

AG TERMINAL MAINTENANCE, PRODUCT & SERVICE SOLUTIONS

**BUCKETS, BUCKET
ELEVATOR BELTS
& ACCESSORIES**



CABLE & RIGGING



MAINTENANCE



**ENGINEERED
FALL
PROTECTION**



CHAIN



**PROGRESSIONER
SYSTEMS**



**LUBE &
LUBE
SYSTEMS**



**SPECIALTY
EQUIPMENT**



**WELDING AND
FABRICATION**



SYNTHETICS



SOCKETING



**SAFETY
TRAINING**



AG TERMINAL MAINTENANCE, PRODUCT & SERVICE SOLUTIONS

Northern Strands offers complete AG terminal equipment, repair and service. We are an authorized agent for replacement parts for Railcar Progressioners manufactured by Nordstrong. Northern Strands is centrally located and will provide parts and service on a 24/7/365 basis.

In addition to progressioner service, we offer complete AG Terminal maintenance, service, repair and training. Services include Engineered Fall Protection, Wire Rope & Rigging, Custom Machining/Fabrication, Specialty Equipment, Safety Training, Lifting Device Certification, Trackmobile rental and more. Northern Strands has recently outfitted a Mobile Railcar

Progressioner Servicing Unit custom suited to service a multitude of railcar loadout facility maintenance requirements. Northern Strands has the technical knowledge and experience to trouble shoot any field issues. We stock car progressioner parts and accessories at our warehouse in Saskatoon, Saskatchewan. We are centrally located and will provide parts and service on a 24/7/365 basis for Nordstrong Progressioner systems.

We offer turn key service. Including design, engineer, supply and install complete railcar packages. This includes expansions or new projects from start to finish.

MOBILE RAILCAR PROGRESSIONER SERVICING UNIT

Mobile Railcar Progressioner Servicing Unit

The Northern Strands Group of Companies has recently outfitted a Mobile Railcar Progressioner Servicing Unit custom suited to service a multitude of railcar loadout facility maintenance requirements. This all-terrain unit is built off of a Yanmar C25R Track Machine and carries a service deck outfitted with a rope greasing system, socketing vice, heavy duty winch, hoisting davit, service greasing system, and welder/generator/air compressor combination unit to

accommodate a variety of loadout servicing needs including rope greasing, component replacements, general system inspections/servicing, rope tensioning, welding repairs, and more. The Mobile Railcar Progressioner Servicing Unit comes fully site compliant with positive air shutoff, fire extinguisher, beacon, lighting, and ROPS.



LIFTING DEVICE CERTIFICATION

- Lifting device inspection, testing and certification on gin poles, chicago booms, monorails, bridge cranes, and other hoisting devices
- Validate working load limits on existing equipment
- Recertification of equipment



TRACKMOBILE RENTAL

- Rent a Trackmobile to keep you on schedule in event of major breakdown
- Fast transport on short notice



ENGINEERED FALL PROTECTION

Design, supply, and installation of custom engineered fall protection systems. Including:

- High tension lines
- Portable travel restraints
- Rigid rail systems
- Fixed ladders
- Bin Safe System - Grain bin Fall protection
- Guardrail



SOCKETING

- Supply of sockets, resin and putty
- Socketing services
- Socketing training



RAILCAR PROGRESSIONERS

RUGGED, ADAPTABLE, EASY TO USE

Designed to make the movement of railcars easier and more efficient, the **NORDSTRONG** Railcar Progressioner is a double drum traction type unit that allows a single operator to handle the loading, unloading and movement of cars.

The unit features a continuous run of cable which moves railcars in both directions. Once railcars are hooked to the cable, the unit can be operated from a remote location.

Main Frame

All railcar progressioner components mount on a single rigid steel frame, which bolts directly to the site's foundation.

Counterweight Assembly

The counterweight assembly automatically compensates for cable stretch by keeping tension on the main cable. Tension sheaves are mounted on anti-friction bearings and housed in heavy duty frames. The assembly includes a solid steel counterweight and a self-contained mast. The complete system mounts directly on top of the railcar progressioner frame.

Safety Guards

The railcar progressioner is completely enclosed by a protective cage. Expanded metal panels and lockable doors provide complete visual access to all components for inspection and maintenance.

