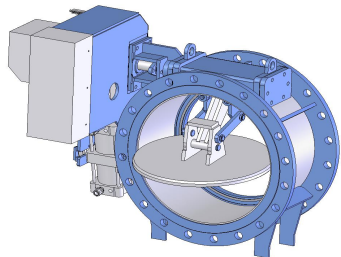


# 欧宾罗斯三杆阀

分子筛纯化系统-----专用切换阀 *MP*系列



# 欧宾罗斯三杆阀

## 主要特点

### 应用

空分厂

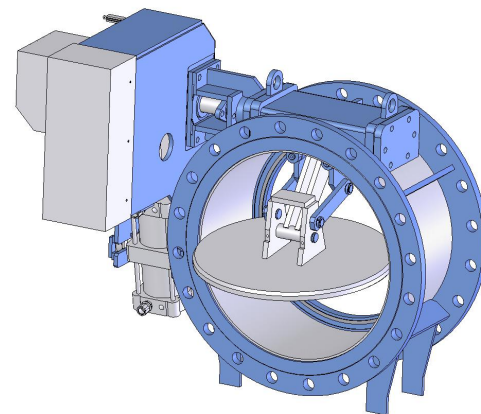
钢厂

### 工作条件

压力 型号: DELTA  $\leq 7 \text{ bar} / 100 \text{ psi}$   
          型号: GOK  $\leq 40 \text{ bar} / 580 \text{ psi}$

温度:  $\leq 300^\circ\text{C}$

杂质含量:  $\leq 1000 \text{ mg}/\text{Nm}^3$



### 产品优点:

1. 阀板与阀座在开启（脱离）和关闭（贴紧）初始时平移，对阀座无剪切挤压和磨擦，故可靠，使用寿命长。
2. 阀座密封位于垂直面上，在开关过程中不会因管道残留的固体颗粒造成阀座密封面损伤——即有自清洁功能。
3. 在开启时，阀门机构限制了阀门两侧的最大压差，从而避免分子筛床层受到高压差气流的意外冲击，也避免进气带水的情况出现，确保系统安全。

