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NEW GENERATION DESTAKER

[The new generation destaker— Introduction]

新一代分张器—简介

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brodd automation ab has developed a new unique
swedish product for separation of both magnetic and
non-magnetic blanks. the solution manages flat mate

[最新型的通用分张器 – 专为新型材料分张而设计]

瑞典布罗德自动化公司开发出一种新型分张装置，用于分开磁性或是非磁性材料。这种方案用于解决扁平材料，例如：薄钢板，铝板，铜板，塑料板，石板，刨花板等。这种分张器已在100多个国家和地区获得专利。

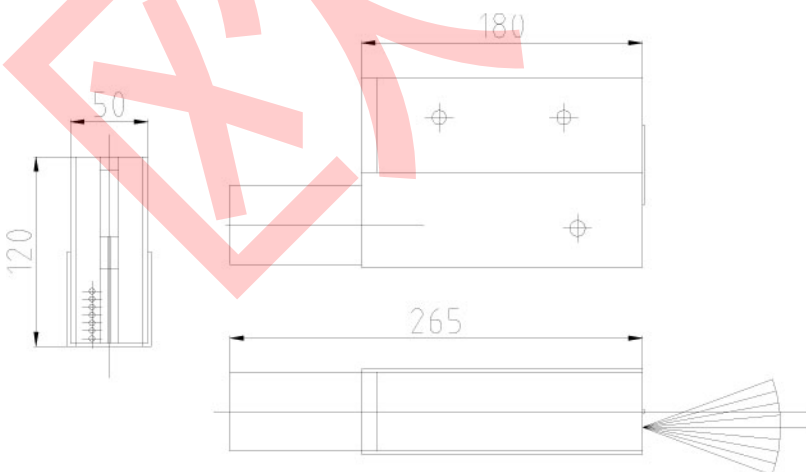


[型号：70718分张器]

- 一次分离一张板材，工作气压2.5~10 bar
- 厚度范围0.4~1.0mm, 0.6~3.0mm, 2.0~25mm
- 每分钟可分离50~55张材料
- 高生产效率，并能与真空抓取系统相配合
- 易于安装于原机械系统的改造和全新的分张应用
- 低噪音
- 节能，耗气量低，但是可以产生12~15 bar的高速分离气压
- 已通过高达750万次工作循环约1万5千小时的产品环境测试

[工业应用案例]

此种新型专利产品在复杂的生产环境下，仍可轻松应用于磁性和非磁性板材的分张。在各行各业能有效加大产品生产灵活性并且提高生产效率。现在分张器还能很好的应用于机器人自动化上料系统上。



[The new generation destacker - for the new generations materials]

BRODD Automation AB has developed a new unique Swedish product for separation of both magnetic and non-magnetic blanks. The solution manages flat material, such as stainless steel, aluminium, copper, titanium, plastic, masonite, chipboard, etc. The separator is covered by international patent in more than 100 countries.

[Separator model 70718]

- Mechanically separates one sheet at a time. Working pressure 2.5 – 10 bar.
- Separates magnetic and non-magnetic blanks, 0.4 - 1.0 mm, 0.6 - 3.0 mm, 2.0 - 25.0 mm, etc.
- The separator itself can run circa 50 - 55 strokes/min.
- At high production rate an extra function to eliminate vacuum can be added.
- Easy integration in existing and new applications.
- Low sound level.
- Energy saving, low air consumption compared to high-pressure air knife system (12 – 15 bar).
- Tested in production environment 7'500'000 cycles, approximately 15'000 hours of production time.

[Industry segment and application examples]

The patented construction can easily be used in a mixed production environment consisting of both magnetic and non-magnetic blanks. The separator can increase the production in terms of flexibility and productivity in multiple industries, e.g. the separator can be integrated in existing feeders as well as in robot constructions.

[结构紧凑，安装灵活]

- 分张器能非常简单的集成于各类自动化设备上。
- 安装机械支架上，支持手动和自动产品定位
- 可单侧或两边多侧同时分离材料
- 重量仅为2.9 kg

[Dimensions]

- The separator is easily built into to various applications and automation levels.
- Mounted onto a frame, supports both manually and automatic production positioning.
- Can be mounted for material separation at one or two sides.
- Weight 2.9 kg.

