

# SIMACO

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SIMACO company is the largest Russian developer and manufacturer of mud blade mud agitators with maintenance-free design and capacity from 3 kW to 30 kW with standard, marine and chemical resistant versions.



## MUD AGITATORS

# PBRT-GK-turbo

**MECHANICAL BLADE MUD AGITATORS WITH «SEALED CASE»  
REDUCTION GEARBOX AND «TURBINE VANE» MIXER**

### MAINTENANCE-FREE DESIGN

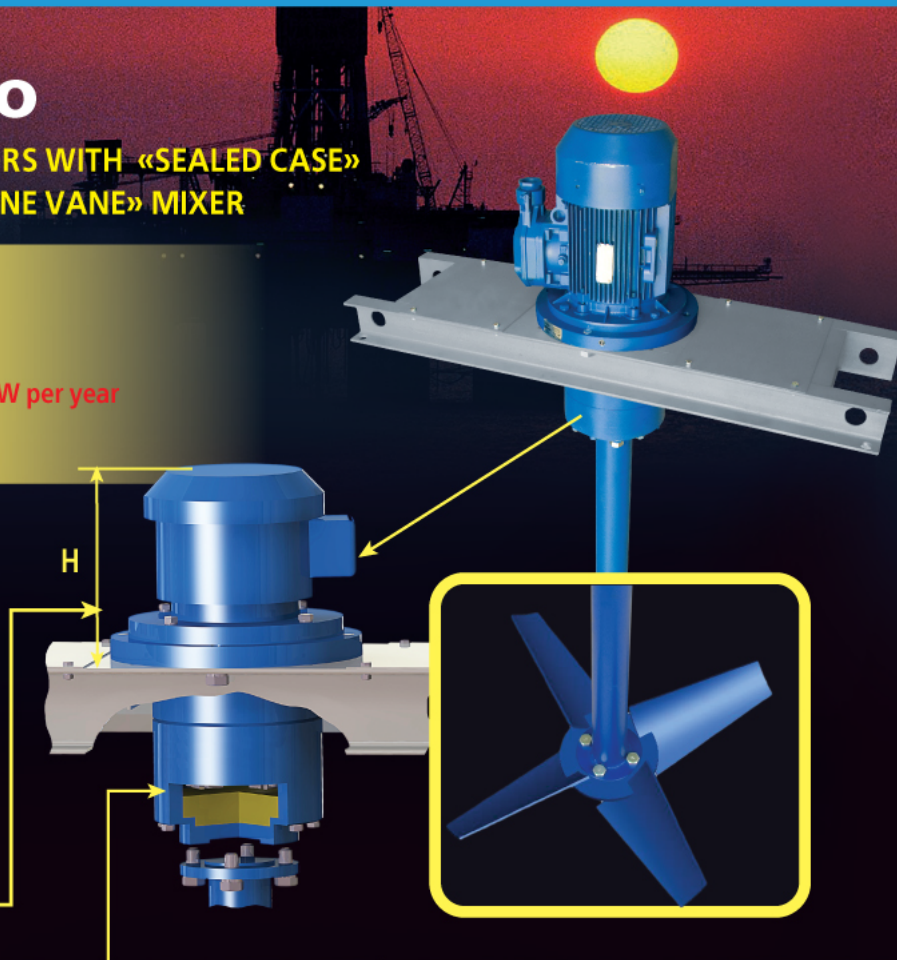
**LIFECYCLE** – more than **55 000** hours

**power ECONOMY** is more than **20 000 kW** per year

**Weight** – from **170 kg**

The unique design of the PBRT-GK-turbo mud agitator manufactured by SIMACO is the result of longstanding work for construction of highly reliable, compact and **fully maintenance-free** design for intense operation at the drilling rigs operated under almost any climatic conditions at temperatures from -50° C to +50° C.

The mud agitator design has considerably reduced H size determining «transportation overall dimensions» for application in the structures of mobile circulation systems of drilling platforms.



### !!! NEWLY-DESIGNED PRODUCT !!! MAINTENANCE-FREE DESIGN «SEALED CASE»

reduction gearbox eliminates the possibility of lubrication liquid leakage during operation and requires no maintenance throughout the period between the scheduled maintenance.

