

产品使用说明书 MANUAL BOOK

钻通刮一体化工具 GX TOOL



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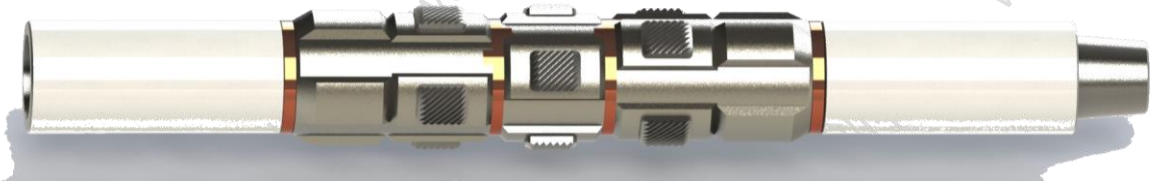
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一、概述 Overview

钻通刮一体化工具主要用于清除井下套管内壁上残存的水泥，泥块和轧制中产生的毛刺、鳞片、管内防砂射孔时嵌在管壁上的子弹以及生产井套管壁上的铁锈、水垢、硬石蜡等所有正常施工作业的杂物。

GX Tool is mainly used to remove residual mud, clod, rolling generated burr and scale, embedded in the casing wall sand control perforation bullets from downhole casing. As well as the production-well debris on casing wall like rust, scale and hard paraffin etc.

二、结构与原理 Structure and Principle



钻通刮一体化工具由随钻具转动的主轴部分和不旋转、整体浮动并自锁的弹性刮削部分组成。刮削部分包括扶正块和有弹性的牙块，见上图。

The GX Tool is composed of the spindle part and the non-rotating, integral floating and self-locking elastic scraping part. The scraping part consists of a stabilizing block and an elastic tooth block, as shown in the figure above.

钻通刮一体化工具连接在管柱的下端。弹性牙块的外径比套管壁内径大，下井入套管时牙块内缩紧贴套管壁。套管刮削器通过钻柱的上下往复运动，牙块即可对套管壁进行刮削作业。

The GX Tool is connected to the lower end of the string. The outer diameter of the elastic tooth block is larger than the inner diameter of the casing wall. The casing scraper can clean the casing wall through the reciprocating motion of the drilling string.

三、技术参数 Technical Parameters

单位 unit: mm

规格 Model	通径 Bore	本体 外径 O. D.	最大工作 外径 Max. O. D.	总长 Length	上下连接螺纹 connecting thread	刮削范围 Scraping Range	最大承扭 Max. Torque	抗拉强度 Tensile Strength
GX 127	20	89	117	1350	NC26	108-114	7 KN•m	80T
GX 178	38	127	162	1430	NC38	152-161	22 KN•m	150T
GX 245	68	178	234	1659	NC50	203-229	36 KN•m	200T

四、技术优势 Technical Advantages

1) 结构坚固，轻便易搬运；

Robust, lightweight and easy to handle

2) 用于最大限度紧贴套管，自我清洁能力；

Used for maximum adhesion and self-cleaning ability;

3) 可连续旋转；

Continuous rotation

4) 实现在钻进中同时清刮；

Achieve simultaneous scraping while drilling

5) 可直接接在钻头之上；

Can be directly connected to the drill bit.

6) 通井刮壁扫塞一趟钻，节约时间减少风险。

Pass through the well to sweep the wall plug while drilling, save time and reduce risk.

7) 下钻过程中进行清刮；

Clean and scrape during drilling.

8) 360° 全方位覆盖；

360° omni-directional coverage

9) 耐高温高压。

High temperature and pressure

五、使用操作 Operation

1. 推荐钻具组合：钻头+双母接头+套管刮削器+钻杆(或油管)到井口。若

钻通刮壁一体化，塞面较厚，可以适当增加钻铤或者加重钻杆

Recommended BHA: drilling bit + dual box connection + Casing scraper + Drill pipe (or tubing) to wellhead. If drilling plug scraping is integrated, plug surface is thick, can be appropriate to add drill collar or heavyweight drill-pipe.

2. 根据套管规格选定相应尺寸的套管刮削器。

Select the appropriate size of casing scraper according to casing specifications.

3. 套管刮削器下井之前，检查刮擦部分有无缺损，吊装套管刮削器过程中应防止套管刮削器磕碰钻台等意外情况，入井按照标准扭矩上扣。

Before running the casing scraper, check the scraping section for defects. During the lifting of the casing scraper, the casing scraper shall be prevented from collision with the drilling platform. While running well shall be buckled according to the standard torque.

4. 接近刮削井段并开泵循环正常后，缓慢下放管柱，然后再上提管柱反复多次刮削直到下放悬重不在下降为止。

After approaching the scraping well section and pump circulation stable, slowly lower the string, and then upper the tubing string repeatedly to scrap until the drop weight stop decreasing.

5. 在通井刮壁的过程中，钻磨进尺一个单根，就上提下放管柱一次，提放距离超过 3 米，检验管柱是否卡钻。

During scraping the well, every single pipe drilling depth need a repeatable upper and lower action of string, once the motion distance exceeds 3 meters, execute a check to make sure the string is not stuck.