【分张器应用于铝合金光板】

铝合金分离可使用分张器对铝合金光板进行完美的分张作业

[Destacker for Aluminium Blanks]

What would the new generation of blank destackers be without a perfect functioning blank separator?



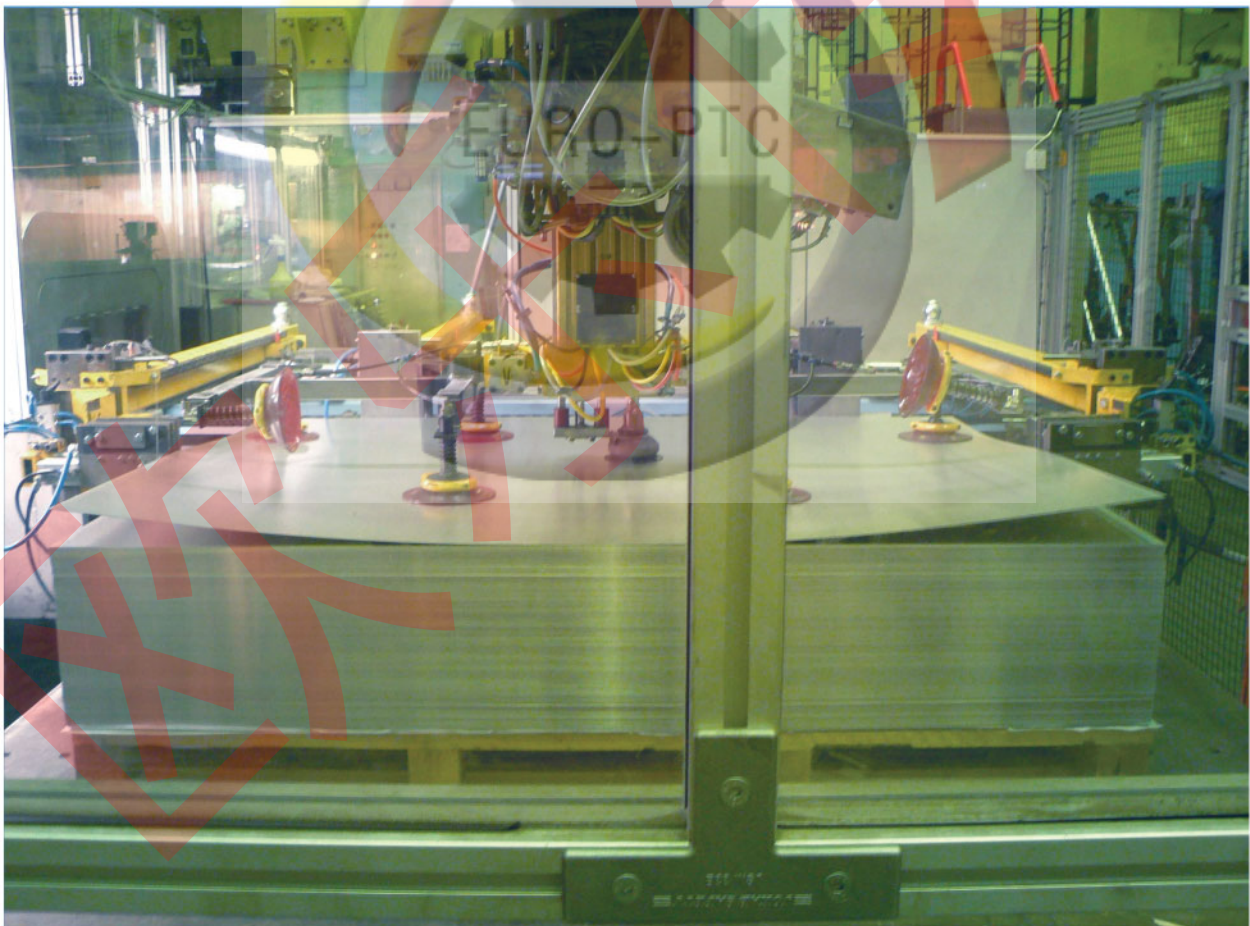
1. 分离前定位

1. Separation at start position



2. 正在分离

2. Separator during the separation process



3. 铝板被完全分离开

3. Separation of the uppermost blank compknifes running with aleted

分张器70718工作原理及工作流程（移动滑架）
分张器能安装于堆垛各边

Principles workflow for separator model 70718. (Sliding frame)
The separator can be mounted on one, two, three or four side of the stack.

