Mycom screw compressor service manual

Download the newly developed compressor achieving a high performance next-generation standard for industrial applications 280J newly designed, high performance, single-foam series (9models) High performance is achieved by making a new type of rotary tooth compatible with natural (ammonia, CO2, propane) and fluorocarbon refrigerants Low vibration and low noise Stepless control power from 100 to 25% range Auto variable vi mechanism (from 2.5 to 5.0 range) effectively cover a wide range of supportive flank engines to facilitate the design of packaged systems - 280J does not have a built-in control valve and does not support the flank engines. The screw compressor, which can handle various refrigerants when coated as small, as well as large power ranges 400SUD line of compressors of high capacity with displacement up to 15600 m3/h (9,180CFM) 1 In 2950rpm, No. 2 B 3550rpm Works over a wide range of temperature and serves in industrial refrigeration applications Compatible with Natural (ammonia, ammonia, propane) and fluorocarbon refrigerants Proven 4:6 rotor configuration high performance, long series of sales suitable for a wide range of applications 250V Available in 13models, SCV Series covers a wide range of bias from 415 to 4740m3/h'1 (244 to 244 to 2790CFM)2) 3550rpm Variable mechanism vi (2.63 to 5.80range) to effectively cover a wide range of temperatures running in a wide range of temperatures and serves in industrial refrigeration and air conditioning applications Compatible with natural (ammonia, propane) and f Carbon refrigerants Proven 4:6 rotor configuration Small compressor with high reliability i125 facilitates the design of packaged systems New design eliminates the need for an oil pump Using a flank engine The small-carry compressor can be installed in a limited space designed to facilitate the replacement of consumables Download a high-performance composite compressor with a No.1 track record with a low-temperature application of 2520LSC Single-company double-pension compression machine to effectively cover the low-temperature range available in 6models, covering a wide range of displacement from 415 to 9700m3/h'1 (294 to 5709CFM)2) No 2At 3550rpm Operation with single engine and oil-based separator THE original myCOM Design Proven Rotor Configuration 4:6 Small Size Two Phase Series for Low-Temperature Applications 37H1410SC Water-cooled semi airtight engine, as well as MYCOM unique rotor design involving different diameters, Allows high efficiency Simple, compact package made possible with integrated semi-seal engine and oil separator design Low Vibration and Low Noise Mycom Compressor Gallery: Screw Compressor Rotor Repair: Mycom Basics: (From Mycom Guide) 2.5.1 Basics screw compressor compressor is a positive displacement of the rotary compressor. As shown in figure 2-3 Compressor mechanism, mechanism, The refrigerant (gas) is constantly compressed by changing the volume between the body and the male and female mesh screw rotors that have different profiles. The rotor with 4 protruding sections of the lobes is called the M rotor (male rotor), and the rotor with 6 lobes of the troughs is called the F rotor (female rotor). Throughout this manual, they are called the M rotor and the F rotor. 2.5.2 The suction process As shown in Figure 2-4 The suction process, the rotors of different mesh profiles together. Also, the volume between the lobes of the M and F rotor and the compressor body increases from the suction side as the rotors rotate. As the rotation continues, at some point the volume reaches its maximum, the rotors begin to catch the gas between the lobes and the compressor shell, thereby isolating the gas from the suction port. Figure 2-4 Suction Process 2202L5JE-DA-C5-N_2015.05.2 Compressor Specifications and Structural Compound 2-Step Screw Compressor 2.5 Mechanisms 1612LSC Speed Increase Type 2-7 2.5.3 Compression Process As Rotors Continue Rotation, The seal line between them moves towards discharge, and the volume between the rotor lobes decreases and compresses the captured gas. Figure 2-5 Compression Process Figure 2-6 Discharge Process 2.5.4 Discharge Process through the compression process, the volume between the rotor lobes decreases to a predetermined value in the discharge port. After the rotor rotates, the compressed refrigerant is pushed out of the reset port. 2.5.5 Volume Ratio (Vi) Volume Ratios (Vi) of Series C screw compressors are listed in performance tables or catalogs using port symbols L and M. The volume factor represented by each symbol is: L-2.63, M-3.65. What volume ratio (L or M) should be used is decided in accordance with operating conditions. If the compressor is used with a volume ratio that does not meet the operating conditions, the work will be inefficient to waste energy. The relationship between volume ratios and commonly used compression ratios is as follows: (Vi) y Pd/Ps Cp/Cv refrigerant gas Vi - developed volume ratio y - developed compression ratio of condrit refrigerant gas is also a factor, and the value of Vi for the compression factor will vary depending on the refrigerant gas used. Figure 2-7 Volume Ratio Explanation 2202L5JE-DA-C5-N_2015.05.2 Specification Compressor and Structural Connection 2-Step Screw Compressor 2.5 Mechanisms 1 Increase In Speed Type 2-8 (A) When Vi meets operating conditions The required compression ratio and Vi are low Required compression ratio and Vi both high (B) When the Vi does not meet the working conditions vi is too low compared to required Vi compression is too high compared to the compression required Figure 2-8 Link between volume ratio (Vi) and operating conditions 2202L5JE-DA-C5-N_2015.05.2 Compressor specifications and structural connection 