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418961 6.8%

6.8% 6.7% 12 6.7%-6.9%

22087 3.2% 169299

6.1% 227576 7.6%

3995 0.9%

2614 1.4% 40904 1.8% 33422

1.2%

6.7% 0.1

7.6% 1.9%

6.7% 6.2% 1.6%

6.9% 10.5%

11.6% 9.2% 4.9 2.5 6

6.0% 1-5 27298

16.5% 6.36%

0.35

8.0% 0.1

6

8.0% 1-5

13.3% 0.2

18.1% 17.5% 15.4% 2.4 5.0 4.5

9609 8.8% 1.2

6.7% 1.3

6.8% 1.1 12.2% 1.2

180018 9.4% 0.4

154091 9.2% 25927

10.5% 19457 9.9% 160561

9.3%

10.6% 10.6% 14.2% 0.2 0.5 2.9

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297316 6.0%

1.5 184539 8.4% 1.2

13.5% 3.8%

4.9% 66107 11.5% 9013 26.7%

12.2% 59%

2.3 7% 58.6%

5.3% 5.2% 11%

41% 16 14.7% 6.8

6 24936 4.3% 13777 3.1%

11158 6.0% 57162

5.7% 6 10547 2.8%

14063 8.7%

6.6% 19770 7.9%

5.8% 7142 8.8%

6.8% 2.77 0.02

12186 8.4% 6 4.8%

0.1 31 4.7%

0.2 18022 149

0.8% 3661 7.5%

2.0% 0.1

1.4% 1.1% 2.3% 1.6%

1.2% 2.1% 5.5%

1.1% 6 1.9% 0.1

0.1% 3.9% 0.2

4.4% 6 4.7%

0.6 0.3% 5.1%

0.4%

1.5

54.3% 0.3 13.9

78.5%

47.1

8.7% 2.0 88.1%

23.9% 15.0%

40810 30.1% 31277 29.8%

17.4%

http://cac.chinaiol.com/s/0717/49198880.html

BHI 2018 5

117 2017 2018 (

117 1.5) 34 30%;44 2018

; 39

BHI رسول

200

OEM ODM

LOGO

200

2015

4 17 3 10.1

7.5%

77.8% 31.3%

24.2% 10%

2%

6.2 62% 8.9%

13%

1

( ) 10.1 7.5% 1-2

0.4 1.7 6.2 8.9%

1-2 0.8 1.2

4 17

20% ;

60%

8.9% 2.9

2% 2.5%

1-2 13%; 3.8% 0.5 ;

8.9% 2.8

13% 10.4%

10.1% 2.8 ; 13.4% 2.2

; 18.9% 0.2 ; 5.1% 1-2

3.4%

;

15.4%;

26.9%

25.3%

2

13% 19%

23.5%

FNJ

http://news.ehvacr.com/news/2018/0531/104473.html

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XJJ050

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GB/T19923

GB/T18920 40%-42>>-BDC BUSÊ "—"j Ê

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25%

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0.5m/s

2.0m/s

6. S316

00Gr20Ni18Mo6CuN

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http://news.ehvacr.com/news/2018/0626/104621.html

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2018 1

2018

http://news.ehvacr.com/news/2018/0522/104406.html

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(TMS)

2018

2016 2.01 7.9%

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27 3 2019

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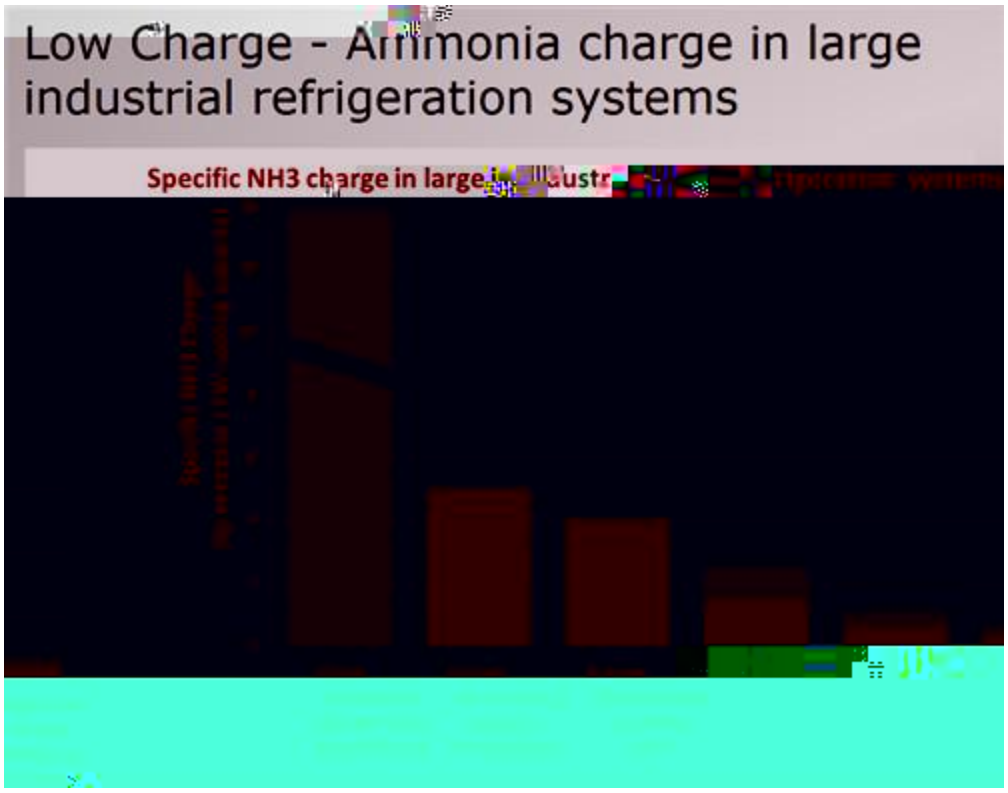
NH3/CO2 。 13

35 。 80-100 η 3


Low Charge - Ammonia charge in large industrial refrigeration systems

About Ammonia as refrigerant

10-50%
Cost saving
The initial cost of R22 pump system is much higher than Ammonia system.

