



Hengyi Industries Sdn Bhd  
恒逸实业（文莱）有限公司

HYBN-T3-07-0003-2024-2



## Special Care Management System for Large Compressors



## 大机组特护管理制度



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## Version Information 版本信息

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 <b>HENGYI</b>	<b>Hengyi Industries Sdn Bhd 恒逸实业（文莱）有限公司</b>			
	<b>Special Care Management System for Large Compressors 大机组特护管理制度</b>			
	Doc No.	HYBN-T3-07-0003-2024-2	Ver No.	2

## Purpose

### 目的

This System is formulated to ensure that the operation of large compressors is under comprehensive and systematic monitoring and guarantee the safe operation of devices in a long period.

为确保大机组运行状况处于全面、系统的监控状态，保证装置长周期安全运行，特制订本制度。

## 2 Scope of Application

### 适用范围

This System is applicable to the special care management of large compressors of the Company.

本制度适用于公司大机组的特护管理。

## 3 Terms and Definitions

### 术语和定义

Large compressors: centrifugal compressors and reciprocating compressors with a shaft power of not less than 500KW.

大机组：指轴功率大于等于 500KW 的离心式压缩机和往复式压缩机。

## 4 Management Responsibilities

### 管理职责

#### 4.1 Specified administrative authority

##### 归口管理部门

4.1.1 The Equipment Management Dept. is the specified administrative authority of the special care for large compressors, which shall be responsible for formulating (revising) the special care management system for large compressors, reviewing and publishing the list of special care equipment and personnel and the changes, guiding and urging all departments to implement this System.

机械动力部是大机组特护的归口管理部门，负责制（修）订大机组特护管理制度，负责审核并公

布特护设备清单、人员清单及变更情况，指导、督促各部门执行本制度。

4.1.2 Organize the weekly inspection and monthly evaluation of the special care for large compressors, and organize all departments to analyze the causes of the major problems found in the inspection and formulate countermeasures.

组织大机组特护的周检及月讲评工作；组织各部门对检查中发现的重大问题进行原因分析，制订对策措施。

4.1.3 Organize the test and confirmation of the interlocking protection system after the overhaul of special care equipment; Organize to clean the depot spare parts before and after maintenance and before statutory holidays.

组织对特护设备大修后联锁保护系统的试验、确认；在检修前后及法定节假日前组织对库存备件进行清理。

#### 4.2 Coordinated management departments

协同管理部门

The Materials Supply Dept., as the collaborative management department for the special care of large compressors, shall be responsible for the purchase, quality inspection and storage of spare parts of special care equipment (including auxiliary machines) and for the comprehensive cleaning of spare parts before December 30 every year and giving feedback to the Equipment Management Dept.

物资装备部是大机组特护的协同管理部门，负责特护设备（包括辅机）备品配件的采购、质量检验及保管；负责在每年 12 月 30 日前对备品配件进行一次全面清理，并反馈至机械动力部。

#### 4.3 Executive departments

执行部门

4.3.1 The operation department, as the executive department of special care for large compressors, shall formulate the working standards for patrol inspection of the special care equipment of the department, specify the contents and requirements of special care inspection, and report to the Equipment Management Dept. for record.

运行部为大机组特护的执行部门，制定本部门特级维护设备巡回检查的工作标准，明确特护检查的内容和要求，报机械动力部备案。

4.3.2 Be responsible for the daily inspection of special care equipment; Participate in weekly inspection and monthly evaluation of special care equipment organized by the Equipment Management Dept.; Finish all tasks assigned in the evaluation meeting in a timely manner.

负责特护设备日检工作；参加机械动力部组织的特护设备周检及月讲评；按时完成讲评会布置的各项工作。

4.3.3 Deal with the general problems found in daily and weekly inspection, and report the major problems to the Equipment Management Dept. and take corresponding measures.

处理日检、周检中查出的一般问题，对于重大问题上报机械动力部并采取相应措施。

4.3.4 Participate in the test and confirmation of the interlocking protection system after the overhaul of special care equipment; Be responsible for the management of special care equipment.

参与特护设备大修后联锁保护系统的试验、确认；负责特护设备牌的管理。

4.3.5 The Equipment Maintenance Dept., Electrical Operation Dept. and Instrument Control Dept. (referred to as the "Maintenance Dept.") shall timely deal with the maintenance tasks entrusted.

设备检修部、电气运行部、仪表控制部（以下简称维保部门）应对委托的检修任务及时处理。

## 5 Management Content

### 管理内容

#### 5.1 Special care equipment

##### 特护设备

See Appendix 1 for the list.

清单见附件 1

#### 5.2 Special care personnel

##### 特护人员

5.2.1 The special care personnel are composed of the staff of the Equipment Management Dept., the operation department where the special care equipment belongs and the Maintenance Dept.

