

### WHEEL BEARINGS

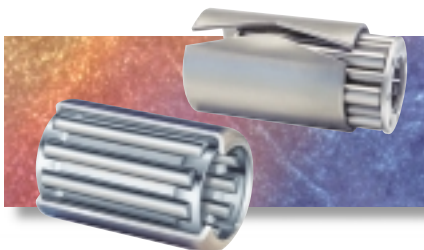


**Precision Tapered Roller Bearings.** Ideal for heavy duty and power-towed caster applications because their tapered faces will handle the most severe combination of downward and side forces. Used in various Hamilton swivel assemblies as well as in wheels.

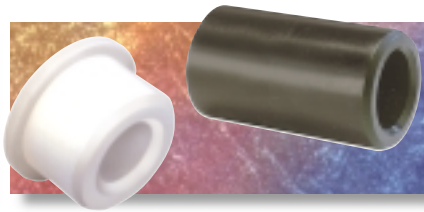
Two bearings are installed per wheel, one in each side of the hub, consisting of a cup (hardened and ground outer raceway) and cone (roller assembly). Tapered bearings extend overall hub length of the wheel itself by approximately  $\frac{1}{4}$ ". (Shown above with optional seal.)



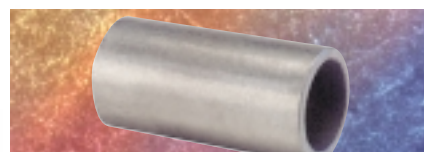
**Precision Ball Bearings.** Best suited when rollability is important and side thrust is not a critical factor. (Tapered bearings are best suited where side thrust is critical). The bearings are pre-lubricated and sealed at the factory so greasing is not required, reducing maintenance costs. Double-sealed precision ball bearings (shown on left) incorporate steel reinforced rubber seals securely fastened to a groove on the ring of both sides of the bearing. They now replace straight roller bearings in the majority of our casters using polyurethane tread and solid urethane wheels and can be provided optionally on many other wheel types. Shielded stainless steel ball bearings (shown on right) are used in our stainless steel and solid urethane wheels to prevent rust and improve rollability. On special order, we can supply additional sizes and configurations including flanged, sealed square bores, extended inner raceways, and wide inner raceways with self-locking collars.



**Straight Roller Bearings.** Traditional anti-friction bearing for industrial equipment. Consists of a cage-type roller assembly, and an outer race that may be separate or integral. (Note: plastic retaining washers or other components may be used unless we are advised of a high-heat application.)



**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  $\frac{3}{16}$ ".



**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.)



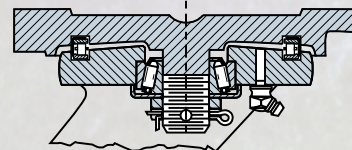
**Non-Precision Ball Bearings.** These ball bearings are the unground radial type, intended for only light-to-medium duty service.

**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.

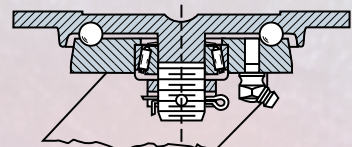
For example, alloy bronze bearings and ferrous alloy bearings are designed for high heat applications. Teflon® impregnated bronze bearings eliminate the need for lubrication and operate effectively in hostile environments. Roller clutch bearings permit a wheel to roll in only one direction and square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

### SWIVEL BEARINGS



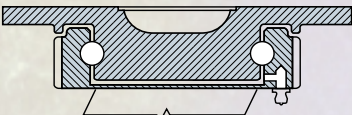
#### Precision Unit Load and Thrust Bearing.

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. 24).



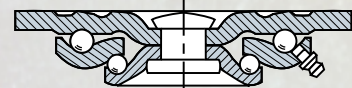
#### Commercial Load and Precision Thrust Bearing.

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. 22), MDD (pg. 23), EHD (pg. 26-27), CH (pg. 28), A (pg. 30), ES (pg. 31), FM (pg. 32), HS (pg. 33), WH (pg. 34), 7000 (pg. 48), 7200 (pg. 49), and 8000 (some models, pg. 52). Heat treated raceways standard on Series MD, MDD and ES, optional at extra cost on all others.



#### Kingpinless-Style Design

The top plate and inner raceway are formed from one piece, providing a superior raceway for shock conditions. The inner and outer raceways are CNC-machined and then induction hardened to ensure a uniform depth in hardness. A sealing cap welded to outer race assures protection from foreign material and keeps grease in the raceway. Series SEC (pg. 25) and Series EC (pgs. 36-37).



#### 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. 38), GS (pg. 39), 52 (pg. 40-41), WW (pg. 42), HL (pg. 43), 300 (pg. 45), 5000 (pg. 50), 4000 (pg. 53), STA (pg. 54), STL (pg. 55), TG (pg. 56), and TX (pg. 57).