

TECHNICAL REPORT

On conducting tests in determining the effectiveness of applying high-temperature XADO- lubricant (XADO-300) to the process equipment of Holding Company OJSC "VLADKHLEB" in Vladivostok

According to contract No. 8 of 07.12.2001 between "XADO-FAR EAST" PE Buzov M.N. and OJSC "VLADKHLEB", during the period of 8.01.2002 to 14.06.2002, tests were conducted for determining the effectiveness of applying XADO-lubricant "XADO-300" at the bakery in rotary oven No. 1.

The work was conducted by OJSC "Vladkhleb" staff: Chief Engineer Badanov Ye.B.; Engineer-Mechanic of SPP No. 3 Fedorenko A.A.; and by Corporation "XADO" representative Buzov M.N.

1. Performance of assembly in equipment being tested.

The rotary oven friction assembly in the baking chamber carriage includes:

- a) a bearing assembly comprising bearings Nos. 1210 and 210,
- b) their working temperature is 180 to 250 °C, and
- c) their rotational speed is 30 rpm.

2. Statistical data on service of bearings Nos. 1210 and 210 in rotary ovens at the bakery prior to applying the XADO lubricant.

Eight-years' experience shows that bearings Nos. 1210 and 210 in the rotary oven bearing assembly in the baking chamber carriage, using standard lubricant "Litol-24", after 380 to 400 hours of operation, failed due to burning and coking of standard lubricant on the bearings' friction surface, followed by seizure of bearings. The bearing assembly had to be replaced.

Oven down-time for replacing the bearings is 5 to 6 hours.

3. The results of applying XADO-300 to bearings Nos. 1210 and 210 in the bearing assembly of the rotary oven baking chamber carriage.

Plastic lubricant XADO-300 was applied to the bearings in the assembly being tested, which is part of the baking chamber carriage of rotary oven No. 1, during their scheduled replacement on 08.01.2002.

After 400 hours of operation, a comparative analysis was made of the condition of bearings in rotary oven No. 1 (XADO lubricant was applied to the bearings) against check bearings using lubricant "Litol-24". The bearing assembly in the baking chamber carriage of rotary oven No. 1 ensured free rotation without seizing; the bearings' rolling pairs had a smooth polished surface coated with a cermet layer (the XADO effect). There were no traces of coking neither on the friction surfaces nor on the bearings' parts.

Inspection of the friction assemblies of check bearings in the bearing assembly of baking chamber carriage in rotary oven No. 1 revealed a high level of coking of the standard lubricant, which lead to immobility of bearing assemblies and, consequently, to failing equipment operation.

The following check inspection of the bearing assembly of baking chamber carriage in rotary oven No. 1 is scheduled in 850 hours. The bearing assembly is serviceable and operates to service requirements. Lubricant replacement is not required.

4. Conclusions

Based on the tests conducted for application of XADO lubricants, the following conclusions can be drawn:

1. The XADO lubricant ensures operation of bearing assemblies when heated to the temperature of 250 °C during 6 months, and more.
2. Applying XADO lubricants as standard ones is effective in all equipment assemblies operating at high temperatures.
3. Applying XADO lubricants ensures the following:
 - a) excludes costs involved with equipment down-time, dismantling and replacing bearings;
 - b) an increase in bearings' service life; and
 - c) reduction in cost of purchasing bearings and lubricants because the XADO lubricant service life is longer by 2 to 5 times, and the lubricant increases the bearings' life.
4. To obtain more comprehensive data on the effectiveness of applying XADO lubricants in bearing assemblies of rotary ovens, it is necessary to continue tests to define the maximum periods of bearing assemblies operation without their dismantling.

Representative of Holding Co. OJSC "VLADKHLEB"
Chief engineer

Badanov Ye.B.

Engineer-Mechanic

Fedorenko A.A

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Tel.: (4232) 25-49-65. Reception: 25-48-25

City of Homel'

Representative of Corporation XADO

Buzov M.N.

June 17 2002

Tel.: (42357) 21-1-68

APPROVED:

Chief Mechanic of OJSC "Homel'steklo"

Ryvkin V.Ye.

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