堆垛顶部

Top of the stack

1.1



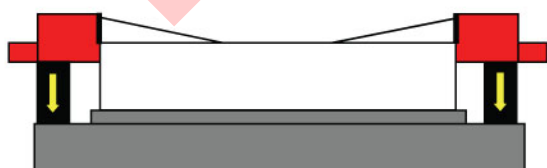
1.2



1.3



1.4



堆垛底部

Bottom of the stack

2.1



2.2



2.3

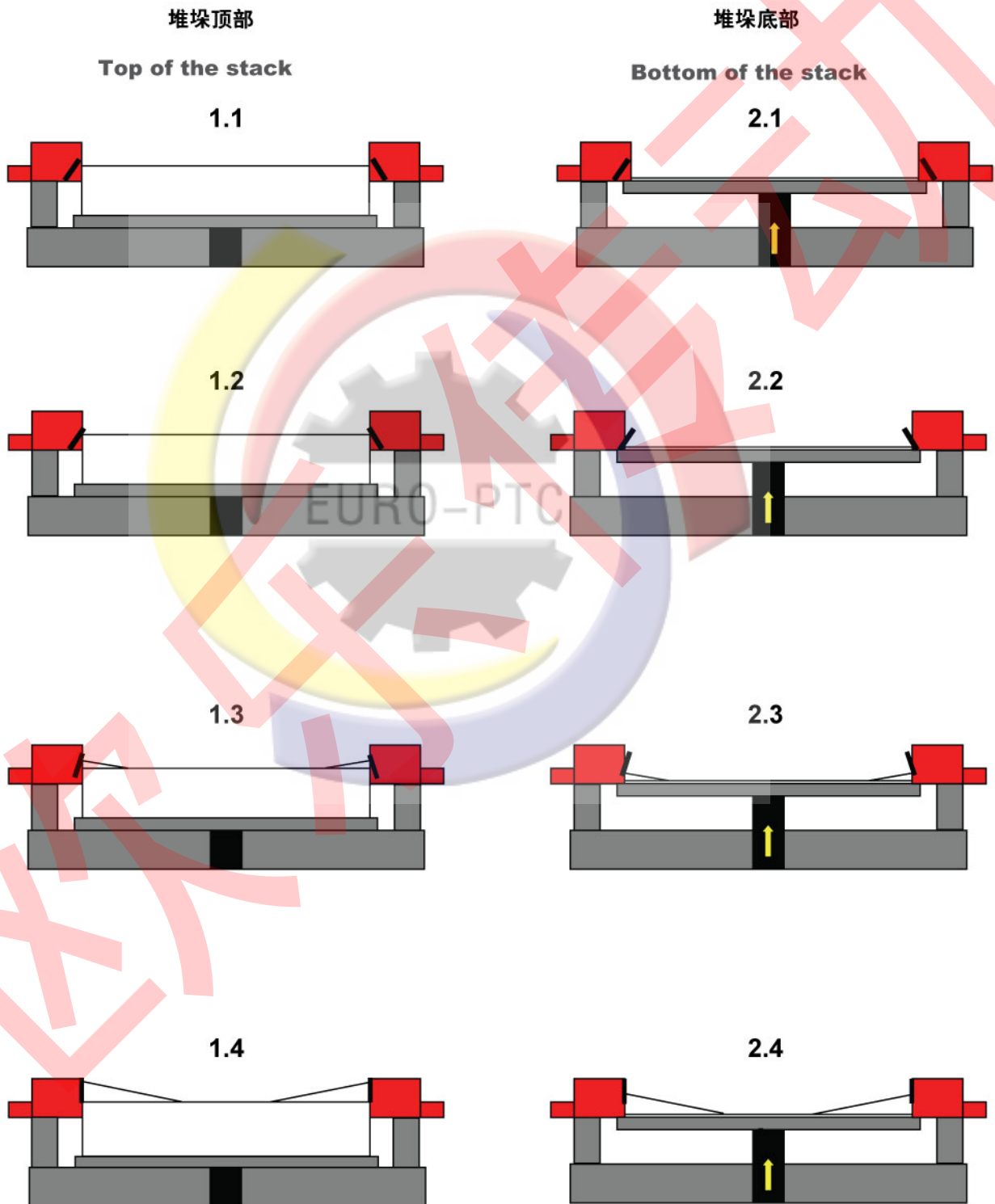


2.4



分张器70718工作原理及工作流程（提升台面）
分张器能安装于堆垛各边

Principles workflow for separator model 70718 (Lifting table)
The separator can be mounted on one, two three or four side of the stack.



[布罗德自动分张器—相比与其他分张方式的优势比较]

分张器与高压空气刀系统（12-13 bar）的对比

- 分离 分张器仅仅影响被分离的坯件，高压空气剪系统则影响多张坯件
- 环境影响较低 分张器相比于使用高压空气剪系统减少了95%-99.7%的能量消耗
- 节省成本 由于低耗能，使用成本将降低。分张器一年消耗能源价值约19.1欧元，而高压空气剪每年的能源消耗价值约为3500-5700欧元。
- 压缩机配置节省 分张器相比于高压空气刀系统所运行的压缩机配置较小，而一般高压空气刀系统则需要配置高价位的压缩机剪，售价大约在7500-25000欧元。
- 工作环境 避免了高压空气剪系统导致的尘埃颗粒被员工吸入。
- 质量改善 避免了高压空气系统导致的扬尘留下成品及在最后在机身上留下印痕。
- 噪音 分张器使用的低压空气相比于高压空气剪系统不需要消音装置进行降噪处理。
- 环保认证 从能源消耗型到资源节约型的转变有助于全面提升工厂环境，降低能耗。

[BRODD Automation AB - Advantages compared to alternative technologies]

SEPARATOR versus Air-knife (12-13 bars)

- Separation The separator only affects the blank being separated, an air-knife affects multiple blanks.
- Low impact on environment The separator consumes 95,0 - 99.7% less energy compared to a high-pressure system using an air-knife.
- Cost savings Due to low energy consumption operating cost will be less. The separator consumes energy worth approximately 19.1 EUR a year. An air-knife consumes energy worth approximately 3500 - 5 700 EUR a year.
