

异形绳锯使用说明书

HOW TO USE DIAMOND WIRE FOR PROFILING



大理石异形绳锯简介

Diamond Wire for Marble Profiling

绳锯适用范围

- 各种类大理石弧板切割。
- 各种形状大理石异形结构件切割。
- 大理石圆柱体切割。

产品特点

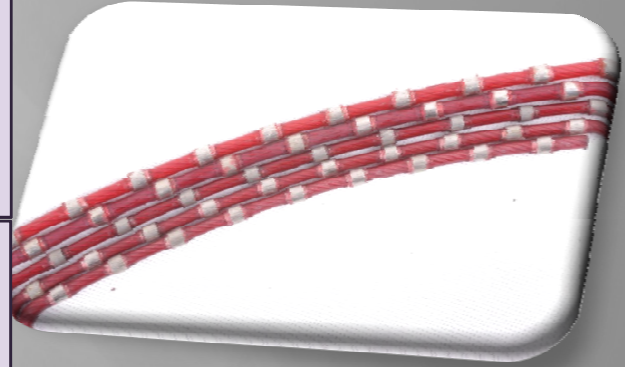
- 绳锯切割效率高，切割面光滑平整。
- 绳锯断绳次数少，切割寿命长。

Wire Application

- Cutting various types of marble arc board.
- For marble shaping operations
- Marble cylinder cutting.

Features

- High efficiency and smooth cutting surface.
- Less wire broken chance but with long cutting life.



花岗岩异形绳锯简介

Diamond Wire for Granite Profiling

绳锯适用范围

- 各种类花岗岩弧板切割。
- 各种形状花岗岩异形结构件切割。
- 花岗岩圆柱体切割。

产品特点

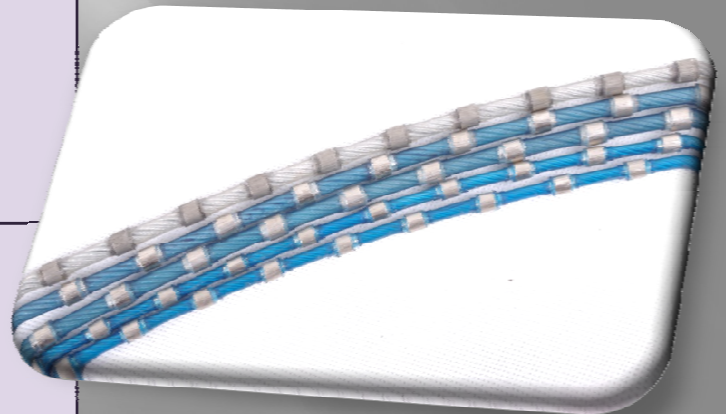
- 绳锯切割效率高，切割面光滑平整。
- 绳锯断绳次数少，切割寿命长。

Wire Application

- Cutting various types of granite arc board.
- For various granite shaping operations.
- Granite cylinder cutting.

Features

- High efficiency and smooth cutting surface.
- Fewer chance of wire breaking off but long cutting life.



异形绳使用技巧： Application Tips:

绳锯机及导向轮要安装对称、平行、稳定；

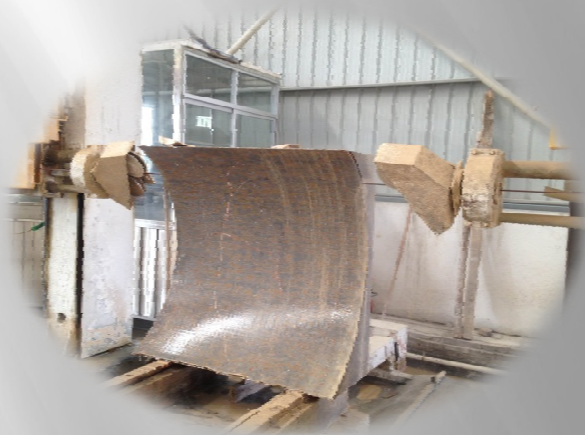
注意绳锯的正确使用方向（箭头指示），如为使用后的绳锯，箭头无法识别，根据串珠的锥形面及金刚石的韧尾方向进行使用方向判别；

