

# **PIPELINEMAN**

## **PMG90** **PIPELAYER**

Cummins NTA855-C360	257 kW/350hp
Max lifting capacity	90000 kg /198000lb
Operating weight	55000 kg /121000lb



# MAIN FEATURES

## CABIN

Good visibility to work area and top of the boom with a sky window on the roof, ROPS can be installed as the optional equipment.

## ENGINE

The Cummins, NTA855-C360 direct injection and turbocharged engine gives sustained power and high torque rise that is required for the more tough jobs.

## BOOM

Tubular A-Frame boom engineered for exceptional support at maximum lift capacity and easy detachment.

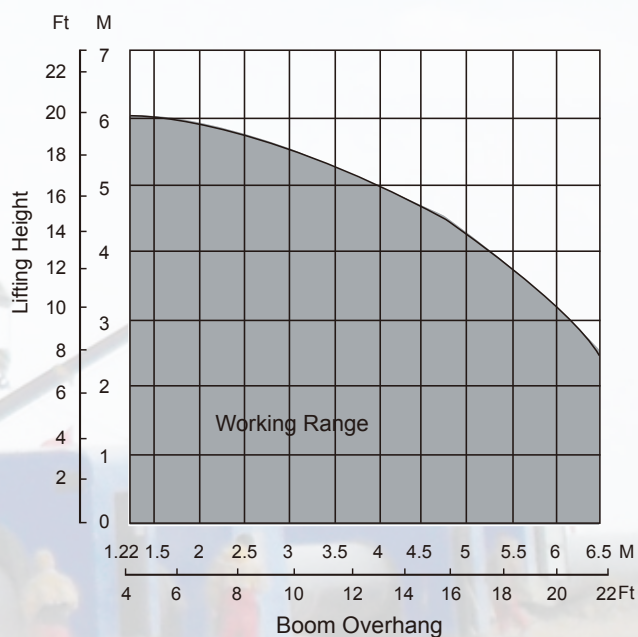
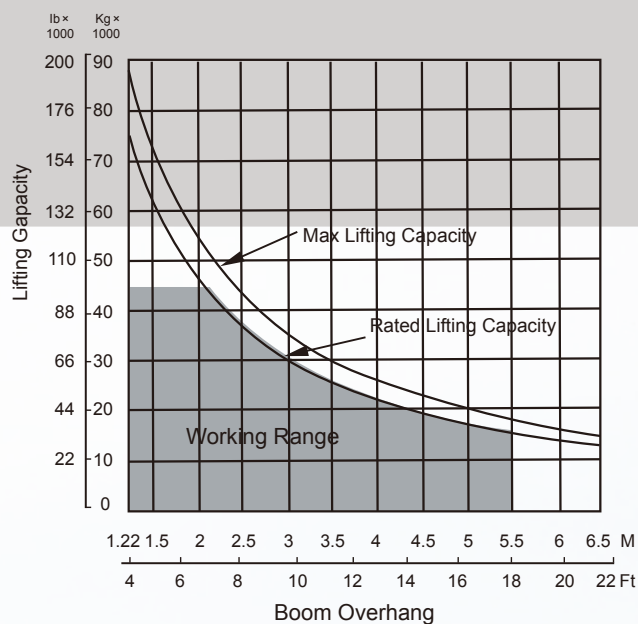




## CONTROL

Multi-axis, hydraulic joystick allows simultaneous, precise control of the load and booms functions with one hand. Single-lever, hydraulic remote control valves are used for counterweight and two-speed functions. The controls are easy to operate and require minimum operator training.

## PMG90 LOADING CHART



- Boom Overhang indicated in the table is the distance between hook center to same side track wheel outer edge.
- The lifting capacity in the table includes hook weight which is 0.5 t.
- The lifting capacity of the equipment is the one when the equipment stop on the rigid level ground.

## **STEERING SYSTEM**

Pivotal steering system comes with the advantage of higher maneuverability and enhanced slope capabilities. hydraulic power assisted steering makes operating the machine comfortable for the operator.



## **COUNTERWEIGHT**

Hydraulically operated, four-bar linkage counter-weight system adds maximum stability and lifting capability. Low, compact design provides balanced weight distribution for optimum operating control and excellent visibility.