- Natural refrigerant, environmental-friendly
- High-efficiency, low-cost
- [illegible] function – through an unique smell
- The main refrigent in industrial refrigeration. 95%+ large refrigerating systems in Euro[illegible]d U.S make use of it
- **Toxic and flammable refrigent can be ignited only in high concentration**
- **The combustion needs extremely high ignition energy**

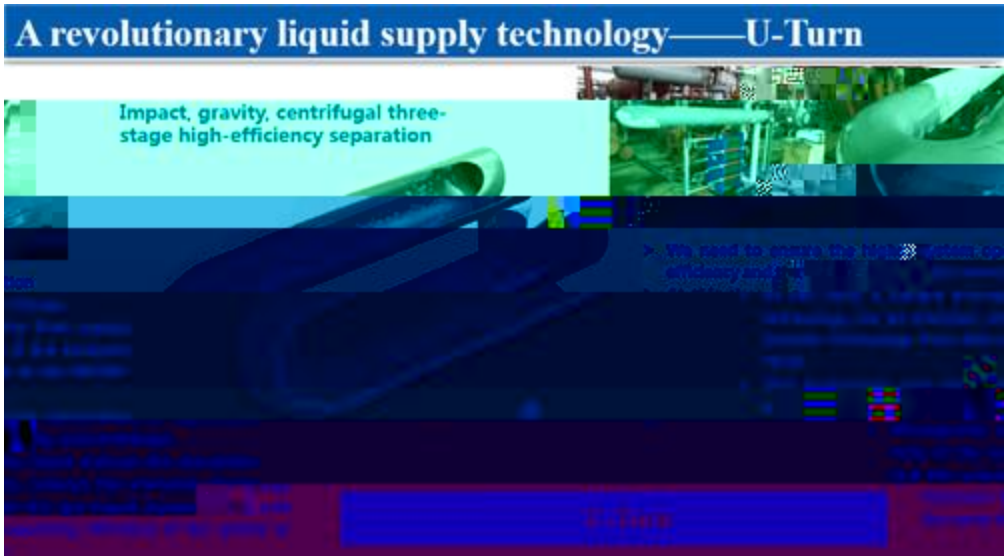
Statistics on the deaths of people caused by Ammonia refrigeration accidents in some

Country	Years of Statistics by the end of 2008	Death toll
Denmark	63	0
Germany	22	2
U.S.	15	8
Australia	30	0
Netherland	[illegible]	1
Italy	30	0

Background information

- China Am[illegible]

The China Industrial Refrineration related industries are threatened


A revolutionary liquid supply technology——U-Turn
Impact, gravity, centrifugal three-stage high-efficiency separation

Further optimization of system
AIST is a commercial refrigeration product with a similar refrigerator.
It can be placed directly in the outdoor or on the roof, the user
plug and play.
We believe that the home electrification of commercial refrigeration products is a trend in the future.

3

150

50 300

6

http://www.chinaiol.com/cold/s/0712/59198722.html

15 2018 3

JB/T2236 JB/T 6908

JB/T7238

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ysjbz@126.com 2018 8 11

2018 6

https://www.ysjw.cn/news/show-2795.html

16

2018 22

2018 6 27

https://www.ysjw.cn/news/show-2806.html

17

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7 100%

7 31

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https://www.d1ev.com/news/zhengce/73233

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GB/T

3 71 1 8000

http://news.ehvacr.com/news/2018/0620/104590.html

20 2018

2018 95

3

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24 4

BNEF Pietro Radoia

2020 2017

BNEF

104 3

2

2020

50%-

2 6 1 24

5.2 3.35

2018 1

2018-2020 2018 28GW 2020 45GW

2017 102GW 53GW

PV Infolink 2017 36% 27%

2017 27.54GW 19.08GW

2017 28GW

2017

45% 100GW

80-90GW 50%

2

Jason Tsai

3.35 3.25 3.1 3.2

2.8 2.7

20% 15%

25% 70%

0.1

Jason Tsai 8

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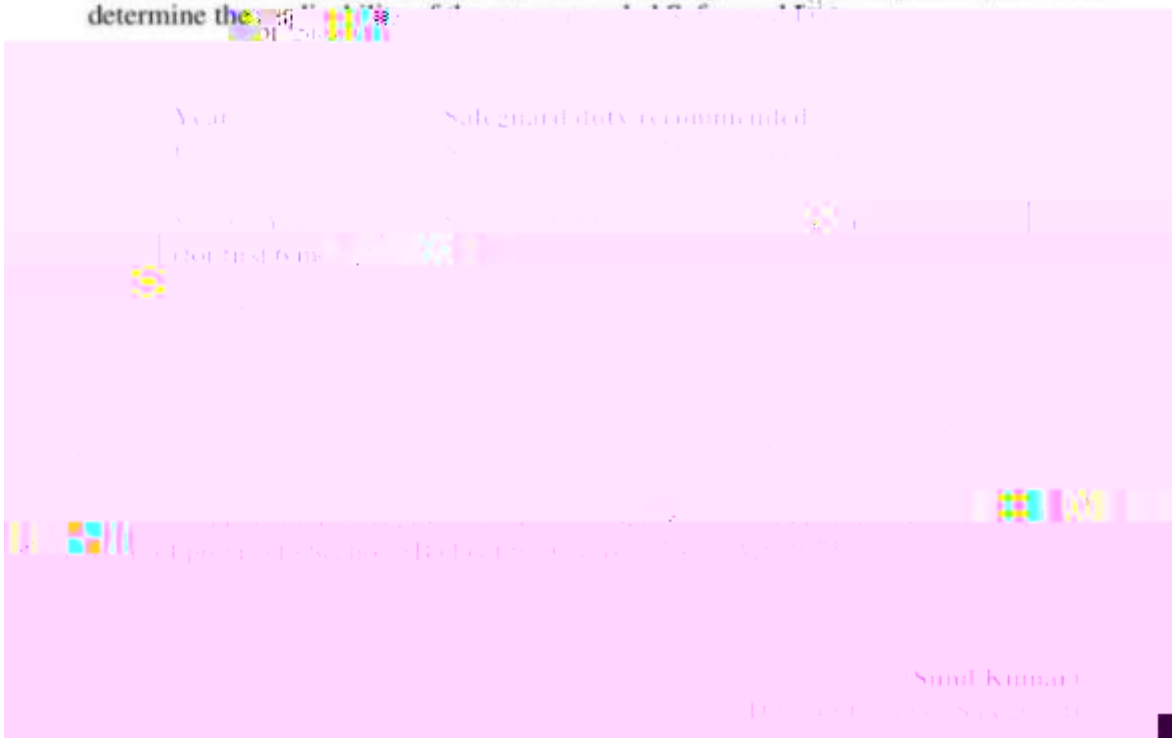
8

mentioned herein is indicative only and the description of the imported goods will determine the



531

9

2022 175GW 100GW

6 2022 227GW 531

3 24 4GW

100GW

100GW 2018 2022

15 12GW 2017 9GW

85

90

2030 40

SECI 2GW

2 44 0 24

30

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201 4 0 201

201

2012

201

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2017 7

3

DGTR

https://solar.ofweek.com/2018-07/ART-260009-8420-30250551.html

23

2018 5 31 2018

(2018 823) 2018

; 10GW 2018

2016 15GW 2017 11GW 2018

201

201

11GW

2017 9.6GW 2022 100GW

15-20GW

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FiT FiT 2018

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https://libattery.ofweek.com/2018-07/ART-36007-8420-30251185.html

25

2017

1130

https://libattery.ofweek.com/2018-07/ART-36001-8420-30252182.html

26 ?