在异形绳使用前，需要对异形绳进行绕圈处理，增强异形绳的切割自转力，确保异形绳串珠均匀磨损；

进行异形绳绕圈处理时，应尽量保证自由状态异形绳的长度，有利于方便绕绳处理，防止局部异形绳过度扭转造成损伤钢丝绳，因此可以进行接头两端同时绕绳；

开始前将切割对象尖角部分磨圆，避免卡绳并造成断绳；

冷却水应保证足够；



The wire and guiding wheels must be mounted Symmetricallt, in parallel and steadily.

Pay attention and use the wire in the right direction which is indicated by the arrow. If the wire has already been used and the arrow can't be identified, decide the direction by the cone shape of the beads and the tail of the diamonds.

Twist the wire before mounting to make the wire rotate while cutting, so the beads can be worn evenly.

While twisting the wire, try to maintain the length of the wire. Twist the wire from both sides of the joint to prevent the wire from being over twisted in some part which would hurt the steel cable.

Before cutting, grind the sharp edges of the stone to prevent wire jamming.

Use enough water.

开始切割时控制下刀量，避免过快引起卡绳情况，并且应使用尽量低的线速度；

初始绳锯线速度应低于正常切割时**15%~25%**，可以防止线速度过高造成断绳情况，也有利于异形绳串珠的正常出刃，防止串珠抛光；

异形绳的接头处是整条异形绳的薄弱处，异形绳接头需安装正确；

异形绳锯串珠直径差异超过**0.4mm**时应停止使用，否则容易卡绳；

使用时应保持安全距离，并使用护具，以避免绳锯断绳时造成人员伤害；

绳锯应储存在干燥、无阳光直射的地方，以避免腐蚀钢丝绳或造成塑料老化，造成断绳；



Limit the down feed at the beginning stage of cutting, cutting too fast would lead to wire jamming, also use lower linear speed at this stage.

The initial linear speed should be 15% to 25% lower than the normal speed, in order to avoid wire snapping and help with diamonds exposure.

The joint is the weakest point of the wire, make sure the wire is jointed in the correct way.

Stop using the wire when the difference of the beads diameter is more then 0.4mm, or there would be wire jamming.

Keep a safe distance from the machine and wear guards to protect yourself in case the wire is snapped.

Store the wire in a dry location and away from direct sunlight to avoid corrosion of the steel cable and rubber aging which would lead to wire snapping.

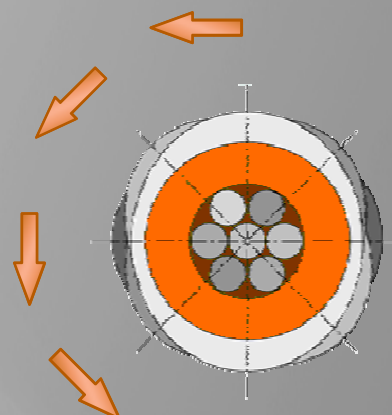
异形绳绕绳处理

TWISTING THE WIRE

进行异形绕绳处理时，最好可以2人参与配合

查看钢丝绳缠绕方式，沿钢丝绳的缠绕方向进行绕绳，正常情况下以向左绕绳方式进行

异形绳自由状态的绳锯长度应尽量长，以防止局部绕绳过度，损伤钢丝绳，可以采用接头两端同时进行绕绳
绕绳过程中尽量分散异形绳绕绳区域，可采用手动分散、抖动绳锯分散，不允许出现绳锯弯折



This should be done by two people working together.

Observe the direction of the steel cable coil, twist the wire in the same direction which normally is to the left.

Make sure that the length should be enough while the wire is in a free state, so to avoid over twisting the wire in some part and hurt the steel cable. Twist the wire from both sides of the joint.