## **WINCH**

Two independently controlled hydraulic winches drive the boom and hook systems, brake are applied automatically when control lever returned to neutral position.



# GENERAL SPECIFICATIONS

## ENGINE

Type	Cummins
Model	NTA855-C360
Rated power	257 kW
Rated speed	2000 rpm
Bore	139.7 mm
Stroke	152.4 mm
Displacement	14.1 l
Design	6-cylinder in-line
Electric system	24 V
Starter	11 kW / 15 hp
Batteries	2 x 155 ah / 12 V
Cooling system	water and air combi radiator
Water cooled, turbo-charged,	
Air-to-air intercooler	

## SERVICE CAPACITIES

Fuel tank	640 L
Crankcase and filter	47 L
Final drive (each side)	55 L
Cooling system	121 L
Hydraulic tank	560 L
Power train	185 L
Roller frames (each)	0.45 L

## WEIGHTS (APPROXIMATE)

Shipping weight (tractor)	37t
Boom	2.5t
Pipelayer attachment	3.5t
CWT leaves	8.8t
CWT frame & rack	3.2t
Total weight	55t

## UNDERCARRIAGE

Shoe type	super extreme
Width of standard shoes	860 mm
Number of shoes (each side)	45
Grouser height	80mm
Pitch	228 mm
Ground clearance	550 mm
Track gauge	2490 mm
Length of track on ground	3620 mm
Ground contact area with 860 mm shoes	6.23 m <sup>2</sup>
Number of track rollers (each side)	9
Number of carrier rollers	2 per side
Ground pressure	86.6 kpa

## TRANSMISSION

Planetary type gearbox, to be shifted under load, with clutches operating in oil and having high capability of transmitting the torque, providing three forward gears and three reverse ones.

As per design, it is connected with a matching reducing gear and the main drive forming a single power unit to be mounted in a rear axle housing.

Three element one-stage torque converter with a pump drive reducing gear, is connected with a gearbox by a spline clutch and is mounted at the front wall of the rear axle. The torque converter is connected with an engine by drive line and an elastic clutch mounted on the engine.

## TRAVEL SPEEDS

Gear	Forward	Reverse
1	3.6km/h	4.4 km/h
2	6.6 km/h	7.8 km/h
3	11.5 km/h	13.5 km/h

## TRACTION FORCE

1f – drawbar pull	310 kN
2f – drawbar pull	295 kN

## HYDRAULIC SYSTEM

Pump type	gear-type, high pressure fixed displacement
Temperature	-40--+60
Pump output – max	440 L/min
Relief valve setting –counterweight	14000 Kpa
Relief valve setting –winches	21000 Kpa
Pump output –counterweight	98 L/min

## PIPELAYING EQUIPMENT

Planetary hydraulic winches		
Winch brakes	multiple-disk, hydraulic released	
	<b>HOOK</b>	<b>BOOM</b>
Drum diameter	470 mm	470 mm
Flange diameter	640 mm	640 mm
Drum length	510 mm	510 mm
Capacity – 22 mm	85 m	85 m
Wire rope installed		
–22 mm	85 m	75 m
Wire rope min breaking strength		322 kN
Hook speed with 8 part line		7.0 m/min
Luffing time		40 s (0-86)
Boom – square section standard		9.6 m
Removable counterweight		4 segments





## **SAFETY DEVICES:**

- **Emergency Free Fall**

When the button is engaged, the load free-falls and then immediately stops when the button is released.

- **Automatic Boom Kick-Out**

This system will ensure you will never bend another boom.

- **Anti Two Block**

Sets a minimum distance between the top block and the hook block, preventing collisions between them.

- **Anti Tipping System**

Prevents tipping by calculating the maximum load that can be lifted.

