## Straightener (Prover Accessories)



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TRG Straightening Vanes are installed in the upstream section of meter tubes to reduce flow disturbance preceding the orifice plate. Disturbance is often created by complex piping or valves which precede the orifice metering section. As flow passes through the vane bundle, the disturbance is straightened and smoothed to a normal flow pattern. Straightening Vanes are economical because their use often allows sufficient reduction of upstream meter tube length, so that a smaller building or enclosure is possible.

TRG Straightening Vanes are manufactured in a variety of sizes, in carbon steel and stainless steel. They are in accordance with recommendations of the A.G.A. and A.S.M.E., as well as numerous other societies and associations. Three standard vane bundles are shown in the document entitled "Standard
 Straightening Vane Bundles." Each type bundle is available in a Flange Model and a Line Model.

The tubes in each TRG vane bundle are welded at both ends at each point of tangency. Tube inlets and outlets are reamed to permit minimum pressure drop. Special spacer lugs on each vane bundle assure a perfect fit in the meter tube.
The Flange Model is held in the line by a flange ring which is clamped between two pipe line flanges.

## TRG Straightening Vane Uses (Stainless Steel)

Stainless steel vanes are particularly useful in meter tubes handling corrosive flows, in buried meter tubes, or in tubes having condensate problems. The standard material for these Daniel vanes is 304stainless steel.

## Standard Straightening Vane Bundles ( CROSS-SECTION END VIEW )



## Line Model Straightening Vane (Carbon Steel)

| Line | Bundle | Line | A | B | O.D. of | Wall | Number of | Number and | Approx. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Size | Type** | I.D. | $\begin{array}{\|c\|} \hline \begin{array}{c} \text { Length } \\ \text { of } \end{array} \\ \hline \end{array}$ | O.D. of | Tubes | Thickness | Tubes | Size | Weight |
|  |  |  | Vane? | Vane |  | of Tubes |  | of Screws |  |
| $\begin{gathered} \hline \text { inch } \\ \text { es } \end{gathered}$ |  | inches | inches | inches | inches | inches |  | inches | lbs. |
| 2 | 1 | 2.067 | 6 | $131 / 32$ | 21/32 | . 095 | 7 | 1--3/8 $\times 3 / 4$ | 2 |
|  | 1 | 1.939 | 6 | $17 / 8 *$ | 21/32 | . 095 | 7 | $1--3 / 8 \times 3 / 4$ | 2 |
| 3 | II | 3.068 | 8 | $27 / 8$ | 19/32 | . 049 | 19 | $1--3 / 8 \times 3 / 4$ | 3 |
|  | II | 2.900 | 8 | $23 / 4$ | 9/16 | . 049 | 19 | $1--3 / 8 \times 1$ | 3 |
| 4 | II | 4.026 | 10 | $331 / 32$ | 13/16 | . 049 | 19 | $1--3 / 8 \times 1$ | $61 / 2$ |
|  | III | 3.826 | 10 | $33 / 4$ | 3/4 | . 049 | 19 | 1--3/8 $\times 11 / 4$ | $61 / 2$ |
| 6 | III | 6.065 | 12 | $515 / 16$ | $13 / 16$ | . 049 | 19 | 1--1/2 $\times 11 / 4$ | $181 / 2$ |
|  | III | 5.761 | 12 | 5 5/8 | $11 / 8$ | . 049 | 19 | 1--1/2 $\times 11 / 4$ | $181 / 2$ |
| 8 | II | 8.071 | 16 | $729 / 32$ | $15 / 8$ | . 065 | 19 | 1--1/2 $\times 1$ | $341 / 2$ |
|  | II | 7.981 | 16 | 7 29/32 | $15 / 8$ | . 065 | 19 | 1--1/2 $\times 11 / 4$ | $341 / 2$ |
| 10 | III | 10.136 | 20 | 10 | 2 | . 083 | 19 | 1--1/2 $\times 11 / 4$ | $531 / 2$ |
|  | 11 | 10.020 | 20 | $93 / 4$ | 2 | . 083 | 19 | 1--1/2 $\times 11 / 4$ | $531 / 2$ |
| 12 | III | 12.090 | 24 | $117 / 8$ | $23 / 8$ | . 083 | 19 | $2--1 / 2 \times 11 / 2$ | 77 |
|  | III | 12.000 | 24 | $117 / 8$ | $23 / 8$ | . 083 | 19 | $2--1 / 2 \times 11 / 2$ | 77 |
|  | 11 | 11.938 | 24 | 119/16 | $23 / 8$ | . 083 | 19 | 2--1/2 $\times 11 / 4$ | 77 |
| 14 | III | 13.250 | 28 | $131 / 8$ | $25 / 8$ | . 083 | 19 | 2--1/2 $\times 11 / 2$ | 100 |
|  | II | 13.000 | 28 | $123 / 4$ | 2 5/8 | . 083 | 19 | 2--1/2 $\times 11 / 2$ | 100 |
| 16 | III | 15.250 | 32 | 15 | 3 | . 188 | 19 | $2--1 / 2 \times 13 / 4$ | 268 |
|  | 11 | 15.500 | 32 | $1419 / 32$ | 3 | . 188 | 19 | 2--1/2 $\times 11 / 2$ | 268 |
| 18 | 11 | 17.250 | 36 | $171 / 32$ | $31 / 2$ | . 188 | 19 | $2--1 / 2 \times 11 / 4$ | 378 |
| 20 | 11 | 19.250 | 40 | 18 27/32 | $37 / 8$ | . 188 | 19 | $2--1 / 2 \times 11 / 4$ | 468 |
| 24 | 11 | 23.250 | 48 | $231 / 8$ | $43 / 4$ | . 188 | 19 | $2--1 / 2 \times 11 / 4$ | 693 |
| 26 | III | 25.250 | 52 | 25 | 5 | . 188 | 19 | $2--1 / 2 \times 11 / 2$ | 796 |
| 30 | III | 29.250 | 60 | 28 3/4 | $53 / 4$ | . 188 | 19 | $2--1 / 2 \times 11 / 2$ | 1273 |
| 34 | II | 33.250 | 68 | 32 13/16 | $63 / 4$ | . 250 | 19 | 2--1/2 $\times 11 / 2$ | 1860 |
| 36 | III | 35.250 | 72 | 35 | 7 | . 188 | 19 | $2--1 / 2 \times 1$ 1/2 | 1559 |