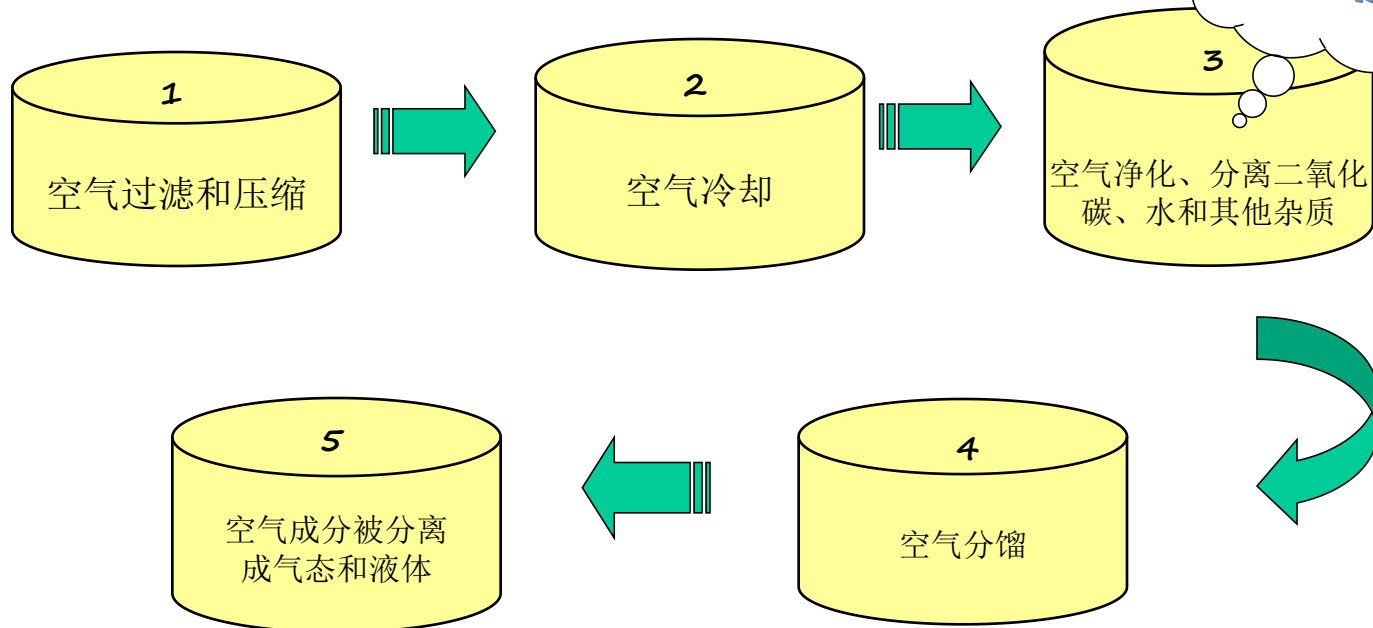
# 欧宾罗斯三杆阀

## 空分

空分厂利用空气及电能作为原料来生产氮气、氧气和氩气，虽然生产工程的细节略有不同，但所以的空分厂可以属于以下2种形式之一：

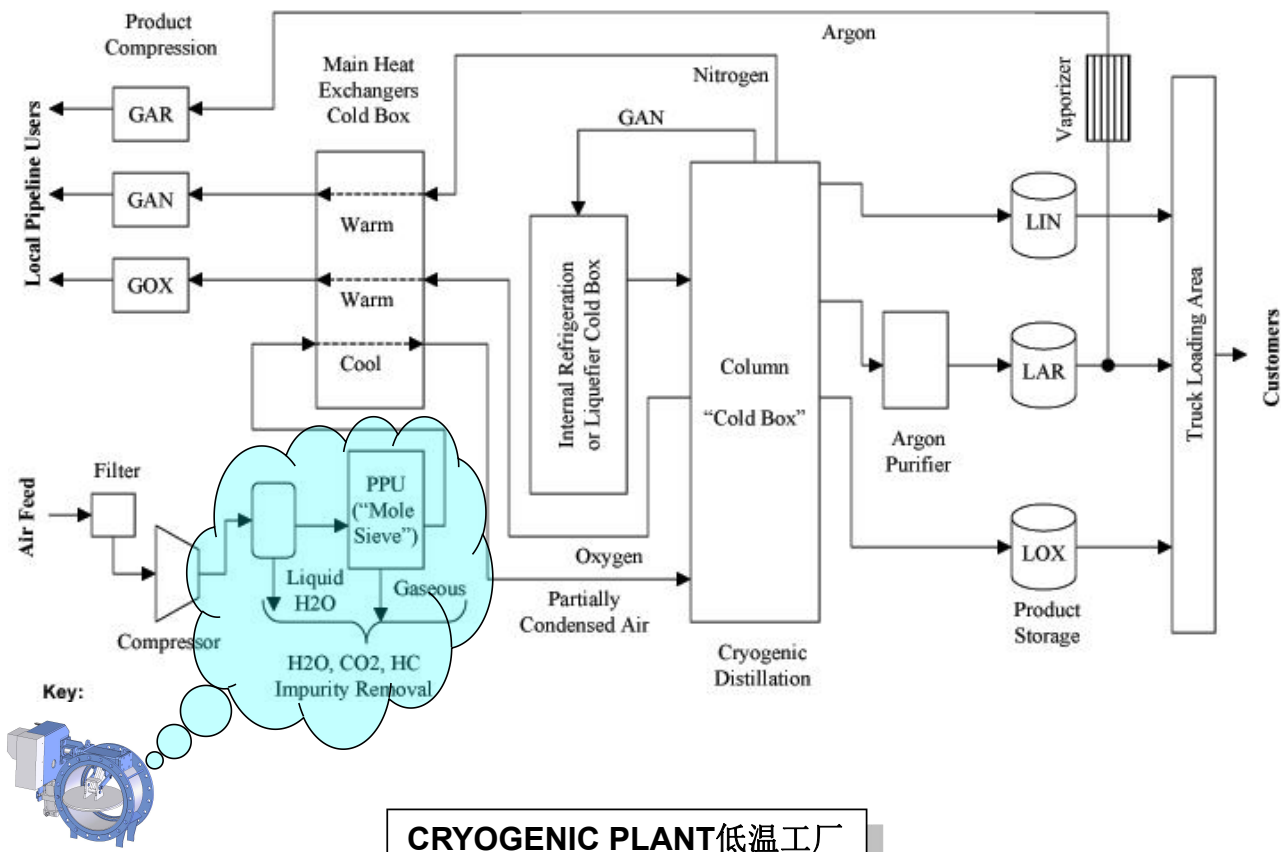
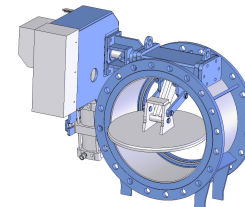
- ❑ 低温型空分设备：利用非常低的温度来分离空气组份来达到所需产品的纯度
- ❑ 非低温型空分设备：在常温下，利用空气组份的不同分子结构、分子量大小、分子体积不同来分离氮气和氧气

