

# ARCHIVED REPORT

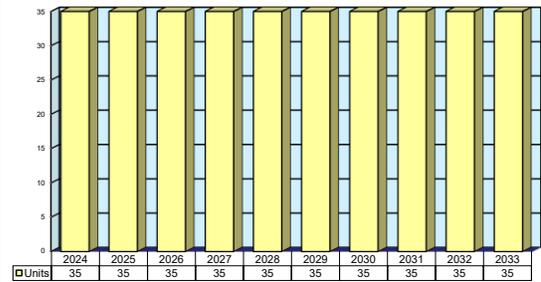
For data and forecasts on current programs please visit [forecastinternational.com](http://forecastinternational.com) or call +1 203.426.0800

## ZBD97

### Outlook

- Serial production of ZBD97 series vehicles is ongoing for domestic PLA procurement
- The ZBD97 and its successors will become an increasingly important supplement to the PLAGF's WZ 501 inventories.
- Forecast reflects ongoing procurement of ZBD97 series vehicles by the PLA, as well as potential export sales

**Unit Production Forecast  
2024-2033**



### Orientation

**Description.** A tracked infantry combat vehicle.

**Sponsor.** The People's Liberation Army Ground Force sponsors production of the ZBD97.

**Licensees.** None.

**Status.** Development through serial production.

**Total Produced.** Through 2023, we estimate the prime contractor produced 15 prototypes and 1,186 production-standard ZBD97 vehicles.

**Application.** An amphibious mechanized infantry combat vehicle optimized for transporting infantry during both offensive and defensive operations.

**Price Range.** In 2024 U.S. dollars, the base ZBD97 model carries an estimated unit price of \$1.22 million.

### Contractors

#### Prime

**China North Industries Corp (NORINCO)**

<http://www.norinco.cn>, 12A Guang An Men Nan Jie, PO Box 100053, Beijing, China, Tel: + 86 10 6352 9988, Fax: + 86 10 6354 0398, Email: [norinco@norinco.cn](mailto:norinco@norinco.cn), Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

**ZBD97 Archived MAR****Technical Data****ZBD97/VN11**

**Crew.** Three: gunner, driver, and commander. The vehicle carries seven fully equipped infantrymen.

**Armor.** All-welded steel armor, which provides protection against 30mm armor piercing (AP) projectiles over the frontal arc and 7.62mm projectiles over the sides and rear. The vehicle can also accept additional applique armor.

**Dimensions.** The following data reflect the latest production-standard ZBD97 vehicle.

	<u>SI Units</u>	<u>U.S. Units</u>
Length	7.51 m	20.41 ft
Width	3.30 m	9.88 ft
Height	2.53 m	8.69 ft
Combat weight	22.03 tonnes	27.78 tons
Fuel capacity	450 liters	118.87 gal

**Performance.** The automotive performance data reflect use on a paved road. With preparation, the vehicle can ford 1.5 meters (4.92 ft) of water. Due to the paucity of official information released by the contractor or PLA on the ZBD97 program, some performance data are derived from estimates based on the best available resources.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum speed	70 kmph	43.47 mph
Maximum water speed	14 kmph	8.70 mph
Maximum range	505 km	313.80 stat mi
Step	55 cm	2.79 ft
Trench	2.3 m	7.55 ft
Slope	36%	36%
Gradient	57%	57%
Fording	Amphibious	Amphibious

**Engine.** Unspecified six-cylinder, water-cooled turbo-diesel engine operating at 403.43 kW/541 hp.

**Gearbox.** Unspecified hydromechanical unit, with six forward and three reverse gear ratios. The gearbox integrates the vehicle braking system and hydrostatic steering.

**Suspension and Running Gear.** Torsion bar suspension, with six dual-tired roadwheels and four return rollers on each side. The drive sprocket mounts to the front, with the idler located at the rear.