2-speed screw compressor 2.5 Mechanisms 1612LSC Speed Increase Type 2-9 2.5.6 Power Control Mechanism Power Control Includes Power Control Mechanism bypass the suction gas before compression on the suction side, which reduces part of the rotor used for compression. The slide valve is located at the bottom of the hull where the rotors mesh together, and is built to move parallel to the rotor axis. This movement changes the mechanism of the camera in motion rotation, and as the position (power control factor) is indicated externally, the value of electrical resistance changes to provide feedback to the automatic control scheme. Figure 2-9 Power Control Mechanism 1612LSC The speed of increase of the type has capacity control only on the low stage of the unit. 2.5.7 Bearings and Balance Pistons For the load created on the rotor perpendicular to the axis, a white metal bearing-type sleeve is used. The bearing uses the surface bearings of the ball with angular contact for loads along the direction of the axis. In particular, the aster gain on the M rotor, which has one type of heli gear, is relatively greater than that of the F rotor due to the load traction from discharge pressure. This load for the M rotor is reduced by the use of the traction bearing, along with the piston balance, providing the opposite hydraulic pressure. 2.5.8 Уплотнение shaft Для того чтобы предотвратить утечку газа и масла хладагента, надежная механическая сборка уплотнения уплотнения вала шпинделя шестерни шестерни увеличения скорости. The mechanical assembly of the seal consists mainly of a rotating ring mounted on the rotor shaft and a stationary ring installed in the seal lid. The rotating ring rotates along with the shaft and slides together with a stationary ring, while retaining a micron gap. Sliding each other's place is called a sliding surface. As an example, for the BBSE (Balanced Bellows Single Seal) type, which is a standard seal currently used, a fixed ring (marriage ring) cast iron, and a rotating carbon ring, with an O-ring for packaging. Figure 2-10 Slide Valve in Rotor Casing 2202L5JE-DA-C5-N_2015.05. 2 Compressor specification and compound structure 2-stage screw compressor 2.6 Gas and Oil Flow 1612LSC Speed increase Type 2-10 2.6 Gas and Oil Flow Screw Compressor Compression Process described earlier in this guide. The gas to connect the 1612LSC type speed of the compressor passes from the vaporizer and through the suction strainer and control valve, and is absorbed into the central part of the compressor (1), and it is compressed at a low stage (2) . Then compressed gas (3). (3) and (4) connected by pipelines through which the gas used for super cooling is mixed with liquid cooler. The lubricant, injected at a low stage, while mixed with gas, is absorbed from (4) to the high stage. After compression at (5) the gas mixed with lubricant oil is discharged from (6) into the oil separator, and then sent to the capacitor. The oil is cooled even without intermediate gas cooling, so the high drop temperature can be maintained at below 90 degrees Celsius. The oil Supply Route oil is divided into 4 streams, as shown in Figure 2-12, and after the lubricant is provided, it is mixed with the unloading gas and leaves the compressor. In standard configurations, the oil injection is not performed at a high stage. Mycom Service: (From Mycom Guide) 5.2 Maintenance and Inspection List 5.2.1 Daily Management As Daily Management, check the items listed in Table 5-1 Daily Inspection Items and record the results. Registering this work data on a daily basis helps to clarify any abnormal conditions of the compressor. This is significantly effective in preventing compressor failures. It is especially important to check whether the correct temperature/pressure correlation associated with refrigerant evaporation and condensation is correct. This allows you to quickly detect problems in the compressor or system. If a compressor or system has a failure or accident, the operational log will help identify the cause and take prompt and appropriate action. Daily Maintenance 1. The level of lubricant oil When the level of oil in the oil separator reaches the lower limit, charge the lubricant oil, referring to the instructions on the block. 2. Replacing the oil filter element When the differential pressure between the oil filter ports enter and exit exceeds 0.1 MPA, replace the oil filter element. At the beginning of the operation, the differential pressure of the oil filter can increase rapidly. 3. Cleaning the suction strainer When the compressor clocks exceed 500, check the suction strainer. If the temporary filter is installed at the initial stage of operation, remove it. At the beginning of the operation or after periodic testing, the differential pressure between the front and back of the suction ingestion can increase rapidly. If the differential pressure becomes high, check and clean the suction strainer. 4. Lubricating the rate of oil leakage from the mechanical seal If a lot of oil leaks from the mechanical seal, determine the rate of leakage per hour. The following table shows the guidelines for the acceptable leaks and the speed at which the inspection should be carried out. If any problem (damage, etc.) is in a mechanical seal, replace the mechanical seal. 5. Pollution of the cooling water side of the cooling pipes of the capacitor and oil cooler clogging and contamination of the cooling pipe depends heavily on the quality of the cooling water. At the temperature of the oil and the pressure of discharge gradually increases the initial stage of operation, inspection and cleaning of the cooling side of the oil cooler and capacitor water, even if the time has not yet come for the inspection to be carried out. Done.