### 低温型空分设备工艺过程



# 欧宾罗斯三杆阀

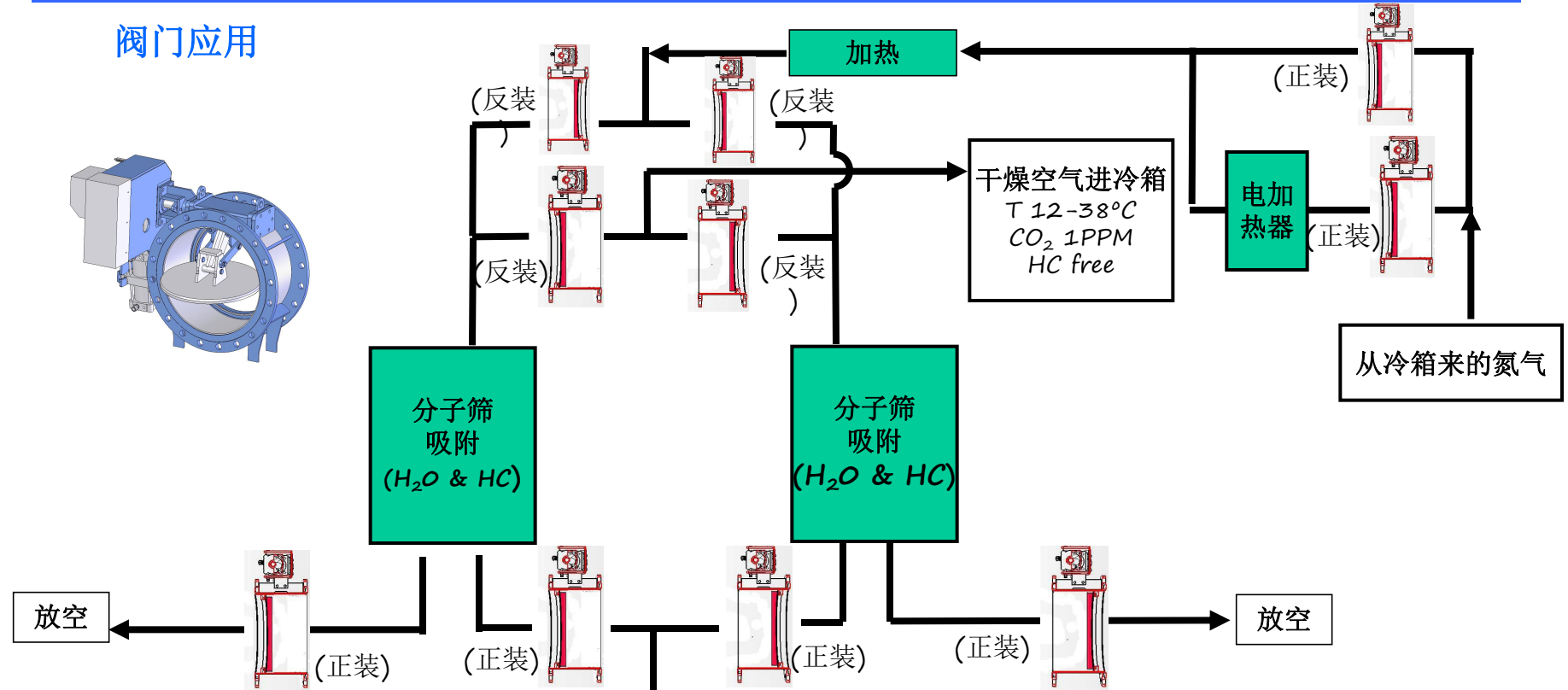
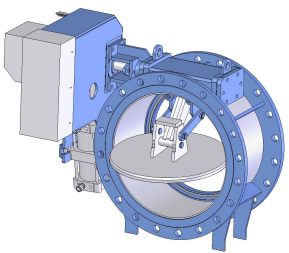
## 空分



CRYOGENIC PLANT低温工厂

# 欧宾罗斯三杆阀

## 阀门应用



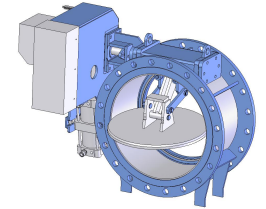
T 8-25°C  
 P 4-40 bar  
 CO<sub>2</sub> 400 PPM  
 Moisture 100%  
 压缩、过滤冷却后的空气

分子筛切换干燥工艺流程图及三杆阀安装方位

压力 (Bar)	温度 (°C)	流体	状态
4 - 40	5 - 15	空气	除去杂质
~0.1	150 (300)	N <sub>2</sub> 含3%O <sub>2</sub>	再生

# 欧宾罗斯三杆阀

## 主要设计特点



功能	开关阀，在差压达到0.1bar时打开
连接方式	法兰(PN,ANSI)
制造工艺	所有阀门内可移动部件（与介质接触部件）是自润滑的
安装	<ul style="list-style-type: none"> <li>· 室外安装（电磁阀除外）</li> <li>· 水平管道</li> <li>· 阀门本身非绝缘</li> <li>· 主阀杆必须在水平位置</li> </ul>
介质	<ul style="list-style-type: none"> <li>· 空气或氮气，或者氧气和氮气混合物其中氧气含量&gt;23.5%，压力&lt;0.5bar</li> <li>· 干、湿或含包含水的气体</li> <li>· 中压(&lt;10bar)/高压 (&lt;40bar)</li> <li>· 高温或者常温</li> <li>· 在再生过程中，温度可达300 °C</li> </ul>

## 设计特点

密封.....单向，高压侧在执行杆侧（密封等级满足DIN-3230）

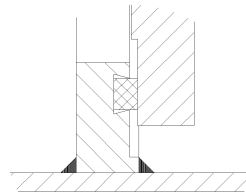
阀座.....软密封或金属密封

开阀时的最大压差.....如果是金属密封，≤0.1bar或0.15bar

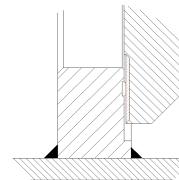
阀门开启的全行程时间.....小于1分钟

设计.....根据国际标准AD Merkblatt, ASME和制造厂的经验（包括特定的原理）特殊制造

认证.....DIR97/23/CE PED 模块H



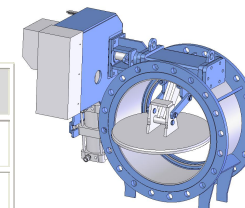
Soft seat  
(P < 7 bar)



