



UTV International
presents
the

2014
ACHIEVER
Tracked Digger Derrick



COMPANY INTRODUCTION

UTV International has been involved in the business of designing and manufacturing tracked carriers since 1992.

In 1996 We integrated our first digger derrick on to a tracked carrier. Since then we have been engaged in a continual product improvement process that has resulted in the production of our 4th generation boom, the Achiever 5042 Digger Derrick.

Worldwide we are the only company that designs and produces both the carrier and the boom as one completely integrated unit resulting in a lighter, stronger unit with 4 radially mounted outriggers built into the subframe and a hydraulic system specifically engineered with the high flows required for drilling in mind.

This is the only tracked digger derrick designed to be transported in a standard hi-cube shipping container if required and due to its light weight it can be towed behind a single axle line truck on a 20 000lb tandem axle trailer.

Our extensive experience with off road machines allows us to offer a carrier with a track and suspension system that leaves the competition far behind.



UNIT DESCRIPTION

1) FRAME - The frame is an all welded Corten steel (corrosion resistant) tub with foam filled side reinforcements, integrated axle tubes and 6 access covers to facilitate service. The entire frame and all covers are phosphate treated and powder coated.

2) SUBFRAME - The subframe is an all welded steel structure that incorporates both the boom tower and the 4 radially mounted outrigger attachment points. The subframe has 10 shearplates and the frame and subframe are joined at 34 points using grade 8 bolts with vibration resistant lock washers and Nyloc locking nuts. The entire subframe is powder coated with a two step process using a zinc rich primer under the top coat. All open subframe tubes are treated with an anti-corrosion oil spray and the bottom side of the subframe is coated with a rubberized gravel guard. The subframe is fitted with a folding rear step and an removable side ladder to facilitate access to the deck. The deck has 6 flush mounted cargo tie down rings and removable wooden sides inserted into pockets in the subframe. The tools hose reel is mounted on the rear left hand side of the deck. There is a deck mounted tool box located beside the engine cover and designed to be accessed when there is a pole in the pole rack.

3) CAB - the cab is a ISO 3471 ROPS certified structure fitted with an air suspension seat and 3 point seat belt. The steering joysticks are attached to a floor mounted bracket and can be adjusted independently of the seat. Located on the right hand side cab panel are a hand throttle, high/low speed switch and the plow controls as well as a 12v accessory power outlet. The engine side cab panels and floor are insulated. A fire extinguisher is mounted behind the seat. The cab is fitted a step and handle to facilitate entrance and with 2 front lights and 1 roof top beacon and 2 rear lights. All lights are high output LED lights.

4) DASHBOARD - The roof mounted dash contains the oil pressure, oil temperature, water temperature, voltage and tachometer/hour Gauges. All electrical circuits are protected by circuit breakers located on the dash. The dash is environmentally sealed and the dashboard uses components rated IP 67 or higher.

UNIT DESCRIPTION

5) **SUSPENSION** - The unit has 8 x 26" rubberized steel road wheels that articulate independently using a rubberized torsion shaft insert. The track tension is controlled by 2 high pressure grease cylinders operating on the rubberized steel idlers which also work to absorb impacts and reduce stress on the unit. The idler wheels are oil filled and fitted with metal face seals. All road wheel hubs are oil filled and fitted with double lip seals and seal protectors to reduce contaminate intrusion

6) **TRACK** - Each track is composed of 2 lengths of 9/16" x 9" 5 ply belting with 68 rubberized aluminum extrusion crosslinks with a 2 5/8" maximum ground penetration and heat treated alloy steel tire guides. The crosslinks are attached to the belting with 6 x 7/16" grade 8 bolts and 3/16" thick backing plates. Both the tire guides and crosslink backing plates are zinc plated for corrosion resistance. The tracks are supplied with removable ice cleats to assist with traction on ice and other frozen surfaces (i.e. mud). The tracks are rebuildable to ensure long life.

7) **ENGINE** - The engine is a tier 3/interim tier 4 Iveco N45 MST 4.5 liter, 125 Hp turbocharged unit with mechanical injection and comes with an intercooler integrated into the radiator shroud. The engine also incorporates an oil heat exchanger built in to the block. The oil capacity is 20 liters with a 500 hour service interval under normal conditions. The engine is rated for a 35° angularity limit continuous operation in all directions. The engine is equipped with a low oil pressure shut down and a high coolant temperature shut that can be overridden in the event of an emergency.