六. 维修、保养与注意事项 Repair, Maintenance and Precautions

1. 入井前检查上下连接螺纹有无损伤；按压牙块（或用小铜棒轻轻敲击），观察牙块伸缩是否顺畅，有无卡滞。

Check up and down connection threads for damage before running

in hole, Press the tooth block (or gently tap with a small copper rod) to observe whether the expansion of the tooth block is smooth and it's not jammed.

2. 入井前可用小链钳夹住中间旋转部分，应能顺畅、均匀转动。 You can Use small chain tongs to hold the middle rotating part, it should be able to rotate smoothly and evenly.

3. 使用后，应立即用清水将整个工具冲洗干净，特别是中间旋转部分缝隙内的泥浆杂质应该尽可能冲净。有条件时，可待工具凉干后向中间旋转部分注入干净的润滑油，以备下次使用。

After use, the whole tool should be washed with water immediately, in particular the mud in the gap of the middle of the rotating part should be cleaned as much as possible. In some conditions, you can wait for the tool to dry and then inject clean lubricating oil into the middle rotating part to prepare for further use.

4. 工具累计使用 300h 后，建议返回维修站进行检测、维修后，视工具损伤情况再确定是否可以继续使用；牙块磨损量 $\geq 1.5\% \times$ 公称尺寸时，须更换牙块；旋转部分转动卡滞，或转动阻力时大时小，极不顺畅时，应暂停使用，并返维修站拆卸检查、维修。

After the accumulated usage of the tool reach 300H, it is recommended to return to the service station for inspection. After repair, depending on the condition of the tool, determine whether it can continue to be used. If the tooth block wear is over $1.5\% \times$ nominal size, the tooth block must be change. When the rotating part is stuck or rotational resistance sometimes large and sometimes small and not very smooth it should be suspended and returned to the maintenance station to be dismantled and repaired.

注意 Note:

1. 严禁将套管刮削器下入裸眼井段，若套管刮削器进入裸眼段，会造成压擦部分弹出无法收回。

It is strictly prohibited to insert the casing scraper into the open hole section. If the casing scraper enters the open hole section, it will cause the pressing part to pop up and cannot be retracted.

2. 要求无弹性扶正块外径要小于套管内径 3mm。

Require the outer diameter of inelastic centralizer block is 3mm less than the casing inner diameter.

3. 遇阻不得超过 40KN，发现遇阻立即上提，上提吨位不超过原悬重 80KN，再慢慢下放。

No more than 40KN shall be encountered, once found the resistance shall be lifted immediately. The upper action weight shall not exceed the original suspended weight of 80KN, and then slowly lower the string.

七、定货说明 Procurement Instructions:

1. 凡符合技术参数内的规格型号，定货时只需注明规格型号即可；

Providing the corresponding model of product when ordering.

2. 若需其它规格、连接扣型，应注明技术参数；

Technical parameters should be indicated if other specifications and coupling type are needed.

3. 若需拆卸工具请单独说明。

For disassemble tools please order separately

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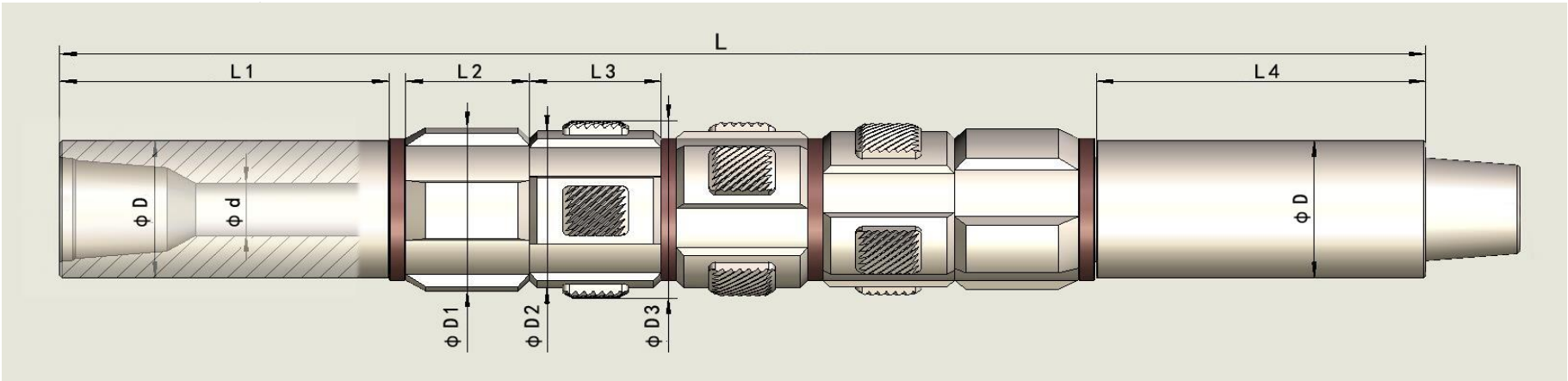
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附：

（套管刮削器打捞尺寸表）



单位：mm

规格 Specifications	通径 Bore	本体外径 O. D.	扶正块外径 D1	旋转套 外径 D2	最大工作外径 D3	总长 L	上端拧 扣长度 L1	扶正块长度 L2	旋转套 长度 L3	下端拧 扣长度 L4	上下连接 螺纹 Connection
GX 127	20	89	101	101	117	1058	290	0	150	260	NC26
GX 178	38	127	151	146	162	1430	350	120	140	350	NC38
GX 245	68	178	212	203	234	1658	400	150	160	400	NC50