特护人员由机械动力部、特护设备所在运行部、维保部门的人员组成。

5.2.2 The department involved in special care shall assign persons with strong sense of responsibility and good technical skills to take part in the daily inspection, and arrange the technical director or team leader or superior for the weekly inspection.

参加特护的部门应指定责任心强、技术素质好的人员参加日检，安排主管技术员或班长以上人员参加周检。

5.2.3 The list of special care personnel for daily and weekly inspection shall be published after being reviewed and approved by the Equipment Management Dept., and the change of personnel shall be also approved by the Equipment Management Dept.

日检、周检特护人员名单由机械动力部审核后予以公布，人员变更须经机械动力部批准。

#### 5.3 Daily inspection

##### 日检

5.3.1 The special care personnel for daily inspection shall check the special care equipment twice a day according to the working standard with the special care card put on from 8:00 to 10:00 and from 14:00 to 16:00. Moreover, the personnel shall check the operating parameters and conditions of the special care equipment, and fill in the *Daily Inspection and Countersignature Records of the Special Care Equipment*.

日检特护人员每天按工作标准对特护设备巡回检查两次并挂特护牌，时间为 8:00~10:00、14:00~16:00，对特护设备的运行参数及状况进行检查，并填写《特护设备日检会签记录表》。

5.3.2 The technical director of the operation department shall inspect the special care equipment once a day with the special care card put on, fill in the column of "Comments of Technical Personnel" in the *Daily Inspection and Countersignature Records of the Special Care Equipment*, and check the implementation of the daily inspection of special care personnel.

运行部主管技术人员应对特护设备每天巡检一次，并挂特护牌，填写《特护设备日检会签记录表》中“装置技术人员意见”栏，并检查作业人员特护日检执行情况。

5.3.3 The daily inspection for special care shall be uninterrupted throughout the year, and the daily inspection on holidays shall be carried out by the personnel on duty.

全年特护日检不间断，节假日的日检由值班人员负责。

5.3.4 One piece of *Daily Inspection and Countersignature Records of the Special Care Equipment* shall be prepared every month and placed in the specified location and managed by the operation department, and kept for 1 year.

《特护设备日检会签记录表》每月一本，放置在指定位置，由运行部负责管理，保存期为 1 年。

5.3.5 The problem found by the special care personnel in the daily inspection shall be promptly addressed or reported to relevant personnel to implement the special care management procedures for large compressors.

特护人员在日检中发现的问题应及时处理或通知有关人员，执行大机组特护管理程序。

## 5.4 Weekly inspection

### 周检

5.4.1 The special care personnel for weekly inspection shall pay attention to the running state of compressors, and check the running status and parameters of the special care equipment and the implementation of special care daily inspection after gathering on every Wednesday morning or at the time as specified by the director of the Equipment Management Dept. at the place specified by the Equipment Management Dept. The special care card shall be put on as follows: the card for the "first week" shall be put on for the first weekly inspection every month and the "second week" for the second weekly inspection, and so on. In addition, the *Weekly Inspection and Countersignature Records of the Special Care Equipment* shall be filled in and kept by the Equipment Management Dept. for future reference for 1 year.

周检特护人员应关注机组运行状态，并于每周三上午或按机械动力部主管人员通知时间在指定地点集合后，对特护设备的运行状况、运行参数、特护日检情况等进行检查，并挂特护牌，每月第

一次周检则挂“一周”，第二次周检则挂“二周”，依此类推。填写《特护设备周检会签记录本》，由机械动力部保存备查，保存期为1年。

5.4.2 The director of the Equipment Management Dept. shall track the problems found in the weekly inspection and coordinate to solve major problems and problems requiring multi-discipline cooperation.

机械动力部主管人员应跟踪周检问题的处理，协调解决重要问题和需多专业协同处理的问题。

## 5.5 Monthly evaluation

### 月讲评

5.5.1 The Equipment Management Dept. shall organize a special care evaluation once a month. The management personnel of all disciplines shall attend the evaluation on time and make a record.

机械动力部每月组织一次特护讲评，各专业管理人员应按时参加，并作好讲评记录。

5.5.2 The operation department should collect the equipment operation situation of this month and the task completion of last month before the monthly evaluation, and assign personnel to participate in the evaluation on time, and fill in the Evaluation Meeting of Monthly Inspection and Maintenance of Moving Equipment before the 5th of each month.

运行部在月讲评前应做好本月设备运行情况和上月任务完成情况的收集，并指派人员按时参加讲评，在每月5日前填报动设备月度检维修讲评会。

5.5.3 The evaluation shall focus on the common problems found and good experience obtained in the operation and management of special care equipment, on the key technical problems requiring multi-discipline cooperation, and on the main operation, online monitoring and maintenance status, major defects, rectification, major technical renovation and application of new technologies of the special care equipment.