8) **DRIVE SYSTEM** - The drive system is composed of 2 independent close circuit hydrostatic piston pumps fed by an independently filtered (3 micron) supercharge pump. The drive pumps supply oil to separate two speed drive motors, each driving one track. The pumps are operated by power assist servos. The drive motor output is reduced by a geared hub and power is transmitted to the tracks via a steel reinforced, polyurethane covered 11 tooth drive sprocket. The drive system is equipped with an high oil temperature shutdown that can be overridden in the event of an emergency.

UNIT DESCRIPTION

9) **STEERING AND BRAKING** - Steering is accomplished via two joysticks which operate power assist servos allowing independent control of each track. Counter rotating of the tracks is possible and the machine can turn in its own length. Service braking is via positive deceleration through the hydrostatic pumps and the parking brakes are multidisc, spring applied, pressure released at the drive hub. The parking brake is automatically engaged each time the machine is started and is interlocked to the seatbelt.

10) **AUXILLARY HYDRAULICS** - The auxillary hydraulic system is composed of two separate pumps with a 2 x 24 gpm maximum flow for a combined total of 48 gpm with a relief valve setting of 3 000 psi. This allows the matching of the flow to the hydraulic requirements without wasting engine power during low flow operations. The hydraulic system is equipped with an high oil temperature shutdown and a warning light for high filter backpressure.

11) **HYDRAULIC RESERVOIR AND COOLING** - The hydraulic reservoir is a 150 Li (40 U.S. gallon) pressurized tank. It is fitted with a intank return filter with a back pressure sensor and bypass valve and bypass equipped strainers on all suctions as well as a visual level gauge and thermometer. The suction lines are fitted with locking ball valves to facilitate service. The unit is fitted with a hydraulic heat exchanger with a thermostatically controlled high speed electric shrouded fan that operates when the oil temperature reaches 60° C.

12) **OUTRIGGERS** - The vehicle comes equipped with four 59" radial outriggers that provide up to 20" of lift that are independently operated from the rear of the machine. The front outrigger feet are 8" x 10" and the rear outrigger feet are 18" x 20". When the outriggers are activated a audible alarm is automatically activated as well. The outrigger cylinders are equipped with double lockvalves and the outrigger control valve is locked out when the digger derrick is in use.

UNIT DESCRIPTION

12) **OUTRIGGERS (cont.)** - The outriggers are fitted with safety interlocks that will prevent the use of the boom unless the outriggers are deployed and there is a in cab warning light to indicated to the driver if the outriggers are not properly stowed. The front and rear outrigger feet are equipped with removable ice cleats and the vehicle comes equipped with 4 x 24" x 24" x 2" outrigger pads fitted in holders mounted on the deck sides.

13) **TOWER** - The center rear mounted tower has a 1 1/4" top plate with a machined flat surface to support the slew bearing. The rear of the tower houses the outrigger controls, auxillary throttle control, rear winch outlet and deck mounted tool outlet controls.

14) **ROTATION** - The unit is equipped with a planetary gear driven slew bearing and also comes with a multi port rotating hydraulic manifold allowing for continuous rotation. Side load protection is provided by a counter-balance valve. The 1 1/4" tower mounting plate is milled flat after welding to ensure perfectly flat mounting surface for the slewing bearing.

15) **TURNTABLE** - The turntable is the mounting point for the control console, turntable step and and operator seat and incorporates a handle to assist the operator while climbing up to the seat. The turntable step has an engine throttle pedal fitted under the control console. The bucket fold/unfold controls are located on the side of the tower.

16) **OPERATOR SEAT** - The operator's seat is a folding vinyl seat with back support and armrests. An optional air suspension fabric covered seat is also available.

17) **CONTROL CONSOLE** - The control console is the location of all the auger and boom lower controls. It uses twin joystick controls for all crane functions and a single lever control for the winch. It also has a separate auger valve, an auger speed switch, pole claw controls, upper/lower selector switch, engine start/stop controls, system pressure and auger pressure gauges and the overload reset switch.