Drive

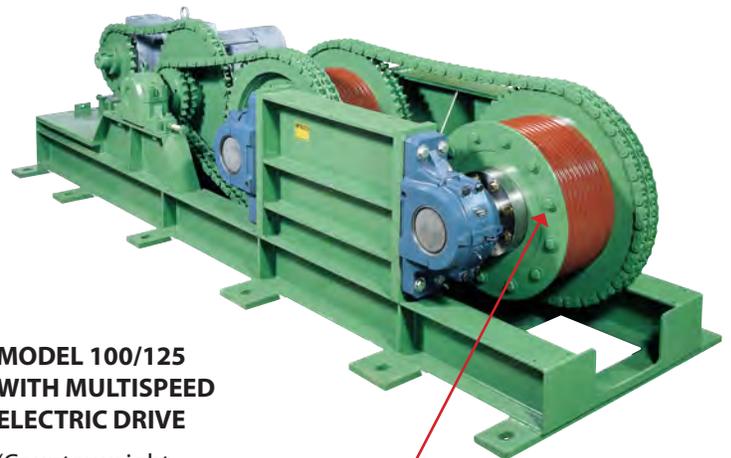
The Railcar Progressioner's main drive is a rugged parallel-helical gear brake motor. A hydraulically driven gear reducer is available as an option. Both come factory-filled with lubrication suitable for year-round use in all climates. Final reduction of the main drive train is through a high strength roller chain and sprocket combination. Drive sprockets have hardened teeth, are piloted and bolt directly to the drums.



DRIVE



MODEL 100/125 WITH OTC DRIVE, 45,000 LBS. LINE PULL



MODEL 100/125 WITH MULTISPEED ELECTRIC DRIVE

(Counterweight assembly and guards not shown)

DRUM ASSEMBLY

Drum Assembly

The grooved drums are machined from solid steel blanks, which are shrink-fitted on high strength alloy steel shafts. The shafts are mounted in oversized spherical roller bearing pillow blocks.

Travel Limit Switch

This switch prevents over-travel of cable connections.

Controls

Three basic control systems are available for our Railcar Progressioners. All three include a MCP main breaker, a reversing starter assembly and a remote push button pendant. A warning horn to signal the railcar progressioner is in use, and a limit switch to prevent over-travel of the cable connections is included. All main components have been factory assembled and placed within a dust-tight enclosure. Remote radio control is available as an option on all units. In addition, controls can be modified to suit specific needs (such as additional push button stations, interlocks with other equipment, etc.) All controls are available in common North American and International voltages.

Single Speed Electric Control

The components listed above come with a control transformer, relays, and required terminals to complete field connections.

Electric with Direct Torque Control (OTC*)

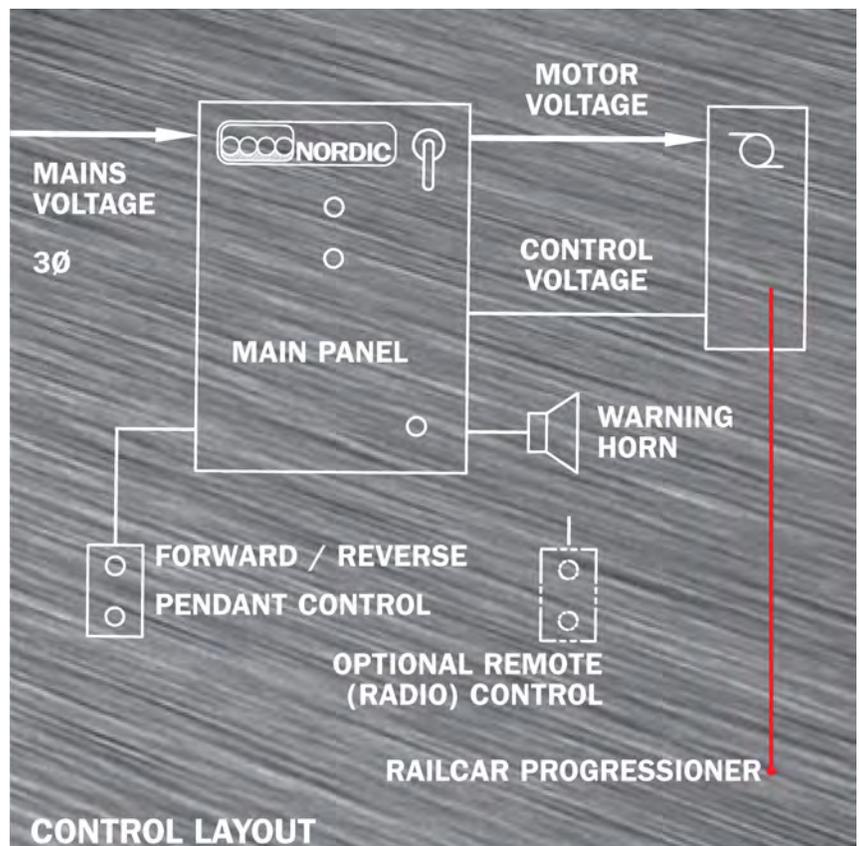
A OTC unit is provided, which limits the output torque of the drive to the maximum design line pull of the railcar progressioner. The unit also allows for smoother stopping and starting, and multiple-speed operations.