讲评内容：特护设备运行和管理中出现的共性问题好的经验；需要多专业协同解决的关键技术问题；特护设备的主要运行、在线监测、检修状况、重要缺陷、整改情况、重大技术改造及新技术应用情况。

5.5.4 The Equipment Management Department shall summarize the special care management work during the monthly evaluation, arrange the work priorities for the next month (stage), and all departments shall follow the minutes of the meeting.

机械动力部在月讲评时要对特护管理工作进行总结，布置下月（阶段）工作重点，各部门按会议纪要执行。

## 5.6 Emergency management

### 应急管理

5.6.1 The Equipment Management Dept. shall organize the operation department and the Maintenance Dept. to guide the startup or major operation of the special care equipment after

overhaul. In case the special care equipment is abnormal or must run with defects, the operation department shall inform the Equipment Management Dept. which shall lead to organize consultation and propose corresponding measures.

特护设备在大修后的开车或重大操作，由机械动力部组织运行部、维保部门到场进行指导；特护设备出现异常或需带病运行时，运行部应通知机械动力部，由机械动力部牵头组织进行会诊，提出相应措施。

## 5.7 Others

### 其它

5.7.1 Special care shall be suspended during the maintenance of the special care equipment. 特护设备检修期间，暂停特护工作。

5.7.2 Bladder type hydropneumatic accumulators for energy storage play an important role in energy storage and pressure stabilization in the oil system of special care equipment and are of great significance in reducing pressure fluctuations in the oil system caused by switching operations of oil pumps and oil filters and ensuring the smooth operation of the compressor. See Appendix 2 for the application requirements of the accumulators.

能量存储用囊式蓄能器在特护设备油系统中起到存储能量、稳定压力的重要作用，对于减少油泵、滤油器切换等操作引起的油系统压力波动，保障机组的平稳运行有重要的意义，其使用要求见附件 2。

## 6 Inspection and Supervision

### 检查与监督

The Equipment Management Dept. shall be responsible for the supervision, inspection and assessment of special care of large compressors by the operation department.

机械动力部负责对运行部大机组特护执行情况进行监督检查并考核。

## 7 Associated Procedures and Records

### 关联程序和记录

#### 7.1 Associated procedures

##### 关联程序

7.1.1 Special Care Management Procedures for Large Compressors  
(HYBN-T2-07-0005-2024-2)

大机组特护管理程序 HYBN-T2-07-0005-2024-2

7.1.2 Emergency Management Procedures for Large Compressors  
(HYBN-T2-07-0006-2024-2)

## 7.2 Associated records

### 关联记录

7.2.1 1030-K101A Daily Inspection and Countersignature Records  
(HYBN-T6-07-0011-001-2018)

1030-K101A 日检会签记录表 HYBN-T6-07-0011-001-2018

7.2.2 1030-K101B Daily Inspection and Countersignature Records  
(HYBN-T6-07-0012-001-2018)

1030-K101B 日检会签记录表 HYBN-T6-07-0012-001-2018

7.2.3 1040-K101 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0013-001-2018)

1030-K101 日检会签记录表 HYBN-T6-07-0013-001-2018

7.2.4 1040-K102A Daily Inspection and Countersignature Records  
(HYBN-T6-07-0014-001-2018)

1040-K102A 日检会签记录表 HYBN-T6-07-0014-001-2018

7.2.5 1040-K102B Daily Inspection and Countersignature Records  
(HYBN-T6-07-0015-001-2018)

1040-K102B 日检会签记录表 HYBN-T6-07-0015-001-2018

7.2.6 1040-K102C Daily Inspection and Countersignature Records  
(HYBN-T6-07-0016-001-2018)

1040-K102C 日检会签记录表 HYBN-T6-07-0016-001-2018

7.2.7 1050-K101 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0017-001-2018)

1050-K101 日检会签记录表 HYBN-T6-07-0017-001-2018

7.2.8 1050-K201 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0018-001-2018)

1050-K102 日检会签记录表 HYBN-T6-07-0018-001-2018

7.2.9 1050-K202 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0019-001-2018)

1050-K202 日检会签记录表 HYBN-T6-07-0019-001-2018

7.2.10 1050-K203 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0020-001-2018)

1050-K203 日检会签记录表 HYBN-T6-07-0020-001-2018

7.2.11 1050-K501 Daily Inspection and Countersignature Records  
(HYBN-T6-07-0021-001-2018)