Metal seat  
(P < 40 bar)

# 欧宾罗斯三杆阀

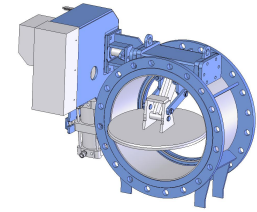
## MATERIALS材料



List of Main Components	Materials	Observations
Body	Carbon steel P265GH *	Straight welded construction
Flanges	Carbon steel P265GH *	Welded on body
Shaft box	Carbon steel P265GH *	Welded on body
Disc	Carbon steel P265GH *	Solid or welded composition
Disc (sealing surface)	Stainless steel	Loaded on disc
Seat support	Carbon steel P265GH *	Welded on body
Seat	Soft (removable)	Manufacturer: HECKER (max. 300C)
	Metal sealing surface (stainless steel)	Used for O <sub>2</sub> service
Actuator yoke	Carbon steel	Welded construction bolted on body
Main shaft & lever axes	Stainless steel AISI 420	
Main shaft & lever axes bearings	DEVA HNiCuFe	Ref: 65.28.8.2.T1.W3100
Levers	Carbon steel	
Shaft box gasket	Graphite or equivalent	
Packing	Graphite	MG-420 + Grafoil
Internal bolts	Stainless steel	
Brackets, supports, etc.	Aluminum or stainless steel	For accessories
Weather protection	Aluminum	
* Carbon steel P265GH acc. to EN 10028-2 equivalent to SA516 Gr60/ 70 acc. to ASTM		

# 欧宾罗斯三杆阀

## 材料



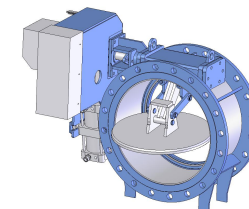
## 表面保护

SURFACE PROTECTION			
Surface preparation	Sand blasting SA 2,5	Internal <input checked="" type="checkbox"/>	External <input checked="" type="checkbox"/>
Primer - 15 $\mu$	F4105 Ecnarro or equivalent	Internal <input checked="" type="checkbox"/>	External <input checked="" type="checkbox"/>
Final coating - 35 $\mu$	F-4102/ A Ecnarro or equivalent Max high temp. resistance = 450°C		External <input checked="" type="checkbox"/>
<b>If O<sub>2</sub> content &gt; 23.5%</b>	<b>Sand blasting SA 2,5 + No internal coating</b>		



# 欧宾罗斯三杆阀

## 阀门主要尺寸



DELTA 型号: MP-  
(DN)

VALVE MAIN DIMENSIONS	MP-400	MP-450	MP-500	MP-600	MP-700	MP-750	MP-800	MP-900	MP-1000	MP-1050	MP-1100	MP-1200	MP-1300	MP-1400	MP-1600
Valve diameter (mm)	400 (16")	450 (18")	500 (20")	600 (24")	700 (28")	750 (28")	800 (32")	900 (36")	1000 (40")	1050 (42")	1100 (44")	1200 (48")	1300 (52")	1400 (56")	1600 (64")
Face to Face dimension (mm)	310	330	350	390	430	450	470	510	550	570	590	630	670	710	790
Approximate total weight (Kg)	250	310	360	420	456	580	700	1030	1240	14100	1570	1870	2220	2445	3250
Open area (cm <sup>2</sup> )	855	1050	1452	2165	3097	3846	4128	5217	6433	7850	8654	9246	10936	12768	17087
Cv	4945	6930	8916	13711	20384	24505	28585	37747	49895	55375	63950	78820	95406	109780	152975

