Příloha 2 – Dmychadlo

Zdroj

Získáno 24.07.2020 z HR Blowers UK Ltd:
**Design Features**

The conservative load carrying capacity of the larger diameter bearings ensures an extended operating life. Timing gear life is also extended by a controlled lubrication system. The computer calculated impeller profiles ensure maximum volumetric efficiency with minimum absorbed power without sacrificing torsional rigidity.

The high rigidity of the impeller and generous shaft strength keeps stresses low. Gear and shaft strength is substantially increased by the use of slow taper mounted gears which do not need keyways for location. This also simplifies the setting of the gear wheels to obtain correct timing of the impellers, a feature that facilitates field maintenance. Precision ground and hardened steel gears are used to ensure smooth running and accurate timing of the rotating impellers. Specially designed rotary oil seals are used in the gearcase. This feature eliminates maintenance associated with the use of lip seals.

This range can now be supplied with oil lubricant at the drive end as well as the gear end and thus helps to simplify maintenance. This feature is particularly attractive where the blower is used in high ambient temperature conditions.

Design and manufacture is in accordance with metric standards.

**Specification**

- **CASING:** The cylinder and headplates are manufactured from cast iron. The gearcase is manufactured from aluminium.

- **IMPELLERS AND SHAFTS:** The impellers are made from SG iron, and cast with integral shafts. The shaft diameter of machines in the HRBV (RBTM) Blowers range is larger than that of earlier designs, enabling increased operating pressures to be achieved without increasing blower size.

- **GEARS:** The precision ground and hardened steel spur gears are taper mounted onto the impeller shafts. The timing of the impellers relative to each other is accurately maintained at all times.

- **BEARINGS:** The bearings are of generous proportions to give long operational life. Grease or Oil lubricated double row ball bearings are used at the drive end of the blower. In addition to their normal duty of carrying radial loads associated with the differential air pressure on the rotating impellers, the ball bearings provide axial location of the impellers. Parallel roller bearings at the gear end are splash lubricated by oil from the gears.

- **LUBRICATION:** Our design of controlled gear wheel lubrication enables the gears to operate at a high pitch line velocity without the need for an oil pump. Simple, maintenance free oil throwers fitted behind each bearing in the gearcase prevent leakage of oil. The drive end is grease lubricated but oil lubricant is now available making the unit all oil lubricated and eliminating grease requirements.

- **DIRECTION OF ROTATION:** Standard machines have a right hand drive shaft for vertical air flow, and a bottom drive shaft for horizontal air flow. If machines are required with a left hand or top drive shaft, all that needs to be done is turn the gearcase and trough through 180°.

**User benefits**

The delivered air is guaranteed to be oil free because internal lubrication is unnecessary, and because all HR Blowers Vehicle Blowers are constructed with air gaps which completely isolate bearing and gear lubrication from the compression chamber. Noise levels are kept to a minimum. Mechanical noise levels have been reduced by the running accuracy of the taper mounted gears. Air noise is reduced by carefully designed air ports and the elimination of resonant unbraced surfaces.

**Specification summary:**

Our truck mounted Roots type blowers are engineered for high performance and long service life:

- A range of 3 sizes
- Impellers made from SG iron and cast with integral shafts
- Precision ground spur gears, taper mounted onto the impeller shafts
- High quality bearings for long operational life
- Oil lubricated versions for increased service life and particularly suitable for operation higher ambient temperatures, the Oil-lube HRBV (RBTM) is a natural progression on the original grease/oil lubricated version.

**Sizes and capacities**

- Capacities from 220 to 2300 m³/hr
- Pressures to 1240 mbarg
- Vacuums to 475 mbarg

**Applications**

- Truck mounting for vehicle tank extraction
- Dry bulk conveying of powders, animal feeds etc.
- Land based pneumatic conveying systems
- Vacuum as well as positive pressure operation
Performance

The graphs and table below show the performance as blowers. However all three sizes can operate as exhausters at vacuums up to 475mbar or combinations of pressure and vacuum.

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*The relief valve should be selected, set and maintained to pass all the volume delivered without the pressure at the outlet of the blower exceeding the above maximum pressure when the minimum recommended speed is that shown in the above table.

Caution: The bhp remains constant for any given impeller speed and outlet pressure. When selecting power take-off equipment, relate the bhp to the blower input shaft speed if a speed increasing gearbox is used. The torque increases in direct proportion to the blower gearbox ratio.
Following the Company's policy of constant development, we reserve the right to alter any detail specified or illustrated in this publication without notice and without incurring any obligation to provide such modifications on machines previously delivered.

Blowers can be supplied as twin shaft versions.

Bare shaft blower with tipper pump (CS P30)

Hydraulic drive

For accurate performance characteristics please contact HR Blowers.