

Tycoons Worldwide Group (Thailand) Public Co.,Ltd.

聚亨企業集團(泰國)大眾有限公司

Buckling Vertical Integration to Cast Prosperous Future.

From wire rod rolling spheroidized annealing wire drawing to screw forming, case hardening and surface treatment, Tycoons setup a world-class manufacturing / marketing system with upstream to downstream core technology integration. Through incorporation global resources, Tycoons proactively manage each critical factor in the supply chains. With price competitiveness and supreme quality, Tycoons provide one-stop shopping services to customers.

Tycoons starts its R&G, Financial, sales and marketing management system. In Taiwan, then expands to own three state-of-the art manufacturing facilities in Taiwan and Thailand. With its international operation, complete product lines and global supplies, Tycoons is able to offer total solution from wire rod which includes low carbon, medium-high carbon, cold heading and low alloy to CHQ annealing wire and fastener

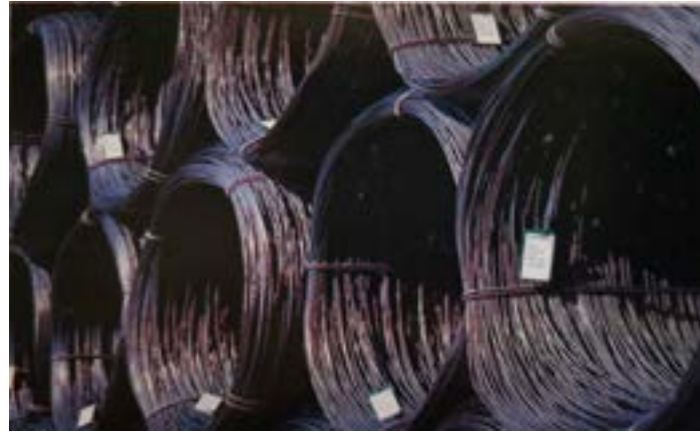
紧扣垂直整合技术打造无限未来

从盘元轧延,球化线材,到螺丝成型,渗碳热处理,表面处理,聚亨以垂直整合技术架构出世界级规模一贯化产销体系,并统合全球有利资源,掌握整条产品供应链各项关键因素,以合理价格最高品质,提供客户一次购足的服务.

聚亨由台湾开始研发,财务,行销,管理营运,进而在台湾泰国建立三座现代化生产基地,以国际组织运作,完整产品线及全球供货的优势,提供客户从盘元(含低碳,中一高碳,冷打级和低合金钢)CHQ球化线材到螺丝的完整方案.



Wire Rods



The First Billet Inspection & Conditioning Line in Thailand.

Billets after being straightened are loaded to be descaled by a shot blast, and transferred towards fluorescent magnetic powder flow detecting to be inspected and marked defective parts on all four surface of billets. Defects on surface of billets are removed by wheel grinding.



The rolling mill of world advanced technical level introduced from Germany, Sweden and Japan has an annual output of 500,000 tons of \varnothing 5.5 mm. - \varnothing 16.0 mm. wire rod coil & \varnothing 17.0 mm. - \varnothing 42.0 mm. bar in coil.

The mill has two production lines :

- Billet Inspection & Conditioning Line.
- High Speed Wire Rod & Bar In Coil Combination Line



Complete grinding produced perfect surface of billets suitably being supplied for cold heading, cold forging, cold drawing, cold stranding, etc., and other intensive processing works required billets as raw material.

从德国,瑞典与日本引进具有世界先进技术设备水准之年产能50万,線徑 \varnothing 5.5 厘米 - \varnothing 16.0 厘米 線材盤元和線徑 \varnothing 17.0 厘米 - \varnothing 42.0 厘米 條鋼盤元产品.

轧钢廠有二條生产線:

- 小钢胚检验和研磨生产線
- 高速線材和條鋼盤元组合型生产線



泰国第一條小钢胚检验和研磨生产線

校直后小钢胚,进入喷砂机除去表面锈皮,以螢光,磁粉液检出与标记小钢胚表面裂缝缺陷.