**Armament**

**Main Armament.** Fully stabilized 2A70 100mm rifled ordnance produced in China under license from Russia's KBP Instrument Design Bureau. The 2A70 weapons system is capable of firing both conventional 100mm ordnance and HEAT-equipped laser-guided missiles.

Reports indicate that the ZBD97 is equipped with eight such missiles and 41 conventional 100mm rounds. The

ZBD97 is outfitted with a bustle-mounted automatic loading system.

The 100mm 2A70 fires 3UOF17 HE or 3OF32 HE-Frag rounds at a maximum rate of 10 rounds per minute. The 30mm 2A72 fires AP-T, HE-Frag, and HE-Frag-Tracer rounds from disintegrating-link belts at rates of 250 or 500 rounds per minute.

**Secondary Armament.** One coaxially mounted KBP 30mm 2A72 cannon with 500 rounds of ammunition and one coaxially mounted 7.62x54mm machine gun with 2,000 rounds of ammunition.

Each side of the turret mounts three electrically operated smoke grenade launchers.

**Fire Control.** The unspecified computer-based fire control suite features full day/night capability, a laser rangefinding system, and a thermal scope.

**ZBD97 Archived MAR****Variants/Upgrades**

**Variants.** The prime contractor is planning a number of additional ZBD97 variants. Currently, the ZBD97 product line offers the following variants:

<b>Designation</b>	<b>Description</b>
ZBD97 Command Vehicle	ZBD97 variant designed to perform as a mobile command post. Outfitted with navigation, communications, and intelligence equipment. The rear cabin is enlarged and the vehicle is equipped with a roof-mounted 12.7mm machine gun.
ZBD97 Recovery Vehicle	ZBD97 variant intended for a vehicle recovery role. Outfitted with an unspecified crane system.
ZBD97 Self-Propelled Artillery System	Modified ZBD97 chassis mounting a 122mm field gun to operate as a self-propelled artillery vehicle.
ZBD-04A/WZ 502G	Enhanced ZBD97 variant with a reduced hull profile and additional, bolted applique armor. Features an improved fire control suite. Not equipped with water jets but still possesses some amphibious capability. Sometimes referred to as the ZBD-08.
ZBD-08 Self-Propelled Mortar System	ZBD-08 variant mounting a 120mm mortar system in a three-man turret.
PLZ-07	Extensively modified ZBD97 chassis reconfigured into a self-propelled artillery vehicle. Integrates a 122mm howitzer.
VN12	ZBD97 variant featuring extensive application of bolted applique armor, encompassing the entirety of the vehicle's turret and hull. Reports indicate the design integrates improved fire control and communications equipment. Turret is outfitted with a 30mm cannon in a two-man turret and two HJ-8 ATGMs. This design is primarily intended for export.

**Modernization and Retrofit Overview.** Although the prime contractor is pursuing new-build production of the ZBD-08 variant, it is probable that some ZBD97/ZBD-04 vehicles will also be converted to the ZBD-08 standard.

**Program Review**

**Background.** Open-source reporting indicates that development of the ZBD97 series of vehicles began in the late 1990s, with the first prototype model completed in 2000. From 2000 to 2005, the subsequent prototype models underwent an extensive period of trials and evaluations.

The ZBD97 first entered active service with the People's Liberation Army Ground Force in 2006. The vehicle was presented in public for the first time in 2009, during a military parade in Beijing.

The ZBD97 represents a significant improvement over the infantry fighting vehicles that are currently in service with the PLAGF. The most prominent of these vehicles is the WZ 501, an indigenously produced version of the Soviet-era BMP-1 design. The Forecast International Weapons Group estimates that the PLAGF fields a force of approximately 6,155 WZ 501 vehicles.

The ZBD97's design derives considerable influence from the Russian BMP-3 IFV, and also integrates a number of Western-derived design innovations.

Current employment of the ZBD97 series is largely confined to a small percentage of frontline PLAGF units. Nevertheless, the vehicle and its successors will become an increasingly important supplement to the PLAGF's WZ 501 inventories.

