



Series 900 Scissor Bolter

First introduced in 1984, the MacLean Scissor Bolter has evolved into a complete ground support system for underground hard rock mines. The benefits of safety, productivity, versatility and quality of installation combine to provide the ideal tool for the mine development cycle and rehabilitation operations.

Features

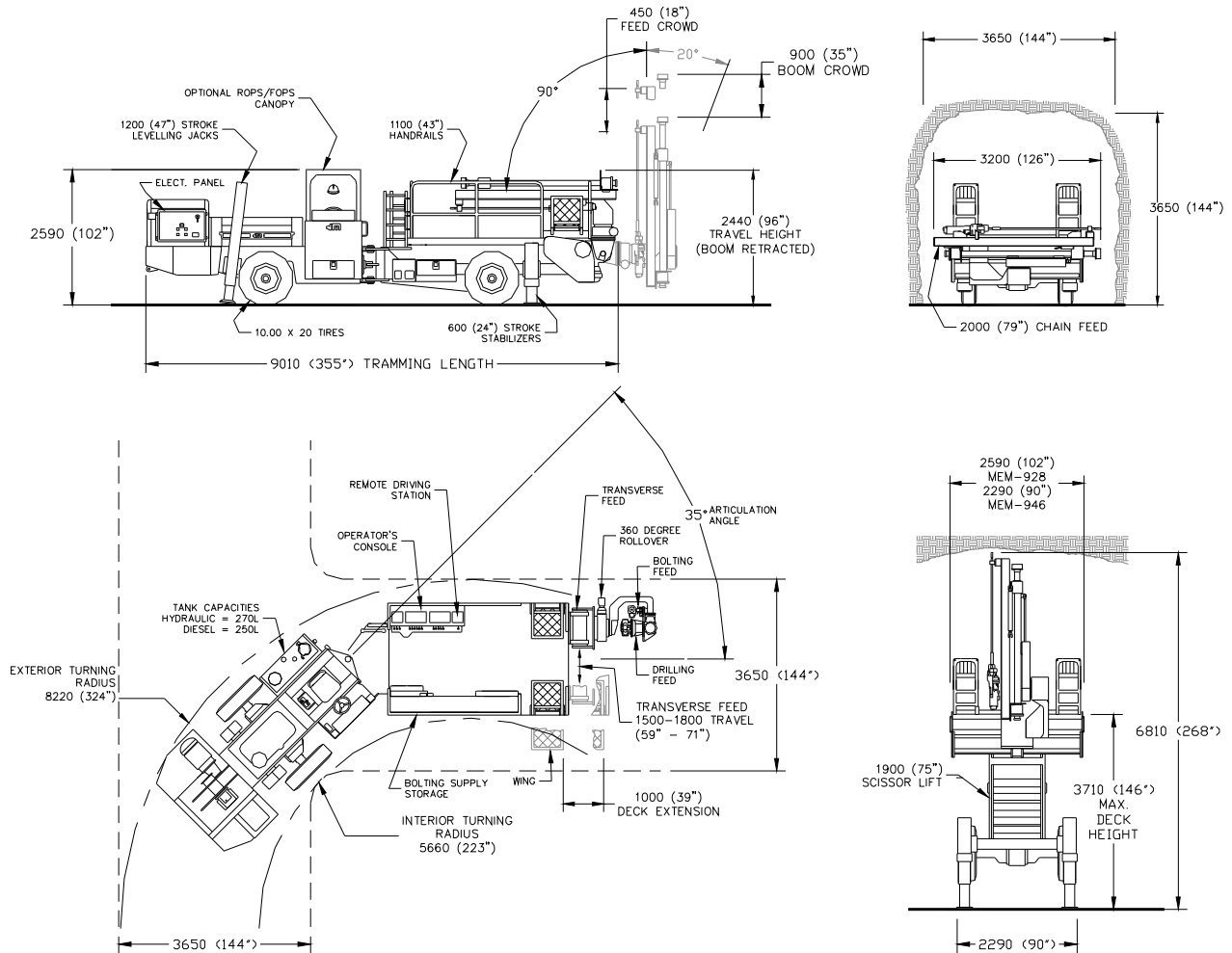
- Self-propelled, heavy duty four wheel drive articulated mine carrier
- Hydraulic positioning, rock drilling/bolting systems
- Electric hydraulic control system with remote drive system
- Operating protocol prevents exposure to loose rock hazards
- Ability to install a wide range of rock support: mechanical bolts, rebar, friction bolts and screen
- Long hole drilling capability
- High capacity storage for bolting supplies
- Single setup, one pass system
- Provides scaling deck at optimum height
- Hydraulic Rock Drilling
- Provides full coverage in varied heading conditions
- Remote Drive System
- Remote control drilling and bolting functions

