

# GEMEX Serie Drill Rig

## AC / 150

*Gemsa General Makine Quality Drill Rig Manufacturer*

*Compressor Onboard  
Air Core & RC Drill Rig*



*Designed for Professional Drillers*

**GEMSA**

*General Makine*

For more than 30 years, we have specialized in developing drilling machines for safe, powerful and profitable.

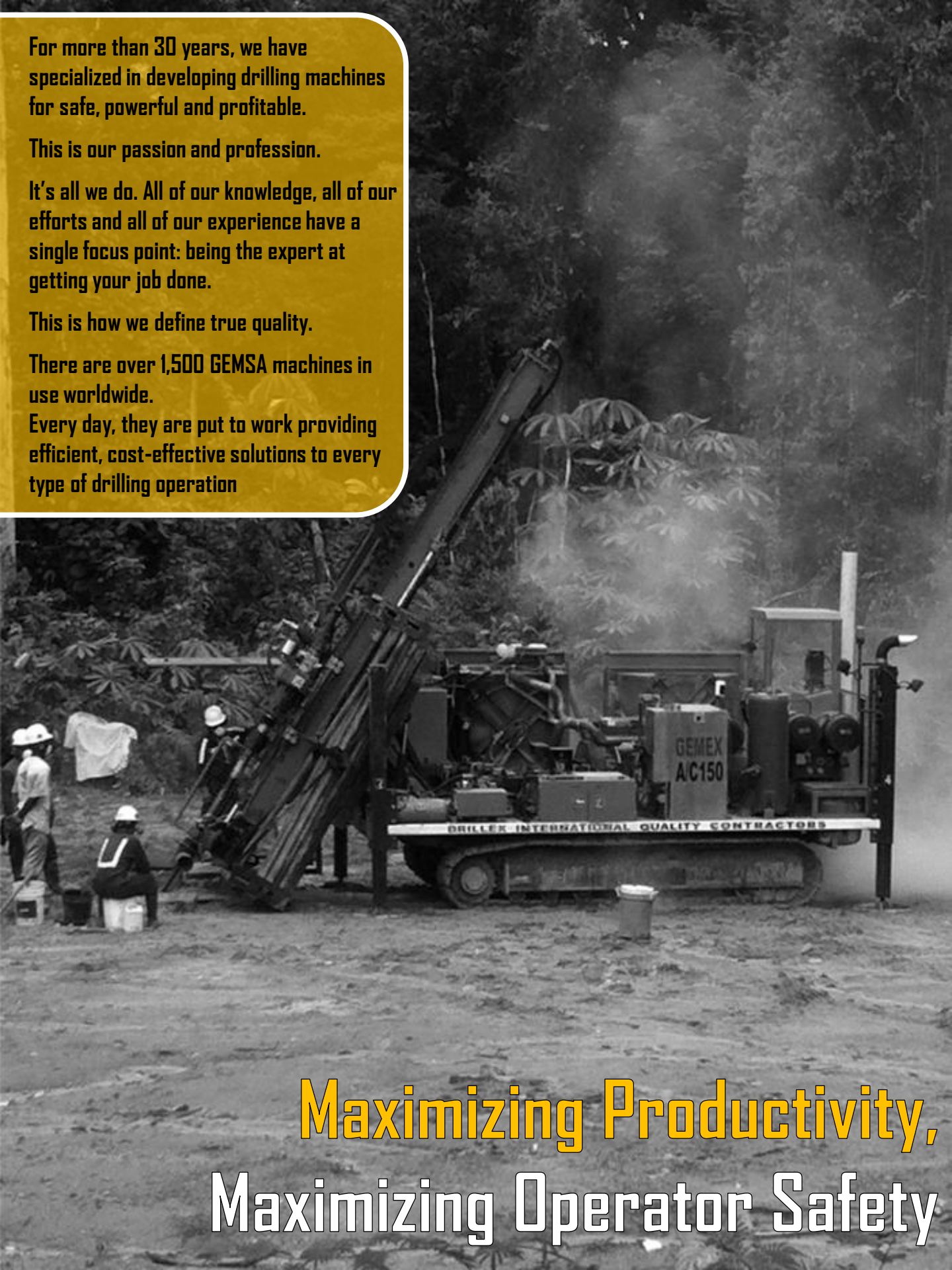
This is our passion and profession.

