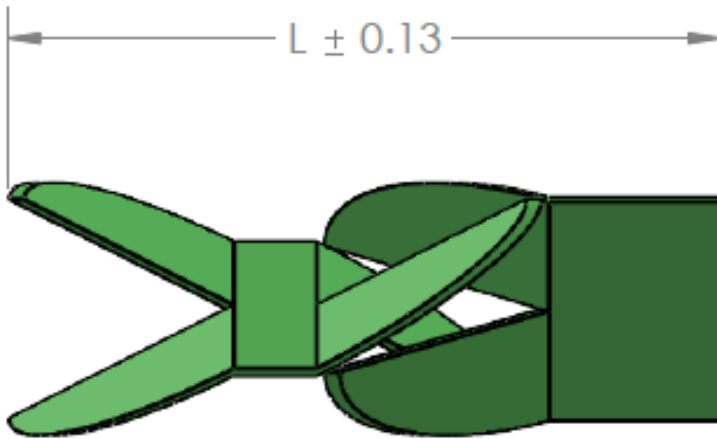
MXR custody transfer (CM) mixers employ a simple, reliable design to provide the ultimate in mixing. Our static mixer is comprised of a fixed arrangement of mixing elements inside a flanged pipe spool. NO MOVING PARTS. Main flow provides the energy for mixing in the MXR static mixer with up to ten (10) times more efficiency than other devices.

The MXR CM static mixer achieves high efficiency through multiple-action mixing. The crude oil and water are mixed through two-by-two division (increasing geometrically with each element added), cross-current mixing which randomizes droplet distribution by direct stream impingement, and excluding MXR back-mixing which improves turbulence and dramatically increases mixing efficiency. THESE THREE MIXING ACTIONS OCCUR SIMULTANEOUSLY IN EACH MXR MIXING ELEMENT COMBINATION.



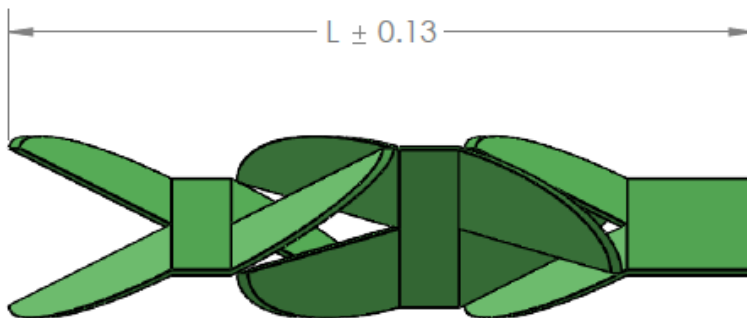
**The MXR CM Mixer**

## 2 Mixing Element Assembly



LINE SIZE (NPS)	MODEL NO.	LENGTH (INCHES)
3/4	CS0075-040-02CM-EA	2.36
1	CS010-040-02CM-EA	2.97
1 1/2	CS015-040-02CM-EA	4.53
2	CS020-040-02CM-EA	5.88
3	CS030-040-02CM-EA	8.65
4	CS040-040-02CM-EA	11.26
6	CS060-040-02CM-EA	17.03
8	CS080-040-02CM-EA	22.46
10	CS100-040-02CM-EA	28.03
12	CS120-STD-02CM-EA	33.44

## 3 Mixing Element Assembly



LINE SIZE (NPS)	MODEL NO.	LENGTH (INCHES)
3/4	CS0075-040-03CM-EA	3.44
1	CS010-040-03CM-EA	4.31
1 1/2	CS015-040-03CM-EA	6.57
2	CS020-040-03CM-EA	8.54
3	CS030-040-03CM-EA	12.53
4	CS040-040-03CM-EA	16.28
6	CS060-040-03CM-EA	24.64
8	CS080-040-03CM-EA	32.49
10	CS100-040-03CM-EA	40.49
12	CS120-STD-03CM-EA	48.29

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