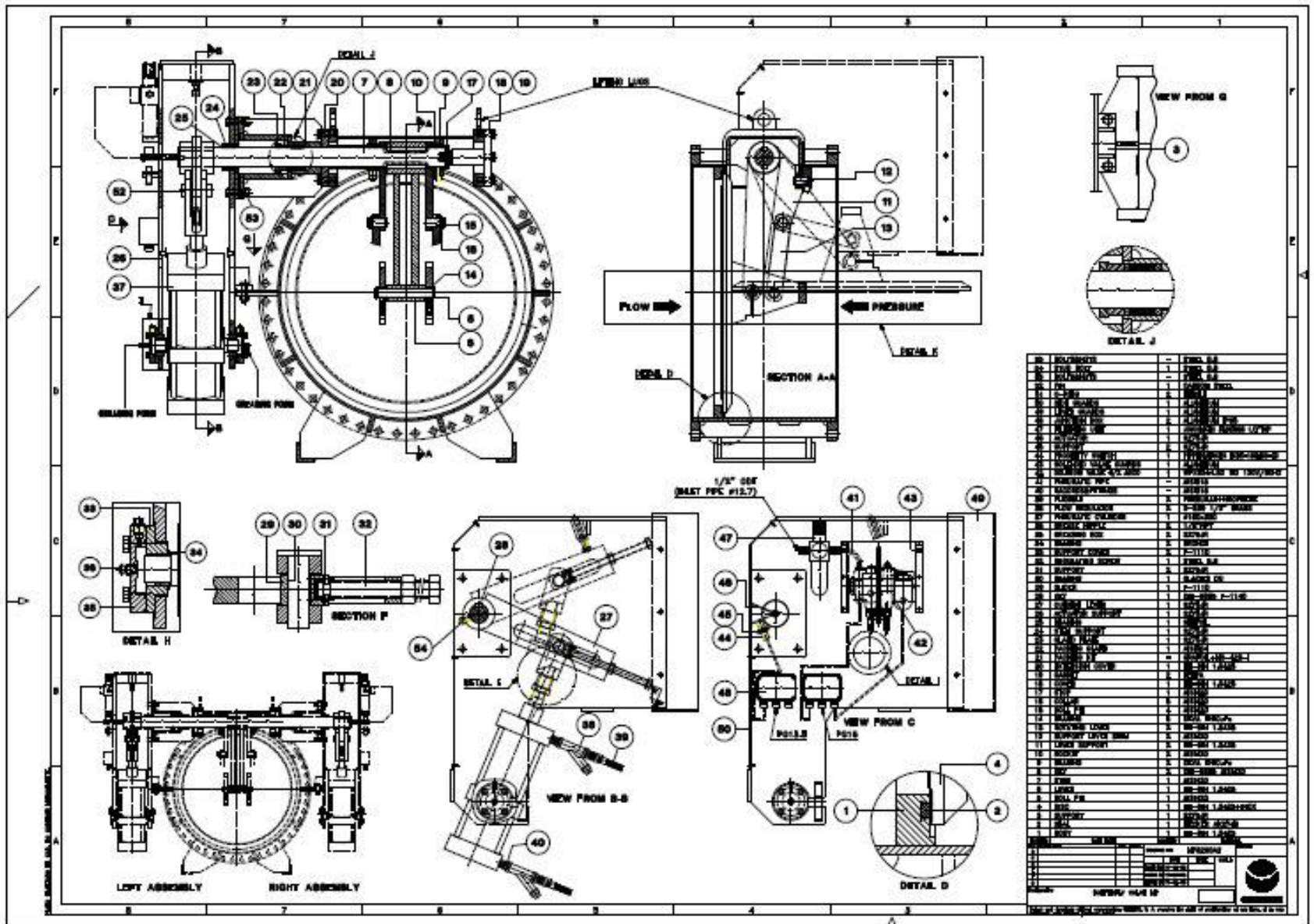
## GOK

VALVE DIMENSIONS	1	2	3	4
Valve diameter	300 (12")	350 (14")	400 (16")	500 (20")
Face to Face dimension	500	550	600	700
Approximate total weight (Kg)	280	360	480	630
Total open area (cm <sup>2</sup> )	220	511	731	1418

□ 阀门最大尺寸 *ND 2200 mm*

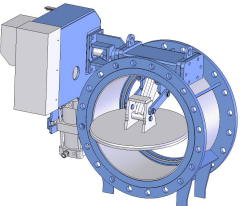
□ 端到端尺寸按照 ISO5752/82

# 欧宾罗斯三杆阀



## COMPONENTS LIST (SEE DRAWING MP8260A2)

55	BOLTS&NUTS	-	STEEL 8.8
54	STUD BOLT	1	STEEL 8.8
53	BOLTS&NUTS	-	STEEL 8.8
52	PIN	1	CARBON STEEL
51	O-RING	2	NITRILE
50	SIDE GUARDS	1	ALUMINIUM
49	LEVER GUARDS	1	ALUMINIUM
48	JUNCTION BOX	2	ALUMINIUM IP65
47	FILTERING UNIT	1	SOUCOMATIC 34203088 1/2"8SP
46	ACTUATOR	1	S275JR
45	SUPPORT	2	S275JR
44	PROXIMITY SWITCH	1	PEPERL&FUCHS NC89-185M60-20
43	SOLENOID VALVE GUARDS	1	ALUMINIUM
42	SOLENOID VALVE 4/2 ASCO	1	WPXB344.82 MD 120V/50HZ
41	PNEUMATIC PIPE	-	AISI316
40	RACORDS&FITTINGS	-	AISI316
39	FLEXIBLE	2	PERBUNAM+NEOPRENE
38	FLOW REGULATOR	2	S-839 1/2" BRASS
37	PNEUMATIC CYLINDER	1	Ø160x300
36	GREASE NIPPLE	2	1/8"NPT
35	GREASING BOX	2	S275JR
34	BEARING	2	BRONZE
33	SUPPORT COVER	2	F-1110
32	REGULATING SCREW	1	STEEL 8.8
31	SUPPORT	2	S275JR
30	BEARING	1	GLACIER DU
29	SLIDER	1	F-1110
28	KEY	1	DN-6885 F-1140
27	OUTSIDE LEVER	1	S275JR
26	ACTUATOR SUPPORT	1	S275JR
25	BEARING	1	SELFOIL
24	STEM SUPPORT	1	S275JR
23	GLAND FLATE	1	S275JR
22	PACKING GLAND	1	AISI304
21	PACKING KIT	-	GRAFOL+WG-420-1
20	EXTENSION COVER	1	HI-DIN 1.0425
19	GASKET	2	BEIPA
18	COVER	1	HI-DIN 1.0425
17	STOP	1	AISI420
16	COLLAR	5	AISI420
15	ROLL PIN	4	AISI420
14	BEARING	6	DEVA HNICUF®
13	ROTATING LEVER	2	HI-DIN 1.0425
12	SUPPORT LEVER STEM	2	AISI420
11	LEVER SUPPORT	2	HI-DIN 1.0425
10	SOCKET	2	AISI420
9	BEARING	2	DEVA HNICUF®
8	KEY	2	DN-6885 AISI420
7	STEM	1	AISI420
6	LEVER	1	HI-DIN 1.0425
5	ROLL PIN	1	AISI420
4	DISC	1	HI-DIN 1.0425+INOX
3	SUPPORT	1	S275JR
2	SEAL	1	HECKER AK2749
1	BODY	1	HI-DIN 1.0425