It's all we do. All of our knowledge, all of our efforts and all of our experience have a single focus point: being the expert at getting your job done.

This is how we define true quality.

There are over 1,500 GEMSA machines in use worldwide.

Every day, they are put to work providing efficient, cost-effective solutions to every type of drilling operation



**Maximizing Productivity,**  
**Maximizing Operator Safety**

# TECHNICAL INFORMATION

## Drill Rig Specifications

### GEMEX AC / 150

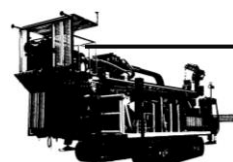


DRILLING DEPTH GUIDELINES	AIR CORE DRILLING	
DRILL ROD / CORE BARREL	Hole Depth "METRIC"	Hole Depth "U.S."
AC Rod (75 mm " 3in")	250 m	820 ft

DRILLING DEPTH GUIDELINES	REVERSE CIRCULATION	
DRILL ROD / CORE BARREL	Hole Depth "METRIC"	Hole Depth "U.S."
4" (101,6 mm)	175 m	574 ft

BASE FRAME ASSEMBLY / UNDERCARRIAGE			
		METRIC	U.S.
Weight of the Rig		16.000 kg	35.273 lb
Length		8.000 mm	26,2 ft
Width		2.600 mm	8,5 ft
Height		3.000 mm	9,8 ft
Stabilization		Four hydraulic jacks on each sides of the rig	
Standard Undercarriage Type		Strickland Model Crawler Unit	
Crawler Width		600 mm	1,9 ft
Crawler Track Type		Steel wide triple grouser shoes	
Driving Speed	1 st Speed	3,5 km/h	2,17 mph
	2nd Speed	5 km/h	3,11 mph
Truck Mounted Option		6x6 / 6x4 truck, or the customer's own support vehicle.	

AIR COMPRESSOR			
		METRIC	U.S.
Onboard Air Compressor (Option 1)		Atlas Copco 2 Stage Screw Compressor	
Working Overpressure Max.		25 bar	365 psi
Free Air Delivery		283,2 l/sec	600 cfm
Power ( Full load)		200 kW	268 hp
Cooler Fan		Hydraulic motor driven, variable speed control according to temperature degree.	



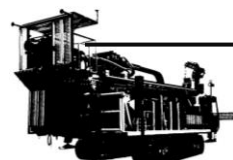
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POWER PACK			
		METRIC	U.S.
Engine Option 1		VOLVO 1342 VE	
Type of Cooling		Water - Cooled	
Fuel		Diesel	
Specific Fuel Consumption @1800 min <sup>-1</sup> (rpm)	25%	252 g/kWh	0,408 lb/hph
	50%	213 g/kWh	0,345 lb/hph
	75%	202 g/kWh	0,327 lb/hph
	100%	200 g/kWh	0,324 lb/hph
Number of cylinders, Method of Operation		6 cylinders, 4 stroke	
Max. Power		300 kW @ 1800 min <sup>-1</sup>	408 hp @ 1800 rpm
Max. Torque		1.645 Nm @ 1800 min <sup>-1</sup>	1.213 lb/ft @ 1600 rpm
PTO Compressor		7 bar	101,5 psi
Electrical Circuit		24 V	
Engine Controller		VP Computer full engine display	
Engine Option 2		VOLVO 943 VE	
Type of Cooling		Water - Cooled	
Fuel		Diesel	
Specific Fuel Consumption @1800 min <sup>-1</sup> (rpm)	25%	249 g/kWh	0,404 lb/hph
	50%	213 g/kWh	0,345 lb/hph
	75%	201 g/kWh	0,326 lb/hph
	100%	203 g/kWh	0,329 lb/hph
Number of cylinders, Method of Operation		6 cylinders, 4 stroke	
Max. Power		267 kW @ 1600 min <sup>-1</sup>	363 hp @ 1600 rpm
Max. Torque		1.480 Nm @ 1600 min <sup>-1</sup>	1.092 lb/ft @ 1600 rpm
PTO Compressor		7 bar	101,5 psi
Electrical Circuit		24 V	
Engine Controller		VP Computer full engine display	
Fuel Tank Capacity		450 liter	119 gal





