

# Selecting grease

Centralized lubricating system is used for supplying lubricant of appropriate amount at an appropriate time, while it goes without saying that an optimum grease must be selected for the machine. Further, it is necessary to select a grease suitable for the lubrication system in order to operate such system in good order. Described here are standards for selecting grease for reference.

1. Quality must be uniform and free from impurities.  
It is essential for lubricant, and especially important for this system. It is because, if quality is not uniform, resistance of pipeline fluctuates, and distributing valve does not operate within adjusted pressure. Further, if connecting groove of distributing valve is clogged, the distributing valve is hard to operate.
2. Oxidizing stability must be good.  
Any lubricant is required to have a good oxidizing stability, and this system especially requires lubricant that can withstand the condition below:
  - A. Retain in pipeline for a long time.
  - B. Pipeline may be located at any temperature from high to low.
  - C. New metal surface is likely to oxidize lubricant with contact. (It is especially significant for copper pipe, and in this case, lubricant first fed must be discarded. Inside of copper pipe is inactive thereafter.)
  - D. Grease is more likely to be oxidized than oil itself because of contact of metal soap. Grease which is once oxidized and hardened, loses its property for lubricant and causes clogging of various parts of the system.
3. Grease must be suitable for lubricating point.  
Centralized lubricating system may supply grease to lubricating point having various conditions, and grease must satisfy each of them. It means that appropriateness is required of pressure resistance, thermal resistance, water resistance, as well as rotating speed, bearing shape, size and etc.
4. Highly separation resistance  
Organization must not separate even while grease is stored. Especially in this system, grease is not only fed through pipeline at a high pressure, but also the pressure in the line fluctuate in a cycle, which promotes separation of oil component in grease. Therefore lubricant with high separation resistance is necessary.
5. Slumpability must be good.  
Slumpability means the likeliness of grease in grease tank being sucked in by a pump. It is theoretically indicated by a force required for grease to start flowing. Slumpability has a relation with property intrinsic to grease, i.e. the likeliness of grease itself becoming horizontal and the hardness (consistency) of grease. Grease pump used for this system is equipped with follower plate, which assists the suction by pump. If grease has a consistency below 250 at some temperature, it must not be used preferably, and grease with consistency above 300 is used in general. Sodium soap base grease (fiber grease) in general is inferior to calcium soap base grease (cup grease) in slumpability. This slumpability, in addition, has a great relation when fill a tank with grease by use of grease filling pump, and lack of this property may cause air to be fed into a tank and make the operation of system abnormal. Be careful enough.
6. Pumpability must be good.  
On a centralized lubricating system, one pump is used for supplying lubricant in a wide range, and grease must flow easily in pipeline when it is sent by pressure. Resistance in pipeline depends on grease, and when grease with large resistance is used, the pipe must be made extremely large, or lubricating range must be made extremely small.  
Resistance in pipeline depends on type of grease, as well as varies with temperature then, which must be noted. Cup grease for grease cup or fiber grease must be avoided.  
Further, it is generally difficult to use grease with apparent viscosity above 1600 pores (at shearing factor 25/sec<sup>-1</sup>). Described above are the points to be considered in selecting grease used for centralized lubricating system.