UNIT DESCRIPTION

18) LOWER BOOM - The lower boom is constructed using a 7" x 9" high tensile strength steel tube and has HDMW polyurethane sliding pads with a total surface area of 126"². Sliding pad adjustment is achieved by the removal of 2 stainless steel sockethead cap screws and then shimming the pads with stainless steel shims. No further disassembly is required. The maximum declination is -15° and the maximum elevation is 80°. The lower boom has an externally mounted cylinder for the operation of the first extension.

19) 2nd BOOM - The 2nd boom is constructed using a 6" x 8" high tensile strength steel tube and has HDMW polyurethane sliding pads with a total surface area of 96"². Sliding pad adjustment is achieved by the removal of 2 stainless steel sockethead cap screws and then shimming the pads with stainless steel shims. No further disassembly is required. The maximum stroke of the 2nd boom is 108". The 2nd boom has an internally mounted cylinder for the operation of the 3rd boom.

20) 3rd BOOM - The 3rd boom is constructed using a 5 1/4" x 7 1/4" high tensile FRP tube with a dielectric working rating of 46Kva. The maximum stroke of the second extension is 108".

21) BOOM TIP - The boom tip is attached to the 3rd boom by 8 x 1/2"-13 grade 8 bolts and has 2 x 6" anodized aluminum sheaves with permanently lubricated bushings that are grooved to accommodate ropes from 9/16" to 7/8". The boom tip flare design assists the pole claw in the handling and placement of poles. The pole claw and 4th boom are both attached to the boom tip.

UNIT DESCRIPTION

20) POLE CLAW - The pole claw has an hydraulically operated open/close and tilt function operated by momentary contact toggle switches on the control console. The tilt function has a range of 75°. The pole claws are one piece steel 5/8" thick and are 19" long from center of rotation to center of tip. The pole claws have laser cut gear profiles on the ends to ensure trouble free operation under any conditions. The pole claws operate through a range of 110° and have a maximum opening of 42" and can accommodate poles of up to 24" diameter. The open/close function is positively controlled through a double acting lock valve that ensures reliable holding of the pole during manipulation.

21) AUGER SYSTEM - The auger is stored on the right hand side of the boom when not in use. Auger release is accomplished by removing a safety pin from the auger storage and activating a hydraulic release cylinder. When released the auger has a drilling radius 12.5' to 19.5' from the center of rotation. The standard auger drive is a 12 000 ft/lb 2 speed unit with an automatic kickdown and fitted with a 2.5" hex shaft. The auger is operated by a separate high flow valve located in the control console. The auger storage unit is protected from over storage by a magnetic switch that engages the crane overload system. The system will accommodate augers of up to 24" in diameter. The oil to the auger is supplied by high flow/low restriction telescoping tubing fixed to the right hand side of the boom. The auger valve has an high/low speed switch and a pressure gauge connected to it to assist in the setting of anchors.

22) WINCH - The boom tip mounted winch comes with dual counterbalance valves to prevent unwanted movement of the load. The winch comes equipped with 75' of 9/16" abrasion resistant coated, non-conductive rope with a tensile strength rating of 25 200lbs. The rope comes with a galvanized steel thimble on the end and the 11 000 swl swivel hook is fitted with a safety latch and is connected to the rope by a galvanized high strength lifting shackle. No tools are required to remove the rope from the boom tip and store it on the lower boom.

UNIT DESCRIPTION

24) FOLDING BUCKET ATTACHMENT - The insulated fiberglass 4th boom is attached to the boom tip in a manner that allows it to be hydraulically folded out of the way when not in use. When the the bucket is folded it rests on the top of the boom with the bottom of the bucket 34" below the boom tip sheave ensuring that it does not interfere with pole handling operations. When extended the bucket attachment point is 60" above the sheave height. The 4th boom has a 46Kva insulation rating. The bucket is gravity leveled and further motion is controlled with a brake. The 4th boom has a attachment point for a safety lanyard. The standard bucket is 24" x 24" x 42" and is supplied with a liner.

25) UPPER CONTROLS - Top controls are a full pressure twin joystick system for all crane movements and are protected from accidental operation by a lock collar. There is also a single lever for winch controls and a d-dent lever for the bucket tools outlet. The bucket is fitted with a radio remote control unit that allows start/stop, horn, high idle and overload reset functions.

UNIT DESCRIPTION

26) CYLINDERS - The elevation, first extension, second extension and outrigger cylinders are of threaded head cap design. All of these cylinders are equipped with check valves to prevent creep down and to lock the booms in position in the event of a hose failure. All cylinders are fitted with double lip seals to stop dirt infiltration.