Hydraulic/Electric

Includes a hydraulic power unit (the reservoir comes complete with electric motor, pump, valving, and accessories), and a hydraulic motor which attaches to the railcar progressioner's gear reducer. Its operating features are similar to the OTC unit.

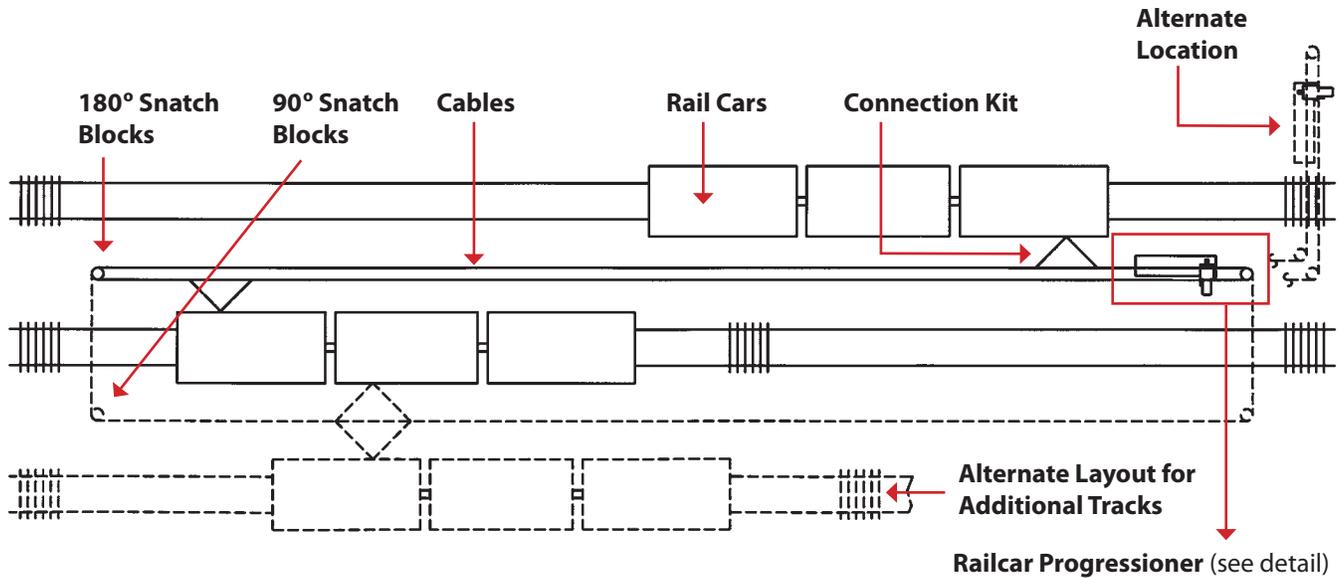


DRUM ASSEMBLY



CONTROLS

PROGRESSIONER LAYOUT



Our Railcar Progressioner Systems can be adapted to a variety of track arrangements. Up to four tracks can be handled by one progressioner. Contact NORDSTRONG to discuss your requirements. A typical layout for one or two tracks is shown here, with an alternate layout for additional tracks.