Benefits

- All bolting operations occur under supported ground
- Permits drilling and bolt insertion from a safe working environment
- Scissor platform enables correct scaling/barring practices to be carried out and facilitates mesh/screen placement
- Offers significant productivity savings (one man operation for bolting and meshing)
- Mesh/screen manipulation system ensures tight and accurate positioning (necessary for shotcrete spraying applications)
- Accelerates the development cycle
- Eliminates safety hazards of hand held drilling
- Multiple types of ground support hardware can be installed without loss of productivity
- Sequential bolting ring set-ups can be made from the drilling and bolting platform
- Provides quality rock bolt installation
- Storage space for all material to complete a shift's work
- The proven lowest cost ground support system for hard rock mines

Applications

- Development drifts and tunnels - 4.0m (13 ft) to 6.5m (21ft) high; minimum width 3.65m (12 ft)
- Incline and decline ramps
- Room&Pillar and Cut&Fill production stopes
- Installation of mechanical rock bolts, resin rebar, Split Set[®], Swellex[®], Dywidag[®], and cable bolts
- Installation of screen or wire mesh
- Long hole drilling for test holes or cable bolting
- Rock bolt installation from invert to invert
- Parallel vertical drilling across 70" (1.8m) width
- Mine rehabilitation operations
- Mine services installations and face preparation



Typical 900 Series Bolter Configuration

Weights and Dimensions

- Empty vehicle weight - 48,500 lbs (22,000 kg)
- Width:
 - > 90" (2290 mm) 946 or 102" (2590 mm) 928 wings in
 - > 134" (3405 mm) 946 or 146" (3710 mm) 928 wings out
- Tramping height 102" (2590 mm) with ROPS/FOPS

- Length:
 - > 355" (9010 mm) tramping
 - > 410" (10,400mm) boom deployed
- +/- 35 degrees steering angle
- Inside turning radius (wings in) - 223" (5,660 mm)
- Outside turning radius (wings in) - 324" (8,220 mm)

Speed Range (Values are approximate)

Mercedes / Clark / New Holland Power Train

- 1st gear on flat – 2 mph (3 km/h)
- 2nd gear on flat – 4 mph (6 km/h)
- 3rd gear on flat – 7 mph (11 km/h)

Deutz / Clark / New Holland Power Train

- 1st gear on flat – 2 mph (3 km/h)
- 2nd gear on flat – 4 mph (6 km/h)
- 3rd gear on flat – 7 mph (11 km/h)

Maximum Grade 20%



Carrier Standard Equipment

Carrier:

- MEM-944 carrier - Four wheel, heavy duty, articulated carrier
- Driver's position - centre seated facing outward
- Anti-slip dimple plate on all step surfaces
- Suspension seat with seat belt
- Grouped grease fittings for articulation joint, steering pins and oscillating axle
- Heavy duty bumper with towing capability and heavy duty component guarding
- Articulation lock bar
- Wheel chock holders
- 57 US gal (205 L) diesel tank

Engine:

- Deutz 1013C Liquid Cooled Diesel Engine
- Rated 154 hp (115kW) at 2200 rpm
- 4 cylinder - 4 stroke - Mechanical control
- Turbo charged / air to air charge cooled
- Integrated Deutz radiator and cooling package

Intake and Exhaust:

- Donaldson dry element air cleaner
- Visual filter state indicator
- High Temperature Insulation (HTI) coating on manifold and turbo
- Standard fiberglass exhaust wrap
- Emissions test port

Transmission:

- Dana Clark 32000 series Power-shift transmission
- 3 speeds forward and reverse
- Electric shift control

Axles:

- New Holland D65 axles
- Inboard planetary gears
- Standard differential on engine and platform ends
- "MICO" SAHR failsafe brake actuators
- Internal wet disk brakes
- +/- 10 degrees oscillation on engine end axle
- Fixed mounting on platform end axle

Brake system:

- Independent front/rear hydraulically operated service brakes
- Spring applied hydraulic released (SAHR) emergency/park brakes
- Spring applied hydraulically released (SAHR) enclosed wet-disc driveline brake
- Automatic Brake Application (ABA) with manual reset

Wheels and Tires:

- 10.00 x 20 tire size
- Solid, lugged tread design

Carrier Hydraulic system:

- 60cc variable displacement piston pump
- Maximum 3000 psi (200 bar) system pressure
- 62 US gallon (235 L) hydraulic tank
- Hydraulic oil fill pump with electric motor
- Stick steering controls
- 35 degrees steering angle with dual steering cylinders
- 10 micron return filter

Carrier Electrical system:

- 24 VDC electrical system
- Main battery disconnect with lock out feature
- 80 amp / 24 volt alternator
- 800 CCA batteries
- 500 amp fuse starter protection
- Re-settable circuit breakers
- 4 driving/drilling lights forward and 4 driving/drilling lights reverse
- Back-up alarm
- Flashing warning light
- Stainless steel enclosures

Fire Suppression:

- Ansul LTE-101 dry chemical 6 nozzle system with engine
- Handheld ABC class fire extinguisher

Platform End Standard Equipment

Scissor and Deck Assemblies:

- Heavy duty 75" (1900 mm) hydraulic scissor lift complete with colleted and NDE certified pins, and self lubricating bearings at all points
- Heavy duty 90" (2290 mm) or 102" (2590 mm) wide deck platform with 39" (1000 mm) deck extension function
- Ladder access to platform
- Platform is complete with control console, Remote Drive System (RDS) controls and integrated tool and consumables storage
- Bolt rack has hooks for mesh/screen and consumables required for bolting
- 24" x 24" (600 mm x 600mm) Folding wings at boom end of platform
- 42" (1070 mm) Handrail system with kick plate and mid height rail
- 2000 lb (900 kg) Platform payload capacity
- Wash wand for deck housekeeping

Drilling and Bolting Systems:

- 110 degree rotary actuator for boom tilt from tram position
- Transverse feed assembly 60" to 72" (1500 to 1800 mm) travel
- 220 degree rollover assembly
- Pivot assembly to allow drill/bolt indexing and 32" (810 mm) boom and 24" (610 mm) drill feed crowd
- Hydraulic driven, feed chain type drill feed
- Rock drill, Furukawa HD90, with saddle
- Fixed centralizer for single pass drilling
- Hydraulic centralizer for extension drilling
- Hydraulic driven, feed chain type bolting feed
- Rotation head with adapter for rebar and mechanical bolt installation

Bolter Control System:

- Electrical (discreet) or hydraulic (proportional) actuated boom controls
- Proportional hydraulic drilling controls
- Tilt Interlock System (TIS) for boom assembly
- Hardwired remote pendant complete with emergency stop
- Remote Drive System (RDS)
- 4 boom end sealed beam drilling lights
- Leveling Jacks
 - > 2 @ 48" (1200 mm) engine end
 - > 2 telescopic @ 24" (600 mm) platform end
- Rock drill lubrication system
- Low pressure collaring impact pressure control system
- Water/oil cooler with water removal element and water thermal dump valve

Electric Power-Pack:

- 575 VAC electric/hydraulic 60 hp power-pack
- 100 cc variable piston pump as main hydraulic pump
- 38 cc or 45 cc variable piston pump as rock drill rotation pump
- Maximum system pressure of 3000 psi (200 bar)
- On-board air compressor
- On-board water pump and hose reel
- Level wind cable reel complete with last wind brake interlock
- 24 VDC battery charger



Optional Equipment

Carrier:

- Auto lubrication system for carrier
- Wiggins Fill and Extraction Systems
- Certified ROPS & FOPS open canopy
- Certified ROPS & FOPS enclosed cabin
 - > Heating and AC systems
 - > Pressurized air and sound suppression
 - > Windshield wiper and washer systems
- Wheel Chocks

Engine:

- Mercedes 904 liquid cooled diesel engine
- Rated 147 hp (110 kW) at 2300 rpm
 - 4 cylinder - 4 stroke - Electronically controlled
 - Turbo charged / Air to air charge cooled
 - Mesabi radiator and cooling package

Intake and Exhaust:

- Stainless Steel exhaust wrap and blankets

Wheels and Tires:

- Choice of tires:
 - > Solids, pneumatics or filled
 - > 12.00 x 20 tire size option
- Spare wheel/rim assembly
- Tire Chains

Carrier Hydraulic system:

- Hydraulic Oil Type
- Emergency Steer System

Electric Power-Pack:

- Power-pack pump installation - Rexroth or Parker
- High voltage configuration (380, 460, 575, 1000 VAC)
- Ground fault system customer specific
- Diesel/Hydraulic Drilling Upgrade
- Cold Weather Application package
- Hydrovane Air Compressor Upgrade

Manuals and Warranty

Parts, Operators and Maintenance Manuals:

- 3 sets of hardcopies
- "Catbase" or "Link One" electronic parts books
- 1 set laminated large size schematics in drawing tube mounted on machine

Scissor and Deck Assemblies:

- Choice of bolt rack
 - > Double tub or Rail and post design
- Folding handrails for boom end of platform
- Air powered greaser system for boom assembly
- Scissor Interlock Circuit
- 110 VAC Deck Receptacle
- Fold away deck seat

Drilling and Bolting Systems:

- Hydraulic or electric Swellex pumps for Swellex bolt installation
- Drill feed length to suit application
- Bolt feed length to suit application
- Hydraulic drill to suit customer fleet
- Combi-Head (impact/rotation) for friction bolt installation

24Vdc Electrical Systems:

- High Intensity Discharge (HID) Drilling Lights Upgrade
- Hardwired Remote Drilling Pendant
- "Cattron" Radio Remote Pendant

Fire Suppression:

- Ansul Checkfire™ fire detection system

Applicable Standards:

- CAN/CSA-B354.3-M82 Self Propelled Elevating Work Platforms for use with "Off-Slab" Units
- CAN/CSA – M424.2 M90 Non-Rail Bound Diesel Powered Machines for use in Non-Gassy Underground Mines
- CAN/CSA – M424.3 M90 Braking Performance for Rubber-Tired, Self-Propelled Underground Mining Machines
- Ontario Occupational Health & Safety Act and Regulations for Mines
- Canadian Electrical Code
- ISO 3449 Falling Object Protection Structures
- SAE J1040 Rollover Protection Structures

Warranty:

- 1 year standard warranty

*The manufacturer reserves the right to change the specifications or design of this machine at any time without notification.