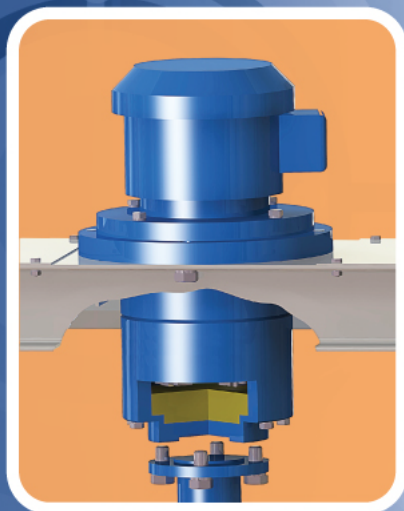
### !!! NEWLY-DESIGNED PRODUCT !!! «TURBINE VANE»

mixer improves mud mixing efficiency by **25%**, significantly increases lifetime of the reduction gearbox and reduces power consumption of the mixer.

SIMACO mud agitators have been manufacturer for over 15 years and more than 25,000 mud agitators have been manufactured up to date! At present, the mud agitators are used in service companies of OJSC «SURGUTNEFTEGAZ», OJSC «GAZPROM», «BK EURASIA», CJSC «SSK», OJSC «GAZPROMNEFT», OJSC «ROSNEFT», PJSC «BASHNEFT», OJSC «LUKOIL», «WEATHERFORD» COMPANY, PJSC «TATNEFT», «SCHLUMBERGER» COMPANY, Halliburton etc. SIMACO mud agitators have been installed on the offshore ice resistance fixed platform OIRFP «Priazlomnaya» in the Barents Sea.



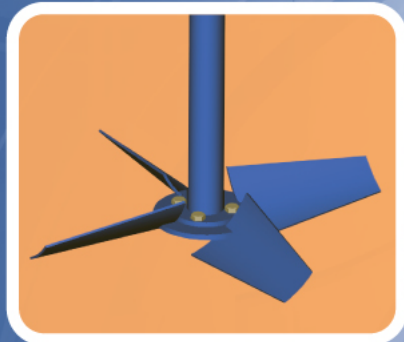
### MAINTENANCE-FREE DESIGN OF REDUCTION GEARBOX «SEALED CASE»



The design of reduction gearbox Sealed Case has no output shaft sealed with packing ring, and rotation is transmitted through rotating gearbox housing with a tight bottom. Thus, liquid lubricant is unable to leak during operation throughout the unit's lifetime.

Also, SIMACO reduction gearboxes have unique resistance against overloads and impulse loads, long operation life and efficiency, transfer of high torques having small overall dimensions, simple and repairable design.

