



**Joint Stock Company
«Luga Abrasive Plant»**

32, Krasnoarmeiskaya str., Luga, Leningrad reg.,
Russia, 188230

Customer service:
+7 81372 22593
+7 81372 22002
+7 81372 21937

Fax: +7 81372 40860
+7 81372 27800
+7 81372 41800
+7 81372 40780

e-mail: lap@abrasives.ru
www.abrasives.ru
www.lugaabrasiv.com

MAINTENANCE AND SAFETY GUIDANCE FOR WORK WITH GRINDING FLAP WHEELS

**Russian Classification of Products by Economic Activities 2: 23.91.11.140
Customs Commodity Code EAEU: 6805 10 0000**

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The guidance is developed according to GOST P 52588 – 2011 «Abrasive tools. Safety requirements».

1) Conditions and storage life

1. The warranty storage life is 12 months from the date of manufacture.
2. The storage life is 5 years from the date of manufacture.
3. Escape the mechanical damages, for example, strokes, discharges or deflections and also provide the security from rainfall, dew, white frost.
4. Keep the abrasive tools in dry, nonfreezing area.
5. If possible keep the abrasive tools in the original package. Keep the abrasive tools that are out of the packages in a way to escape the deformation.
6. The efficient temperature for the units is 18-22 °C.
7. The relative atmosphere humidity is 45-65%.
8. It is forbidden to keep the wheels closer than 1 meter from the heating devices, cold, wet walls, windows, doors, on the floor.
9. It is forbidden to expose the wheels to direct sunlight.

2) Instructions on placement and installation of the tools on equipment, measures of precaution:

1. Only persons who have passed training, certification, qualification commission on labour safety are allowed to work with grinding wheels.
2. Equipment must be provided with:
 - removing of abrasive dust and waste from the working zone;
 - protection of the worker against abrasive, metal and non-metallic dust, particles of the processed material formed during the grinding;
 - - the abrasive tools and their fastenings should be protected by means of protection (protection hood, metal screen, protective shroud, etc.) included in the equipment.
3. The wheels should be viewed before the installation.



It is forbidden to use a wheel:

- with seams, cleavages and other mechanical damages on the ribs of the wheel (for KL, KLO), on the base surface of the wheel (for KLT);
- with fallouts of the separate flaps from the side of grinding surface;
- that doesn't have testing mark on mechanical strength;

4. The wheels should be tested on mechanical strength with the speed of trial start V_{pr} – 100% according to GOST P 52588-2011. There should be a testing mark with the mention of serial number and the date of testing on the tools that passed the test.
5. The flap wheels KL are used only on special equipment. The special gripping ribs are used for the fixing of the centre of the wheel KL. The outer diameter of these ribs should relate to the outer diameter of the metal ribs of the flap wheel KL.
6. Inspect the wheels before the beginning of the work if they are damaged while the transportation or careless storage.
7. Check the working capacity of your equipment before the beginning of the work. Use only efficient grinding portable machine or machine. Never take off the protective shroud when working with grinding portable machine or machine!
8. The rate speed of the equipment spindle should not exceed the revolutions per minute that are mentioned on the wheel.
9. Before the installation of the wheel KL or KLO find the arrow on the label. In operation the direction of movement of the wheel must coincide with the arrow.
10. Fix the wheel on the portable machine spindle out of winds pressing it by special fixture (for KL) or flange nut from the set of the portable machine (for KLT). Be sure that the wheel is well fixed.

11. Start the portable machine or machine and check at idle how the wheel runs. It must move without jumping and axial deflections when running. Start the grinding when the wheel reaches the maximum number of revolutions at idle speed.
12. Before the beginning of the work the wheel should be subjected to the idle running on the machine or portable grinding machine with the working speed during 2 min – for the wheels with diameter up to 400 mm and 3 min – for the wheels with diameter more than 400 mm.
13. Do not allow overcharges when working, especially when you start to process sharp edges and projections.
14. Put the wheel KLT to the contact with the processing surface smoothly at an angle 10-20°. The base of the wheel KLT should not touch the processing surface. The contact must be just by flaps of the coated abrasives.
15. In wet grinding by the wheels KL or KLO, after the grinding process has ended, the lubricating-cooling fluid supply stops and the flap wheel starts at idle as long as the lubricating-cooling fluid stops flying off from the grinding tools.
16. The successful grinding by the wheels is achieved while the efficient tension on it according to the operating regimes that are recommended for the applied equipment.
17. In order to remove dust from the grinding zone use the system of aspiration.
18. When working do not forget that the flying flashes can be the reason of flaming of highly flammable liquids, inflammable materials that should be removed from the working area before the beginning of the work.
19. When working you need to maintain the following measures of precaution:



- to work in safety goggles;



- to work in safety earphones;



- to work in individual respiratory protection equipment;



- the safety gloves should be used while working with portable grinders ;



- It is not allowed to use with cooling-cutting fluids
(for KL, KLO the mark depends on the properties of the coated abrasives and the used tools)

20. It is forbidden to use the wheels on operations that are prohibited by the safety marks with the speed exceed that are mentioned on the label.
21. When installing on equipment or handle tools it is essential to comply with the safety requirements that are anticipated when exploitation of this equipment.

3) The list of possible incorrect actions that can cause the crashes:

- mechanical damages of the wheels;
- application of the regimes higher that the ones required;
- installation of the tools on equipment that is not recommended for it;
- absence of the machine balancing according to the certificate;
- absence of the wheels testing marks;
- exceed of the periphery speed;
- absence of the protective shroud;
- lack of proper training of employees;
- application of wrench attachments and also drum tools when fastening of the wheel;
- jumping of the spindle more than the required norms;
- careless storage of the tools.

4) Safe disposal information:

Used wheels according to the «Federal classification catalogue of waste materials» (FCCW-2017) are related to the waste materials of the class 5 (code 456 100 01 51 5 «Used abrasive wheels, junk of used abrasive wheels», code 456 200 01 29 5 «Used coated abrasives»). The waste of used wheels does not imply an environmental hazard and can be disposed at the domestic wastes landfill.