

Winkel Linear Motion— Components & Systems

Combined Bearings and Profiles

Heavy Duty Linear Motion

Lifting/Staging Gantries

Multi-Axis Systems

Telescoping Forks

Robot Tracks



P.T. International Corp. (PTI) stocks Winkel Heavy Duty Combined Bearings and Profiles to control Linear Motion. Complete Motorized Systems are also possible from production in Germany. The 3-Stage, Multi-Axis Gantry below was built, assembled and tested, in Germany, prior to packing for shipment to the customer in the US. Winkel Systems have been well known in Europe for over 30 years. Simply provide us with your concept or preliminary sketches, (including design parameters), and PTI can provide budgetary costs. For additional concepts and details of installed systems, please visit www.winkel-bearing.com.



Winkel 3-Stage
Gantry System



X- and Z-Axis Drive

Components - Combined Bearings & Profiles

P.T. International Corp. stocks a wide variety of Combined Bearings (with and without flange plates), with adjustable or fixed axial bearings, offering both re-lube provisions and maintenance free units. Stainless or standard bearing steel rollers and profiles are all stocked in Charlotte. For quiet, high speed applications, choose Vulkollan or Polyamide rollers. Profiles can be cut-to-length, or shipped in 6-meter lengths from Charlotte or shipped in 12-meter lengths from stock in Germany. Longer lengths are possible from production. For precision applications, profiles can be machined in one continuous pass allowing for precise linear movement. Profiles are shipped shot blasted, ready to install.

Optional coatings for Combined Bearings and Profiles for harsh environments. Drilled and tapped holes in profiles are also common custom requests for mounting.



Combined Radial and Axial Bearing



Jumbo Bearings for extreme loads

20 Sizes of Profiles in C-Channel and I-Beam Sections



Duplex Adjustable Units allow precise radial control



Vulkollan and Polyamide rollers for quiet, high speed operation

Combined Bearings with Flange Plates for quick mounting



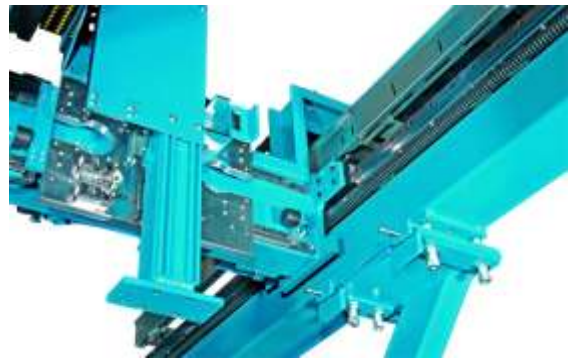
Spur Gears & Racks in Stock for converting rotational motion to linear control.

Systems - Key Features & Timeline

Linear Systems requiring repetitive linear movements, positioning, lifting, or rotational sequencing are all possible with Winkel kinetic designs. Winkel Systems utilize Combined Bearings, Profiles, Gears, Racks, Variable Frequency Drives and/or Gear Motors, and Interface Logic as required by our customers. System possibilities are endless. Reviewing Winkel systems on-line or documented in the catalog of applications may provide some helpful design concepts. PTI needs just basic parameters to get started such as loads, positioning frequency, kinetic requirements, and general dimensional guidelines. Your preliminary concepts are welcomed to further illustrate your need. Existing Winkel designs can often be utilized to provide the basic framework for a new system, saving significant engineering time. Full system set-up support is also available. Winkel designs are engineered for endurance. Full documentation is provided along with the operating manual. Several end-use customers operating with installed Winkel systems are shown on the back.

Key Features

- ◆ Customized Solutions for Single and Multi-Axis needs.
- ◆ Kinetic Systems are extremely durable, incorporate Steel Profiles and Combined Roller Bearings for Heavy Radial and Axial loads. Vulkollan wheels are available for quiet, high-speed operation. Ideal for process integration and repetitive movements.
- ◆ Rack & Pinion Actuation with SEW Gear Motors & Interface Ready.
- ◆ Thousands of Winkel Systems in use world wide.
- ◆ Virtually maintenance free and extremely durable.
- ◆ Full System Design by Winkel.



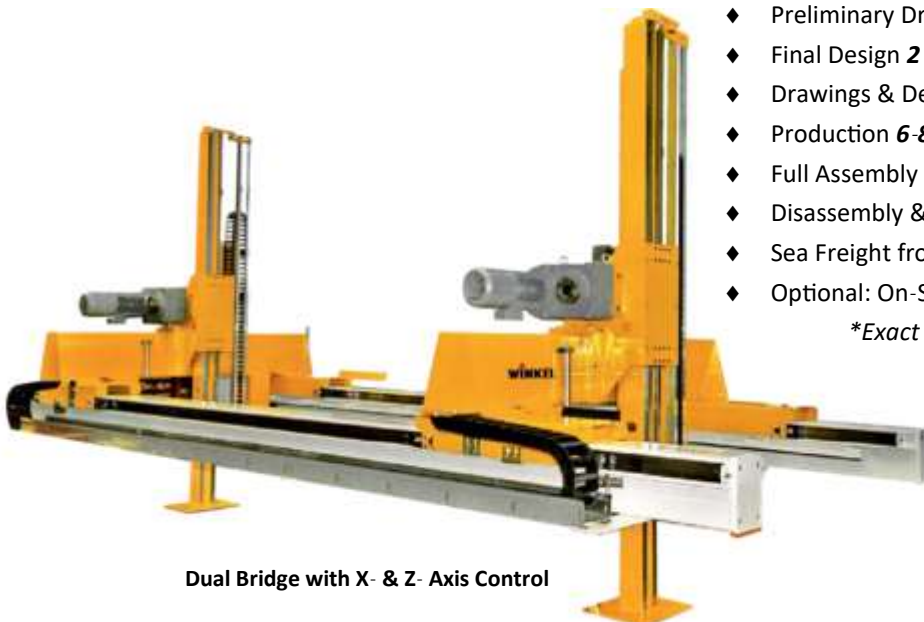
X-, Y- & Z-Axis Control

Timeline Example

Budget Quote:

- ◆ Gather basic parameters & sketches from customer **1-2 Weeks**
- Order Processing (Once Order is Approved):
- ◆ Preliminary Drawings **4-6 Weeks**
- ◆ Final Design **2 Weeks**
- ◆ Drawings & Design Approved by Customer
- ◆ Production **6-8 Weeks**
- ◆ Full Assembly & Test (Customer Visit Welcome) **2 Weeks**
- ◆ Disassembly & Pack for Sea Freight **1 Week**
- ◆ Sea Freight from Germany **4-5 Weeks**
- ◆ Optional: On-Site Installation

**Exact timeline depends on scope of project*



Dual Bridge with X- & Z- Axis Control



Customers



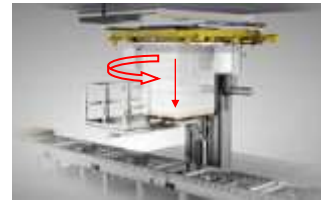
Fast Pick Handling Systems



Upper Level Packing & Staging



Packages Can Vary in Size



Shrink Wrapping Goods on Pallet



Conveying Goods to Shipping

Additional Systems & Concepts at www.winkel-bearing.com



Vertical Lift, Telescoping Bed



Multi-Axis Gantry



Pallet Stacker



Vertical Lift & Rotational Positioning



Horizontal X-Axis Positioning, Telescoping Y-Axis



Packing & Shrink Wrapping



PTI and Winkel Catalogs: 800+ pages of **Metric** & Linear Motion PT Products from stock