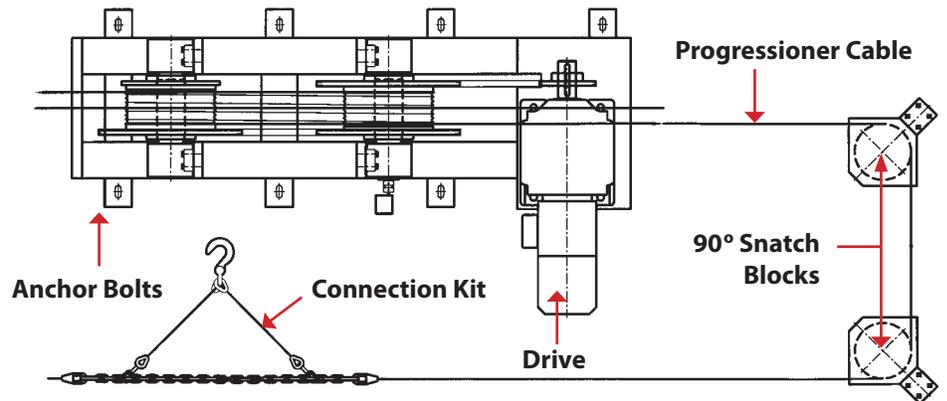
Cable and Connections

Nordstrong supplies die-drawn, compacted strand cables, which offer higher strength and improved flexibility. Complete cable connection kits, featuring a variety of different sling arrangements, are available for joining the cable ends and hooking to the railcars. Each type of sling is supplied with a break-away link to protect the main cable and railcar progressioner from accidental overloads.

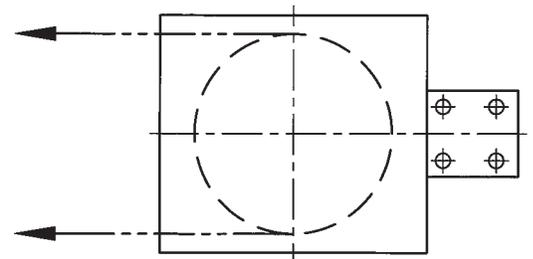
Snatch Blocks

To make possible a wide range of railcar progressioner and track configurations, both 90° and 180° models are available. Both feature steel sheaves and anti-friction bearings housed in substantial frames.

RAILCAR PROGRESSIONER DETAIL



90° SNATCH BLOCK



180° SNATCH BLOCK

Snatch Block (Single)

