

法兰类产品工艺的选择与应用

Selection and Application of Flange Products

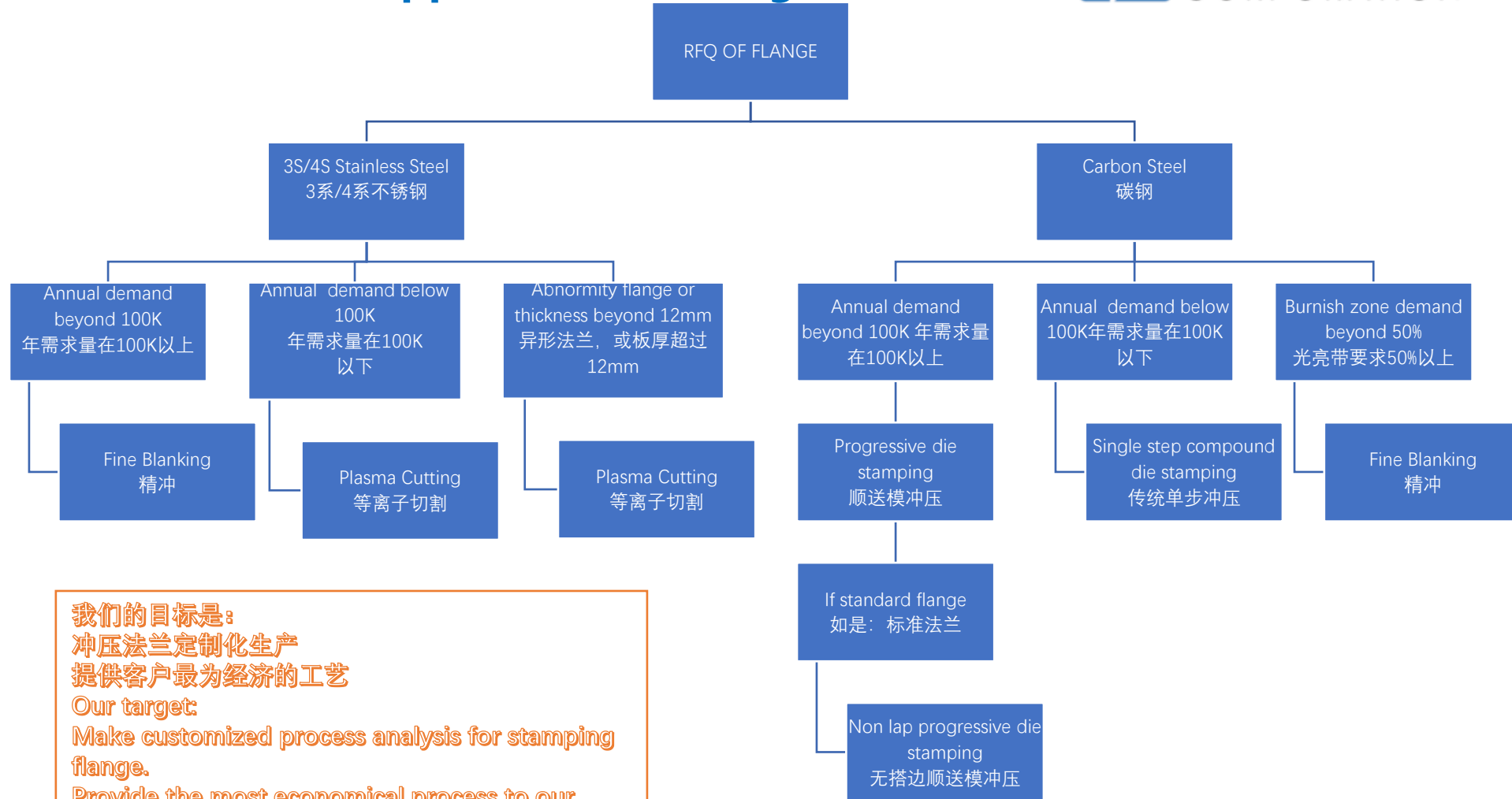


The Flange of Exhaust System



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我们的目标是:
冲压法兰定制化生产
提供客户最为经济的工艺

Our target:
Make customized process analysis for stamping flange.
Provide the most economical process to our customers.