SEMI 2018

2019 173

IC

28nm 14nm

10nm 7nm 3D NAND Flash

IC 7nm

14nm 28nm

8

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1-2

http://www.semi.org.cn/news/news_show.aspx?ID=53439&classid=117

27 2018

IC Insights 2018 110

10.6%

2014 -2017 15 22

39 79

IC Insights

2018 2019 32

33 35.47%

http://www.semi.org.cn/news/news_show.aspx?ID=53215&classid=117

28

6 15

AI

5G

200

500 100 100

300

http://www.semi.org.cn/news/news_show.aspx?ID=53097&classid=117

29

2050 18

2050

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Mirai

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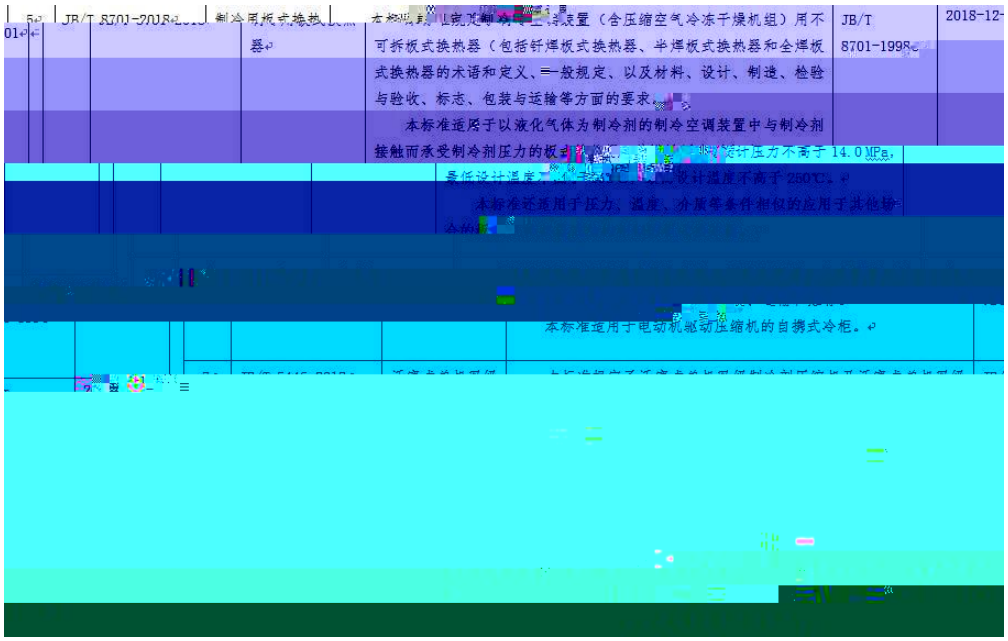
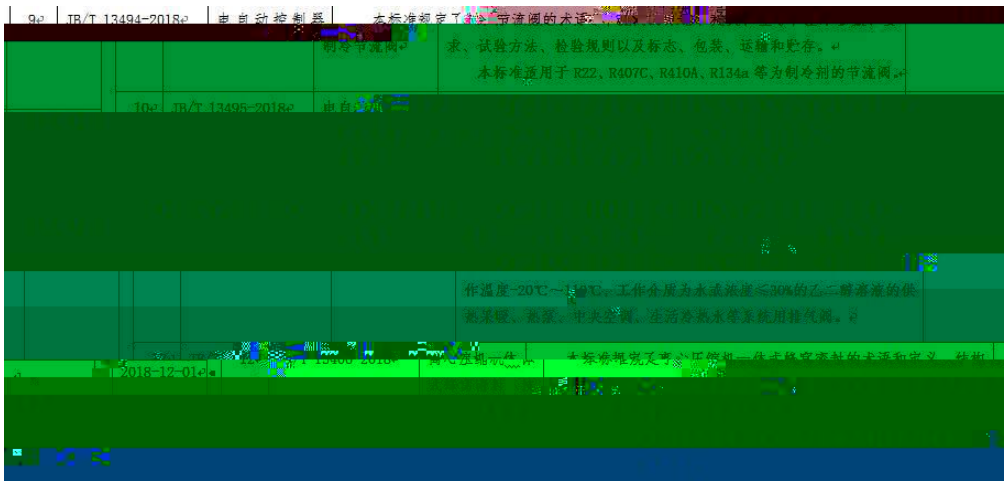
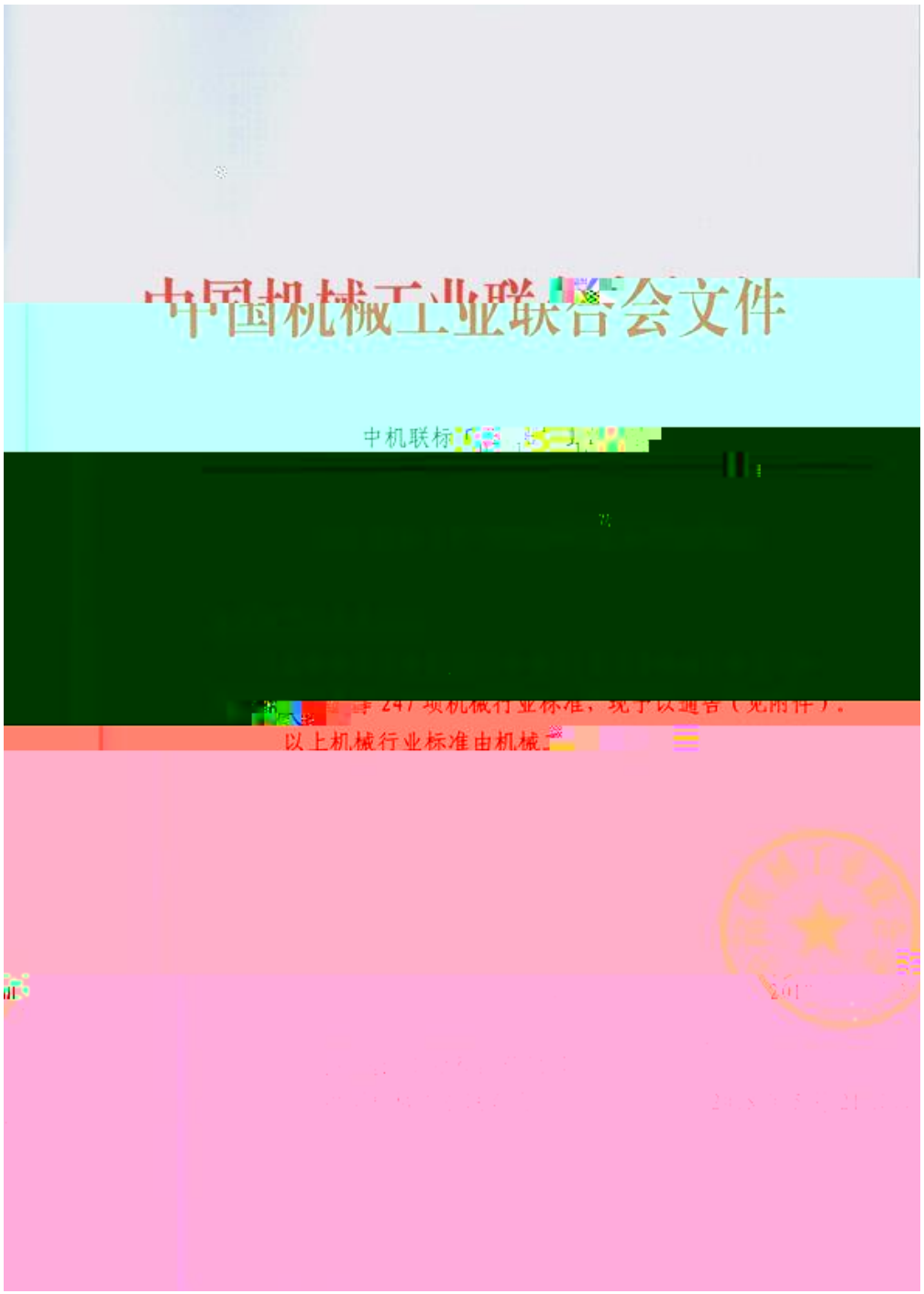
2014 ç







