

Material courtesy of Colson Caster Ltd.

A RECIPE FOR CASTERS

The food processing industry has specific requirements for casters and wheels

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The caster that supports equipment in the food processing industry can face a variety of challenging conditions. The same cart that travels down a smooth corridor may face uneven tiles in a kitchen. Temperatures can also shift from the heat of a bakery oven to the sudden chill of a flash freezer.

The selection of the right caster always requires an assessment of the load to be moved, the condition of floor surfaces, and the range of temperatures to be faced. As well, ergonomics, ease of maintenance, noise and composite materials are important things to consider.

The choices begin with the rated load of a caster, which is the maximum weight that may be imposed on it for manual operation. That weight includes the cart system or equipment and its total load to be transported.

The load per caster is calculated as the total gross load divided by the number of casters affixed to the cart or equipment, less the number of casters that may not be in contact with the ground while the cart is in motion over uneven floors. For example, minimum loads of 250 pounds per caster will suffice for most bakery cart racks. (This translates into a fully loaded cart of up to 1,000 pounds being pushed and pulled all day long.) On the other hand, dough-mixing equipment may involve loads in excess of 3,000 pounds in total, so each caster under that load should have the capacity of at least 900 pounds.

Having satisfied the load capacity per caster, what about the wheels? In general, the decisions here will include the choice between hard or soft treads

the carts and equipment on any floor. In contrast, other types of bearings will require some type of food grade lubrication.



The optimum choice of caster for the food equipment industry will also incorporate stainless steel frames with no lubricants such as hot- or low-temperature grease. This not only satisfies all types of uses, but specifically facilitates wash-down conditions and the caster's ability to function in harsh heat or flash freeze environments.

Wheel and bearing selections are intertwined. The better the choice of wheels, the more the ergonomic needs of the employees are fulfilled when pushing, pulling and manoeuvring food equipment, conveyors, carts and mobile tumbler mixers.

and the selection of a flat surface or crown tread profile.

Each option presents a benefit. Harder wheels will roll more easily, but tend to make more noise than those with softer treads. Crown tread profile wheels manoeuvre more easily than flat tread wheels. Newer composite materials offer the rolling ease of hard tread wheels, along with the quick, quiet, and clean properties of soft tread designs that require no maintenance.

Bearings must also be considered. The options here include sealed precision ball, plain delrin, or bronze bearings, roller bearings, and the food processing industry's need for stainless steel hardware. Precision sealed bearings are maintenance-free, minimize downtime, and offer lower resistance when starting and rolling

Other considerations in caster selection include the functionality of any wheel brake, swivel lock, foot operated directional lock, integrated tread guards and mounting options.

Castors and wheels used in the food industry should also be approved by the National Sanitation Foundation (NSF). Make sure that the caster being specified or used are indeed listed by the manufacturer with NSF International. (This information is available on line www.nsf.org, while manufacturers should offer information concerning specifications.)

Users should be cautious about buying imitation products or dealing with unlisted suppliers since the failure to comply with NSF standards can be the source of serious concerns to the food equipment maker, user or reseller.