



Cat[®] 953D Welding Tractor

Engine

Engine Model	Cat [®] C6.6 ACERT™	
Flywheel Power	110 kW	148 hp

Weight

Operating Weight	16 300 kg	35,935 lb
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Value for Your Investment

This machine will exceed your expectations



Uptime

The Cat® 953D Welding Tractor is based on the construction equipment 953D in production since 2007. With valuable input from our customers and dealers, it has been equipped with the best and reliable components currently used in the pipeline industry to provide the best uptime to your fleet.

Machine Use

The Cat 953D Welding Tractor is easy and precise to move.

- The transmission allows smooth rides and continuous travel speeds between 0 and 10 km/h (6.2 mph). Travel and steering uses a single joystick for intuitive operation by new and experienced operators alike.
- The generator is engine driven, select the frequency of the region you work and switch on electricity. Producing electricity has never been so easy.

Safety

Safety is paramount around people, equipment and pipeline job sites.

- The 16+ tonnes (17.6+ tons) of the 953D Welding Tractor, combined with an oscillating undercarriage, makes it stable on uneven grounds. Stability can be further increased with a low ground pressure undercarriage that will extend the machine ability to work on very soft soils and that will increase the choice of possible cranes.
- The operator is protected by a Roll Over Protective Structure built into the cab. Three points of contact can be used to get on and off the machine and all the daily inspection can be performed from ground level to prevent falls.
- Excellent visibility around the tractor from the cab makes the machine safer as well for people working around.
- This machine is also equipped with safety features dedicated to electricity production. Emergency shutdown switches are available inside the cab and outside the machine from ground level. The production of electricity is controlled by the machine Electronic Control Module able to detect an issue with the tension or with the quality of the current. Downstream the alternator, all the electrical equipment is protected by a magneto thermal breaker that can stop the electricity production instantaneously.

Versatility

Because each pipeline project requires specific equipment needs and machine configurations, the Cat 953D Welding Tractor is designed so that the front and rear modules can be customized to meet your needs. The 2.6 m³ (3.37 yd³) built-in rear compartment provides enough space to receive and secure automatic welding equipment (computers, inverters, controllers), stick welding inverters, pipe heating systems and gas mixing system. Moreover, this compartment can be removed to free a 2.9 m (114 in) width and 1.26 m (46 in) long platform to fit a workshop, a standalone genset or any other equipment necessary on the job site to meet current and future needs.

The structure supporting the crane and the platform at front is also designed so that most of the crane and air-compressor brands can be installed. The platform can also receive additional gas bottles and a large toolbox to secure your power tools.

Base Machine

Engine

The Cat® C6.6 ACERT engine utilizes the Cat® Common Rail fuel delivery system. Designed for performance, durability, serviceability, and fuel economy, it meets EPA Tier 3, EU Stage IIIA and Japan Ministry of Land, Infrastructure and Transport Step 3 emission standards.

Structure

The D series main frame and loader tower provide durability, resistance to twisting, and a solid base to all components.

Hydrostatic Drive

The closed loop hydrostatic drive provides precise modulation for quick, smooth operation and superior maneuverability.

The transmission allows a smooth ride from 0 to 10 km/h (6.2 mph) and gradual turns up to counter-rotation within the length of the machine. Moving from one junction to one another will be fast and easy for any drivers.

Implement System

The 953D features a load sensing implement pump which reduces engine power and fuel consumption. On the welding tractor this pump powers the hydraulic crane.

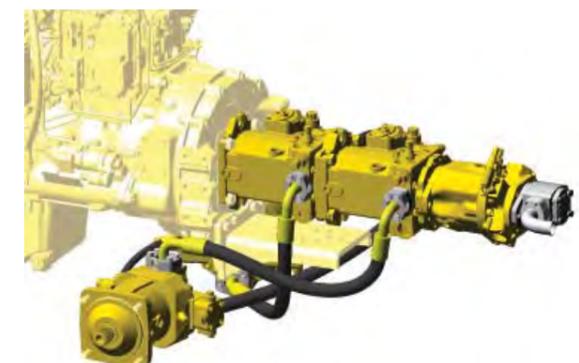
Undercarriage

The undercarriage is equipped with an oscillating system that keeps the track shoes on the ground. The machine stability is ensured on uneven grounds and the ground pressure kept as low as possible for a good flotation.

A low ground pressure undercarriage is also available optionally to further enhance the machine stability and the flotation thanks to the wider gauge and wider shoes.

