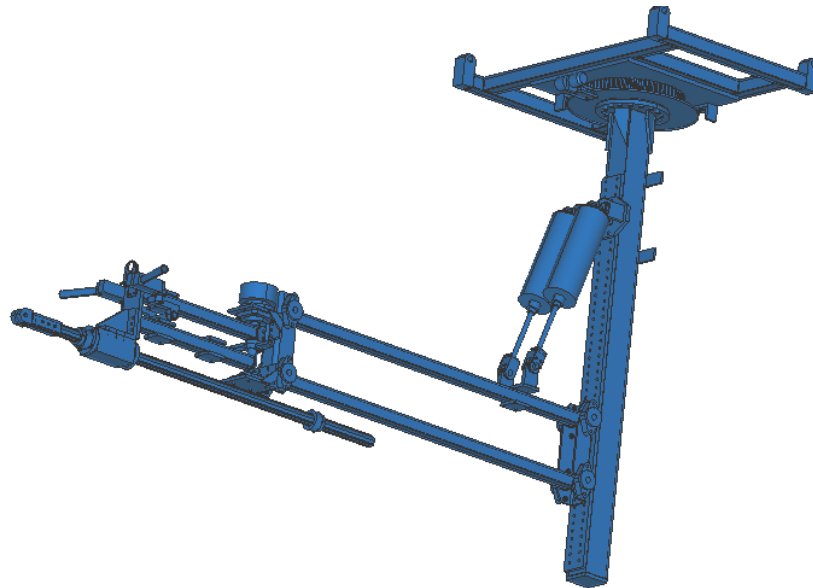
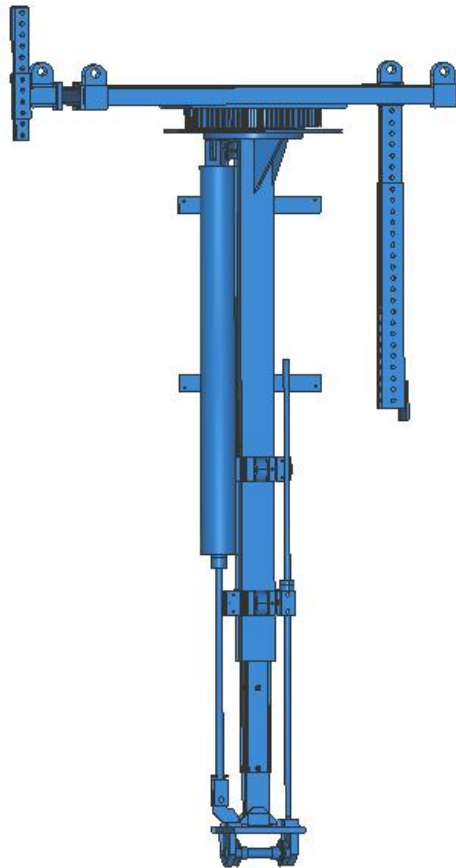


Guardian Mfg. Corporation

Articulating Arms, Lifts, Manipulators



Since
1946

Ergonomics

- Guardian has a complete range of articulating arm manipulators and lift assist devices to meet your every need.
- Articulating arms and/or lift assist devices are ideal solutions for challenging applications.

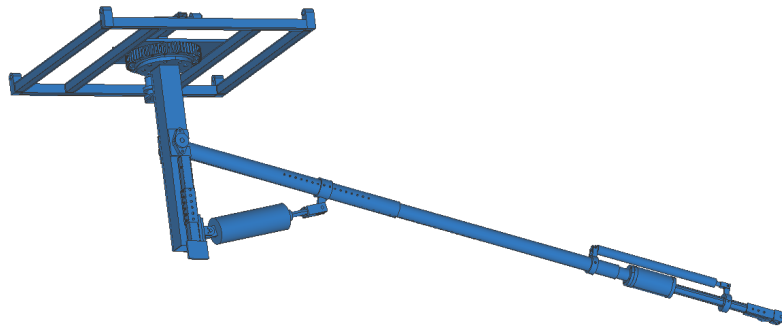
12193 Levan Road, Livonia, Michigan 48150

www.guardman.com

Design Features

Guardian Manufacturing Corporation has been designing and building industrial assist fixtures for over 61 years. We are constantly improving our product for a more precise way to move your products while increasing your employee's production and safety.

Industrial lift assist are used to move and or position items. Common assist arms and end effectors utilize hooks, pneumatic clamping, various magnets, vacuum cups or suction pads and grips.



Ergo assist devices can move and place your product in a desired location, raise and lower the product, material, parts and or components for loading and work positioning.

Some assist devices contain balancers to hold the fixture in a predetermined position to minimize operator effort during the use of the tool.

Our assist devices are capable of handling loads with different weights and sizes on the same assembly line.

- Light Duty Arms usually use compressed air and incorporate simple mechanical devices.
- Heavy Duty Arms can use hydraulics and other means for lifting.
- Air Tractors to return the articulating arm automatically when cycle is finished.
- Telescoping ends or booms for special applications.
- Disk brakes & air brakes to hold position.
- Ease of movement and rotation.

Guardian Mfg. Corporation

3D Modeling,, Concept Design, Reverse Engineering, Tool Design



Design Capabilities

We design and build our tools/fixtures in-house to ensure low cost, high maintainability and reliability. Our engineering and design teams use the latest technology to design our fixtures. Guardian Manufacturing has the knowledge and capabilities in the following design applications:

- Prototype & Production Tool Design & Build
- The Latest CAD Technology
- Unigraphics (NX4)
- CATIA (V5 & V4)
- AutoCAD 2008, 2006, 2004 and Mechanical Desktop

Mounting Capabilities

Articulating arms may be mounted on a slide or stationary pedestal that is secured/lagged to the floor, mounted to a fixed beam or mounted on an overhead rail/trolley allowing it to track with the assembly line.

The arm is mounted to suit the operation and plant station size & layout for the job.

**The following are just a few examples of arms Guardian Manufacturing Corporation has designed & built.
We can design and build an arm for virtually any application**

Guardian Articulating Arms

- Sunroof Load
- Seat Loads:
 - a. Front Seat, Driver & Passenger
 - b. Rear Seat
 - c. Bucket or Bench Seats
- Engine Transfer
- Instrument Panel Load
- Battery Load
- Console Load
- Steering Column Secure
- Doors On/Off
- Exhaust Load
- Tire Load
- Spring Compression
- Bumper Load and Secure

**Current Assembly Plants With
Guardian Articulating Arms,
Torque Tubes, Ergonomic Lift
Devices**

- Spring Hill Assembly, Tennessee
- St. Louis North Assembly, Missouri
- St. Louis South Assembly, Missouri
- Warren Truck Assembly Plant, Michigan
- Saltillo Assembly, Mexico
- Windsor Assembly, Canada
- Newark Assembly, Delaware
- Belvidere Assembly, Illinois
- Toledo North Assembly, Ohio
- Stickney Assembly, Ohio
- Toluca Assembly, Mexico
- Brampton, Canada
- Jefferson North Assembly, Michigan
- Nissan Canton Assembly, Mississippi
- Nissan Smyrna, Tennessee
- Toyota Cambridge Ontario, Canada

**Current Customer Base Utilizing
Guardian Articulating Arms**

General Motors Corporation
Chrysler LLC
Decoma
Johnson Controls Inc.
Toyota
Nissan

**Current Customer Base Utilizing
Guardian Tooling & Fixtures**

General Motors Corporation
Chrysler LLC
Ford Motor Company
Nissan Motors
Toyota
JCI
Decoma
Scotsman Inc.
Auto Alliance
Freightliner