## 欧宾罗斯三杆阀

# 欧宾罗斯三杆阀

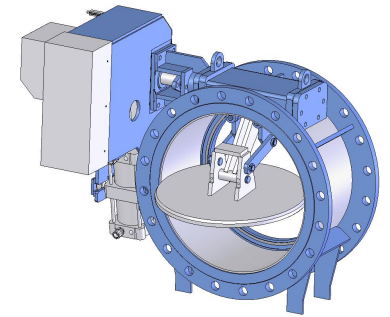
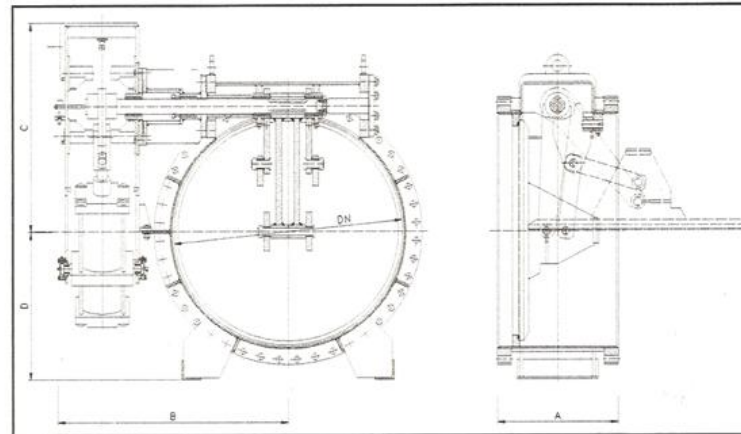
Diameter (mm)	250-1600
Flange standard	PN10/ANSI 150
Position	Horizontal
Design pressure	7 bar
Design Temperature	300°C
Sealing	Soft seated Metal seated
Tightness	DIN 3230

## Materials

Body	P265GH / SA516 Gr 60/70
Disc	P265GH / SA516 Gr 60/70
Seal	Hecker
Packing	Graphite
Shaft	AISI 420
Bearing	DEVA type
Actuator	Pneumatic
Type	Double effect
Air pressure	6 bar