Operator Station

Experience a high level of efficiency, comfort and productivity with the D series cab. The cab features a clear gauge cluster, comfortable air-suspension seat with Electro-hydraulic controls, automatic air climate control and provides optimal visibility around the machine.



953D Welding Tractor Features

Assets

Single Diesel Engine

The Cat 6.6 L (1.7 gal) 110 kW (148 net hp) diesel engine provides mechanical power to the track drive, generator and hydraulics.

The maintenance required to move the tractor and power the welding equipment is then minimized.

The fuel burned per hour is lower compared to hydrostatic drive alternators. For example, when the machine powers 4 inverters loaded at 80% @ 50 Hz, the fuel consumption is less than 9 L/h (2.38 gal/hr).

Robust and Reliable Generator

The 108 kW (144.8 hp) alternator powers up to 4 inverters, a high capacity air compressor and 4 additional auxiliaries 220V/110V AC power.

The electronic diesel engine governor provides precise frequency control for the welding equipment and the capability to switch from 50 Hz to 60 Hz easily.



Easy and Safe to Operate

The Cat 953D Welding tractor is easy to maneuver using a single joystick.

The hydrostatic transmission allows a smooth ride from 0 to 10 km/h (6.2 mph) and allows gradual turns up to counter-rotation within the length of the machine.

Moving from one junction to another is fast and easy for new and experienced operators.

The HIAB cranes available ex-factory are installed with the HIAB XSDrive® controller placed at the right hand side of the driver. Ergonomic and fitted with load indicators it provides information to quickly modify the crane motion while working.

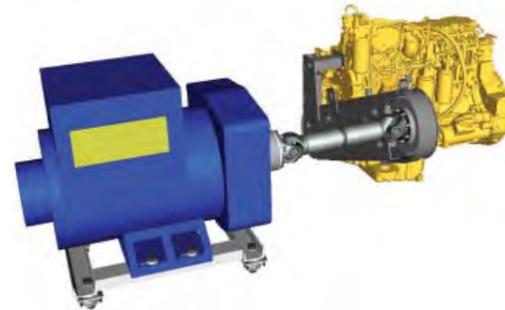
Adjusting the shack onto the pipe junction is fast and precise.

Finally, the dashboard integrates a switch to control the electricity production. Producing electricity has never been so easy.



Undercarriage and Cranes

Standard and low ground pressure undercarriages are available. The second choice reduces the ground pressure on soft soils while increasing the machine stability. It enables the installation of a 10 meter tonne crane such as the HIAB XS111 for tough pipeline jobs.



Storage

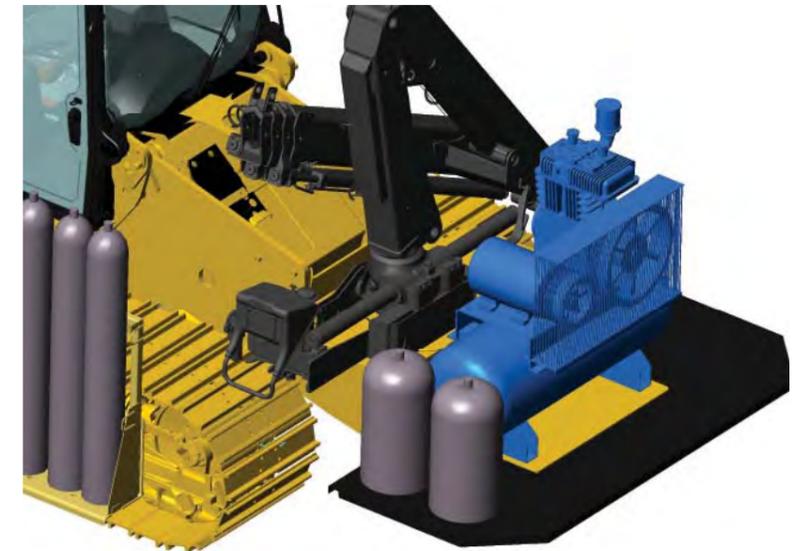
The Cat 953D welding tractor provides 2.6 m³ (3.37 yd³) of space available at back and allows the installation of up to 4 inverters for stick welding or all the automatic welding equipment from inverters to welding computers.

In addition it is possible to install an induction power source in the central area to pre-heat the pipe junction such as the RapidHeat35.

The compartment is easily accessible from ground level and is secured to protect your welding equipment.