http://cac.chinaiol.com/s/0608/89197163.html

2

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2015

2016

3.50%

2

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AirProducts 75%

20 80

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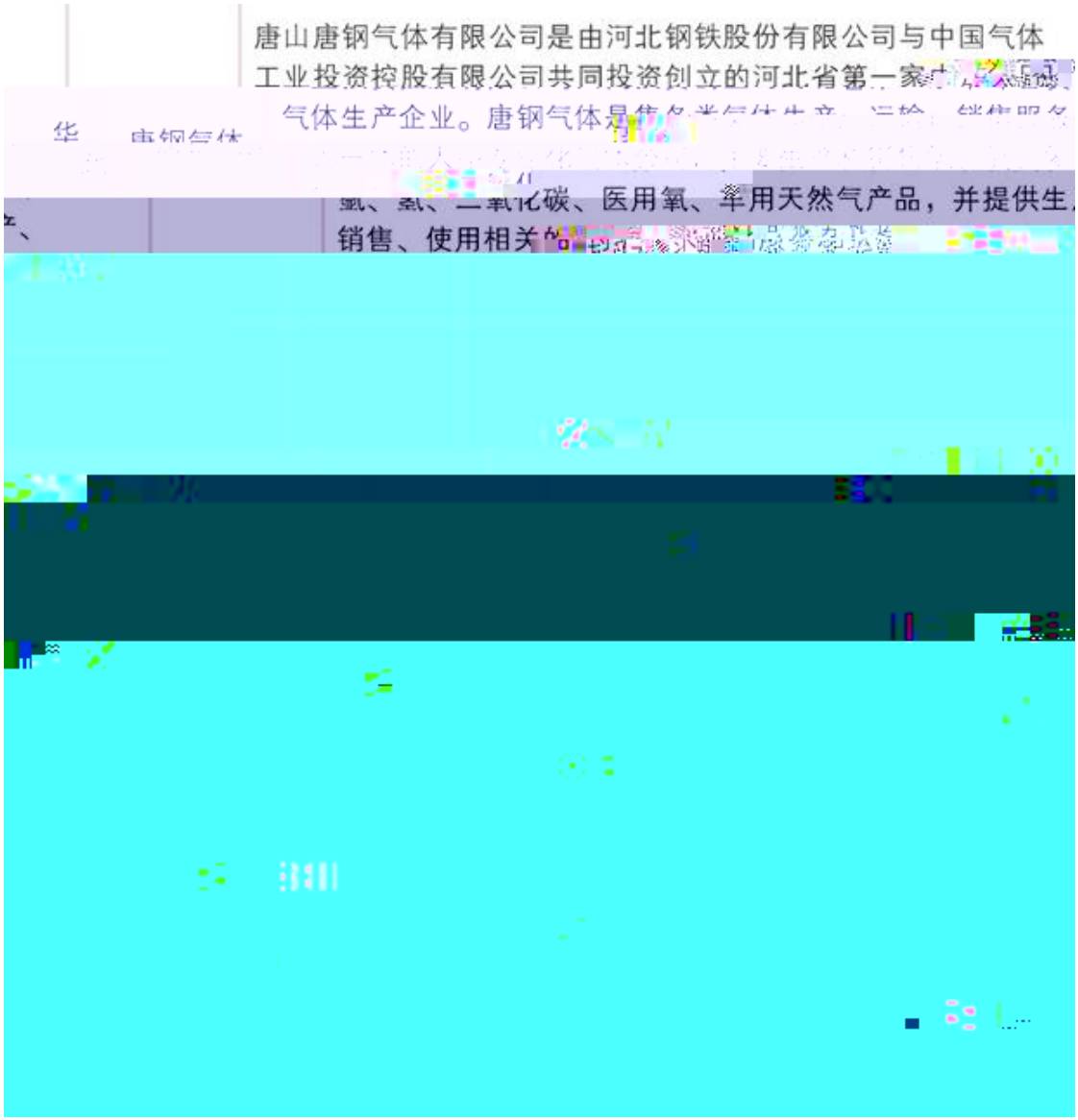
表4