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生产工艺和设备 Production Process and Equipment	适用范围 Application Range	工艺优势 Process Advantage
精细等离子切割（精细等离子切割机，1台） Fine plasma cutting (Fine plasma cutting, 1 set)	-3系/4系不锈钢 -厚度为8mm-20mm -异性法兰 -3S/4S Stainless steel Thickness 8mm-20mm -Abnormity flange	- 可以做到搭边2-3mm，相比传统冲压工艺提高5%-15%的材料利用率。 - 节省模具费用，交样周期短。 - 不同大小形状的产品，可以进行套料切割，最大限度的提高材料利用率。 -The scrape width can be 2-3mm, improve the material utilization ratio by 5%-15%. -Save the mould cost, shorten the sampling period -We can do nest cutting according different shape, maximize material utilization

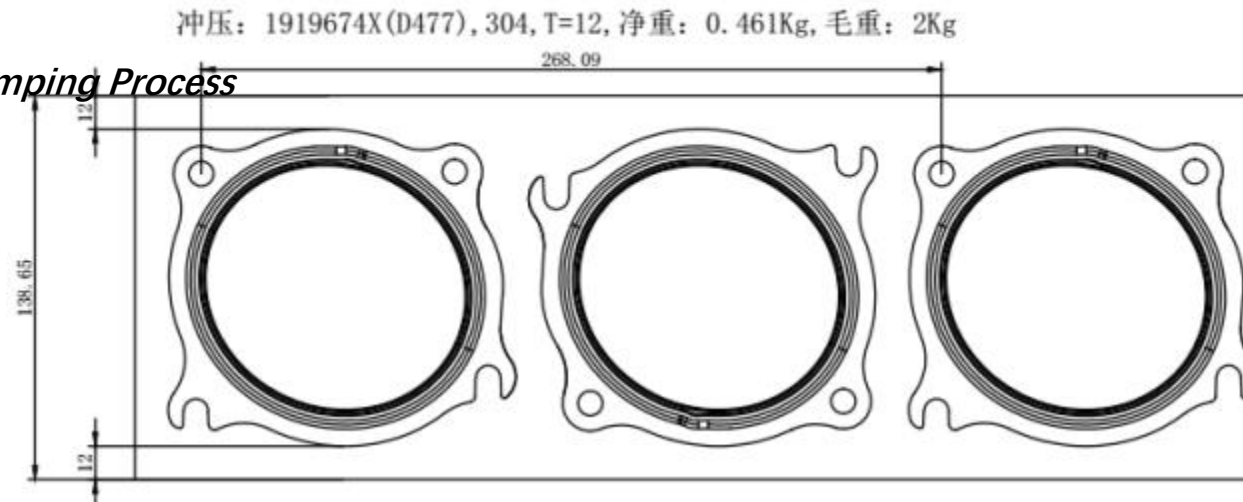
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传统冲压工艺VS等离子切割工艺
Traditional Stamping Process VS Fine plasma Cutting Process