27) HOSES - All hoses are either 2AT double braid for abrasion resistant and to ensure a long working life or electrically non-conductive 100R7 hose for the upper boom hoses. All exposed hoses are covered with heavy duty nylon hose protection. All hose and hose assemblies meet SAE J517-2013 specifications.

28) STANDARDS - This unit complies with CSA C225-10 and ANSI/SIA A92.2-2009 for aerial devices and ANSI/ASSE A10.31-2006 for digger derricks. The cab is tested and certified to ISO 3471.

29) MANUALS - Each unit ships with 2 sets of operations and parts and service manuals.

SPECIFICATIONS.

27) DIMENSIONS / WEIGHT

Overall length	550 cm
Overall width	254 cm
Overall height	300 cm
Ground clearance	42 cm

Weight and payload

- Basic vehicle (with derrick)	7 160 kg (15 785lb)
- Payload	1 460 kg (3 215lb)
- GVWR	8 620 kg (19 000lb)

28) ENGINE DATA

Make	Fiat Powertrain Technologies
Model	Iveco N45 MST
Displacement	4 cylinder 4.5li
Asperation	Intercooled turbocharger
Power	93kW (125hp) @ 2 200rpm
Torque	525Nm (385 ft/lb) @ 1 250rpm

29) PERFORMANCE DATA

Maximum speed	12 kph (8 mph)
Inside turning radius	0 cm
Climbing ability	
- Uphill	35° (70%)
- Sidehill	15° (25%)
Ground pressure (29" Tracks)	
- Unloaded	0.14 Kg/cm ² (2.0 psi) Base vehicle with derrick
- Loaded	0.18 Kg/cm ² (2.6 psi) @ 8 620Kg (19 000lb) GVWR
Tank working range	12 hours

SPECIFICATIONS.

30) FRAME / SUSPENSION

Type	Welded Corten tub
Axles	independent Torsion Axles
Hubs	Oil Bath
Road Wheels	8 x 26" Solid Rubber
Idler Wheels	2 x 20" Solid Rubber
Idler Tension System	independent grease cylinders
Drive Sprockets	11 Tooth Polyurethane Over Steel Core

31) TRACKS

Type	Rubber 5 Ply Belts 29" Rubberized aluminum Crosslinks Hardened Steel Tire guides
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32) STEERING

Type	independent Joysticks Activating Power Assist Servos Mounted On The Drive Pumps
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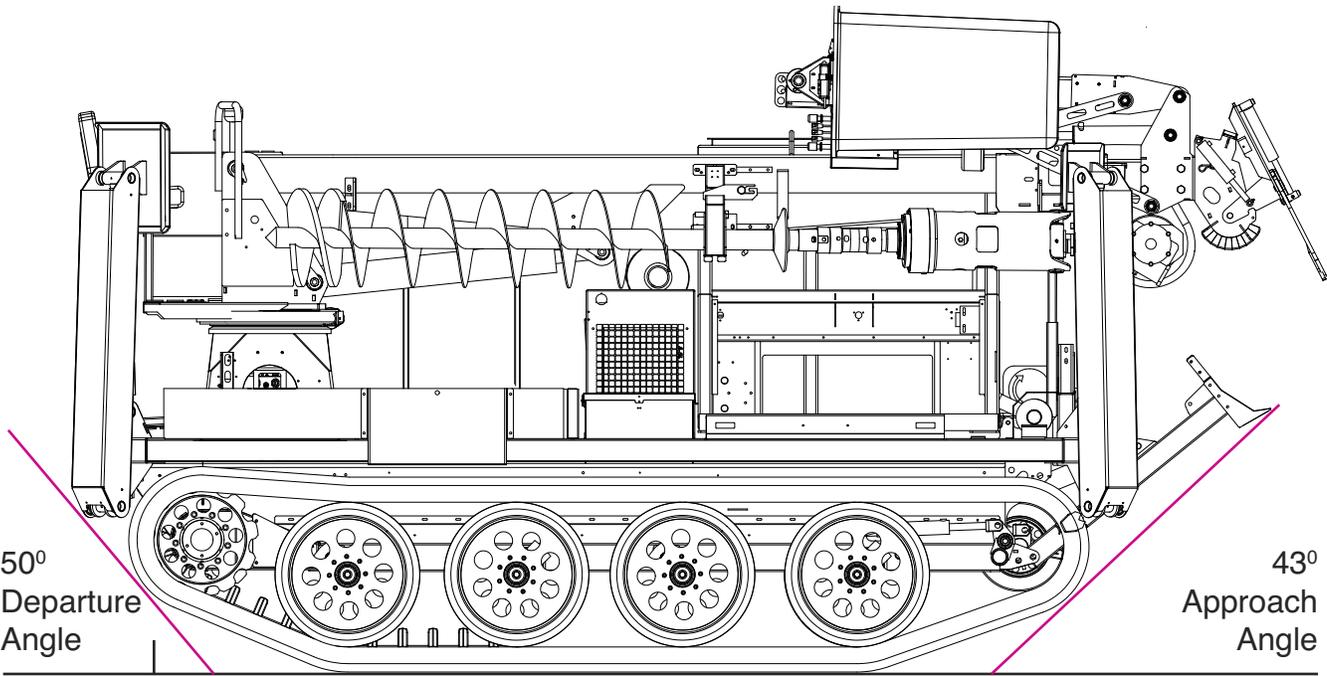
33) ELECTRICAL