At front the 3.6 m² (5,580 in²) platform is designed to welcome a high capacity air compressor such as the Quincy 390 and a 450 L (120 gal) air tank, welder tool box and gas bottles for those who need to heat the pipe junctions with propane.

On right hand side an optional gas bottle rack bolted to the track roller frame allows to store up to 8 tall gas bottles. This rack enables the replacement of bottles from ground level. Moreover, it can be easily stored on the front platform to meet transportation regulations requiring a travel width lower than 3 m (118 in).



Customer Support

Caterpillar has the most experienced dealer network in the world

Commitment Makes the Difference

Cat dealers offer a wide range of solutions, services and products to help you lower costs, enhance productivity and manage your operation more efficiently. From the time you select a piece of Cat equipment until you trade or sell it, the support you get from your Cat dealer makes the difference.

Dealer Capability

Cat dealers provide the level of support you need on a global scale. Dealer expert technicians have the knowledge, experience, training and tooling necessary to handle your repair and maintenance needs, when and where you need them.

Product Support

When Cat products reach the field, they are supported by a worldwide network of parts distribution facilities, dealer service centers and technical training facilities to keep your equipment up and running. Cat customers rely on prompt, dependable parts availability through our global dealer network, meeting your needs 24/7.

Service Support

Cat equipment is designed and built to provide maximum productivity and operating economy throughout its working life. Cat dealers offer a wide range of service plans that will maximize uptime and return on your investment, including:

- Preventive Maintenance Programs
- Diagnostic Programs, such as Scheduled Oil Sampling and Technical Analysis
- Rebuild and Reman Options
- Customer Support Agreements

Product Support ▶▶



Sustainability

A commitment for future generations



ONE WORLD. ONE FOCUS. ONE NAME.

Caterpillar is committed to building safe products that contribute to your business, promote efficient energy use and help protect the environment.

Greenhouse Gas Emissions

The 953D welding tractor is a Tier 3/ Stage IIIA emissions compliant machine with reduced levels of carbon dioxide and soot.

Sound

The 953D has reduced noise levels of 74 dB(A) dynamic with noise reduction technology throughout the cab.

Fuel Efficiency

Cooler environments will see a fuel benefit from the on-demand cooling fan that uses energy only when it's needed.

Electronic governing and the fine, accurate injection of fuel make the Cat C6.6 engine responsive to load yet mindful of fuel use.

Life Cycle Costs

Caterpillar and your dealer can offer you remanufactured parts, customer service agreements and rebuild options. The machine is designed to limit downtime with 500 hour oil and filter changes, waste specific guarding and protection, and quick evacuation of

engine oil and hydraulic oil. Scheduled oil sampling can monitor the health of your machine. Parts commonality with other Cat equipment reduces parts stocking requirements at either your shop or the dealer's.

Recycle

When the time comes, all of the steel that makes up the 953D Welding Tractor can be recycled and reused.

953D Welding Tractor Specifications

Engine	Cat C6.6 ACERT, 110 kW (148 hp) constant net
	EPA Tier 3, EU Stage IIIA and Japan ML&T Step 3
Fuel Consumption	Lower than 9 L/hr (2.38 gal/hr) @ 50 Hz (engine speed 1,660 rpm) with 4 Lincoln VPRO350 inverters loaded at 80%
Service Refill Capacities	Fuel Tank – 316 L (83.5 gal)
	Cooling System – 31 L (8 gal)
	Crankcase (with filter) – 16.5 L (4.4 gal)
	Final Drives (each) – 10.8 L (2.8 gal)
	Hydraulic Tank – 70 L (18.5 gal)
	Pivot Shaft – 0.7 L (0.18 gal)
Machine Dimensions	Length – 7.43 m (292.5 in)
	Width – 2.9 m (114.2 in) The width is increased by 405 mm (16 in) when machine is equipped with the side bottle rack.
	Height – 3.2 m (124 in)
	Ground clearance 416 mm (16.37 in)
Operator Environment	A/C and heated cab
	Windshield washers and wipers front and rear
	Cab windows glued
	4 halogen lights guarded, two facing forward, two facing rearward
	Option: 4 additional lights guarded: 2 facing forward, 2 facing sideways
Generator Power (kW)	108 kW (144.8 hp), 135 kVA, 194A @ 27° C (81° F) @ 50 Hz
	90 kW (120.6 hp), 112 kVA, 162A @ 40° C (104° F) @ 50 Hz
Output Voltage	400V @ 50 Hz or 480V @ 60 Hz, 3-phases
Frequency	50 Hz or 60 Hz – Software driven
Voltage of Auxiliaries	220V or 110V optionally
Voltage Protection	Magneto thermal breaker 160A, 40 Amps circuit breaker for each of the 4 welding units with earth leakage, 16A for each of the 4 auxiliaries coupled with 30 mA differential breakers
Number of Welding Units	4
Gas Bottle Storage	Front platform can get 4 to 6 propane bottles or 8 Argon bottles
	An optional side bottle rack bolted to the track roller frame can store up to 8 gas bottles diameter Ø 230 mm (9 in) Max × Height 1200 mm (47.2 in)
	Side bottle rack mass capacity: 800 kg (1,764 lb)
	This rack can be stored on the front platform to meet transportation width of 3 m (9.8 ft)
Lifting Device	HIAB XS077 1000 kg (2,204.6 lb) @ 6 m (19.7 ft) or HIAB XS111 1000 kg (2,204.6 lb) @ 10 m (32.8 ft) from center of machine. XS077 and XS111 add 970 kg (2,138 lb) and 1300 kg (2,866 lb) to the machine respectively.
Lifting Device Controls	2 sets of controls provided with the HIAB cranes: close to the crane and inside the cab using the XSDrive HIAB controller
Lifting Device Brand	Front platform compatible with Pal finger, FASSI and HIAB lifting devices but hydraulic compatibility only with HIAB
Hydraulic System	Output – 140 L/min (30.8 gal/min)
	Main Relief Valve Setting – 27 500 kPa (3.99 psi)