### MIXERS «TURBINE VANE»



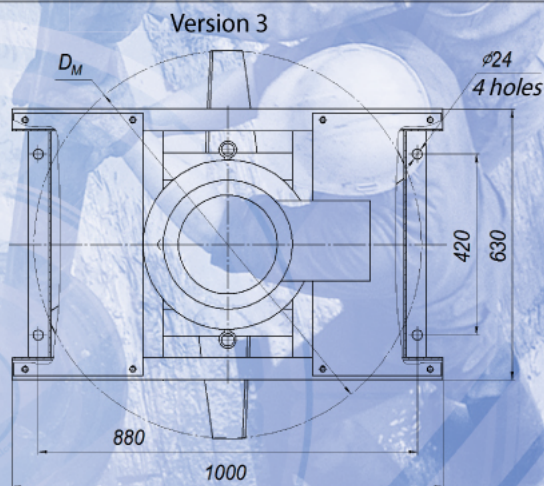
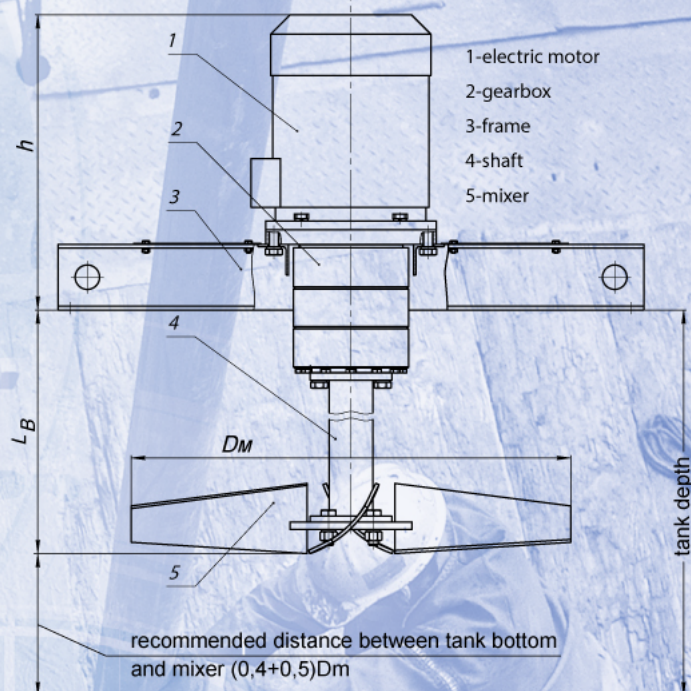
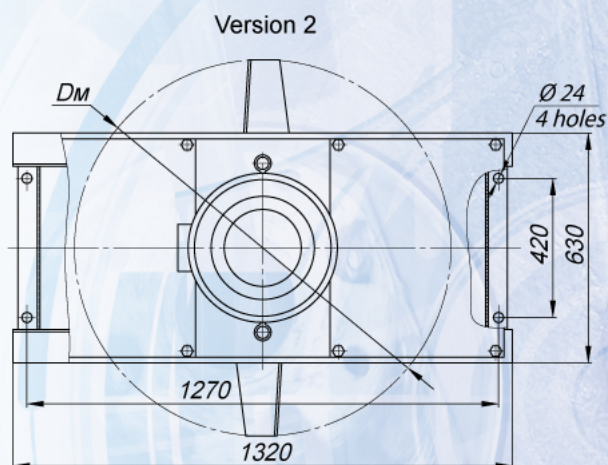
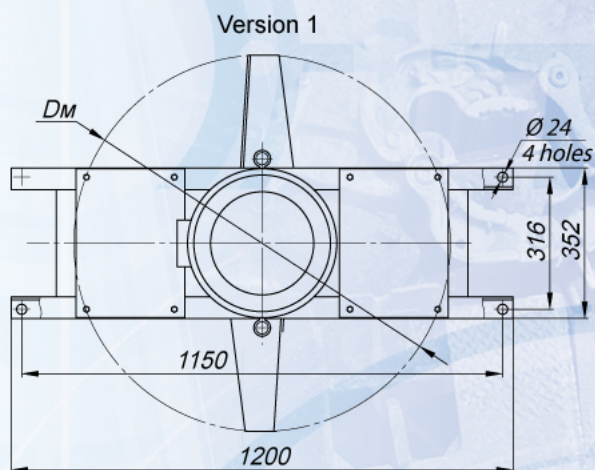
The profile of mixers in SIMACO mud agitators with «turbine vane» is developed so that the arising flow creates powerful uplift force. Upon that, the mixer's wing incidence values are calculated so that the medium flow creates the minimum face load and sweep availability enables to improve the flow-around. «Turbine Vane» mixer enables to increase mud make-up speed by 25% and considerably reduce power consumption during mixing.

## ADVANTAGES OF PBRT-GK-turbo MUD AGITATORS

<b>HIGH RELIABILITY OF REDUCTION GEARBOX</b>	PBRT-GK-turbo mud agitators are designed on the basis of a reduction gearbox with unique reliability, resistance against overloads and impulse loads, long lifecycle and efficiency, transfer of high torques with small overall dimensions, simple and repairable design.
<b>LIFECYCLE - OVER 55 000 H</b>	Application of highly reliable SIMACO reduction gearbox in combination with the «turbine vane» mixer, enabling to significantly reduce loads during mixing operations, enables to provide over 55 000 hours of the mud agitator's lifecycle.
<b>COMPACT DESIGN, WEIGHT - FROM 170 KG</b>	Overall dimensions of SIMACO drives have compact design and low weight. As compared with similar mud agitators the PBRT mud agitators weight is 2 times less which enables to considerably ease equipment supply and to perform installation and dismantling not using load lifting means.
<b>INCREASES MUD MIXING SPEED BY 25%</b>	Strong mud axial flow created by «Turbine Vane» mixer enables to considerably reduce mud make-up time and reliably exclude stagnation areas and bottom deposits. «Turbine Vane» mixer enables to increase mud make-up speed by 25% and considerably reduce power consumption during mixing.
<b>POWER ECONOMY - OVER 20 THOUSAND KW PER YEAR</b>	Power consumption as compared with screw type analogues is reduced by more than 25%. Upon operation of only one PBRT-turbo mud agitator within a drilling platform the power economy will be more than 20 thousand kW a year.