2

20,000Nm3/h

5

http://www.compressoronline.cn/index.php?m=content&c=index&a=show&catid=6&id=7977

3

2018 1 18 2017

6.27 6%

6%-9%

25%

15%-30%[5u4~[illegible]3W[illegible]~Ï/G,[illegible]WSG[illegible]RW3@CDQ,[illegible]%

721 2016 8 0.7671

2018 200724 43B844139175022CF251F044002A1 0 0 1 187.13 384.89 Tm[(20)1 TJF7.1

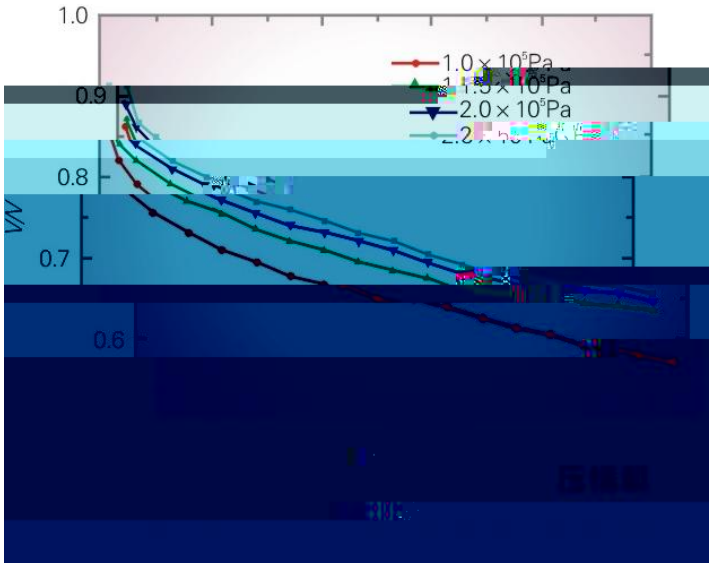
2018

300 500

EMC 17

35%

1



1

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2

2.1

Toyota UTC DOE

Author D.Little / CEM

28kW 42g/s 2.2×105Pa

50kW

2

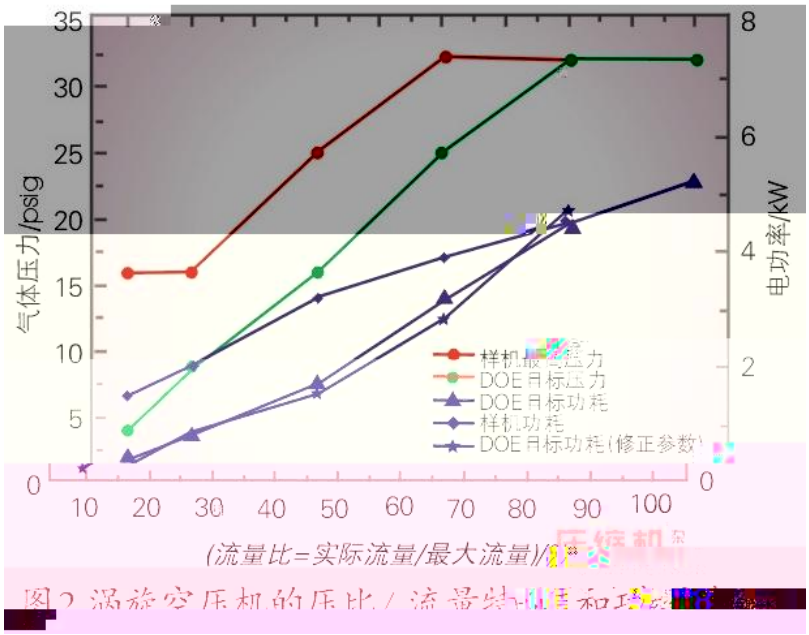


图2 涡旋空压机的压比/流量特性和功

Author D.Little / DOE

3.2

80% DOE 1.5 2

DOE

2.2

/

GM PlugPower Xcellsis Ballard

Mercedes-Benz A 68.5kW /

4%

3

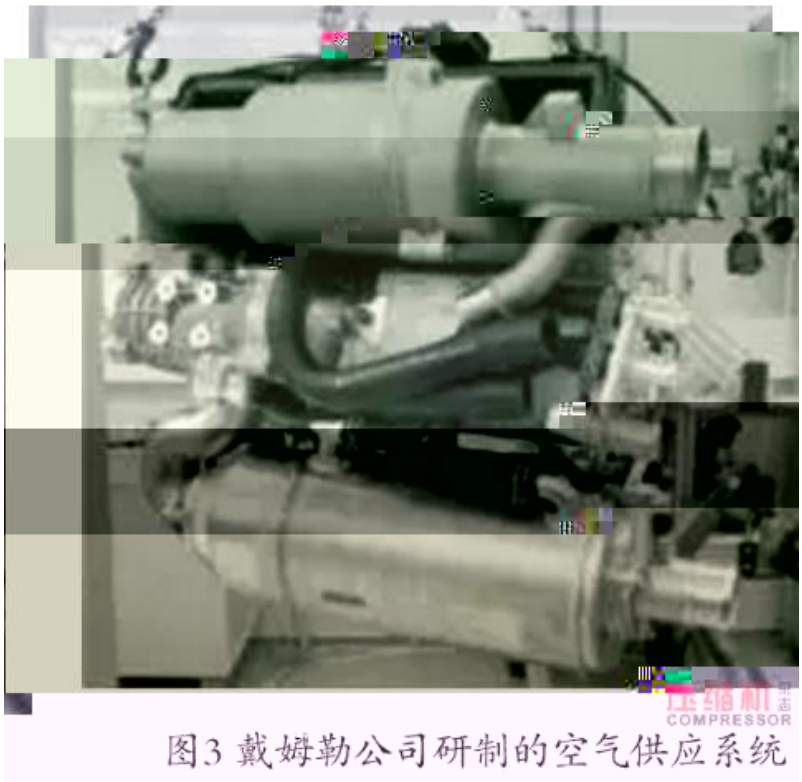


图3 戴姆勒公司研制的空气供应系统

Mercedes-Benz B F

/ 2.9 9.1kW 80kWFCS

2.3

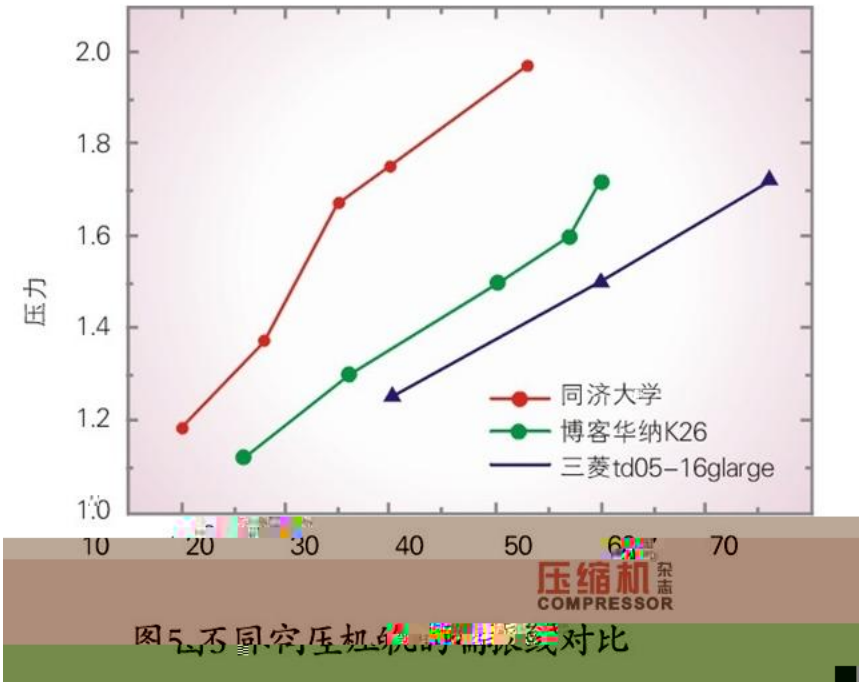
65kW

80g/s 1.5 2.5

<10kW 4

80000r /min

5



2.4

DOE

P R

P400 R340 TVS

80kW 6

TVS

TVS

2.5 92g/s

1

2

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2.5

Toroidal Intersecting Vane Machine

7 90 °

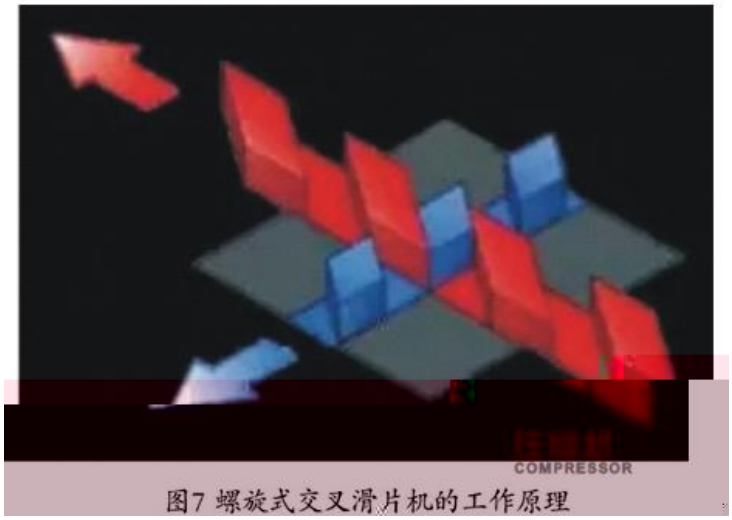


图7 螺旋式交叉滑片机的工作原理