1050-K501 日检会签记录表 HYBN-T6-07-0021-001-2018

7.2.12 1050-K701 Daily Inspection and Countersignature Records

(HYBN-T6-07-0022-001-2018)

1050-K701 日检会签记录表 HYBN-T6-07-0022-001-2018

7.2.13 1056-K101 Daily Inspection and Countersignature Records

(HYBN-T6-07-0023-001-2018)

1050-K101 日检会签记录表 HYBN-T6-07-0023-001-2018

7.2.14 1070-K101 Daily Inspection and Countersignature Records

(HYBN-T6-07-0024-001-2018)

1050-K101 日检会签记录表 HYBN-T6-07-0024-001-2018

7.2.15 1070-K201 Daily Inspection and Countersignature Records

(HYBN-T6-07-0025-001-2018)

1050-K102 日检会签记录表 HYBN-T6-07-0025-001-2018

7.2.16 5501-11ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0026-001-2018)

5501-11ST01 日检会签记录表 HYBN-T6-07-0026-001-2018

7.2.17 5501-12ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0027-001-2018)

5501-12ST01 日检会签记录表 HYBN-T6-07-0027-001-2018

7.2.18 5501-13ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0028-001-2018)

5501-13ST01 日检会签记录表 HYBN-T6-07-0028-001-2018

7.2.19 5501-14ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0029-001-2018)

5501-14ST01 日检会签记录表 HYBN-T6-07-0029-001-2018

7.2.20 5501-15ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0030-001-2018)

5501-15ST01 日检会签记录表 HYBN-T6-07-0030-001-2018

7.2.21 5501-16ST01 Daily Inspection and Countersignature Records

(HYBN-T6-07-0031-001-2018)

5501-16ST01 日检会签记录表 HYBN-T6-07-0031-001-2018

7.2.22 1030-K101A Weekly Inspection and Countersignature Records

(HYBN-T6-07-0032-001-2018)

1030-K101A 周检会签记录表 HYBN-T6-07-0032-001-2018

7.2.23 1030-K101B Weekly Inspection and Countersignature Records

(HYBN-T6-07-0033-001-2018)

1030-K101B 周检会签记录表 HYBN-T6-07-0033-001-2018

7.2.24 1040-K101 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0034-001-2018)

1040-K101 周检会签记录表 HYBN-T6-07-0034-001-2018

7.2.25 1040-K102A Weekly Inspection and Countersignature Records

(HYBN-T6-07-0035-001-2018)

1040-K102A 周检会签记录表 HYBN-T6-07-0035-001-2018

7.2.26 1040-K102B Weekly Inspection and Countersignature Records

(HYBN-T6-07-0036-001-2018)

1040-K102B 周检会签记录表 HYBN-T6-07-0036-001-2018

7.2.27 1040-K102C Weekly Inspection and Countersignature Records

(HYBN-T6-07-0037-001-2018)

1040-K102C 周检会签记录表 HYBN-T6-07-0037-001-2018

7.2.28 1050-K101 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0038-001-2018)

1040-K101 周检会签记录表 HYBN-T6-07-0038-001-2018

7.2.29 1050-K201 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0039-001-2018)

1040-K201 周检会签记录表 HYBN-T6-07-0039-001-2018

7.2.30 1050-K202 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0040-001-2018)

1040-K202 周检会签记录表 HYBN-T6-07-0040-001-2018

7.2.31 1050-K203 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0041-001-2018)

1040-K203 周检会签记录表 HYBN-T6-07-0041-001-2018

7.2.32 1050-K501 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0042-001-2018)

1050-K501 周检会签记录表 HYBN-T6-07-0042-001-2018

7.2.33 1050-K701 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0043-001-2018)

1050-K701 周检会签记录表 HYBN-T6-07-0043-001-2018

7.2.34 1056-K101 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0044-001-2018)

1040-K101 周检会签记录表 HYBN-T6-07-0044-001-2018

7.2.35 1070-K101 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0045-001-2018)

1040-K101 周检会签记录表 HYBN-T6-07-0045-001-2018

7.2.36 1070-K201 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0046-001-2018)

1040-K201 周检会签记录表 HYBN-T6-07-0046-001-2018

7.2.37 5501-11ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0047-001-2018)

5501-11ST01 周检会签记录表 HYBN-T6-07-0047-001-2018

7.2.38 5501-12ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0048-001-2018)

5501-12ST01 周检会签记录表 HYBN-T6-07-0048-001-2018

7.2.39 5501-13ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0049-001-2018)

5501-13ST01 周检会签记录表 HYBN-T6-07-0049-001-2018

7.2.40 5501-14ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0050-001-2018)

5501-14ST01 周检会签记录表 HYBN-T6-07-0050-001-2018

7.2.41 5501-15ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0051-001-2018)