### Basic dimensions



Notation	Technical data				Frame version	L <sub>B</sub> , mm	h*, mm	D <sub>M</sub> , mm	Weight, kg
	Type of the motor	Rated capacity of the motor, kW	RPM of the motor						
PBRT-40-GK-1500-22-900-turbo UHL2	100L4U2 IM3081 IP54	4	66	1, 2	Выполняется в диапазоне 500...2125 с шагом 25	495	900		185
PBRT-55-GK-1500-22-900-turbo UHL2	112M4U2,5 IM3081 IP54	5,5				510			195
PBRT-75-GK-1500-22-900-turbo UHL2	132S4U2 IM3081 IP54	7,5				535			245
PBRT-110-GK-P-1500-23-900-turbo U2	132M4U2 IM2081 IP54	11	64	3		592			320
PBRT-150-GK-P-1500-23-900-turbo U2	160S4U2 IM2081 IP54	15				704			370

Notations by an order (example):

**PBRT-55-GK-1500-22-900-TURBO UHL2, LB=1550 mm, frame – Version1**, here: PBRT – mud agitator – product name; 55 – capacity of the motor 5,5 kW; GK – hermetic enclosure of the gearbox; 1500 – RPM of the motor; 22 – reduction ratio of the gearbox; 900 – diameter of the impeller (D<sub>M</sub>), mm; turbo – construction of agitator blades «turbine-type impeller»; UHL2 – climatic version according to the State Standard 15150; LB=1550 mm - depth of immersion of the impeller into tank;

Version1 – frame version.

The same is with the motor capacity 4,0 kW, depth of immersion of the impeller into tank LB=1320 mm, and frame version 2:

**PBRT-55-GK-1500-22-900-TURBO UHL2, LB=1320 mm, frame – Version2**

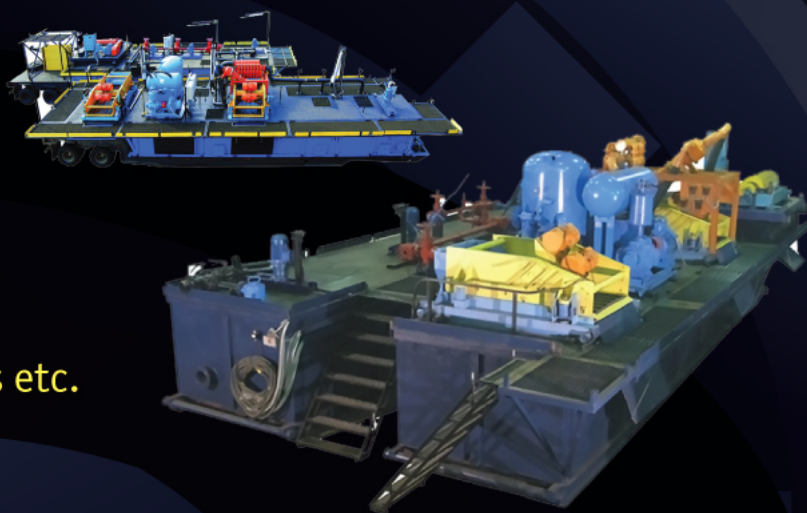




SIMACO Company was founded in 1999 on the basis of the branch of the rocket-and-space agency. At present, the company is a «full cycle» enterprise and performs works from designing of the newest equipment types to production and supply of complete equipment to the customer. Nowadays, SIMACO company is the largest Russian manufacturer and developer of mud agitators with 3 kW to 22 kW power, standard, offshore and chemical-resistant design. The company also produces the following: hydraulic hoists, electromechanical hoists, various purpose gears, gearboxes, swiveling devices for crane and other equipment.

### **SIMACO mud agitators are widely used in the following production:**

- Fixed circulation systems
- Mobile circulation systems
- Drilling mud makeup units
- Drilling mud cleaning units
- Chemicals preparation units etc.



### **AT PRESENT, WE OFFER TO SUPPLY THE FOLLOWING:**

Complete mud agitator (reduction gearbox, explosion-proof motor, frame, shaft, mixer)



Geared motors for mud agitators (reduction gearbox, explosion-proof motor)



#### **SIBERIAN MACHINE BUILDING COMPANY**

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