

## Precision Ball Bearings (Deep Groove)

This is the mainstream configuration for mid-to-high-end commercial and industrial hand trucks. Their extremely low friction coefficient significantly reduces pushing and pulling fatigue under maximum payloads.

| Bearing Model | ID / Axle Size   | OD / Hub Bore      | Width            | Max Load Rating (Per Wheel) | Wheel Compatibility                 |
|---------------|------------------|--------------------|------------------|-----------------------------|-------------------------------------|
| 6204-2RS      | 20 mm            | 47 mm              | 14 mm            | 300 kg+                     | 10" Heavy-Duty Pneumatic / Solid PU |
| 6203-2RS      | 17 mm            | 40 mm              | 12 mm            | 200 kg                      | 8" - 10" Solid Rubber / TPR         |
| 1635-2RS      | 15.875 mm (5/8") | 34.925 mm (1-3/8") | 11.11 mm (7/16") | 150 kg                      | 10" Polyurethane / Pneumatic        |
| R12-2RS       | 19.05 mm (3/4")  | 41.275 mm (1-5/8") | 11.11 mm (7/16") | 250 kg                      | Heavy-Duty Contractor Wheels        |

## Flange Bearings & Bushings

Primarily utilized for light-duty garden carts where strict cost control is required, or in chemical/marine environments with specific anti-corrosion requirements.

| Bearing Type                | Standard ID  | Standard OD                | Core Feature        | Typical Application          | PM Engineering Notes                                                                                                                                                           |
|-----------------------------|--------------|----------------------------|---------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stamped Flange Ball Bearing | 16 mm (5/8") | 35 mm (1-3/8")             | Extended flange lip | Light-duty Garden Carts      | <b>Cost-Killer.</b> Pressed directly into two-piece stamped steel hubs without high-precision machining. Low cost but weak against lateral impact. Only for loads under 150kg. |
| Needle Roller Bearing       | 16mm / 20mm  | Varies (Fits tube sleeves) | High radial load    | Pallet Jacks / Heavy Castors | Higher load capacity than ball bearings but slightly higher rolling resistance. Mostly for pallet jacks requiring extreme static loads.                                        |
| POM / Nylon Bushing         | 16mm / 20mm  | Varies                     | 100% Rust-proof     | Marine / Chemical Carts      | <b>Maintenance-Free.</b> No metal balls, so they never rust. Perfect for beach use, fertilizer plants, or food facilities requiring frequent washdowns.                        |

|                              |              |        |                  |                              |                                                                                                                                                                                            |
|------------------------------|--------------|--------|------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Oilite Bronze Bushing</b> | 5/8" or 3/4" | Varies | Self-lubricating | Vintage or specialized carts | Relies on oil within the material's pores. Wear-resistant but has significantly higher starting resistance than ball bearings. Largely replaced by 2RS bearings in mainstream B2B exports. |
|------------------------------|--------------|--------|------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