- Compressor cost The separator consumes less air compared to an air-knife and runs on standard compressed air consumption, where an air-knife requires a compressor worth 7 500 - 25 000 EUR.
- Work environment Avoiding high pressure air systems causing air-borne particles being breathed in by staff.
- Quality improvements Avoiding high pressure air systems causing air-borne particles scratching and leaving marks on final body part.
- Sound level The separator uses a lower air pressure compared to air-knife systems which often requires a sound proof container.
- Environmental certification Changing from an energy consuming system to the energy friendly separator system can lower a company's total energy consumption considerably.

[空气剪系统消耗价值]

这是在汽车自动化车间使用的两种普通的高压空气剪分离装置的消耗:

根据这两种方案配置的两种压缩机方案:

空气剪 A :	10 bar = 1.78 Nm ³ /min (35%工作时间=0.6 Nm ³ /min)
	12 bar=2.13 Nm ³ /min (35%工作时间=0.75Nm ³ /min)
空气剪 B :	10 bar =3.00 Nm ³ /min (35%工作时间=1.05 Nm ³ /min)
	12 bar=3.6 Nm ³ /min(35%工作时间=.25Nm ³ /min)
压缩机A	使用30 KW 提供压力13 bar (3.60Nm ³ /min) 工作负载75%时, 压缩机输出流量: 2.7Nm ³ /min 价值: 13000 欧元
压缩机B	使用37 KW 提供压力13 bar (4.40Nm ³ /min) 工作负载75%时, 压缩机输出流量: 3.3Nm ³ /min 价值: 14 500 欧元