Mechanology LLC

Mechanology TIVM

6.7×104Pa

DOE 50kW TIVM TIVM

1500r/min 3.2

72g/s

3

1

2

Wiartalla

2.5×105Pa 12% 2%

DOE Honeywell 110kr /min

5%

http://www.compressoronline.cn/index.php?m=content&c=index&a=show&catid=6&id=7921

5

2018 9

上海漢鐘精機股份有限公司

CSHIA 2018

3 19 T/CSHIA 001-2018

GB/T 1.1-2009

CSHIA

VillaKit

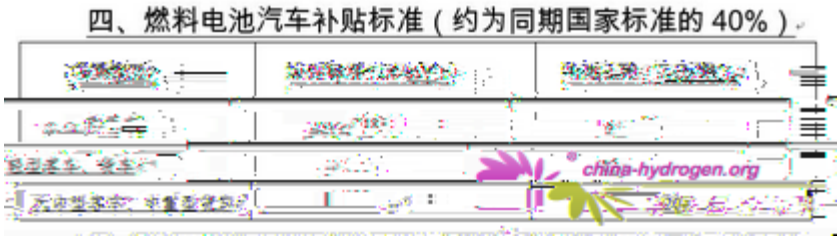
http://news.ehvacr.com/news/2018/0619/104581.html

6 2018

6 20 2018

2016

50%



40%

2400 /KW 8 /

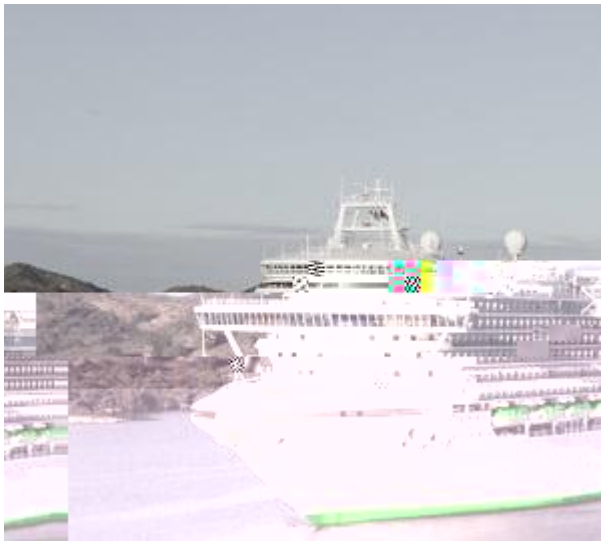
12 / 20 /

http://china-hydrogen.org/fuelcell/mix/2018-06-28/8014.html

1

Angriya

350 15



http://www.chinaiol.com/cold/s/0614/97197454.html

2 2018-2019 6

23

6 23 2018-2019 200

2 4 2 1 1

1 1 3

1

25

1 1 2 1

2 1 1 1 1 1

1 1 1 2 1

2 1 1 1

1 1

1

58

5 3 3 1

2 2 1 2

1 1 1 1 1

2 1 1 1 1

2 2 1 6 6

2 2 1 1 1 Ǝ

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5000

4000

2017 15.42%

1.61

14.8% 38%

GMV

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12700 10 1000

2005 13 160

24 35635 21229

2017 7698 20

8.9 1.9 4300

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“ ”)