5501-15ST01 周检会签记录表 HYBN-T6-07-0051-001-2018

7.2.42 5501-16ST01 Weekly Inspection and Countersignature Records

(HYBN-T6-07-0052-001-2018)

5501-16ST01 周检会签记录表 HYBN-T6-07-0052-001-2018

7.2.43 Operation Situation of Special Care Equipment (HYBN-T6-07-0053-001-2018)

特护设备运行情况表 HYBN-T6-07-0053-001-2018

7.2.44 List of Special Care Personnel for Special Care Equipment

(HYBN-T6-07-0054-001-2018)

特护设备特护人员申报表 HYBN-T6-07-0054-001-2018

7.2.45 List of Special Care Personnel for Special Care Equipment

(HYBN-T6-07-0055-001-2018)

特护设备特护人员一览表 HYBN-T6-07-0055-001-2018

7.2.46 Monthly Evaluation Records of Special Maintenance of Special Care Equipment

(HYBN-T6-07-0056-001-2018)

特护设备特级维护月讲评记录 HYBN-T6-07-0056-001-2018

7.2.47 List of Special Care Equipment (HYBN-T6-07-0057-001-2018)

特护设备特护设备清单 HYBN-T6-07-0057-001-2018

7.2.48 Inspection Records of Air Pressure of Bladder of Accumulator

(HYBN-T6-07-0058-001-2018)

蓄能器皮囊气压检查记录表 HYBN-T6-07-0058-001-2018

## 8 Supplementary Rules

### 附则

8.1 This System is under the jurisdiction of Equipment Management Dept.

本制度由机械动力部归口管理。

8.2 This System is drafted by Equipment Management Dept.

本制度起草部门：机械动力部。

8.3 Equipment Management Dept. is responsible for the interpretation of this System.

本制度解释权归机械动力部拥有。

8.4 Revision, preparation and approval of this System are shown in Table 1:

本制度版本编制和审批情况见表 1:

**Table 1 Revision, preparation and approval of document**

表 1 文件版本编制和审批情况

2	2024-04-01	Hu Chuan 胡川	Zhao Tingyun 赵挺云	Xu Ye 徐野	Chen Liancai 陈连财
Revision 版本	Issued date 颁布日期	Prepared by 编制人	Reviewed by 审核人	Authorized by 审定人	Approved by 批准人

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## Appendix 1

## 附件 1

## List of Special Care Equipment 特护设备清单

Competent unit 所属单位	Unit name 装置名称	Equipment name 设备名称	Equipment tag No. 设备位号
Refining Dept. #2 炼油二部	2.2 MMTPA Diesel Hydrotreating Unit 220 万/年柴油加氢精制	Makeup hydrogen compressor 新氢压缩机	1030-K-101A/B
Refining Dept. #2 炼油二部	2.2 MMTPA Diesel Hydrocracking Unit 220 万/年加氢裂化	Recycle hydrogen compressor 循环氢压缩机	1040-K101
Refining Dept. #2 炼油二部	2.2 MMTPA Diesel Hydrocracking Unit 220 万/年加氢裂化	Makeup hydrogen compressor 新氢压缩机	1040-K102A/B/C
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Prehydrogenation recycle hydrogen compressor 预加氢循环氢压缩机	1050-K101
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Reformed recycle hydrogen compressor 重整循环氢压缩机	1050-K201
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Reformed hydrogen primary supercharger 重整氢一级增压机	1050-K202
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Reformed hydrogen secondary supercharger 重整氢二级增压机	1050-K203
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Disproportionation recycle hydrogen compressor 歧化循环氢压缩机	1050-K501
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	Isomerization recycle hydrogen compressor 异构化循环氢压缩机	1050-K701

Refining Dept. #3 炼油三部	Light Naphtha Isomerization Unit 轻石脑油异构化	Light naphtha isomerization recycle hydrogen compressor 轻石异构化循环氢压缩机	1056-K101
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	1# Rotary valve 1#转阀	1050-S601
Refining Dept. #3 炼油三部	1.5 MMTPA Aromatics Complex 150 万/年芳烃联合	2# rotary valve 2#转阀	1050-S602
Refining Dept. #4 炼油四部	1 MMTPA Flexicoking Unit 100 万/年灵活焦化	Main air blower 主风机	1070-K101
Refining Dept. #4 炼油四部	1 MMTPA Flexicoking Unit 100 万/年灵活焦化	Rich gas compressor 富气压缩机	1070-K201
Refining Dept. #4 炼油四部	Sulfur plant 硫磺装置	Pelletizer 造粒机	
Port storage department 港储部	Single point mooring 单点系泊	Single point mooring 单点系泊	
Power Dept. 热电部	Thermal Power Station 热电站	55MW steam turbine 55MW 汽轮机	5501-11-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	55MW steam turbine 55MW 汽轮机	5501-12-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	55MW steam turbine 55MW 汽轮机	5501-13-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	55MW steam turbine 55MW 汽轮机	5501-14-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	7MW waste heat steam turbine 7MW 余热汽轮机	5501-15-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	7MW waste heat steam turbine 7MW 余热汽轮机	5501-16-ST-01
Power Dept. 热电部	Thermal Power Station 热电站	stacker-reclaimer 堆取料机	5501-41S01