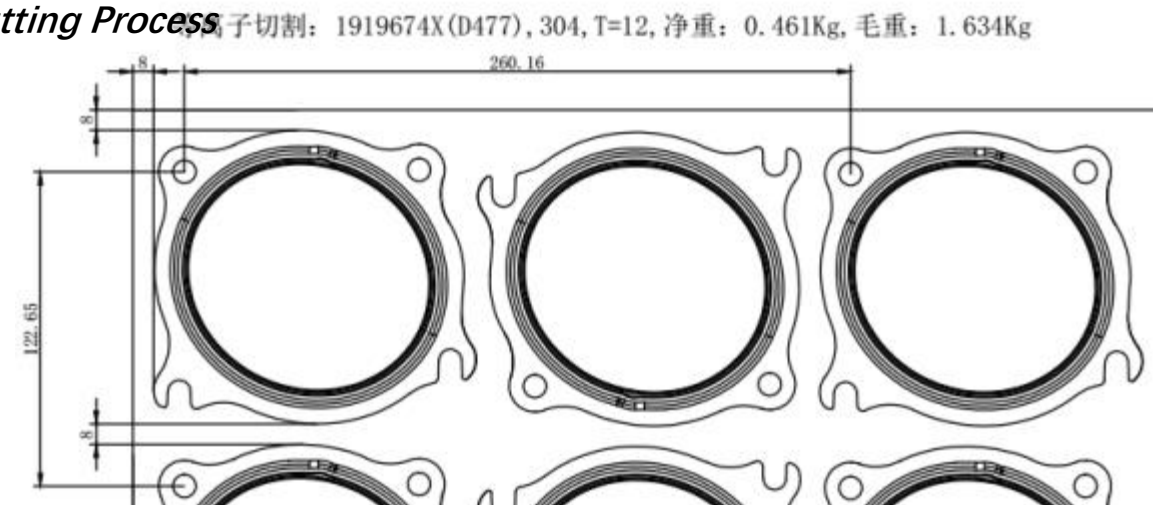
传统冲压工艺排料图

Layout of Traditional Stamping Process



等离子切割工艺排料图

Layout of Fine plasma Cutting Process



**18.30%
Material
Saving**

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<p>生产工艺和设备 Production Process and Equipment</p>	<p>适用范围 Application Range</p>	<p>工艺优势 Process Advantage</p>
<p>无搭边级进模冲压技术 (三合一卷料送料+400T冲床 1台) Non lap progressive die stamping technology(Three-in-one rolling material feeding machine+400T punching machine,1 set)</p>	<ul style="list-style-type: none"> - 碳钢 - 厚度为8mm-10mm - 标准法兰 - Carbon Steel - Thickness 8mm-10mm - Standard Flange 	<ul style="list-style-type: none"> - 相比传统冲压工艺，可提高约10%的材料利用率。 - 可实现卷料自动送料，冲压频次可达到20-30次/分钟 - Improve the material utilization ratio by 10% compare to the traditional stamping process - Realize automatic feed of rolling material, stamping frequency 20-30/min.

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三合一料架整平送料机

适用材料厚度：1.4-12mm，送料速度：Max.22m/min，最大送料宽度600mm.

Three-in-one feeding machine has already arrived at the middle of May. Now it is under testing.

Applicable material thickness:1.4-12mm, feeding speed: Max.22m/min, Max material width:600mm