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HYDRAULIC SYSTEM			
		METRIC	U.S.
Pump Drive		TWINDISC	
Max. Input Torque		2.700 Nm	1.992 lbf ft
Max. Output Torque per Pump Pad		1.050 Nm	774,4 lbf ft
Max. Input Speed		2100 min <sup>-1</sup>	2100 rpm
Max. Output Speed		2700 min <sup>-1</sup>	2700 rpm
Oil Quantity		5 Liter	1,32 gal
Pump 1		Open Circuit Axial Piston Pump Sauer Danfoss	
Working Input Speeds	Minimum	500 min <sup>-1</sup>	500 rpm
	Continuous	2450 min <sup>-1</sup>	2450 rpm
	Maximum	2880 min <sup>-1</sup>	2880 rpm
Working Pressure	Continuous	280 bar	4.060 psi
	Maximum	350 bar	5.075 psi
Flow at Rated Speed		210 l/min	55,4 gal/min
Input Torque at Max. Displacement		1.592 Nm/bar	972 lbf in/1000 psi
Pump 2		Open Circuit Axial Piston Pump Sauer Danfoss	
Working Input Speeds	Minimum	500 min <sup>-1</sup>	500 rpm
	Continuous	2450 min <sup>-1</sup>	2450 rpm
	Maximum	2880 min <sup>-1</sup>	2880 rpm
Working Pressure	Continuous	280 bar	4.060 psi
	Maximum	350 bar	5.075 psi
Flow at Rated Speed		210 l/min	55,4 gal/min
Input Torque at Max. Displacement		1.592 Nm/bar	972 lbf in/1000 psi
Pump 3		Load Sensing Sauer Danfoss	
Working Input Speeds	Minimum	500 min <sup>-1</sup>	500 rpm
	Continuous	2200 min <sup>-1</sup>	2200 rpm
	Maximum	2600 min <sup>-1</sup>	2600 rpm
Working Pressure	Continuous	260 bar	3.770 psi
	Maximum	350 bar	5.075 psi
Flow at Rated Speed		198 l/min	52,3 gal/min
Input Torque at Max. Displacement		1.433 Nm/bar	874,8 lbf in/1000 psi



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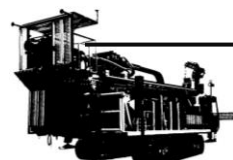
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HYDRAULIC SYSTEM			
		METRIC	U.S.
Pump 4		Open Circuit Gear Pump	
Working Input Speeds	Minimum	700 min <sup>-1</sup>	700 rpm
	Maximum	2300 min <sup>-1</sup>	2300 rpm
Working Pressure	Operating	5 bar	72,5 psi
	Maximum	210 bar	3.045 psi
Flow at Rated Speed @ 2100 min <sup>-1</sup> (rpm)		148 l/min	39,1 gal/min
Displacement		70,74 cm <sup>3</sup> / rev	4,32 in <sup>3</sup> / rev
Pump 5		Open Circuit Gear Pump	
Working Input Speeds	Continuous	2100 min <sup>-1</sup>	2100 rpm
	Maximum	3000 min <sup>-1</sup>	3000 rpm
Working Pressure	Continuous	180 bar	2.610 psi
	Maximum	270 bar	3.900 psi
Flow at Rated Speed @ 2100 min <sup>-1</sup> (rpm)		73 l/min	19,3 gal/min
Displacement		34,56 cm <sup>3</sup> / rev	2,11 in <sup>3</sup> / rev
Hydraulic Valves		PVG Valves Sauer Danfoss	
Hydraulic Hose, Fittings, Gauges		Parker	
Hydraulic Oil Tank Capacity		450 liter	119 gal

MACHINE CONTROLS	
Engine Control	VP Computer full engine display
Drilling Controls	Pilot control and manual control
Drilling Control Panel	All controls and gauges ergonomically positioned for operator comfort.
Driving Controls	Manual control.
Platform	Manual adjusted separate operator foot stand platforms for control panel front. Galvanized and anti-slip constructed folding platform for operator standing with shoe slide protection and no mud accumulated design.



