

SCREW JACKS APPLICATIONS

Packaged Solutions, Countless Applications

Duff-Norton mechanical actuators, screw jacks and power transmission products are the best packaged solution for your linear actuation needs. With capacities ranging from 500 lb. to 250 tons, no one offers a broader range of solutions for your application needs. This extensive selection is designed to meet the requirements of the most challenging applications. Benefiting from the latest in advanced design techniques, manufacturing methods, and over 100 years experience, Duff-Norton Mechanical Actuators last longer and run smoother with little maintenance and no headaches. If you have a linear actuation application, Duff-Norton has the packaged solution for you.

Duff-Norton Customer Service Programs

Duff-Norton gives you the benefit of over a century of customer service. From stocking distributor programs, to expert application engineering, Duff-Norton is committed to providing you with the right solution every time. Our staff works hard to make sure you always get the product you need, when you need it.

The answers to all of your questions are always just a phone call away. Our Application Engineers and Customer Service Reps are ready to answer any question you may have about price, volume orders, availability or delivery. Additionally, there is always a District Sales Manager near you, ready to discuss your application and any special requirements you may have. Duff-Norton's Application Engineers will apply their years of experience to determine the right product to fit your needs, or to design a complete system to fulfill all of your requirements. This saves you time and money in the design, specification, procurement and installation of system components. Also, please visit our website and design your system online with our 3-D modeling software.

Whether you need a packaged solution, or one that has been custom designed to fit your specifications, Duff-Norton offers the expertise that comes from working closely with our worldwide customers. Combined with this history is a commitment to technology. We strive to constantly improve our manufacturing methods and stay ahead of industry trends in both our products and our philosophies. This comprehensive approach to customer service makes Duff-Norton actuators an exceptional value; we are always aware that we must provide the right solution every time.

Next time you have a linear motion need, call Duff-Norton first. Our Customer Service staff will take it from there!



SCREW JACK APPLICATIONS



Plastics Machinery

CHALLENGE: Raise and lower extrusion carriages while manufacturing large rolls of thin plastic film. The lifting screw jacks must withstand high dynamic shock and vibration in the extended position while holding a carriage table in various positions within tolerances of a thousandths of an inch.

SOLUTION: Four custom engineered 25 ton screw jacks were used on each corner of the extrusion table to handle the rigors of this application. The jacks were supplied with extremely tight tolerance lifting screws and special bottom bushings for handling side loads shock and vibration.

Duff-Norton products used in this application:

- 25 ton Mechanical Actuators
- Motor with extended shaft
- Handwheel



Beverage Bottling System

CHALLENGE: Meeting the demand for a variety of bottle sizes to fit the vast array of packaged soft drinks and bottled waters and the ability to quickly change from one package size to another. The conveying system needed precise adjustments in height to resolve the various size bottles.

SOLUTION: Linking a set of 4, ¼ ton screw jack actuators provided the mechanism needed to allow the operator to adjust for different bottle heights. A simple design that can be quickly adjusted by the operator based upon a single input.

Duff-Norton products used in this application:

- ¼ ton Screw Jacks
- Food Grade Grease

Duff-Norton products and systems can be found in industries including aluminum, steel, agriculture, construction, communications, energy, food & beverage and industrial machinery.

- Large satellite dish antenna movement (x, y, z axis)
- Workplace table adjustments
- Drive wheel adjustment to change conveyor flow stops
- Conveyor lifts, diverters
- Knife blade filter drum skimmer
- Furnace combustion gun adjustment
- Mechanical clutch linkage
- Vacuum furnace lid lifters
- Roll lifts
- Mandrel pushers
- Sluice gates
- Low temperature valve operators
- Unwind stands
- Calender stacks
- High voltage switch gear die set tables
- Electron beam adjustments
- Horizontal presses
- Saw blade tension
- Stage lifts for scenery changes
- Robotics manipulator
- Disc refiner blade adjustment



Aircraft Assembly

CHALLENGE: Lift and position aircraft structural sections which need to be aligned accurately and held in place using pre-drilled holes and Cleco fasteners on the surface of the fuselage frame. Due to the size of the structures there was concern about alignment issues.

SOLUTION: A complete system combining four 10 ton screw jacks delivered highly accurate positioning. An electronic remote control pendant added control flexibility and accurate positioning of each jack. Redundant travel position sensors were used to provide absolute position feedback. The screw jack are controlled within ± 0.005 inches and can be moved in pairs for quick alignment.

Duff-Norton Products:

- 10 ton Screw Jacks
- Bidirectional Drives
- PLC Controller
- Remote Control Pendant w/Graphical User interface



Paper Production

CHALLENGE: Maintaining proper belt tension on the paper roll to ensure production quality with a steering system to ensure the paper is always centered on the roll at a very high speed.

SOLUTION: A servo driven 5 ton screw jack assembly with an embedded load cell for belt tensioning and a Servo Driven 5 ton actuator assembly steering package to center the paper product on machine rollers. The key to success was the ability to provide rapid adjustments in both tensioning and steering to achieve high quality paper.

Duff-Norton Products:

- 5 ton Ball Screw Jacks
- Servo Drive with Load Cell
- 1/2 ton Machine Screw Jacks

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| <ul style="list-style-type: none"> ■ Blast door locks ■ Headbox unit for paper machine ■ Tooling machine bed adjustment ■ Textile, steel, rubber, plastics skewing roll adjustments ■ Pinch valve control actuation, gate and ball valve ■ Tension testing machines ■ Packaging machinery ■ Diagnostic scanners ■ Work platforms ■ Injection molding machines-head adjustment ■ Mechanical brake linkage adjustment ■ Curing processes-constant speed ■ Feed rate movement ■ Air dampers | <ul style="list-style-type: none"> ■ Sheet slitter ■ Angle tilt adjustments with double clevis models ■ Remote contamination lifts ■ Precision closures ■ Solar panel actuation ■ Tension adjustment of cables ■ Welding positioners ■ Centerless grinder positioner ■ Locking indexing pins ■ Batch control ■ Palletizer indexing ■ Oven lifters ■ Door openers |
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