结论

在汽车工业一个系统中使用两个普通的空气剪系统, 空气剪B 在12 bar 的空气压力下配置约30 KW 压缩机. 在工厂三班制工作情况下能量消耗为: $5000 \times 30 \times 2.5 / 3.6 = 104167$ KW 一年

电能价值0.09欧元/kw时 $104167 \times 0.09 = 9375$ 欧元/每年

电能价值 0.11欧元/KW时 $104167 \times 0.11 = 11458$ 欧元/每年

电能价值 0.13 欧元/KW时 $104167 \times 0.13 = 13542$ 欧元/每年

根据瑞典2009年平均电费标准测算, 要使这两个空气剪运行12个月共压缩机成本为: $11458 + 13000 = 24458$ 欧元 = 12229 欧元 (平均每个空气剪运行一年的成本)

一个系统使用4个高压空气剪, 在供气压力12bar (空气剪A)需要配置约37 KW的压缩机, 在工厂三班制工作情况下, 压缩机电能消耗为: $5000 \times 37 \times 3.0 / 4.4 = 126136$ KW

电能价值0.09欧元/kw 时 $126136 \times 0.09 = 11352$ 欧元/年

电能价值0.11欧元/kw时 $126136 \times 0.11 = 13875$ 欧元/年

电能价值0.13欧元/kw时 $126136 \times 0.13 = 16398$ 欧元/年

根据2009年平均电费标准计算, 要使这四个空气剪运行12个月的压缩机成本为: $13875 + 14500 = 28375$ 欧元, 平均每个空气剪一年的运营成本为7094欧元。

[Cost of air consumption for air-knife systems]

The two most commonly used air-knives within the car manufacturer industry consumes:

According to two tenders received on compressors:

Compressor A Using 30 kW giving 13 bar (3.60 Nm³/min)
At operation with 75% load it produces 2.70 Nm³/min Price 13 000 EUR

Compressor B Using 37 kW giving 13 bar (4.40 Nm³/min)
At operation with 75% load it produces 3.30 Nm³/min Price 14 500 EUR

Air-knife A 10 bar = 1.78 Nm³/min (35% air-time = 0.60 Nm³/min)
12 bar = 2.13 Nm³/min (35% air-time = 0.75 Nm³/min)

Air-knife B 10 bar = 3.00 Nm³/min (35% air-time = 1.05 Nm³/min)
12 bar = 3.60 Nm³/min (35% air-time = 1.25 Nm³/min)

A system using 2 of the most commonly used air-knife within car industry, Air-knife B and 12 bar requires a compressor on approximately 30 kW. Energy consumption at 3 shifts, $5\ 000 \times 30 \times 2.5 / 3.6 = 104\ 167$ kW a year.

Given an energy cost at 0.09 EUR / kW. $104\ 167 \times 0.09 = 9\ 375$ EUR a year.

Given an energy cost at 0.11 EUR / kW. $104\ 167 \times 0.11 = 11\ 458$ EUR a year.

Given an energy cost at 0.13 EUR / kW. $104\ 167 \times 0.13 = 13\ 542$ EUR a year.

According to the (Swedish) electricity tariff 2009-02-15 the cost for these two air-knives running with a compressor for 12 months is: $11\ 458 + 13\ 000 = 24\ 458$ EUR = 12 229 EUR for one air-knife first year.

A system using 4 of these air-knives at 12 bar (air-knife A) requires a compressor at approximately 37 kW. Energy consumption at 3 shifts, $5\ 000 \times 37 \times 3.0 / 4.4 = 126\ 136$ kW a year.

Given an energy cost at 0.09 EUR / kW. $126\ 136 \times 0.09 = 11\ 352$ EUR a year.

Given an energy cost at 0.11 EUR / kW. $126\ 136 \times 0.11 = 13\ 875$ EUR a year.

Given an energy cost at 0.13 EUR / kW. $126\ 136 \times 0.13 = 16\ 398$ EUR a year.

According to the (Swedish) electricity tariff 2009-02-15 the cost for these two air-knives running with a compressor for 12 months is: $13\ 875 + 14\ 500 = 28\ 375$ EUR = 7 094 EUR for one air-knife first year.



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THE NEW GENERATION DESTAKER



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