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DRILL MAST and FEED SYSTEM			
		METRIC	U.S.
Mast	Structure	Drill Head operating surfaces covered with Hardox plates. Box section of mast 250 mm x 250 mm ST52-3	
	Length	5.500 mm	18 ft
Cradle		Supported with rollers	
Feeding System		Double shaft hydraulic feed cylinder	
Feeding Stroke		4.000 mm	13 ft
Fast Feeding Down Speed		80 m/min	262,5 ft /min
Pull Back Force		60 kN ( 6 tones @ 250 bar )	13.489 lbf @ 3.625 psi
Pull Back Speed		80 m/min	262,5 ft /min
Maximum Rod Length		3 m	9,8 ft
Slow Feeding		Hydraulic pressure controlled from Hold-back and Feed	

DRILL HEAD			
		METRIC	U.S.
Model		GM 250	
Floating Spindle Thread		4 " (101,6 mm)	
Drive Motor		Sauer Danfoss Orbital Motors	
Drill Head Speed		10-90 min <sup>-1</sup>	10-90 rpm
Drill Head Torque		4.000 Nm	2.950 lbf ft
Operating Pressure		220 bar	3.190 psi
Make Up		Torque Control	
Max. Break Out Pressure		250 bar	3.625 psi



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RC KIT			
		METRIC	U.S.
Rod Keys		Hydraulic Double Rod Key Unit	

Rod Thread Breaker	Type	Cylinder actuated, mounted on lower right hand side of mast	
	Tool	Wrap around Spanner	

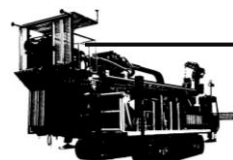
Blow Down	Hydraulic Control		
Blow Down Inserts	Replaceable Wear Tubes		

Cyclone	Metal frame cyclone with replacement wear plates and nylon bag base. Sample inlet port is coated with ceramic. Easy to clean, top opened Cyclone suitable for sample collection RC Drilling.		
Cyclone Capacity	28,31 m <sup>3</sup> /min	1000 cfm	
Drive Subs	101,6 mm	4 in	

AIR LINE LUBRICATOR			
		METRIC	U.S.
Lubricator	Hydraulic Driven		
Operating Pressure	75 bar	1.087 psi	
Lubricator Tank Capacity	30 Liter	8 gal	

ROD CARRIER	
Standard Rod Carrier	One rod carrier on the left hand side of the rig, activated by hydraulic cylinder (one cylinder for extension, one for lifting) 16 Rods ( Ø 101,6 x 3.000 mm ) , 30 Rods for Air Core

WATER PUMP			
		METRIC	U.S.
Pump	DYNASET HPW		
Max. Water Flow	30 l/min	7,92 gal/min	
Max. Pressure	200 bar	2.900 psi	
Max. Pumping Power	10 kW	13,41 hp	





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#### ACCESSORIES

Rig Lighting	Working led lights, Tramming lights, Service Lights
Tool Box	Lockable tool cabinet
HD Steel Work Bench with HD Work Vice	

#### SAFETY SYSTEM

Hose socks on all high-pressure air hoses fixed to anchor points.	
Safety Cage	Opening cage restricts oil flow to drive head motor thus limiting drive head rotation speed.
Safety Stops	On each side of the machine where operator and assistant can reach easily.
Alarm Horn & Back Drive Beeper	Alarm horn higher than 100 decibel controlled from operator cabin and back drive beeper for back drive warning.
Fire Extinguishers	There are 12 kg fire extinguishers several places where operator and assistant can reach easily .Also fire sensitive balls inside the engine cabinet .
Safety Decals	

#### OPTIONAL EQUIPMENT

OPTIONAL EQUIPMENT		
	METRIC	U.S.
Extra Valve Outlet		
Cold Start System		
Rig Lighting	Extra Led Lights Optional	
Drill Rig Color	Standard Color : International Harvester Orange – Black & White Colored ( Customer's choice is Optional )	





**INTELLIGENT TECHNOLOGY**

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