2017 696878.23
129688.49 262274.66 711.84
2017 50.24% 29.50% 31.68% 8.69%
(
) 1975

2015 4729 2015
97 2 64 2011-2015 16%
22%

7 300

300 20

2000

7000 6000

6

-

2600 120 300 5 2011 4 16

http://cac.chinaiol.com/s/0625/41197839.html

8 T2

T2

T2

T2

50492 20 T2

T2

210 75

5 R̀

1968

http://cac.chinaiol.com/s/0711/03198668.html

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( ) ( ) -- (

)

50

100 1000

http://www.chinaiol.com/cold/s/0521/77196107.html

10 IPO 5.99

5 15 A

5

500L

77.38% 68.65% 70.22% 73.54%

IPO 2014-2017 5.73 8.65 8.44

5.97 4710 1.2 1.23 8660

https://www.ysjw.cn/news/show-2823.html

13

6 13

215

2

2017~2019

2019

350

70% 15% 15%

2017

20

https://www.ysjw.cn/news/show-2798.html

14

4 4

18 Busch ACHEMA

ACHEMA Busch

P M2 3 35 0 445

3 15 0 395 0 2 0 05

6 34

2017 5 4

P M2 71 4

6 14

80

93

0 21 1 6

http://pv.semi.org.cn/a/grid/snec_editcommend/38161.html

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2005 5 18

2007 2 7

11 17

3 62

CEO

2 2015 6

9 69 4 891

11

1 6

1 51 ADR 7 55

2017 6 5 18 6 5

7 17

https://solar.ofweek.com/2018-07/ART-260006-8440-30249928.html

21 9.7 100%

49 2018 3

31 7 836 13

2018 3 31 97 072 06

89 235 93 1138 77 100

97 000 47 530

2008

2016 CEO

2016 12

8

800 7

2018 2018 1 16

10

2000

500 7

150

IPO 5 30

1 17 IPO

87.52 2.68 2016 78.98

8.36 2017 6042 3

150

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30 2018

30 16

2017 3353

46% 2.68 50%

5 100

1 000

FinFET GAA EUV 3

eFlash/PMIC/DDI/CIS/RF/IoT 8

IP EDA

2018 8 20

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2020 3

Strategic Analysis Inc. Mirai

1.1

3 8000

Mirai

10%-20%

Cataler Eri Ichikawa

30

300

Yoshikazu Tanaka

Clarity 2019 Nexo SUV

https://www.d1ev.com/news/qiye/73242

1

2018-05-03

3 LB LT-S

2018-05-17

2018

2017 2018

LT

4 A 30

2018-05-24

5 22

13.77 / 19.7 271 A

IPO

5 24

1000 413000 20

413

A (002415,) 3800

A

1984

1980 ( )

2017 9.8 660

3.7% 6.03

1827 9%

2001 A 2003

(PwC China)

2018 3 29 B

A

(601231,) 130

3

29 A 4

(002468, 23

(92%) 1 (4%) 1 A (4%) A

2019 A A

A

A 1995

50%

1700 8 FII

A 2017

110 20 9 IPO

IPO

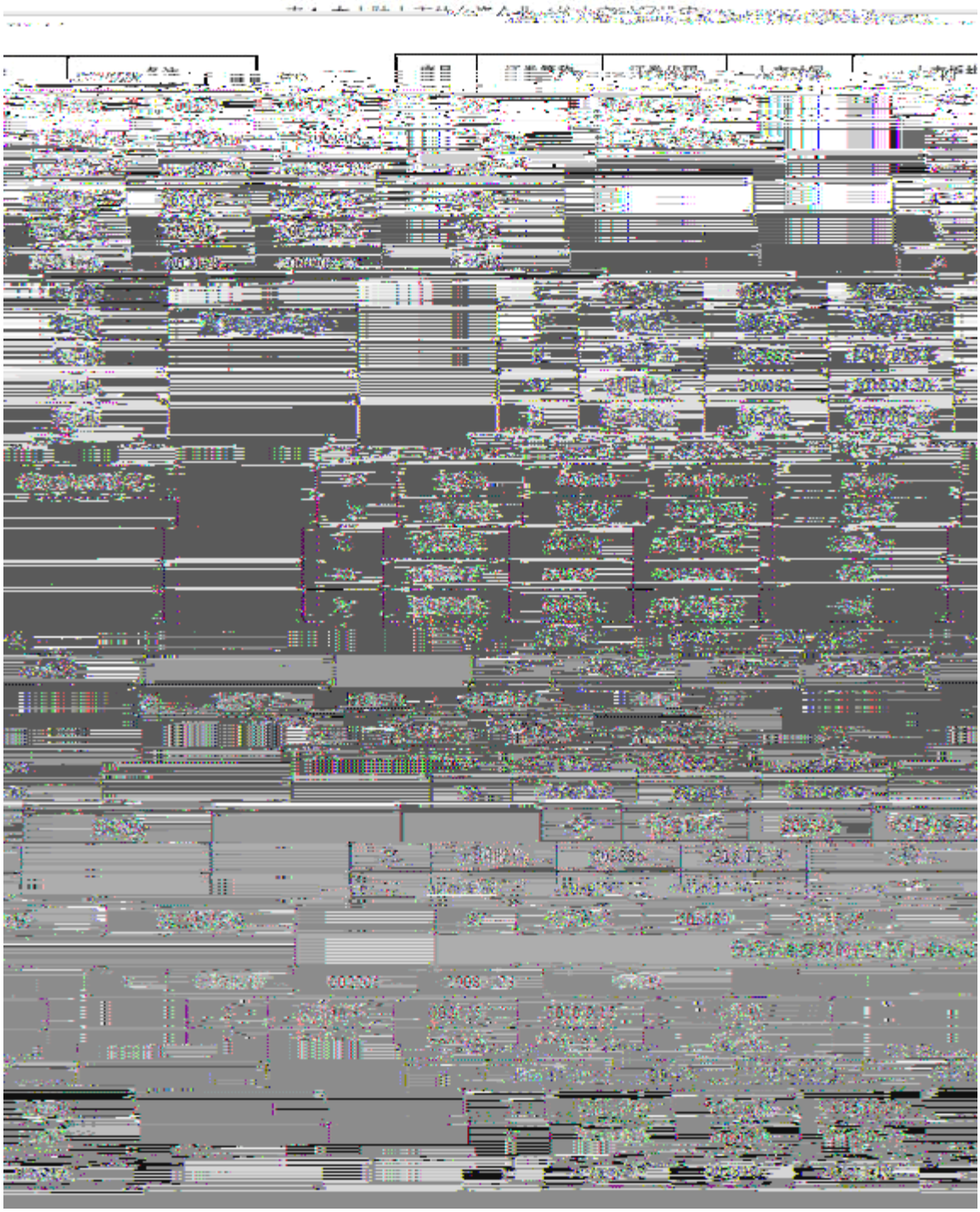
IPO

A 1%

A A

A

2018 5 A



(002463,) PCB

(27.42%)

