



# NORA-B52

## Self-propelled gun-howitzer 155 mm



The NORA-B52 155mm self-propelled gun-howitzer is designed to provide fire support to own units. Fire support is achieved by powerful, sudden and rapid fire against tactically, operatively and strategically significant targets at greater distances.

The weapon is modular, which provides for the delivery of a number of different options. It is mounted on KAMAZ 6560 and MAN TGS chassis. It can also be mounted on some other truck chassis depending on the user's choice.

### Basic firing data:

- fire mode is 12 rounds in less than 4 minutes
- rate of fire - 4 rds/min in loading elevation
- barrel ballistic life - 1000 rounds with charge 10 as per the firing tables
- with autofrettage barrel - 2000 rounds with charge 10 as per the firing tables
- Range with ERFB projectile 32.5 km
- Range with ERFB BB projectile 41.5 km
- Range with VLAP projectile 52 km

### The vehicle ground support system during firing and the mechanisms for movement of the self-propelled 155mm gun-howitzer provide:

- basic direction of fire – contrary to the direction of driving
- field of action in elevation from - 5° to +65° with the speed of the barrel movement in elevation of 8°/sec.,
- total field of action in azimuth of minimum 60° (with
- approximately equal rotation in both directions from
- the longitudinal axis of the vehicle) with the speed of the barrel movement in azimuth of 6°/seconds,
- auxiliary direction of fire - in the driving direction:
- field of action in elevation from + 25° to +65°,
- total field of action in azimuth of minimum 50° (with
- approximately equal rotation in both directions from the longitudinal axis of the vehicle).

### The NORA-B52 155mm self-propelled gun-howitzer can be used, without degrading its exploitation characteristics, in the following conditions:

- on all types of ground,
- in all climatic-mechanic conditions (sunshine, rain, snow, high humidity, high sand concentration),



- by day and night, in all visibility conditions,
- the operation of all basic subsystems of the weapon is reliable within the temperature range from -25°C to +55°C
- in case of failure of the basic motor, the additional power unit installed in the weapon, provides smooth operation of all subsystems,
- in case of failure of the electrical-power subsystem, the basic functioning is ensured through the blocks and valves installed in the weapon so that the weapon can exit the firing position,
- the weapon has an installed independent, stand-by, manual hydraulic subsystem that enables the transition from the combat to the marching position in order to withdraw from the firing position.
- for training purposes, the weapon can be integrated with a coaxial 20 mm gun which can also be used as a defensive weapon
- Optional: Implementation of the system for setting of multi-function fuze.
- Optional: The latest generation of navigation and orientation system, to emphasize particularly the optosensor head featuring laser, day and night vision camera from which the data are forwarded to FCS facilitating direct fire within a shorter period of time compared to standard weapons.

The combat mass of the NORA-B52 gun-howitzer, with onboard ammunition and the crew members, does not exceed 40 tons.

The number of crew members of the NORA-B52 selfpropelled gun-howitzer is 5 (commander, gunner, driver and two crew members). While driving, operating the gun and firing, the entire crew is accommodated in the cabin without the need to leave the vehicle, whereas most competitive howitzers must be served manually to some extent, even in the basic mode of operation. The communication between the crew members is enabled by an intercommunication (UMK) unit, which enables normal communication at the work places and at the places of serving the automatic loader components. The UMK unit is integrated into the communication system on the weapon and battery level.

The time of the transition of the weapon from the marching to the combat position and vice versa is less than 90 seconds.

A part of the fire control system is integrated on the NORA-B52 self-propelled weapon, which, together with the fire control system on the levels of the battery and division, enables efficient use of the weapon.

#### **The weapon part of the fire control system includes:**

- unit for inertial navigation, orientation and laying,
- unit for determination of the relative location of the weapon,
- communication equipment,
- unit for communication between the crew members,
- PLC unit,
- indicators of the firing elements and other information with computers (commander's and gunner's counters),
- set of sighting devices for indirect and direct firing with accessories for their lighting.

#### **The fire control system on the battery level enables the use of the weapon in several ways, and specifically:**

- in the automatic operation mode (automatic line of sight),
- in the semi-automatic operation mode,
- in the classical-manual operation mode.

#### **Technical characteristics of the 8x8 chassis**

- Wheels formula 8x8
- GVW <40 t
- Engine V-8 diesel with turbo compression, water cooled
- Fuel consumption test at 100 km, full load and speed 60 km/h 53 l

#### **Version with RCWS weapon module**

This modular system can be upgraded with the weapon made through an integration of a 155 mm weapon module on an 8 x 8 chassis. The weapon module is controlled from the vehicle cabin and, owing to its characteristics, can be regarded as a 155 mm RCWS. It is built around a 155 mm autofrettaged barrel assembly that is in compliance with Joint Ballistic Memorandum of Understanding. The most important component of the weapon module is a fully automatic loader with 24 projectiles and propellant charges, featuring the rate of fire up to 4 rounds per minute. Additional 12 rounds are accommodated on the platform for automatic re-loading, so the combat set comprises a total of 36 rounds. The number of crew members is 4.

