

## WHEEL BEARINGS



**Precision Tapered Roller Bearings.** Ideal for heavy duty and power-towed caster applications because their tapered faces will handle any combination of downward and side forces. Used in various Hamilton swivel assemblies as well as in wheels.

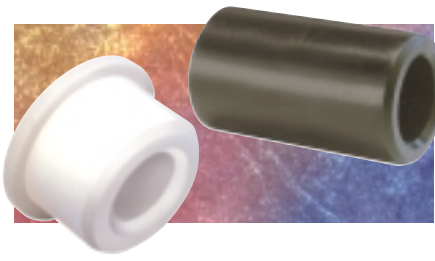
Two bearings are installed per wheel, one in each side of the hub, consisting of a cup (hardened and ground outer raceway) and cone (roller assembly). Spanner bushings are not employed since adjustment requires tightening caster legs against the bearing assembly. Tapered bearings extend overall hub length of the wheel itself by approximately  $\frac{1}{4}$ ". (Shown above with optional integral seal.)



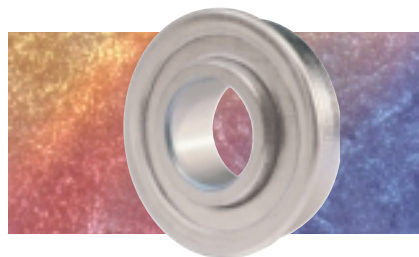
**Straight Roller Bearings.** Most popular anti-friction bearing for industrial equipment. Consists of a cage-type roller assembly, and an outer race that may be separate or integral. Hamilton most often uses hardened and ground steel roller bearings for maximum loads and life. (Note: plastic retaining washers or other components may be used unless we are advised of a high-heat application.)



**Oilless Sleeve Bearings.** A sleeve, usually of sintered iron or oil-impregnated bronze, is press-fit into the wheel bore. Lacks the ease of movement anti-friction bearings provide, but practical for light loads or where re-lubrication is a problem. (A light application of oil or graphite improves rollability and extends bearing life.)



**Plastic Bearings.** For environments detrimental to metal bearings, acetyl resin bearings offer chemical and corrosion resistance. Delrin® (registered DuPont trademark) is a standard offering in certain wheels, as either a sleeve or flange type bearing. Plastic bearings can be custom machined and installed in most other Hamilton Wheels on request. Note: flange type bearings extend actual hub length of wheel approximately  $\frac{3}{16}$ ".



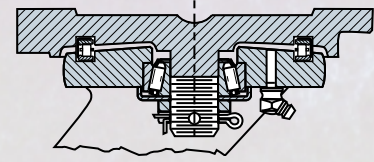
**Ball Bearings.** The standard ball bearings referred to in this catalog are the unground radial type, intended for light-to-medium duty service. On special order we can supply light or heavy-duty precision ball bearings for both radial and thrust loads. In configurations including flanged, sealed, square bores, extended inner raceways, and wide inner raceways with self-locking collars.

**Plain Bore.** The term applied to running machine-bored wheels directly on an axle; hence, the absence of a bearing. Suitable for light or seldom moved loads, where ease of starting and rolling is not too important or where price is a dominant factor. Except for roller bearing bores, Hamilton normally machines "plain bore" wheels  $\frac{1}{64}$ " oversize for good running fit. Closer tolerance machining available at extra cost.

**Special Bearings.** For most applications, the bearings discussed above work quite effectively. However, there is an occasional requirement for bearings with special features and characteristics.

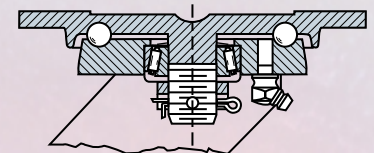
For example, alloy bronze bearings and ferrous alloy bearings are designed for high heat applications. Teflon® impregnated bronze bearings eliminate the need for lubrication and operate effectively in hostile environments. Roller clutch bearings permit a wheel to roll in only one direction and square bearings allow wheels to roll on a square shaft. Ask for a Product Engineer to help you with any unusual requirements.

## SWIVEL BEARINGS



### Precision Unit Load and Thrust Bearing.

Ideal choice for continuous or extra demanding service. A replaceable unit bearing carries the direct thrust (main load), while a precision tapered roller bearing counteracts component thrust. In addition, Hamilton's famous integrally forged kingpin—which can't bend, break or come apart—makes this a herculean combination. Series PSD (pg. 19).



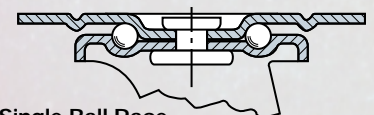
### Commercial Load and Precision Thrust Bearing.

A set of hardened and polished steel balls rotates in a machined raceway (flame hardening recommended for continuous service). Radial thrust is absorbed by a precision tapered roller bearing. To get the most out of this combination, Hamilton also gives you our unbeatable integrally forged kingpin. Series MD (pg. 17), MDD (pg. 18), EHD (pg. 20-21), CH (pg. 22), A (pg. 23), ES (pg. 24), FM (pg. 25), HS (pg. 26), WH (pg. 27), 7000 (pg. 38), 7200 (pg. 39), and 8000 (some models, pg. 42). Heat treated raceways standard on Series MD, MDD and ES, optional at extra cost on all others.



### Double Ball Race.

Two sets of hardened and polished steel balls rotate in machined or pressure-coined raceways. The upper raceway absorbs direct thrust, while the lower raceway surrounds the kingpin to absorb side forces (component thrust). Raceways are hardened as required by the load ratings, and kingpins may be of the bolt or rivet type. Series MS (pg. 28), GS (pg. 29), 52 (pg. 30-31), WW (pg. 32), HL (pg. 33), 300 (pg. 35), 5000 (pg. 40), 4000 (pg. 43), STA (pg. 44), STL (pg. 45), TG (pg. 46), and TX (pg. 47).



### Single Ball Race.

Most basic of possible swivel constructions, this economical and low-height caster depends on an accurately curved raceway to contact a single row of balls. Because of its minimal ability to withstand thrust against the kingpin, this construction is not recommended where shock exists, but is nevertheless found in the world's most popular "dolly" casters. Series 200 (pg. 34).