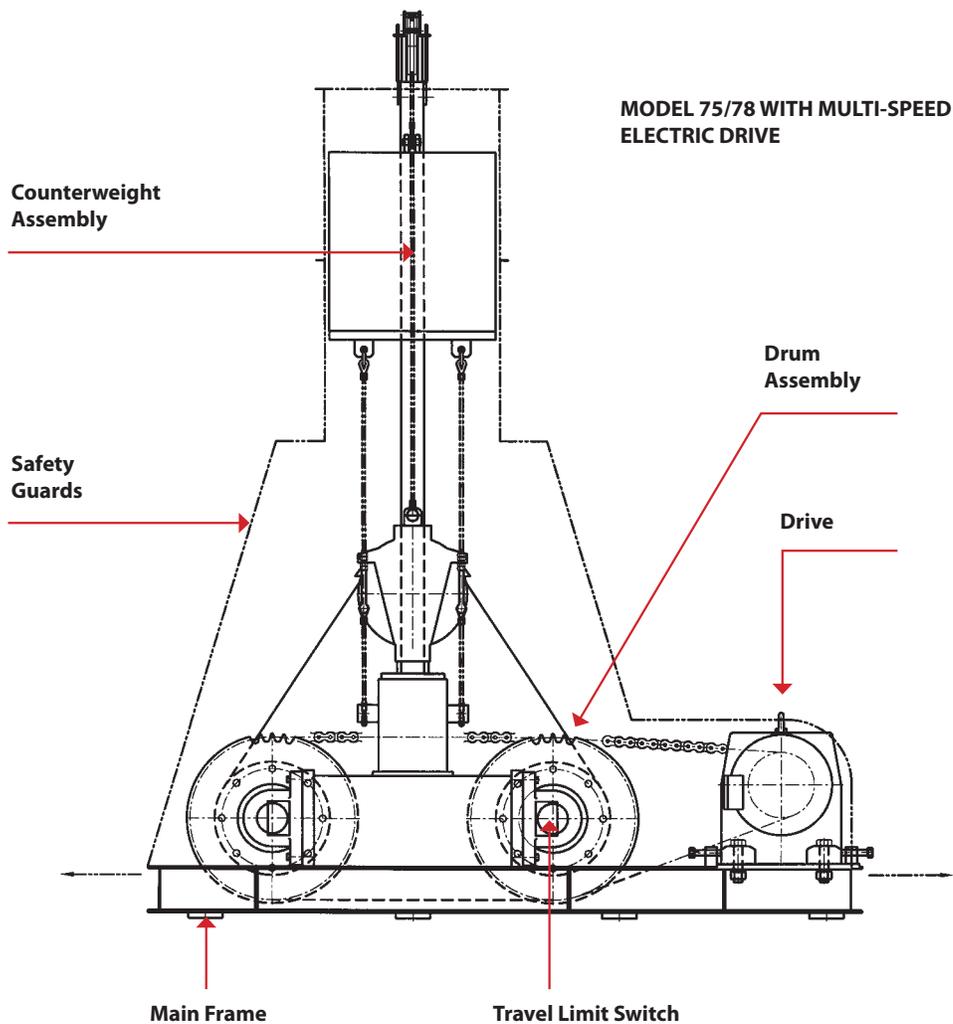
Model	Drive	Cable Dia.	Line Pull**	Line Speed***	Weight
75/78 Single Speed Electric	10 HP (7.5 kw)	7/8" (22 mm)	20,000 lbs starting (90 kN) 10,000 lbs running (45 kN)	33 fpm (.18 m/s)	10,000 lbs (4500 kg)
75/78 Multi-Speed Electric	25 HP-DT* (17 kw)	7/8" (22 mm)	23,000 lbs (100 kN)	Multiple	10,000 lbs (4500 kg)
75/78 Multi-Speed Hydraulic	30 HP-HYD (22 kw)	7/8" (22 mm)	23,000 lbs (100 kN)	Multiple	12,000 lbs (5400 kg)
78/112 Multi-Speed Electric	40 HP-OTC* (30 kw)	11/8" (29 mm)	37,000 lbs (160 kN)	Multiple	13,000 lbs (5900 kg)
78/112 Multi-Speed Hydraulic	50 HP-HYD (37 kw)	11/8" (29 mm)	37,000 lbs (160 kN)	Multiple	15,000 lbs (6800 kg)
100/125 Multi-Speed Electric	50 HP-OTC* (37 kw)	11/4" (32 mm)	45,000 lbs (200 kN)	Multiple	19,000 lbs (8600 kg)
100/125 Multi-Speed Hydraulic	60 HP-HYD (45 kw)	11/4" (32 mm)	45,000 lbs (200 kN)	Multiple	21,000 lbs (9500 kg)

Other models available - contact Nordstrong for information.

* Direct Torque Control (DTC) technology is patented by ABB.

** Line Pulls represent a minimum factor of safety of 4 on the main cable. based on use of die-drawn, compacted strand wire rope.

*** Multiple speed units are set at 25 fpm and 35 tpm (.13 m/s and .18 m/s) at maximum line pull. A high speed of 70 fpm (.36 m/s) is for moving the cable when not hooked to railcars.



PROGRESSIONER PARTS



- Pull cables
- Anticrash cables
- Counterweight cables
- Connection kit chain and accessories.
- SEW Eurodrive gearboxes, motors, brake assemblies and components
- Rotary limit switches
- Jack shaft assemblies
- Drums
- Refurbished parts and reconditioned machines
- 160, 160-2, and 200 riv roller chain for progressioner drive