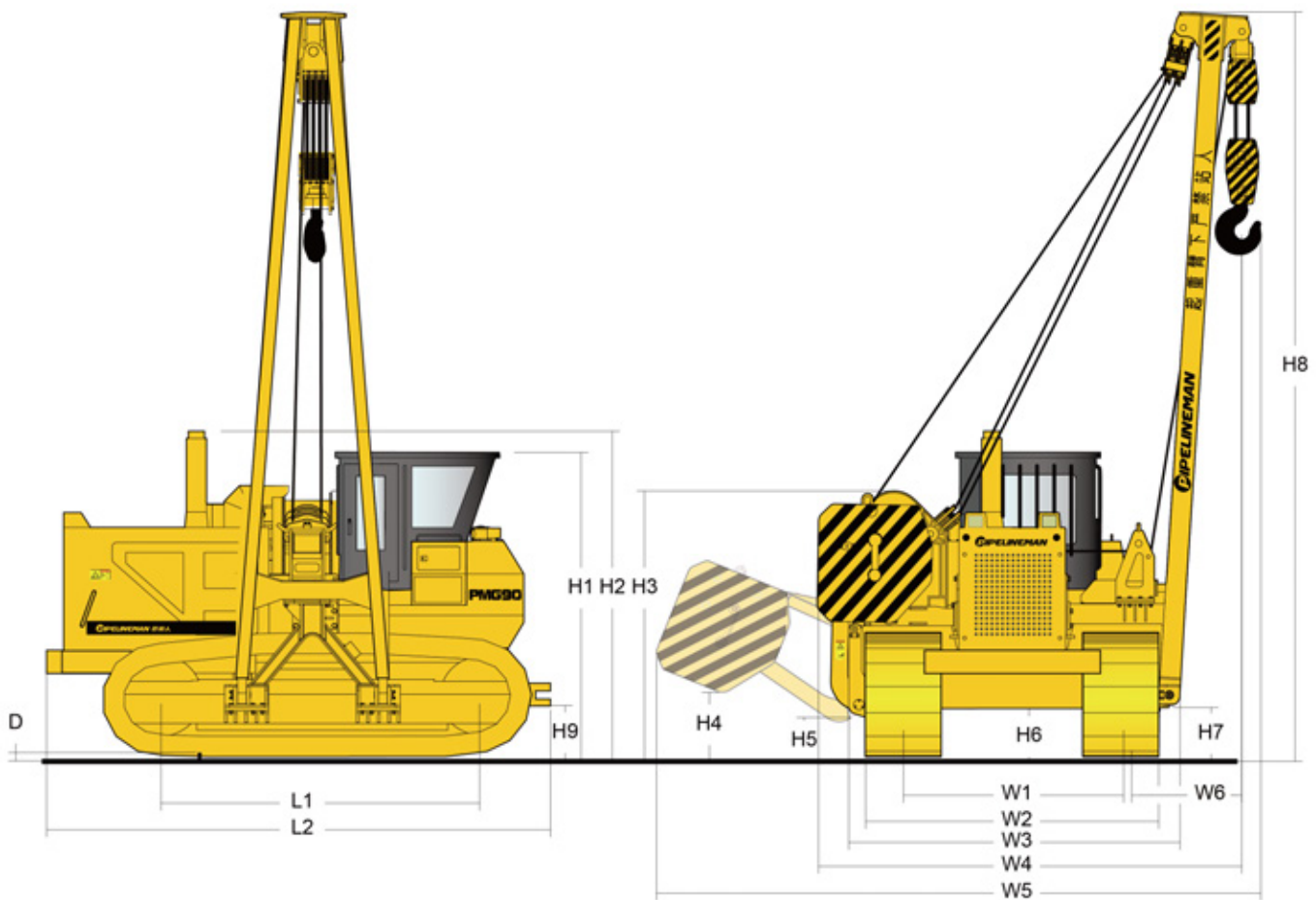
## **UNDERCARRIAGE**

With high stability and low ground pressure, the rigid and boxed frame undercarriage meet the requirement of all type of terrains, giving a dependable and longevity of service in all harsh conditions.

## **ELECTRONIC OVER HYDRAULIC**

- Freefall system, boom kick-out system and anti-two block plus,
  - Anti-tipping system
- Prevents tipping by calculating the maximum load that can be lifted.