Operating Weight	16 300 kg (35,935 lb) – Standard undercarriage, without crane, without compressor
	17 050 kg (37,589 lb) – Low ground pressure undercarriage, without crane, without compressor
Examples of Operating Weights	17 870 kg (39,396 lb) when fitted with Standard gauge + HIAB XS077 + Quincy 370
	19 380 kg (42,725 lb) when fitted with Low ground pressure undercarriage + HIAB XS111 + Quincy 390 + Side bottle rack
Track Type	Sealed and Lubricated Tracks, Extended Wear Life, Double grouser – 480 mm (19 in)
	Optional: SALT Heavy Duty Double grouser 800 mm (31.5 in) wide (when ordered with low ground pressure U/C)
Flotation	78.6 kPa (11.4 psi) when fitted with Standard gauge + HIAB XS077 + Quincy 370
	51.2 kPa (7.4 psi) when fitted with Low ground pressure undercarriage + HIAB XS111 + Quincy 390 + Side bottle rack
Storage Space	Rear compartment volume: 2.6 m ³ (3.37 yd ³)
	Front platform area: 3.6 m ² (5,580 in ²)
Air Compressor	Air compressors available:
	– Atlas copco LT10-15 40 m ³ /h (52.3 yd ³ /h), 14 bars with air tank 120 L (31.7 gal) Adds +225 kg/496 lb to the machine
	– Quincy F370 QR25 equipped with air tank 450 L (120 gal), 1245 L/min (44 ACFM), 175 PSIG (12.07 bar) Adds +600 kg/1,322 lb to the machine
	– Quincy F390 QR25 equipped with air tank 450 L (120 gal), 1897 L/min (67 ACFM), 175 PSIG (12.07 bar) Adds +760 kg/1,675 lb to the machine
Range of Operating Temperatures	Min ambient capability is –27° C (81° F) with low temperature oil and startup with Ether
	Max ambient capability is 43° C (109° F) machine loaded 100%, 52° C (126° F) machine loaded 70%
Travel Speed	Infinitely variable between 0 and 10 km/h (6.2 mph)
Electrical System	Type 24V DC
	Batteries: Capacity 950 CCA, Voltage 12, Quantity 2
	Alternator 95 Amps, Heavy-Duty Brushless
Wireless Data Exchange	Product Link optional
Standards	• ROPS (Rollover Protective Structure) offered by Caterpillar for the machine meets ROPS criteria SAE J1040 MAY94, ISO 3471:1994 DLV criteria SAE J397B, ISO 3164:1995.
	• FOPS (Falling Object Protective Structure) meets SAE J/ISO 3449 APR98 Level II, ISO 3449:1992 Level II, DLV criteria SAE J397B, ISO 3164:1995.
	• Brakes meet SAE J/ISO 10265 MARCH99, ISO 10265:1998.
	• The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT 98 is 79 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
	• The operator sound pressure level measured according to the procedures specified in ISO 6396:1992 is 74 dB(A) for the cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
	• Hearing protection is recommended when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
	• The exterior sound pressure level for the standard machine measured at a distance of 15 m (49 ft) according to the test procedures specified in SAE J88 APR 95, mid-gear-moving operation, is 76 dB(A).
• The labeled sound power level is 109 dB(A) measured according to the test procedure and conditions specified in 2000/14/EC.	