Voltage	12 vdc
Ground	Negative
Battery Capacity	2 x 900 CCA
Alternator Capacity	120 Amps

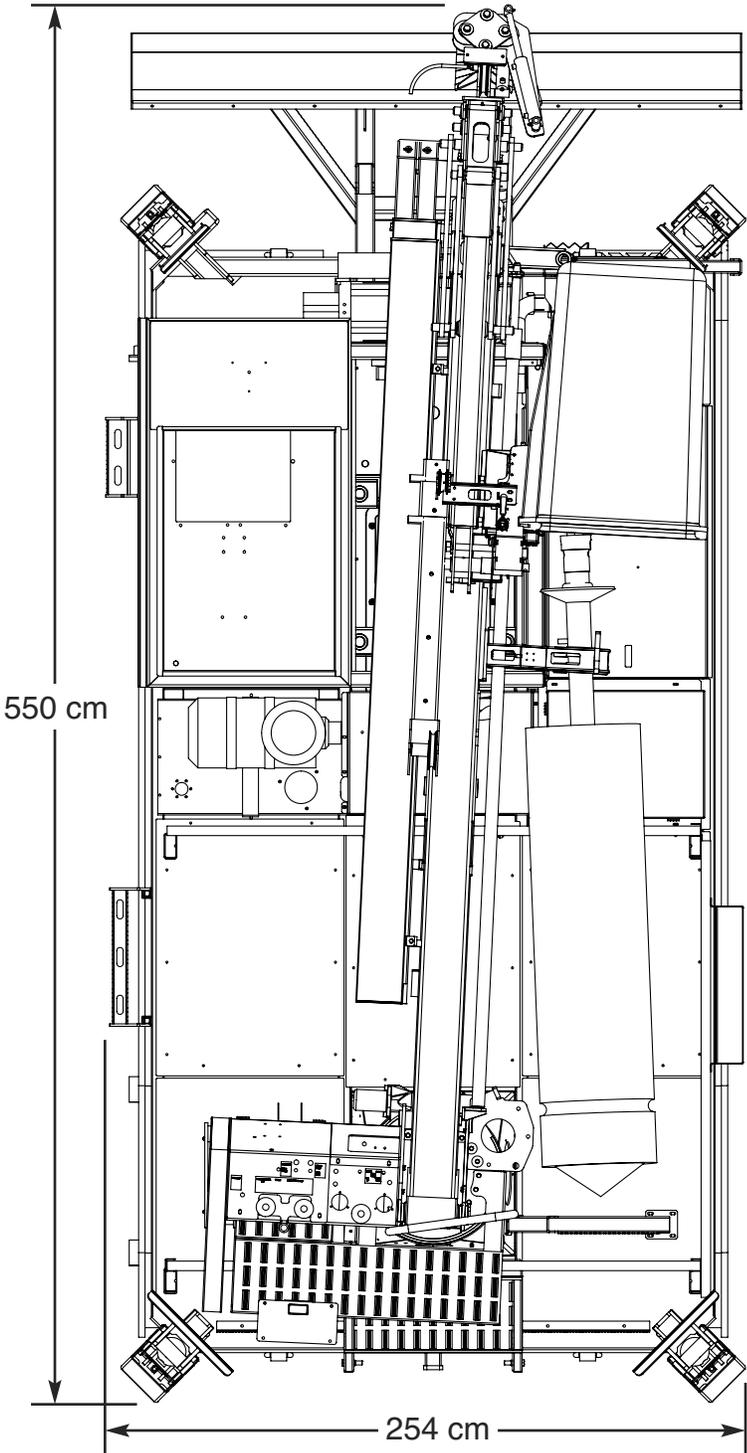
34) POWERTRAIN FOR HYDROSTATIC DRIVE

Transmission	Hydrostatic 2 Speed
Service Brakes	Positive Deceleration through Hydrostatic Drive
Parking Brakes	Wet Multi-disc Spring Applied Pressure Released
Oil Cooler	9 kW Thermal Cooling Capacity
Hydraulic Oil Capacity	
- Tank	150 Li
- System	210 Li
Filtration	3 Micron Charge 10 Micron Supercharge 11Micron Return