## Accessories

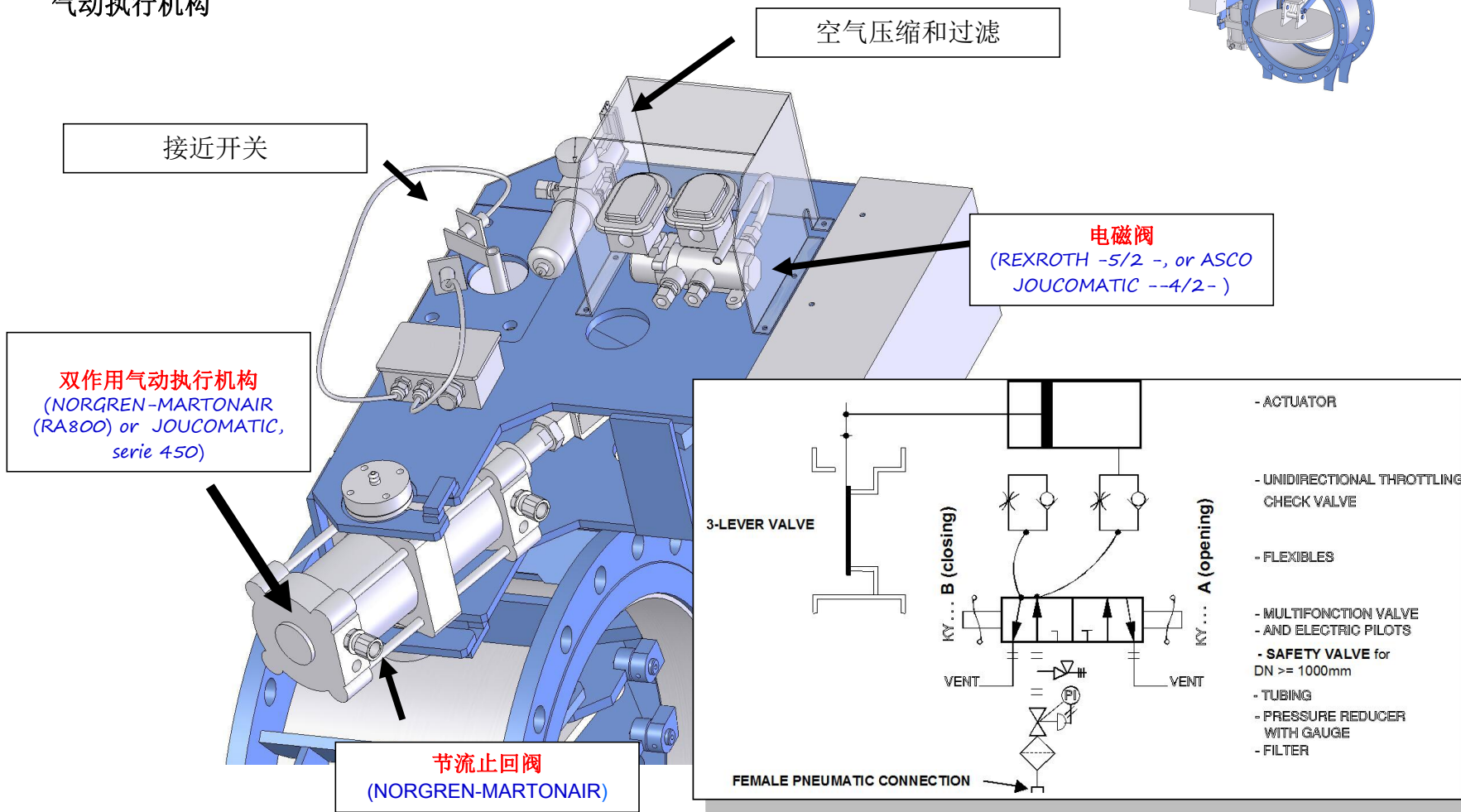
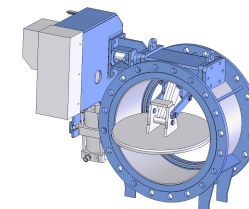
Pneumatic Actuator	Norgren/Joucomatic
Proximity sensors	Pepper & Fuchs
Solenoid Valve	Rexroth 5/2 or ASCO 4/2
Throttling check valve	Norgren
Hose	Rubber Armored
Tube and fitting	½" AISI 316



Ø	A	B	C	D
250	250	408	475	300
300	270	430	490	325
350	290	450	500	350
400	310	480	550	380
450	330	500	575	430
500	350	520	600	435
600	390	563	625	490
700	430	680	675	500
800	470	769	700	615
900	510	865	750	650
1000	550	961	800	760
1200	630	1153	910	850
1400	710	1346	1015	930
1600	790	1538	1120	1015

# 欧宾罗斯三杆阀

仪表  
气动执行机构



# 欧宾罗斯三杆阀

## 阀门测试

### 1.- 强度测试

设计压力的1.5倍

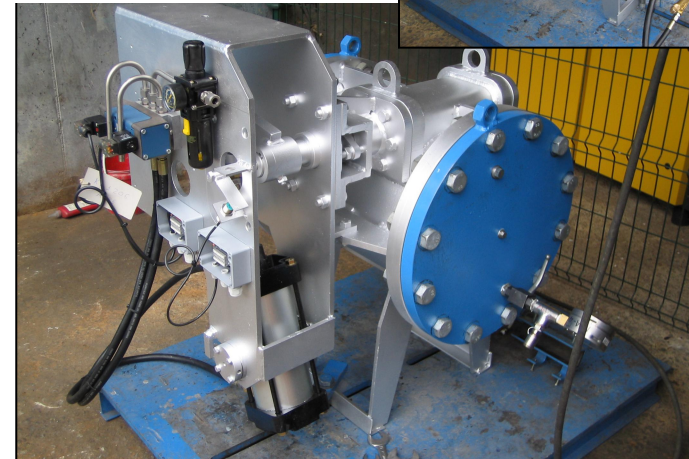
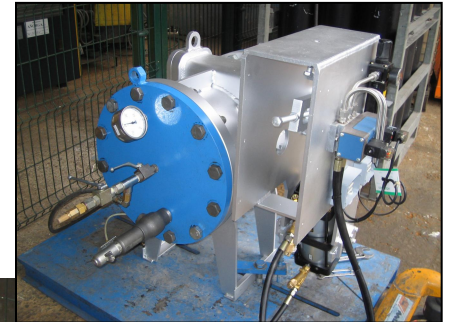
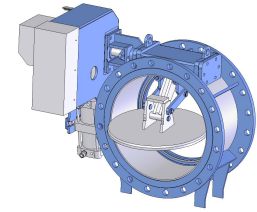
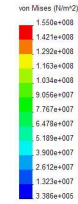
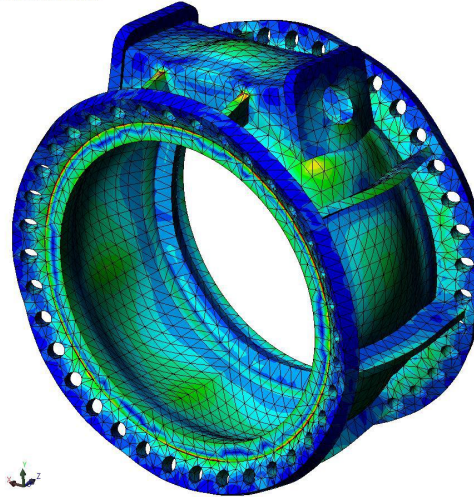
### 2.- 泄漏测试 (ANSI)

