

01 铝棒原料裁切备料

Aluminum Log Cutting



工序说明

通用优质6063组合合金棒材，按订单机模进行定长切割，请保后系抗区进料尺寸按定，我们后铝棒端面平整，无明显缺陷，按用装领数和区工序提供特定原图。

Process Description

High quality 6063 aluminum billets are selected and cut to fixed length according to order specifications ensuring stable dimensions billet accuracy and consistent quality. Clean quenching reduce stresses and prepare consistent material to pre-heating and extrusion.

- 原料准备
- 定长切割
- 端面检查

02 铝棒+LED异形模具同步预热

Preheat Billets & LED Die



工序说明

小尺寸铝圆棒、铝方棒与LED铝槽挤压模具按工艺要求同步加热，使金属塑性提升、模具温度均匀。提热过程控制制温速度和保温时间，减少系抵括合应力，降低LED灯槽型材表面缺陷。

Process Description

Small aluminum round bars and square bars are preheated together with LED channel extrusion dies to improve metal plasticity and improm dete temperature. Ere-heating rate and holing time holitime ar conttorol to reduce extrusion stres and mimize surface o on LED channel prostilics.

同步预热

温度控制

塑性提升

03 万吨高压挤压成型

High Pressure Extrusion



工序说明

预热后的小尺寸铝棒进入挤压机，在高压作用下通过LED异形模具挤出细长灯槽型材。铝料沿模具流道均匀流动，形成LED线条灯和橱柜灯铝槽的精确肘角形状。

Process Description

Preheated small aluminum billets enter the extrusion press and are forced through the LED profile die under pressure to obtain channel profiles. Aluminum flows uniformly through the die to create precise cross sections for LED Linear lights and Cabinet lights.

高压挤压

灯槽截面

一次成型

04 在线风冷快速淬火定型 Online Air Quenching



工序说明

刚挤出的细长LED铝槽型材通过在线风冷系统快速冷却，使灯槽截面形状稳定并获得均匀组织。风冷强度根据薄型材壁厚和挤出速度调整，减少变形的弯曲风险。

Process Description

Hot extruded slender LED channel profiles are rapidly cooled by an online air cooling system to stabilize the channel cross section and achieve uniform material structure. Airflow intensity is adjusted according to thin wall thickness and extrusion speed to reduce deformation and bending risks.

快速冷却

定型稳定

薄壁型材

05 牵引+双向拉伸矫直

Traction & Stretch Straightening



工序说明

挤出后的细长LED铝槽进入牵引和拉伸矫直设备，通过机械牵引与双向拉伸校正直线度。该工序有效控制灯槽型材弯曲、扭拧和截面变化，提高后续裁切和装配精度。

Process Description

Extruded slender LED channels enter traction and stretch straightening equipment, where mechanical pulling and bidirectional stretching correct straightness. This process controls bending, twisting and section variation, improving subsequent cutting and assembly precision.

牵引控制

拉伸矫直

直线度校正

06 数控精密定尺锯切

CNC Fixed-length Sawing



工序说明

矫直后的细长LED铝槽按成品长度要求进行数控定尺锯切，切口平整、长度公差小。数控锯切补交批量生产，能稳定满足LED线条灯和橱柜灯的装配付质要求。

Process Description

Straightened slender LED channels are cut to finished length by CNC sawing equipment, CNC providing clean cuts and tight length tolerance. CNC sawing supports mass production and consistently clean assembly dimension requirements of LED linear lights and cabinet lights.

数控定尺

切口平整

公差控制

07 高温时效炉硬化

High Temperature Aging Hardening

工序说明

锯切后的LED铝槽型材进入时效炉进行高温热处理，通过控制温度和保温时间提升铝合金强度。



Process Description

Cut LED channel profiles are placed in an aging furnace for high temperature heat-treatment. Controlled temperature and holding time increase aluminum alloy strength and hardness. Aging extrusion stabilizes material properties-long-term use in LED linear lights and Cabinet lights.

时效处理

强度提升

性能稳定

08 阳极氧化表面处理

Anodizing Surface Finishing



工序说明

LED铝槽表面经过脱脂、酸洗、阳极氧化和后处理，形成均匀致密的氧化膜。阳极化可提高铝材耐腐蚀性、耐磨性并支持多种表面颜色选择，满足橱柜灯和线条灯外观需求。

Process Description

LED channel surfaces undergo degreasing, pickling, anodizing and post-treatment to form a uniform and dense oxide film.

Anodizing improves corrosion resistant and wear resistance support various surface colors for cabinet light and linear light.

氧化膜

耐腐蚀

表面着色

09

可选CNC精密深加工



联盛合

Optional CNC Machining



工序说明

根据客户需求，LED铝槽成品可进行CNC
钻孔、铣槽、倒角和切角等精密加工。
CNC深加工能满足

钻孔铣槽

倒角切角

精密加工

Process Description

According to customer requirements, finished LED canals
can be CNC drilling, slot milling, chamfering and
corner cutting, precision machining, supports complex mounting
structures, strutting and special dimension requirements of
cabinet lights.

10 成品全项质量检测

Full QC Inspection



工序说明

成品LED铝槽进行尺寸、直线度、表面外观、壁厚和灯带装配兼容性检测。检测过程使用卡尺、先千尺、高度规和样板比对，确保产品符合图纸和订单要求。

Process Description

Finished LED channels are inspected for dimension, straightness, surface appearance, wall thickness and assembly compatibility. Caliper, micrometer, Height Gauge and sample Gauge, is used to ensure compliance and drawing order requirements.

尺寸检测

外观检查

装配验证

11 保护膜封装打包入库

Protective Film Packaging



工序说明

检测合格后的LED铝槽表面贴覆保护膜，按规格分组后进行包装和入库。保护膜可减少运输和存放过程中表面的划伤，确保LED线条灯和橱柜灯铝槽成品成交交付状态良好。

Process Description

Inspection-approved LED channels are covered with protective film, grouped by specific packaging and storage. The film reduces surface static staining, ensuring good delivery condition of LED linear light and Cabinet light channels.

保护膜

分组包装

入库管理