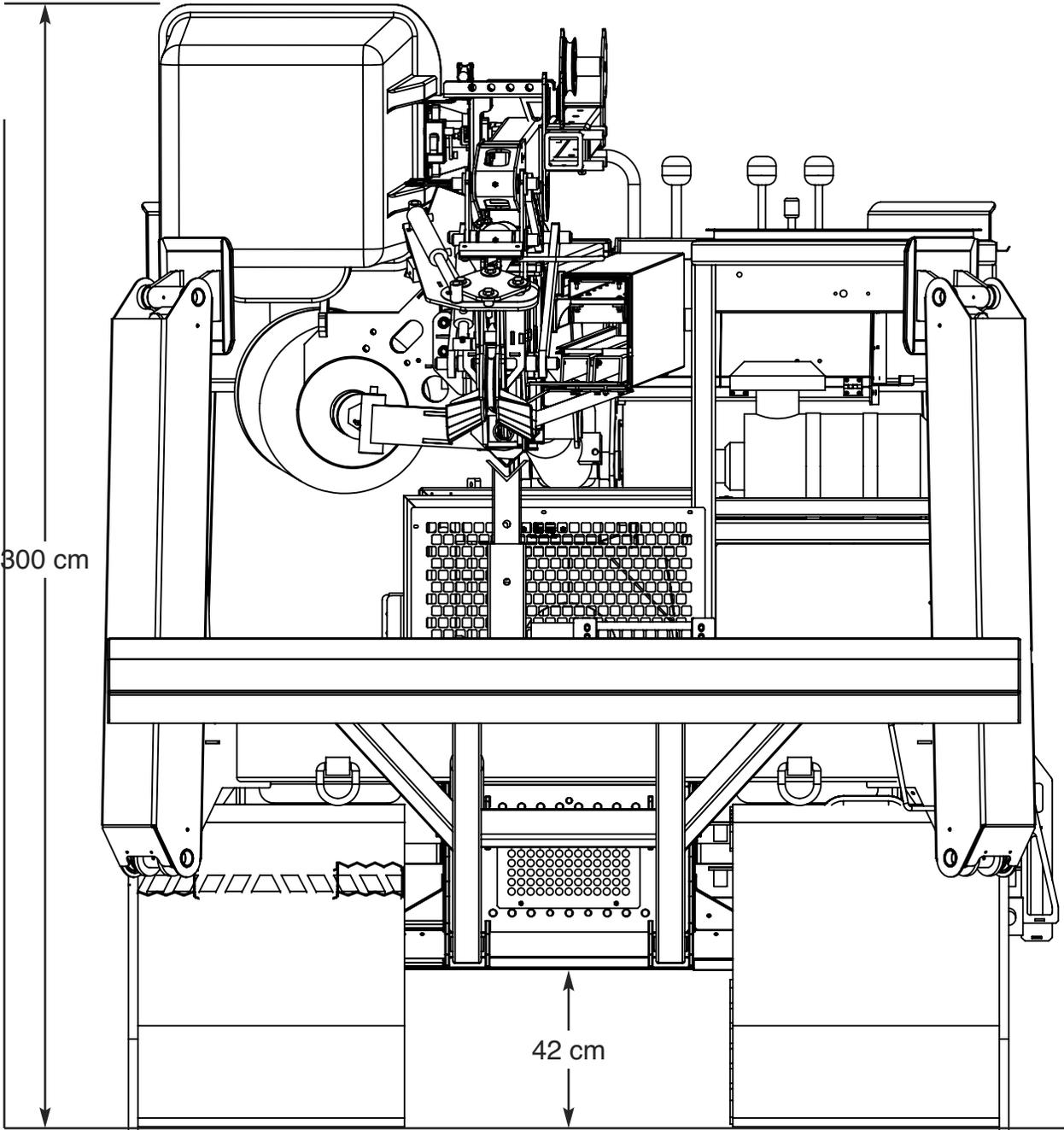
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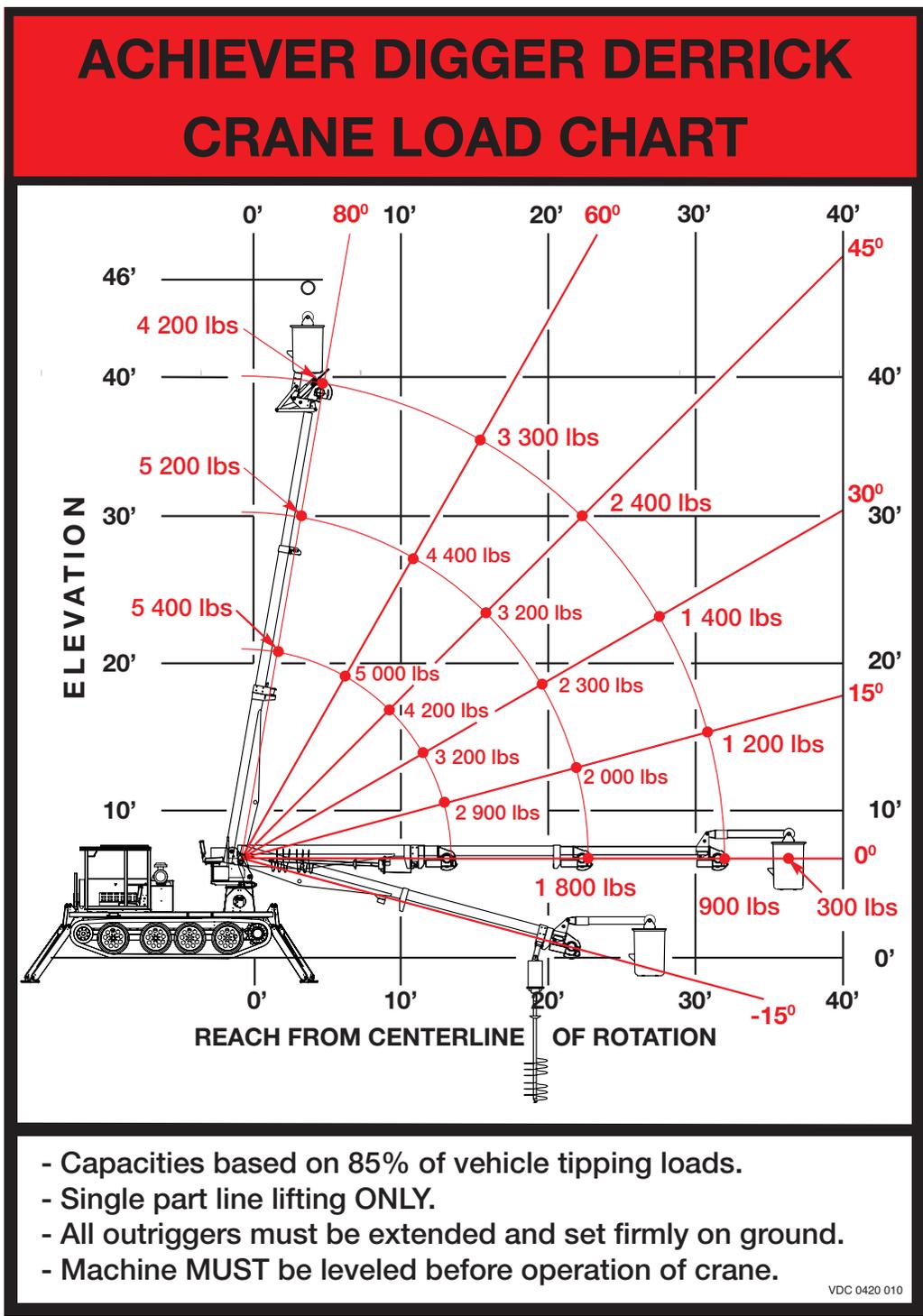
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DIMENSIONS



LOAD CHART



OPTIONAL EQUIPMENT

FRONT PLOW - Full width with 2 way hydraulics. Used for removing trail obstructions, clearing brush, leveling ground and creating a clear work area.