The ZBD97 is also referred to as the WZ 502, ZBD-04, and Type 97 IFV in various publications. These designations indicate minor build and performance deviations.

On the export market, the base model ZBD97 IFV is designated the VN11.

## ZBD97 Archived MAR

**Description.** The driver's station – located in the left-front of the hull – features a single-piece domed hatch cover and three periscopes. The diesel powerplant is located to right of the driver's station.

An additional crew station is positioned to the rear of the driver. This position also features a single-piece domed hatch cover.

The turret mounts at the center of the vehicle. The turret design allows for a maximum elevation of 60 degrees for the 2A70 and 2A72 ordnance, allowing the vehicle to engage rotorcraft if necessary.

The commander sits to the right of the main armament; the gunner sits to the left. The commander's cupola features a single-piece hatch cover with a periscope, day/night sights, and an infrared system.

The troop compartment is located in the rear of the vehicle hull and allows for the transport of seven fully equipped troops.

The troop compartment features one forward-opening hatch mounted on the rear of the hull for protected access and egress from the vehicle. This hatch is the primary means of disembarkation and features an additional forward-facing viewing/firing port.

The troop compartment features two forward-angled firing ports on each side of the hull and one located in the rear.

The vehicle also integrates two overhead hatches above the troop compartment that can be locked upward to provide an additional two firing ports.

The water-jet mechanism, for amphibious propulsion, mounts two jets on each side of the lower rear of the hull.



ZBD97 Infantry Fighting Vehicle

Source: Public Domain

## Funding

---

The Ministry of National Defense of the People's Republic of China provides funding for this program.

## Worldwide Distribution/Inventories

---

**Export Potential.** The prime contractor is actively promoting the sale of ZBD97 series vehicles on the international market. Currently, however, no export sales of the vehicle have been reported.

**Countries.** People's Republic of China (15 prototypes; 1,186 production-standard ZBD97 series vehicles).

## Forecast Rationale

Although the ZBD97 series of vehicles currently represents only a minute percentage of the PLAGF's armored fighting vehicle fleet, the series occupies a key position in the service's ongoing pursuit of a modernized frontline armored force structure.

The limited number of ZBD97 vehicles in active service are meant to act as the tip of the spear of the PLAGF's mechanized infantry forces, supplementing the service's vast but antiquated fleet of WZ 501 vehicles.

Open-source reports and imagery suggest the PLAGF is increasingly prioritizing the retrofit of existing ZBD97 stocks to the up-armored ZBD-04A variant, as well as extensive new-build production of the upgraded model. The ZBD97's versatility also makes it a strong foundation upon which the PLA can develop a wide family of specialized variants and upgraded models in the future.

### *Export Potential*

The base ZBD97 model carries the export designation VN11, while the enhanced variant is designated the

VN12. NORINCO began actively marketing the VN12 in mid-2014. However, neither the VN11 nor the VN12 have thus far generated any known export orders.

Nevertheless, the Forecast International Weapons Group expects the VN11 and VN12 to secure a modest quantity of export orders, primarily from China's traditional customers in North Africa, the Middle East, and South America.

For customers seeking to modernize their IFV inventories without incurring exorbitant expenditures, the VN11's and VN12's combination of modern capabilities and a comparatively low unit price may provide an attractive solution.

Ultimately, however, the expansive domestic requirements of the PLAGF as it continues to pursue its ambitious campaign of force modernization will be the primary force that sustains serial production of the ZBD97 series.

## Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION													
Designation or Program	Thru 2023	High Confidence					Good Confidence			Speculative			Total
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033		
<b>China North Industries Corp (NORINCO)</b>													
<b>ZBD97</b>													
	1,201	35	35	35	35	35	35	35	35	35	35	35	350
<b>Total</b>	1,201	35	35	35	35	35	35	35	35	35	35	35	350