Power Dept. 热电部	Thermal Power Station 热电站	1# bucket door machine 1#带斗门机	
Power Dept. 热电部	Thermal Power Station 热电站	2# bucket door machine 2#带斗门机	



## Appendix 2

## 附件 2

## Application Requirements of Bladder Type Hydropneumatic Accumulators for Energy Storage 能量存储用囊式蓄能器使用要求

### 1 Installation

#### 安装

1.1 The air charging valve of the accumulator shall be installed vertically and upwardly, with sufficient space reserved for maintenance, inspection and repair.

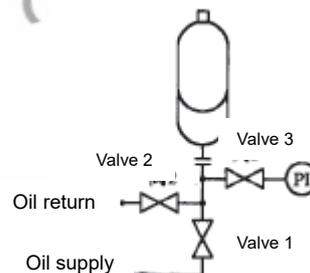
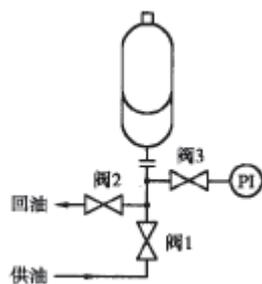
蓄能器应充气阀朝上垂直安装，并留有足够的维护、检查和检修空间。

1.2 The accumulator shall be fixed reliably and shall not be fixed by direct welding.

蓄能器应固定可靠，不得直接焊接固定。

1.3 A shut-off valve (valve 1) shall be installed between the accumulator and the pipeline to be used in case of air filling, oil filling or long-time shutdown; An oil drain valve (valve 2) shall be set behind the shut-off valve. If possible, a pressure gauge shall be installed in front of the oil drain valve for online inspection of air bladder's pressure (as shown in the figure on the right). An additional accumulator of the same specification can be connected in parallel if possible for the convenience of switching during inspection. Moreover, a small-diameter oil inlet bypass can be added to prevent oil shock.

蓄能器和管路之间应安装切断阀（阀 1），供充气、充油或长时间停机时使用；切断阀后应设置放油阀（阀 2），可能的情况下在放油阀前安装压力表，供在线检查气囊压力时使用（见右图）。条件允许的情况下可额外并联一只同规格的蓄能器，以备检查时切换。为防止进油冲击，可增设小口径进油旁路。



1.4 The inflating needle valve cover of the accumulator shall be provided with an "O" ring to prevent air leakage from the bladder.

蓄能器充气针阀阀盖应设置“O”型圈，以防止气囊向外漏气。

### 2 Nitrogen filling

#### 氮气的充装

2.1 Before nitrogen filling, the shut-off valve between the slow accumulator and the pipeline shall be slowly closed, and the oil valve shall be opened to slowly drain the oil in the

accumulator.

充气前应关闭缓蓄能器和管路之间的切断阀，打开放油阀，缓慢排净蓄能器中的油。

## 2.2 Nitrogen shall be filled with slowly to avoid damage of the bladder.

充气应缓慢进行，以防冲破皮囊。

## 2.3 Oxygen, compressed air or other flammable gases shall not be filled with.

不得充装氧气、压缩空气或其他易燃气体。

## 2.4 Nitrogen filling shall be performed with special tools attached to the unit which shall be properly kept by the operation department.

氮气的充装使用随机所带的专用工具，该工具由运行部妥善保管。

## 2.5 Charging pressure standard: the charging pressure of the bladder of lubricating oil accumulator shall be 80% of the lower limit of the lubricating oil pressure and that of the control oil accumulator shall be 80% of the lower limit of the control oil pressure. The charging pressure of the system accumulator bladder shall be 80% of the lower limit.

充气压力标准：润滑油蓄能器皮囊充气压力为润滑油压低报警值的 80%；控制油蓄能器皮囊充气压力为控制油压力低报警值的 80%；系统蓄能器皮囊充气压力为低报警值的 80%。

## 2.6 Check the air tightness of the inflating needle valve of the accumulator after charging, screw on the valve cover, and check the air tightness of the valve cover.

充气完成后应检查蓄能器充气针阀气密性，然后拧上阀盖，再检查阀盖的气密性。

## 3 Examination and maintenance

检查和维护

### 3.1 The bladder pressure shall be periodically checked, with records made by following the format as described later.