## OVERALL DIMENSIONS

W1 Track gauge	2490 mm	98 in
W2 Width to outside of track	3350 mm	132 in
W3 Shipping width(boom and counterweight removed)	3775 mm	149 in
W4 Width(counterweight retracted)	4886 mm	192.4 in
W5 Width(counterweight extended)	7025 mm	276.5 in
W6 Distance(outer edge of chain link to hook)	1220 mm	48 in
D Grouser height	80 mm	3.1 in
L1 Length of tracks on ground(Distance idler/sprocket center)	3620 mm	142.5 in
L2 Operating length	5630 mm	221.7 in
H1 Height over cab	3540 mm	139.4 in
H2 Height (top of stack)	3710 mm	146.1 in
H3 Height (top of winch)	3028 mm	119 in
H4 Height to bottom of counterweight(extended)	814 mm	32 in
H5 Ground clearance of console	428 mm	16.9 in
H6 Ground clearance	545 mm	21.7 in
H7 Ground clearance of boom	565 mm	22.2 in
H8 Total height	10479 mm	412.6 in
H9 Drawbar height	660 mm	26 in

# PMG90

## PIPELAYER

### STANDARD EQUIPMENT

#### Undercarriage

Suspended track frame,closed,non-oscillating type •  
Track chain,sealed with split master link,41 links •  
Track frame, rigid •  
Pivot shaft, separate •  
Sprocket segments, bolted •  
Track roller 9,each side •  
Carrier roller 2,each side •  
Idler 01, each side •  
Hydraulic track adjuster •  
Track and rollers lifespan lubricated •  
860 mm serviceable plate •  
Track guide centre part •  
Track guiding guard,front •

#### Power train

Cummins NTA855-C360 engine •  
Antifreeze, -37 0C (-34 F) •  
Fan, suction •  
Water separator fuel system •  
Air cleaner, dry type w/exhaust •  
Aspirated primary and safety elements and service indicator •  
Fuel priming pump •  
Fuel tank and filter •  
Torque converter, single stage •  
Final drives, planetary type •  
Muffler •  
Radiator •  
Transmission, power shift •  
3 speed forward, 3 reverse •  
Parking brake, automatic •

#### Hydraulic system

Variable flow pump, load sensing •  
Pipe and valves •  
Hydraulic control counterweight •  
Hydraulic control winch and boom •

Emergency free fall device •  
Control valve for 1 circuit •  
Hydraulic servo control •  
Hydraulic tank and oil level control •  
Oil filter with strainer in hydraulic tank •

#### Operator's cab

Cabin, isolation mounted, full vision  
With lockable door •  
Operator's seat, adjustable •  
Seat belt •  
Foot operator, inching break paddle •  
Dual steering control •  
Monitoring system/service indicator •  
Key, start •  
Fire extinguisher in cabin •  
Coat hook •  
Rear mirror, inside •  
Safety glass, tinted •  
Windshield wipers front, rear •  
Dome window •  
Control, single joystick •  
Safety lever •  
Emergency stop •

#### Electrical

Starter motor •  
Batteries, 2 units maintenance free •  
On-board system 24 V •  
Alternator 50 A •  
Back-up alarm, horn •  
Beacon •  
Working lights, front 2 ,rear 2 ,  
side 2 ,boom 1 ,winch, 1 •  
Dome light •  
Instrument warning lights •  
Battery charging •  
Hourmeter •  
Speed range •

Engine oil pressure •  
Water temperature •  
Fuel level •  
Parking brake •  
Hydraulic oil temperature •  
Pump replenishing pressure •  
Oil return filter •  
Air filter •  
Main warning light •

#### Pipe laying equipment

Boom welded type box-section structure •  
Boom kickout,uppermost position •  
Boom load limit sensor •  
Counterweight,adjustable,hydraulically controlled,4-block and 2-counterweight frames •  
Hydraulic draw works with independent driver motors for boom and hook winches •  
Brakes ,wet multiple disc,closed type,spring applied and hydraulically released •  
Blocks and hook with latch •  
Ropes •

#### Basic machine

Bumper front •  
Towing lug front •  
Towing hitch rear •  
Battery compartment, lockable •  
Refuelling pump, electric •  
Belly pans, heavy-duty,hinged •  
Radiator, wide-meshed •  
Engine cover, perforated •  
Engine doors, perforated •  
Engine doors, hinged, lockable •  
Lugs for crane lifting •  
Toolkit •  
Exhaust pipe,insulated •

### OPTIONAL EQUIPMENT

Air conditioner  
Arctic package

Rear winch for pulling  
ROPS or FOPS

Lengthened boom.  
Enlarged radiator

GLOBAL PIPELINE EQUIPMENT CO.,LTD.

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