Scatter the loops by hand or shaking the wire, do not bend the wire.

异形绳绕绳规则：

- ① 异形绳每米绕2圈~2.5圈
- ② 切割过程中需要进行串珠磨损情况监控，如发现串珠出现明显的偏磨，需要调整绕绳参数或核对是否进行了正确的绕绳处理
- ③ 持续调整绳锯扭转圈数，增加或减少30%，例如10米绳锯可用10，13，17，22，29，最多每米3圈

Rules of twisting the wir :

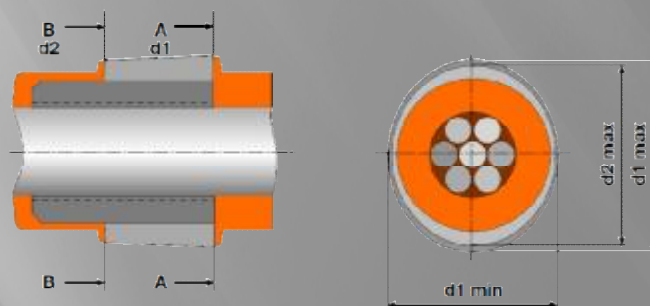
- ① 2 to 2.5 twists per meter.
- ② Monitor the wearing of the beads while cutting, if the beads are worn unevenly, adjust the twists or check if the wire was twisted correctly.
- ③ Keep adjusting the twists, increase or reduce it by 30%, for example, 10 meter wire can be twisted with 10, 13, 17, 22 or 29 twists, maximum 3 twists per meter.

测量串珠的锥度及椭圆

Measuring of conicity and ovalness of the beads

测量点见下图

Measuring points



异形绳接头安装

JOINT THE WIRE

进行异形绳接头安装时，首先采用砂轮切割机切断绳锯以获得整齐的断口，不要用剪子剪断，否则断口不规则不利于接绳

接头两端钢丝绳的连接部分长度一致，并且长度与接头配合要合理

A、如过长，接头连接后钢丝裸露在外过多，容易腐蚀、磨损钢丝绳，造成断绳

B、如过短，连接部分的钢丝绳受压面积小，连接强度不足，容易脱离

进行接头压制时，压制部位为接头的两端部分，并且两端的压制方位形成十字交叉形式

压制模具需要选择合理，确保接头压实到位。



连接绳锯时，用切割轮切断绳锯以获得整齐的断口，不要用剪子剪断，否则断口不规则不利于接绳。

Without fail cut wire to length with cut-off wheel and not with cable scissors!

选择加工精良的液压钳压头，以利于保证接头质量

Influence of the press insert on the pressing



Cut the wire with cutting wheel before jointing to obtain clean fractures, do not use scissors.

The length of the steel cable of both sides of the joint should be the same, and the length should match the joint.

A. If the cable is too long, exposed cable would easily be corroded or worn which would lead to wire snapping

B. If the cable is too short, the joint would not be strong enough and tend to break while cutting.

Clip the joint from both sides, clip one side, turn the joint 90° and then clip the other end.

Use the correct mold when clipping the joint to make sure it's pressed solidly

问题及解决办法：

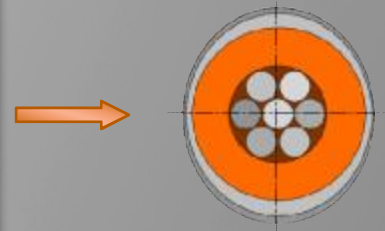
REMEDYING PROBLEMS:

绳锯串珠偏磨现象

uneven wearing of the beads

绳锯串珠磨损

Bead wear



原因：

- 绳锯绕绳圈数不足
- 绳锯张紧力太大
- 冷却水不足

Causes:

- Not enough twists
- Over tension
- Not enough water

解决办法：

- 增加绳锯扭转圈数或持续调整
- 降低下刀压力
- 增加冷却量
- 增长距离

Solution:

- Increase or keep adjusting the twists
- Lower the down feed
- Use enough water

磨损过多(Too high wear):

串珠磨损，出现大的颗粒状突起

串珠锥形严重（最大可用直径差0.4mm）

Over-wearing of the beads (big bumping on the beads,

severe cones, remember the maximum diameter difference allowed is 0.4mm)



原因：

- 所切材料研磨性过高
- 绳锯接触长度太短
- 冷却不足或未正确使用冷却剂
- 绳锯线速度太低
- 绳锯使用切割方向不正确

Solution:

- The material is too abrasive
- The cutting surface is too short
- Not enough water or incorrect cooling
- Linear speed is too low
- Wrong cutting direction

解决办法：

- 选用更耐磨的绳锯配方
- 提高线速度
- 降低下刀压力
- 增加冷却剂用量并正确使用
- 明确异形绳的切割方向，正确使用绳锯

Solution:

- More wear resistant type
- Increase wire speed
- Reduce feed pressure
- Increase coolant supply and optimize
- Increase wire speed
- ????

绳锯切不动或切得过慢(Wire not cut or cuts too slow)

金刚石颗粒被磨平 Diamond grain flattened



原因:

石材研磨性弱
接触长度太长
绳锯线速度太高
石材致密、硬度高

解决办法:

使用初期低速切割，实现金刚石正常出刃
绳锯的线速度不宜过高，确保金刚石正常换层，遵循石材越硬，线速度越低的原则

Causes:

- Material not abrasive enough
- Cutting surface is too long
- Linear speed too high
- Material is too dense or hard

Solution:

- Lower the initial cutting speed to expose the diamonds
- Use lower linear speed, the harder the material is the lower the speed

断绳(Wire snapping)

原因:

绳锯张紧力太大，卡绳
切割材料有锋利边角
转角半径太小
绳锯抖动剧烈
接头磨损太大，接头没接好
钢丝绳绕绳弯折过度，钢丝绳损伤

Causes:

- Over tension, wire jamming
- Sharp edge on the material
- Turning radius too small
- Wire wobbling
- Joint worn out, joint was not done correctly
- Steel cable bent too much while twisting



解决办法:

降低下刀压力
破碎锋利边角
调整转向轮
绕绳时分散缠绕力，防止钢丝绳过度弯曲
正确接绳

Solution:

- Lower down feed
- Grind the sharp edge
- Adjust the guiding wheel
- Scatter the loops while twisting
- Joint the wire correctly

接头脱开(Joint breaking)

钢丝绳断口不规则

接头磨损严重

Irregular fractures of the steel cable,

Too much worn on the joint



原因:

用剪子剪断钢丝绳而不是切割轮

没有正确压紧

绳锯张紧力太大, 卡绳

切割材料有锋利边角

转角半径太小

Causes:

- Use scissor not cutting wheel
- Clipping was not done right
- Over tension of the wire, jamming
- Sharp edge on the material
- Turning radius too small

解决办法:

使用砂轮切割机切割接头钢丝绳

正确压实接头, 确保压制到位

降低下刀压力

破碎锋利边角

Solution:

- Use cutting wheel to cut the cable
- Clip the joint right
- Lower down feed
- Grind the sharp edges

窜珠现象(Beads moving)



原因:

绳锯张紧力太大

冷却不足, 过热

动力轮上绳锯打滑, 过热

突然卡绳

Causes:

- Over tension
- Not enough water
- Slipping on the driving wheel, over heating
- Sudden jamming

解决办法:

调整张紧力, 控制下刀量

增加冷却, 同时使用多个喷嘴

磨平切割对象锋利边角

不使用异形绳串珠外径偏差过多的绳锯

Solution:

- Adjust the tension and down feed
- Use more water and multiple nozzles for even cooling
- Grind the sharp edges
- Stop using wire when the difference of beads diameter exceeds the limit allowed