Soft seat: Class VI 软密封

### 3.- 功能测试

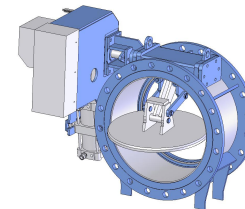
100个完整的动作 (开关一次)

Nombre de modelo: CUERPO MTP\_calculo PED 2006  
Nombre de estado: 0700A03006  
Tipo de resultado: Static esfuerzo nodal Trazado1  
Escala de deformacion: 452.547



# 欧宾罗斯三杆阀

## 阀门测试

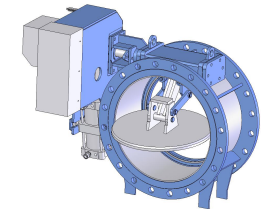


### 性能测试

20000个周期，相当于17年运行，密封仍然在用户要求的范围内

# 欧宾罗斯三杆阀

## 业绩表



### 2005 PROJECTS IN CHINA

- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / HANDAN IRON & STEEL COMPANY (CHINA) 2x  $\varnothing 800$  & 8x  $\varnothing 1000$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / YUNAN TIANIN CHEMICAL CO.(CHINA) 10x  $\varnothing 1600$
- ❑ AIR LIQUIDE HANGZHOU / PANZHIHUA 8x  $\varnothing 800$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / QINGDAO- I LIDONG CHEMICALS 8x  $\varnothing 350$
- ❑ AIR LIQUIDE HANGZHOU / SPC2 (CHINA) 10x  $\varnothing 1000$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE)/SHOUGANG QIAN'AN STEELLTD CO (SQQA 2) 8x  $\varnothing 1000$  - 2x $\varnothing 800$
- ❑ ANGANG GROUP INT. TRADE CORP CHINA / ANSHAN STEEL CHINA 4, 5 & 6 24x  $\varnothing 1000$  6x  $\varnothing 800$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / AIR LIQUIDE QINGDAO TIANJIN II 9x  $\varnothing 350$

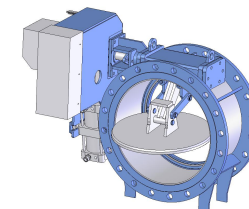
### 2006 PROJECTS IN CHINA

- ❑ AIR LIQUIDE ENG SOUTH ASIA PTE (SINGAPORE) / BAOSTEEL -LUOJING (CHINA) 20x  $\varnothing 1600$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / ZHEJIANG 9x  $\varnothing 500$
- ❑ AIR LIQUIDE ENG. SOUTH ASIA PTE (SINGAPORE) / YITAI (Inner Mongolia) 8x  $\varnothing 1200$



# 欧宾罗斯三杆阀

## 业绩表



自1990年以来，有三十多套国内大型空分设备配套使用**ORBINOX**三杆阀，投入运行的有（部分业绩）：

<b>60000</b> 等级 金陵石化	<b>1</b> 套
<b>56000</b> 等级 兖矿煤化工(国泰)	<b>1</b> 套
<b>35000</b> 等级 鞍山钢铁	<b>6</b> 套
<b>25000</b> 等级 首钢	<b>3</b> 套
<b>52000</b> 等级 云天化	<b>1</b> 套
<b>42000</b> 等级 上海金山石化	<b>1</b> 套
<b>30000</b> 等级 淮南化工	<b>1</b> 套
法液空天津、青岛等供气自建项目	数套
<b>60000</b> 等级 宝钢(一套为杭氧,执行中)	<b>3</b> 套
<b>58000</b> 等级 陕西神木甲醇二期	<b>2</b> 套
<b>40000</b> 等级 承德燕山气体(杭氧,执行中)	<b>1</b> 套
<b>60000</b> 等级 神华包头(杭氧,执行中)	<b>4</b> 套
<b>40000</b> 等级 兖矿久泰(杭氧,执行中)	<b>3</b> 套
<b>50000</b> 等级 宜兴灵谷化工(杭氧,执行中)	<b>1</b> 套
<b>40000</b> 等级 山东凤凰化工(开封空分,执行中)	<b>1</b> 套