1941

(

1944 5 1984

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5Ä÷

2018 2018

60%~80% 2017 28~42pp 2018

240~320 2017 30.4%~73.9%

- -

20-30%

20% 3 1.5~2

15~20 40 90%

2017 150

2018

2018~2020 EPS 0.58/0.73/0.94 PE 19/15/12

2018 25~28 PE

14.5-16.2

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2018 5 30 ---

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61

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2018-06-

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2018-06-07

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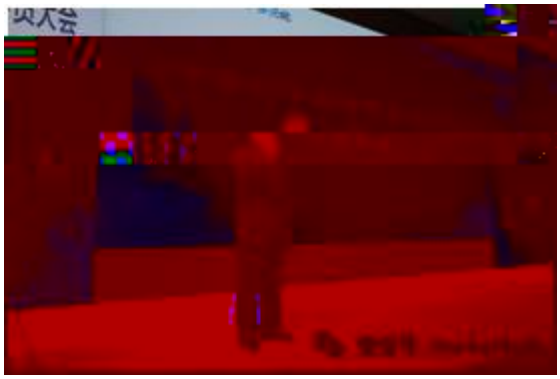
2018

2018

2018 -



11 6 5

2018-06-06

36

A

"LCmpS0DCÁÀ

*ST

12

2018-06-07

2017 6 2

123 1 9

1000

2

G60

13 2 4

2018-06-09

(2018-2020) (

) 2018

30

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15) 450

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( ) 27

100

(300255) 2 20%;

(002451)

17% 55

1 29 6 25 19.64%

15.31% iFinD

50% 110 30% 1033 *ST

(600634) *ST (002018) (002694) *ST (002122) (600666)

12 70%

A

A

2018 5 663

0.39%

A TTM PE 24 21

A 15~20%

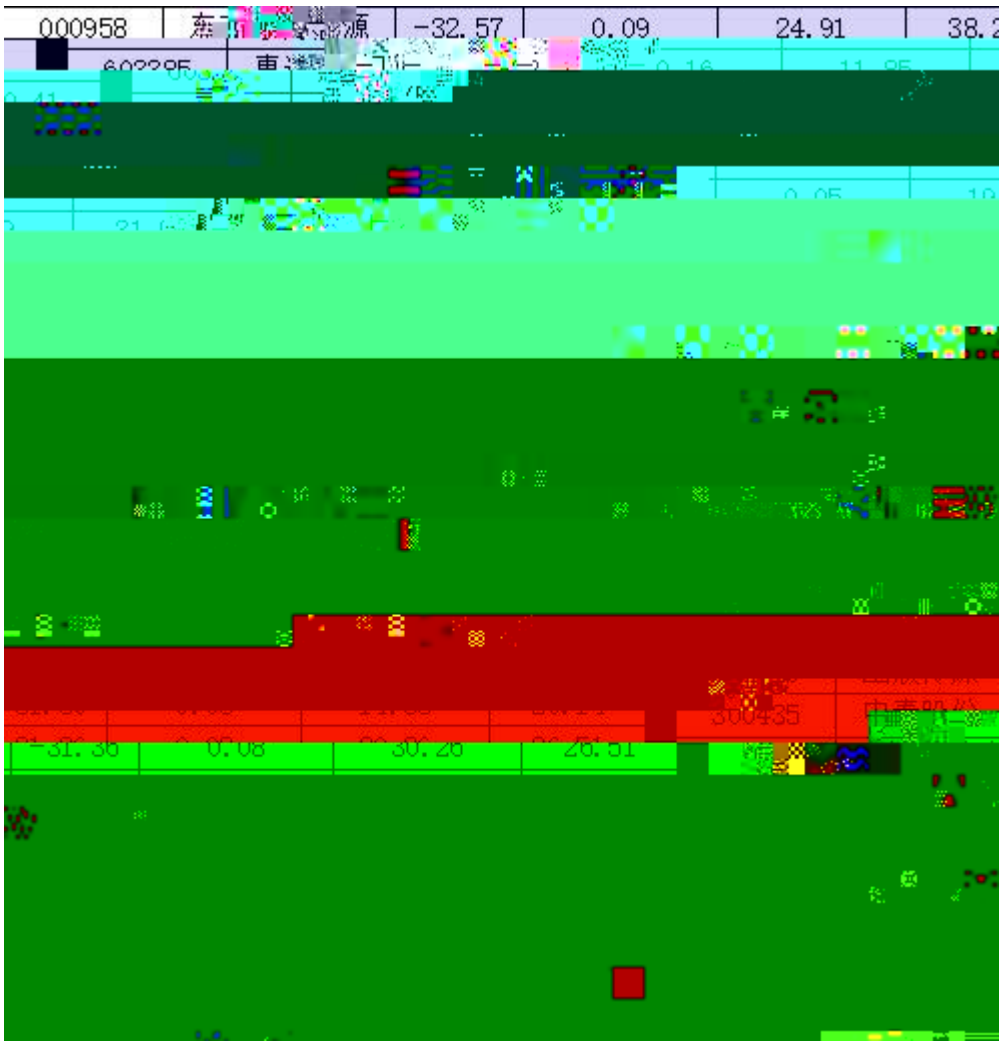
ṅ A 12.7 36 300 12.1 A

15.2

A 2016

K

1 29 30%



2018-06-26

6 22 2018

200 2018

2016-2017

80% 80%

2018

+

/ / /

10

6 1

87.97%

40,000 1,500 2,000

fab 3%~5% 20%

3DNAND 2018 3DNAND DRAM

NAND 3DNAND 2DNAND

2018~2020 5%

EUV ExtremeUltraviolet EUV

EUV

EUV

EUV

: 2017 -2019 20.23 24.72

31.17 0.59 0.72 0.92 PE 18X,14X 11X

25 6 15 /

[ ]