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传统冲压VS无搭边顺送模冲压

Traditional stamping VS Non lap progressive die stamping

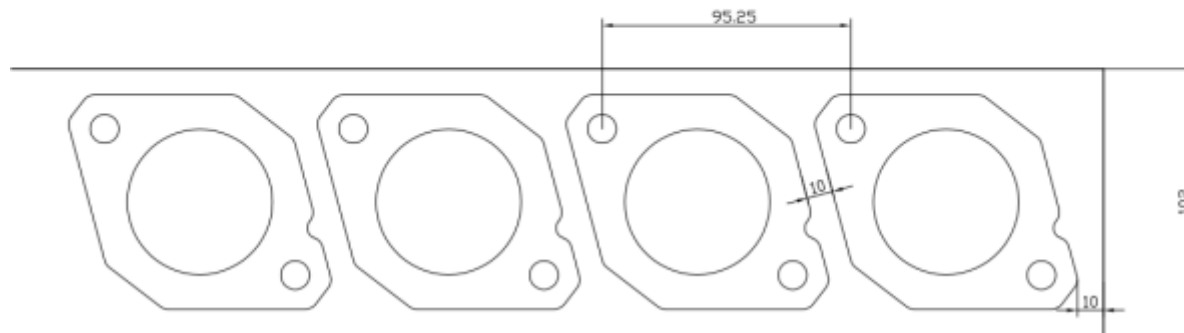
传统冲压排料图

Traditional stamping layout

毛料重: $102 \times 95.25 \times 10 \times 7.85 = 0.7626\text{KG}$

净重: 0.298kg

利用率: 39.07%



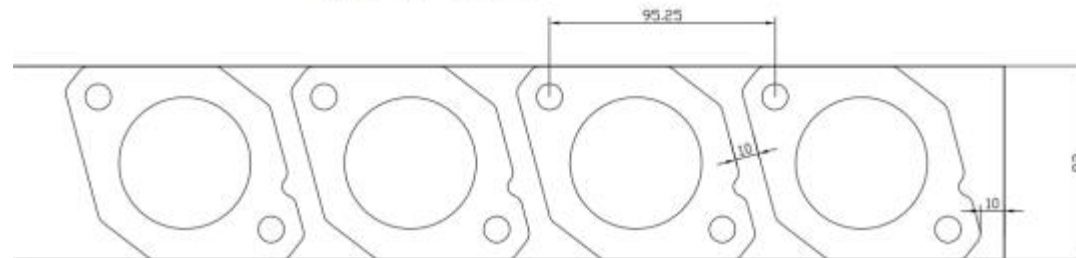
无搭边顺送模冲压排料图

Non lap progressive die stamping layout

毛料重: $82 \times 95.25 \times 10 \times 7.85 = 0.6131\text{KG}$

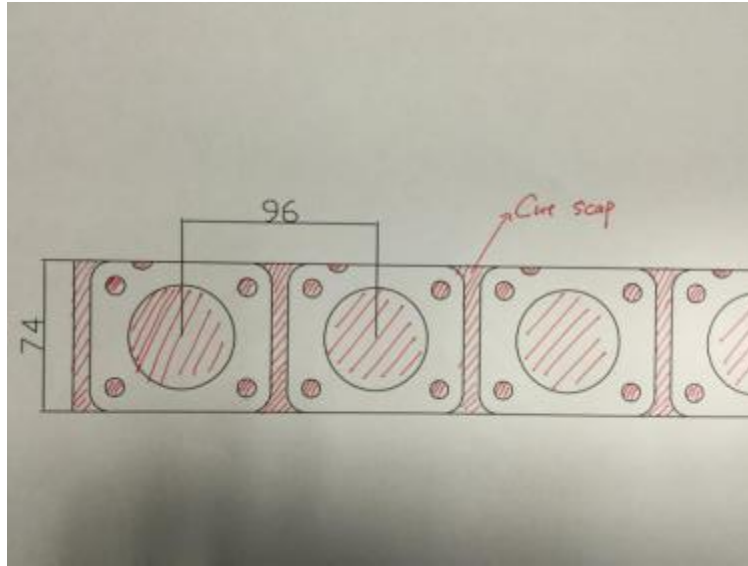
净重: 0.298kg

利用率: 48.6%



案例展示

Practical Case Demonstration



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<p>生产工艺和设备 Production Process and Equipment</p>	<p>适用范围 Application Range</p>	<p>工艺优势 Process Advantage</p>
<p>厚板精密冲压 (500T 1台, 900T 1台, 1500T 1台) Thick plate fine blanking (500T,1 set, 900T 1 set, 1500T 1 set)</p>	<ul style="list-style-type: none"> - 碳钢/3系&4系不锈钢 - 厚度为8mm-10mm - 普通菱形法兰、三角法兰、方形法兰、多孔法兰 - Carbon Steel/3S&4S stainless steel - Thickness 8mm-10mm - Common rhombus flange, triangle flange, square flange, porous flange 	<ul style="list-style-type: none"> - 单工序一次成型, 内孔光亮带80%以上平面度良好, 无需整平。 - Single process one-time forming, burnish zone of the inner hole beyond 80%, good flatness, no need of leveling

隔板&球形法兰 Spacer & Spherical Flange



<p>生产工艺和设备 Production Process and Equipment</p>	<p>适用范围 Application Range</p>	<p>工艺优势 Process Advantage</p>
<p>级进模冲压 (80T 1台/ 110T 2台/260T 1台 400T 2台) Progressive stamping(80T 1 set/ 110T 2 sets/ 260T 1 set / 400T 2 set)</p>	<p>-碳钢/3系&4系不锈钢 -厚度为0.5mm-6mm -长条形隔板、球形法 -兰和支架 -Carbon steel/3S&4S Stainless Steel -Thickness 0.5mm-6mm -Strip Spacer , Spherical flange, Bracket</p>	<p>- 卷料自动送料，冲压频次可达到30次/分钟 - AV值可以做到1.00元以下 -球形法兰以无搭边斜排顺送模工艺为主，相比传统正排工艺，材料利用率提高25% -Rolling material automatic feeding machine, stamping frequency 30times/min - The AV amount of Spacer below ¥1 -Spherical flange using non lap progressive stamping process(oblique lay out), the material utilization ratio increase by 25% compare to traditional lay out</p>

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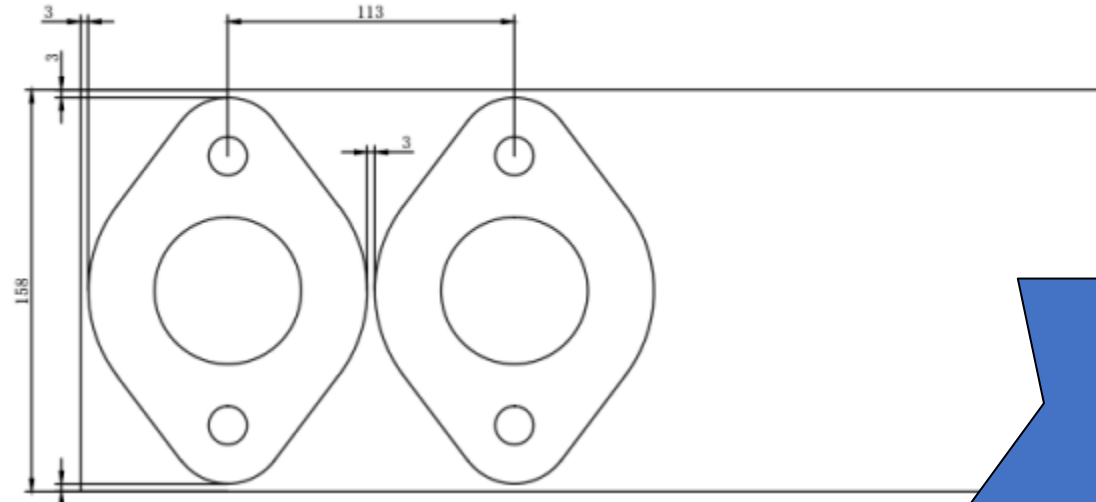
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传统冲压VS无搭边顺送模冲压
Traditional stamping VS Non lap progressive die stamping