皮囊气压应定期检查，并做好纪录，记录格式后附。

3.1.1 Inspection cycle: Each department shall implement the Usage and Inspection Scheme of Device Accumulator. For units that cannot be inspected during operation, soap bubbles shall be sprayed on the charging cap at the top of the accumulator before 5th of each month to check whether there is air leakage and whether the lubricating oil pressure is stable, which shall be recorded in the maintenance record of the compressor in EM system, and the motor department shall check the implementation every month as the assessment basis. For the inspection unit once in June, the records of accumulator inspection are also uploaded to the maintenance records in the EM system.

检查周期：各部门按《装置蓄能器使用情况及检验方案》执行，无法在运行期间检验的机组，每月 5 日前在蓄能器顶部充气帽喷肥皂泡检查是否漏气，检查润滑油压是否平稳，并记录在 EM 系统中该压缩机的检修记录中，机动部每月检查执行情况，并作为考核依据。六月一次的检验机组，同样在 EM 系统中把蓄能器检验的记录上传至检修记录中。。

### 3.1.2 Inspection method of bladder pressure:

皮囊气压的检查方法：

3.1.2.1 Close the shut-off valve between the accumulator and the pipeline, slowly drain the oil in the accumulator, and directly check the charging pressure with the charging tool.

关闭蓄能器和管路之间的切断阀，缓慢排净蓄能器中的油，利用充气工具直接检查充气压力。

3.1.2.2 For the inspection of accumulator with a pressure gage in front of the oil drain valve, the shut-off valve between the accumulator and the pipeline shall be slowly closed and the oil drain valve shall be slowly opened to check the indication change of the pointer. The pointer slowly drops at the beginning and then rapidly drops when a certain pressure is reached. The pressure where sudden change occurs to the moving speed of the indicator is the charging pressure.

在放油阀前有压力表的蓄能器，检查时关闭蓄能器和管路之间的切断阀，缓慢打开放油阀，注意压力表指针的变化，开始时指针慢慢下降，达到某压力时，急速下降到零，指针移动的速度发生突变的压力值即为充气压力。

3.2 The operator shall check the inflating needle valve of the accumulator and other sealing points for air tightness once a month and make records.

操作人员每月一次检查蓄能器充气针阀和其他密封点的气密性，并做好记录。

3.3 When the air pressure of the bladder is less than 70% of the standard charging pressure, nitrogen shall be added and the final charging pressure shall be recorded.

气囊气压小于充气压力标准的 70% 时，应补充氮气并纪录最终充气压力。

3.4 The shut-off valve between the accumulator and the pipeline shall be closed in case of long-time suspension of the accumulator, thus to keep the oil pressure in the accumulator above the charging pressure.

蓄能器长期停用时，应关闭蓄能器和管路之间的切断阀，保持蓄能器里的油压在充气压力以上。

3.5 For any accumulator listed as a pressure vessel, the pressure bearing shell shall be inspected periodically in accordance with the Specifications for Vessel. For an accumulator not listed as a pressure vessel, the pressure bearing shell shall be inspected periodically by referring to the specifications for pressure vessels.

蓄能器已列入压力容器的，承压壳体按《容规》定期检验，不属于压力容器的，参照压力容器定期检验。

3.6 Before the accumulator is disassembled for maintenance, the shut-off valve between the accumulator and the pipeline shall be closed, the pressure oil shall be removed, and the nitrogen in the bladder shall be removed with the charging tool.

蓄能器检修拆卸前应关闭蓄能器和管路之间的切断阀，卸去压力油，使用充气工具放掉皮囊中的氮气。

3.7 Oil filling shall be conducted slowly (preferably through a small-diameter bypass) when the accumulator is put into use after inspection and maintenance, to avoid system pressure fluctuation.

蓄能器检查和检修结束投用时，应缓慢充油（最好用小口径旁路），避免引起系统压力波动。

3.8 The accumulator bladder shall be replaced in case of overhaul of the accumulator.

蓄能器皮囊更换周期与机组大检修同步。

## Appendix 3

附件 3

## Usage and Inspection Scheme of Accumulators of Various Devices

### 各装置蓄能器使用情况及检验方案

No. 序号	Department 部门	Equipment No. 位号	Name 名称	Is there any oil flushing crossing line? 有无冲油跨线	Is there an oil return line? 有无回油线	Putting into use 投用情况	Efficacy scheme 效验方案	Quantity (number of units) 数量 (每台机组数)
1	Zone 1 一部	1012-K-601ABC	Top gas screw machine 塔顶气螺杆机	Without 无	There is no oil return tank line, only local guide shower. 无回油箱线, 只有就地导淋	Normal 正常	Two units are on and one is standby, and the switch is effective once every six months. 机组两开一备, 切换时半年一效验	1
2	Zone 2 二部	1040-K101	Circulating hydrogen compressor 循环氢压缩机	Without 无	There is a return tank line. 有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it is recommended to check it when stopping for maintenance. 切除效验后投运风险较大, 建议停机检修时校验	1
3	Zone 3 Aromatics 三部芳烃	1050-K501	Disproportionation circulating hydrogen compressor 歧化循环氢压缩机	Without 无	There is a return tank line. 有回油箱	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked during shutdown and	1

