



**ODEN CORPORATION**

*Advanced Technology Liquid Filling, Dosing, and Blending Systems*

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## **CORIOLIS MASS FLOW METERS PROVIDE NET WEIGHT FILLING EXCELLENCE**

### **NET /MASS<sup>®</sup> Liquid Filling Systems A Quick Summary**

Oden introduced NET/MASS<sup>®</sup> liquid filling systems in 1998. Ranging from the smallest benchtop units to our largest in-line automatic machines, NET/MASS products are the world's first complete filler family for net weight filling using mass flow meters.

It is a curious fact of life that when you measure the filling dose of your volumetric filler you use a scale and weigh the product! If you stop to think how hard it would be to fill a graduated cylinder with many liquid products it may not be so curious that you use a scale, but from a technical viewpoint it is true that volumetric fillers are accurate only volumetrically. When the weight of a product per unit volume, termed its specific gravity, changes, the volumetric dose the filler produces doesn't change -- but the weight of the volumetric filling dose does. So, when you track the accuracy of your volumetric filler by weight you are trying to "maintain product weights" by adjusting a filler that has no idea of what is happening to the specific gravity of your product. When you stop to think about it this does not make a lot of sense. Because of this problem, NET/MASS does make sense.

If your liquid filling operations are like most, you are experiencing continuing pressure to reduce overfills, meet tighter regulatory standards, satisfy growing statistical process control expectations and still find a way to make your fillers operate across a growing span of liquid products and fill sizes. What real choices in technology are available to you to solve these conflicting requirements?

Until now, the only net weight in-line fillers available were weigh-cell based units designed for the pharmaceutical world. Aside from being incredibly expensive, these machines do not offer the ability to span a large variation in fill size or liquid characteristics and they are not typically very fast.

Scale based net weight rotary fillers are at the very high end of the cost and speed spectrum and so don't make sense for most operations, and in any event they lack the ability to match the range of flexibility and versatility found in Oden's state of the art volumetric in-line GEN4 PRO/FILL<sup>®</sup> machines.

NET/MASS is the clear (but not so obvious) answer to controlling fill weight problems caused by product changes during filling without sacrificing the flexibility of the machine to run virtually any type of liquid and the versatility of the machine to handle a vast range of containers. NET/MASS can also provide the rich statistical data yield being demanded of new filling equipment, and can offer the most sophisticated electronic controls and operator interfaces.

NET/MASS combines the ultramodern versatility and flexibility of Oden's extremely successful GEN4 PRO/FILL volumetric series with a net weight filling technology called the Coriolis mass flow meter. The Coriolis mass meter can measure the mass flow (as opposed to the volumetric flow) of virtually any liquid. The technology can span a fill weight range of at least 100:1. This means that you can run a 3 ounce product on one shift and a gallon fill the next without change parts of any kind. And, because the mass meter is able to track true liquid density, the filler produces net weight fills in real time - regardless of changes in product temperature, viscosity, pressure or specific gravity.

No matter what liquid filling products world you live in, household, personal care, industrial, cosmetic, pharmaceutical, petroleum, food, or "not-otherwise-classified", NET/MASS filling technology can open new capabilities for your manufacturing operations. We don't think we are exaggerating at all when we say that NET/ MASS introduced the next revolution in liquid filling.