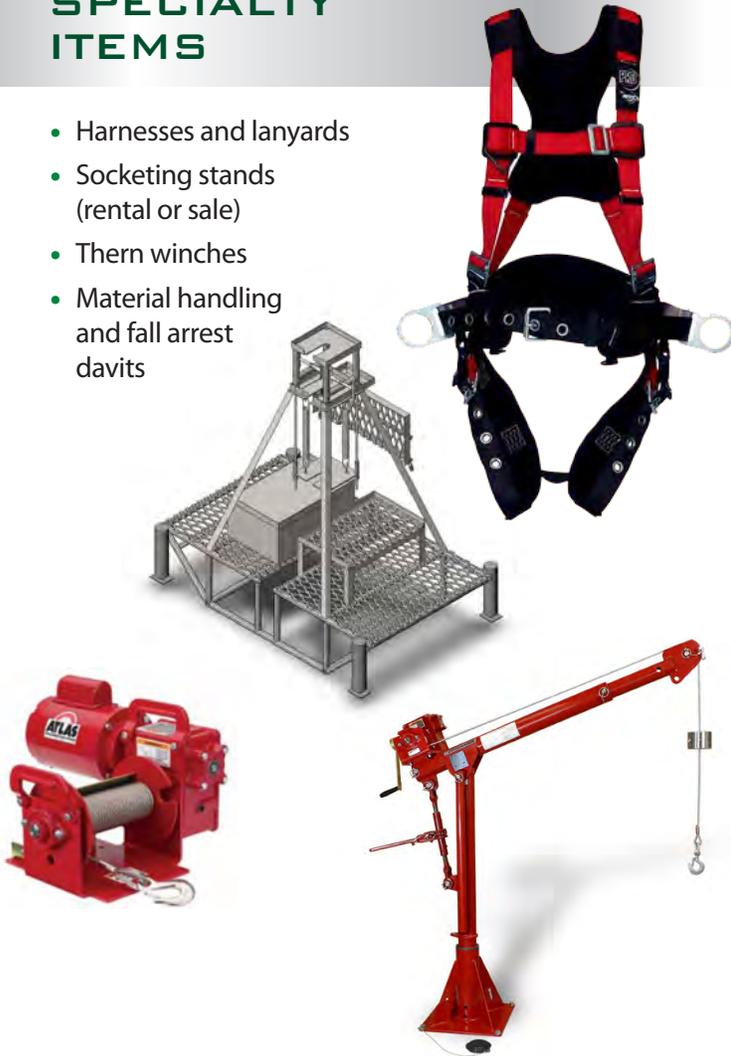
CABLE

- Progressioner and winch compact cable
- Common AG terminal cable constructions
 - 6/36 IWRC OL IPS
 - Compacted 6/26 or 6/31 IWRC OL
- Sizes - 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-1/2"
- Assemblies - Custom built to customers needs
- Installation



SPECIALTY ITEMS

- Harnesses and lanyards
- Socketing stands (rental or sale)
- Thern winches
- Material handling and fall arrest davits



CHAIN

- Type (Grade)
 - 80 and 100
- Size 1/2", 5/8", 3/4", 7/8"
- Other grades and sizes available
- Rings
- Swivels



SYNTHETICS

- 3 Strand (general purpose) 3/16" to 1"
- Double Braid 3/16" to 2"
- Nylon 3 strand
- Natural fiber 3 strand
- High strength 12 strand Dyneema 1/8" to 1-1/4"



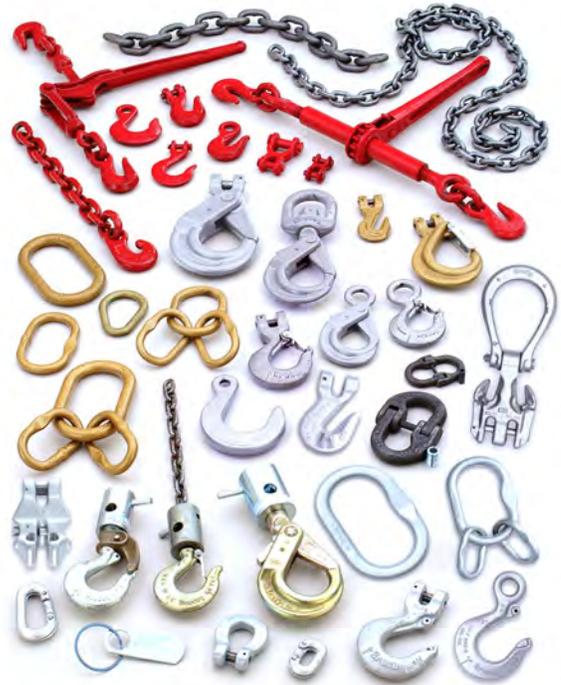
RIGGING

LUBE:

- Lube Products (Grease, Oil)
- On site lubing service
- Lubing systems



- Clamps
- Hooks
- Hammer links
- Snatch blocks



MATERIAL HANDLING

- Chain hoists and lever tools
- Winches
- Monorails



BUCKETS, BUCKET ELEVATOR BELTS & ACCESSORIES

All bucket styles available. Popular types include: Tiger Tuff, HD Max and CC Max. We have superior buckets that can replace competitor products. Our CC Max style cup is a direct replacement for competitor CC-HD product lines.