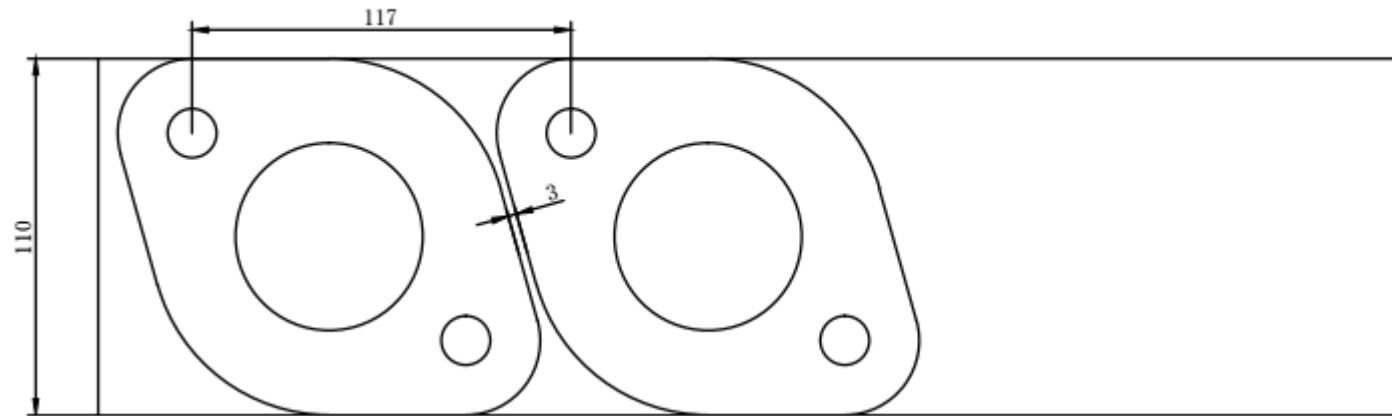
级进冲压（正排料）：1085487X, 304, T=3, 净重：0.189Kg, 毛重：0.437Kg。

传统正排布料图
Traditional Lay Out



无搭边顺送模斜排布料图
Non lap progressive Stamping Lay out

级进冲压（斜排料无搭边）：1085487X, 304, T=3, 净重：0.189Kg, 毛重：0.315Kg。



27.91%
Material
Saving

What do we produce



Product type:	Hot Forging Flange
Material:	1.4301/ 1.4016/1.4512/ 1.4713/ (Carbon steel)
Outside Diameter:	30mm~400mm
Current production process	Die Forging/ Roll Forging

For Example:



Gross Weight: 544.70



After Stamping: 352.70



After Machining: 133.70

Material Utilization Ratio : $133.70 \text{ gr} / 544.70 \text{ gr} * 100\% = 24.54\%$

Project: VOLVO VEA

We want to do more

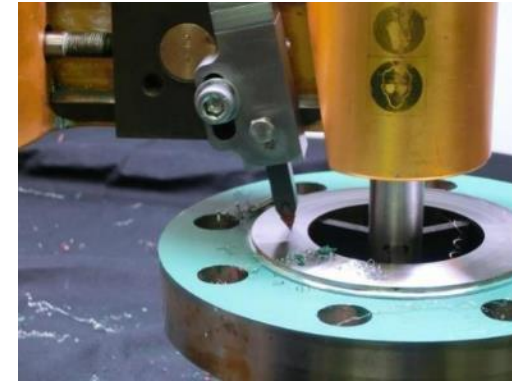
- Our advantages



Heating



Roll Forging



Machining



The new production line will start production in December, 2018.