953D Welding Tractor Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat dealer for details.

Standard Equipment

Power Train

- Cat® C6.6 ACERT™ diesel engine, turbocharged with ATAAC
- Modular cooling system for engine air intake, oil and water
- Fan, demand, hydraulically driven
- Tank fuel
- Electro Hydrostatic Control (EHC) for transmission with travel and work modes
- Fuel priming pump, electric, water separator, air inlet, precleaner
- Air cleaner dry-type, axial seal with integral precleaner and dust ejection system, electronic filter condition indicator
- Muffler, under hood
- Starting aid ether injection
- Caterpillar extended-life coolant
- Load sensing variable displacement implement pump

Undercarriage

- Cat HD tracks (38 sec.) width 480 mm (18.9 in), double grouser
- 1800 mm (70.9 in) track gauge
- Final drive, standard
- Track guiding guards, end section
- Track adjuster, hydraulic
- Sprocket rims, with replaceable bolt-on tough steel segments
- Guards, sprocket
- 7 single flange track rollers per side, with one upper carrier rollers, lifetime lubricated
- Idlers, lifetime lubricated
- Idler, scrapper
- Oscillating track roller frames

Electrical

- Alternator, 24 volt, heavy duty brushless
- Alarm, backup, horn, electric
- 2 heavy duty batteries, high output, maintenance free, 950 CCA
- Switch, Main disconnect
- Starter, Electric (heavy duty, 24 volt)
- Four halogen lights, 2 forward facing, roof mounted; 2 facing rearward integrated in A/C unit

Operator Environment

- Cat Messenger
- Side sliding window
- Pressurized, sound suppressed, ROPS/FOPS cab with tinted glass and sliding side window
- Air conditioning and heating
- Heater/defroster with automatic temperature control
- Seat, air suspended adjustable
- Electro Hydraulic seat mounted control levers
- Seat belt, retractable
- Electronic Monitoring System with gauges for:
 - Engine coolant temperature
 - Hydraulic oil temperature
 - Pump drive box oil temperature
 - Fuel level
- Mirror, rearview, inside
- Radio ready. Includes 24 to 12 volt converter, speakers, antenna and one 12 volt power outlet
- Coat hook
- Transmission control, Joystick
- Storage compartments under left armrest
- Document holder on right console
- Floor mat, rubber, heavy duty
- Windshield washers and wipers, front and rear
- Cab window, front glued
- Durable metal roof
- Parking brake switch and “brake-on” indicator light

Welding Tractor

- Rear compartment with latches lockable and rearview mirrors
- Generator Leroy Somer 108 kW (145 hp)/135 kVA/194A @ 27° C (81° F)
- Electrical cabinet with breakers for the generator, 4 welding units, 1 compressor and 4 auxiliary plugs
- Generator power switch with light indicator on side console
- HIAB XSDrive support seat mounted
- Front platform
- Harness to power the compressor on the front platform
- Hydraulic hose and electrical harness to power the crane on the front structure

Other

- Tilt cab, locking bar
- Sound suppression, exterior
- Engine enclosure with lockable doors
- Radiator core 6.5 fpi, debris resistant
- Swing out fan
- Guards, full bottom
- Bumper
- Ecology drains on hydraulic tank
- Product Link ready
- Oil sampling valves
- Hoses, Caterpillar XT
- Warning decals
- Hydraulic Oil, HYDO Advanced 10

Optional Equipment

- Low ground pressure undercarriage with HD tracks (38 sec) width 800 mm (31.5 in), double grouser shoes. Track gauge 2100 mm (82.7 in)
- Additional lights: two facing forward and two facing sideways
- Caterpillar Product Link 321 (for selected territories)
- Hydraulic tilt cab system with manual pump
- Heater engine coolant 120V or 240V
- Antifreeze –50° C (122° F)
- Cranes HIAB XS077 or HIAB XS111 with HIAB XSDrive controller
- Compressors Atlas Copco LT10-15, Quincy compressors QR25, 370 and 390
- Side bottle rack for 8 bottles for standard and wide undercarriages equipped with hand hold and a step

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