- Longest lasting buckets in industry
- Complete packages. Buckets, belting splices & bolts all in one order
- Direct shipments to your facility
- Sold in US or CND dollars

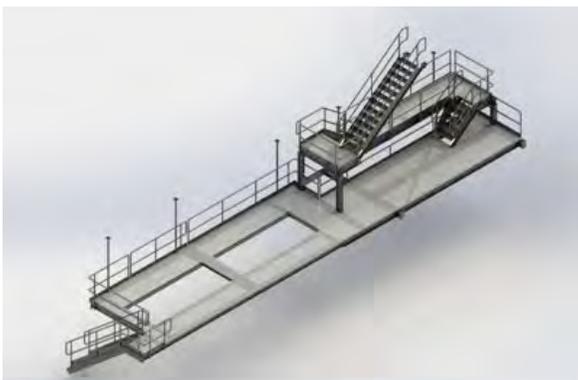


REPAIR, FABRICATION & ENGINEERING

We are a CWB certified weld shop. We have achieved and maintained ISO 9001 Quality Management, 14001 Environmental Management & 45001 Health & Safety Management Certifications. ISO benefits our customers by ensuring our products and services are safe, reliable and meet standards.

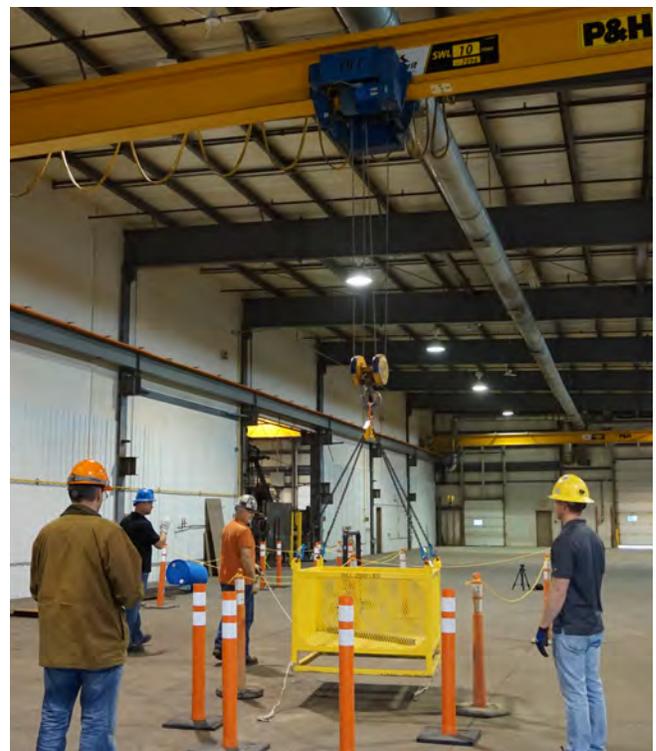
We offer the following shop and field fabrication capabilities:

- Machining
- Custom Manufacturing
- Welding
- Engineering
- Inspection



TRAINING

- Rigging
- Socketing
- Fall Arrest
- Overhead Crane



NORTHERN STRANDS

SASKATOON

3235 MILLAR AVENUE
SASKATOON, SK S7K 5Y3
PHONE: (306) 242-7073
FAX: (306) 934-2920

REGINA

125 HENDERSON DRIVE
REGINA, SK S4N 5W4
PHONE: (306) 352-7073
FAX: (306) 352-9112

TOLL FREE: 1-800-242-7073

Email for specific Railcar Progressioner related services and equipment:
cprogressioner@northernstrands.com

Email for all other AG Terminal related services and equipment:
sales@northernstrands.com

www.northernstrands.com