FRONT PLOW EXTENSION - This extends the top of the plow by 19" to facilitate the removal of deep snow from work areas.

ELECTRIC WINCH - Available from 10 000lbs to 16 500lbs, the winch can be installed in either the front or rear hitch receiver.

HYDRAULIC WINCH - A 20 000lbs hydraulic winch can be permanently fitted to the front crossmember and operated from the cab or by radio remote control.

PINTLE HOOK - Can be installed in either the front or rear hitch receiver.

CLOSED CAB KIT - Comes with front and back fixed windows and 2 sliding side windows, locking door and a roof escape hatch. Kit also comes with a heater, ventilation fan and a front windshield wiper. This kit can be retrofitted to all open cab machines.

CAB PROTECTION KIT - Comes with wire mesh cover for all sides as well as a opening wire mesh door to protect the operator from branches and to protect the cab from unauthorized entry.

ADDITIONAL LIGHTS - Extra lights can be fitted to the front and back of the cab and can also be fitted to the boom.

REMOTE CONTROLLED SPOTLIGHT - A radio remote controlled spotlight can be fitted to the cab roof and comes with a fixed controller in the cab and a hand held radio remote.

OPTIONAL EQUIPMENT - cont.

SPARK arrester - Can be fitted to the muffler for use in fire sensitive areas. Approved by the United States Department of Agriculture Forest Service. As required by the state of California and some other jurisdictions.

DUAL BATTERY KIT - The machine can be fitted with a dual battery system that comes installed in a combination tool and battery box fitted on the deck. This kit can be field retrofitted at any time.

COLD START UP KIT - Includes the dual battery kit with and additional oil heater and synthetic engine oil.

ADDITIONAL COLD START UP EQUIPMENT AVAILABLE

- Espar diesel fired coolant heater
- Electrically heated fuel filter bowl
- Coolant heated inline fuel warmer
- Coolant heat exchangers mounted in fuel or oil tank
- Electric battery warmers

WOODEN SIDE WALLS - Fit into pockets on the deck and can be removed without tools. Facilitates carrying objects on the deck.

LOWER TOOLS OUTLET - A reversable tool outlet with a D-dent position and a deck mounted hose reel is available. It can also be equipped with a high/low pressure switch for use with either tools or pole jacks.

CABLE GROUNDING REEL - A rear deck mounted grounding reel is available.

EMERGENCY LOWERING PUMP - A 12vdc emergency pump for use in the event of engine failure is available. This pump will operated all boom functions and outrigger functions.

OPTIONAL EQUIPMENT - cont.

AUGERS - A wide range of augers are available from 12” to 24” as well as extensions and Kelly bars.

ANCHOR DRIVING ATTACHMENT - An anchor driving attachment that fits onto the end of the Kelly bar is available.

FOLDING BUCKET ATTACHMENT - Includes the 4th boom, bucket and upper controls.

BUCKET LINER - A dielectrically tested bucket liner is available.

UPPER TOOLS OUTLET - The bucket can be equipped with a hydraulic tools outlet.

MATERIAL HANDLING JIB - Available with the folding bucket option. It is adjustable for both length and angle and is usable from 0° to 80° with a maximum load capacity of 600 lbs. The jib is equipped with sheaves to allow the use of the crane winch and rope and can be installed and removed without tools. See load chart below.

JIB LOAD CAPACITY			
BOOM ANGLE	All Booms Collapsed	Only 2nd Boom Extended	2nd Boom and 4' of 3rd Boom Extended
0°	400 lbs	400 lbs	400 lbs
30°	450 lbs	450 lbs	450 lbs
45°	550 lbs	550 lbs	550 lbs
60°	600 lbs	600 lbs	600 lbs
80°	600 lbs	600 lbs	600 lbs

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