			sor 歧化循环氢压缩机		线油箱线		maintenance.切除效验后投运风险较大, 停机检修时校验	
4	Zone 3 Aromatics 三部芳烃	1050-K 701	Isomerization circulating hydrogen compressor 异构化循环氢压缩机	Without 无	There is a return tank line.有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked during shutdown and maintenance.切除效验后投运风险较大, 停机检修时校验	1
5	Zone 3 Aromatics 三部芳烃	SR601	Aromatic rotary valve 芳烃转阀	Without 无	There is a return tank line.有回油箱线	Normal 正常	The resection effect has no effect, and it will be checked once every six months.切除效验无影响, 半年一校验	8
6	Zone 3 Reforming 三部芳烃	1050-K 101	Pre-hydrogenation cycle machine 预加氢循环机	Have 有	There is a return tank line.有回油箱线	Normal 正常	The effect of removal is small, but the site location is small, so it will be effective when stopping for maintenance.切除效验影响较小, 但是现场位置较小, 停机检修时校验	1
7	Zone 3 Reforming 三部芳烃	1050-K 201	Reforming cycle hydrogen compressor 重整循环氢压缩机	Without 无	There is a return tank line.有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked during shutdown and maintenance.切除效验后投运风险较大, 停机检修	3

							时校验	
8	Zone 3 Reforming 三部芳烃	1050-K 202	Reforming primary booster 重整一级增压机	Without 无	There is a return tank line.有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it is recommended to check it when stopping for maintenance.切除效验后投运风险较大, 建议停机检修时校验	2
9	Zone 3 Reforming 三部芳烃	1050-K 203	Reforming secondary booster 重整二级增压机	Without 无	There is a return tank line.有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked during shutdown and maintenance.切除效验后投运风险较大, 停机检修时校验	2
10	Zone 3 Reforming 三部芳烃	1056-K 101	Light stone circulating hydrogen compressor 轻石循环氢压缩机	Without 无	There is a return tank line.有回油箱线	Normal 正常	Stop the machine at present, and check it every six months. 目前停机, 半年一校验	1
11	Zone 4 四部	1070-K 201	Rich gas compressor 富气压缩机	Have 有	There is no oil return tank line, only local guide shower. 无回油	Normal 正常	The removal effect has little influence, but only the on-site drainage and oil discharge will be effective when the machine is stopped for maintenance.切	1

					箱线, 只有就地导淋		除效验影响较小, 但是只有现场导淋放油, 停机检修时效验	
12	Zone 4 四部	1070-K 101	Coking main fan 焦化主风机	Without 无	There is a return tank line. 有回油箱线	Normal 正常	切除效验后投运风险较大, 停机检修时校验	1
13	Port storage Dept 港储	4702-K 001A/B/ C	Torch gas screw compressor 火炬气螺杆压缩机	Without 无	There is no oil return tank line, only local guide shower. 无回油箱线, 只有就地导淋	Normal 正常	Two units are on and one is standby, which is effective when switching. 机组两开一备, 切换时效验	1
14	Power Dept 热电	1~4#汽轮机	turboset 汽轮机组	Without 无	There is a return tank line. 有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked when stopping. 切除效验后投运风险较大, 停机时校验	3
15	Power Dept 热电	1~4#汽轮机	Anti-fuel system of steam turbine unit 汽轮机组抗燃油系统	Without 无	There is a return tank line. 有回油箱线	Normal 正常	It is risky to put into operation after resection and efficacy test, so it should be checked when stopping. 切除效验后投运风险较大, 停机时校验	1
16	Power Dept	5/6#汽轮机	turboset 汽轮机组	Without 无	No pressur	Normal	Stop the machine frequently, and	1

	热电热电				e relief line 无泄压线	正常	check it on June 1st when it stops. 经常停机, 停机时 6月一校验	
17	Utilities Dept 公用工程	ET001A B	Expansion machine 膨胀机	Without 无	There is a return tank line. 有回油箱线	Normal 正常	Cut the machine regularly, and check it on June 1st when it stops. 定期切机, 停机时 6月一校验	1