最后经研磨机磨除此裂缝缺陷,既产出良好表面品质适用于冷打,冷鍛,冷拉,绞丝等深加工用途的小钢胚原料

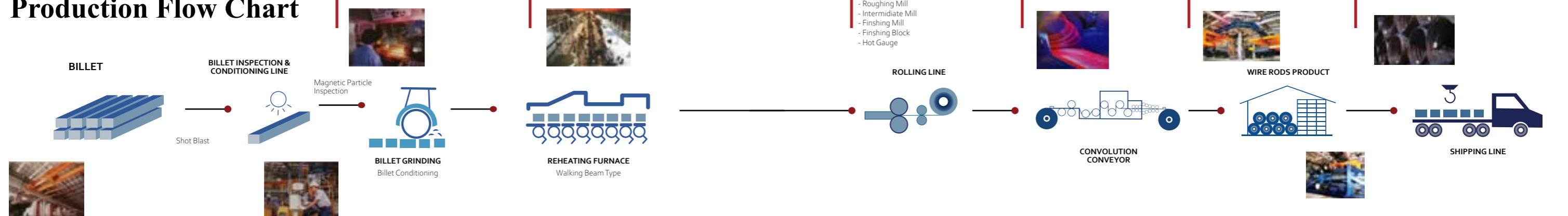
Quality Assurance of Rolling Mill

- Metal Analyzer
- Line Magna
- Vernier Caliper
- Hot Gauge
- Outer Micrometer
- Metallurgical Microscope
- Up-Setting Testing Machine
- Universal Testing Machine
- Rockwell Hardness Testing Machine

轧钢品质保证

- 分光仪
- 磁粉探伤机
- 游標卡尺
- 热尺寸侦测器
- 分厘卡
- 金相试验机
- 端壓机
- 拉力试验机
- 硬度试验机

Production Flow Chart



Annealing Wire



There are four processes for annealed wire production, from intermediate drawing to spheroidized annealing, pickling & coating and skin pass.

• Intermediate Drawing

Equipment : 10 sets of intermediate drawing lines from Taiwan and 3 sets of straight-line type drawing machines from Germany and 10 set of big wire drawing.

Capacity : 17,500 tons / month

Product : low carbon steel from \varnothing 2.3 mm. – \varnothing 25.5 mm.

球化線材之生产共需要经过四个制程，由制程關係从上而下分別为粗抽(Intermediate Drawing)，球化(Spheroidized Annealing)，酸洗(Pickling and Coating) 及精抽(Skin-Pass) 等四个制程。以下分別就各廠之设备，产能及特色介绍如下：

• 粗抽廠

设备：台湾粗抽机组10條,德国Herborn全电脑控制连续式伸線机组3條及大線徑線材伸線机组10條。以生产 \varnothing 2.3 – \varnothing 25.5 mm之低碳鋼線材为主。

• Spheroidized Annealing

Equipment : Hydrogen Atmosphere Bell-type wire annealing furnaces from Germany including 14 bases, 8 heating hoods and 8 cooling hoods.

Capacity : 18,000 tons / month

Product : low carbon, medium carbon, high carbon and low-alloy steel.

• 球化廠

设备：德国全电脑控制氢气气氛保護钟罩式球化炉。共有14个炉基(Base)，8个加热罩以及8个冷卻罩。

设计产能：可達18,000噸 / 月。

产品：设计以生产低碳鋼之球化線材为主，亦可用來处理中，高碳钢及低合金鋼等鋼種之球化退火。



• Pickling & Coating

Production Line : 2 lines.

Capacity : 18,500 tons / month

• Skin Pass

Equipment : 34 sets

Capacity : 10,500 tons / month

Product : low carbon steel from \varnothing 2.2 mm. – \varnothing 25.0mm.

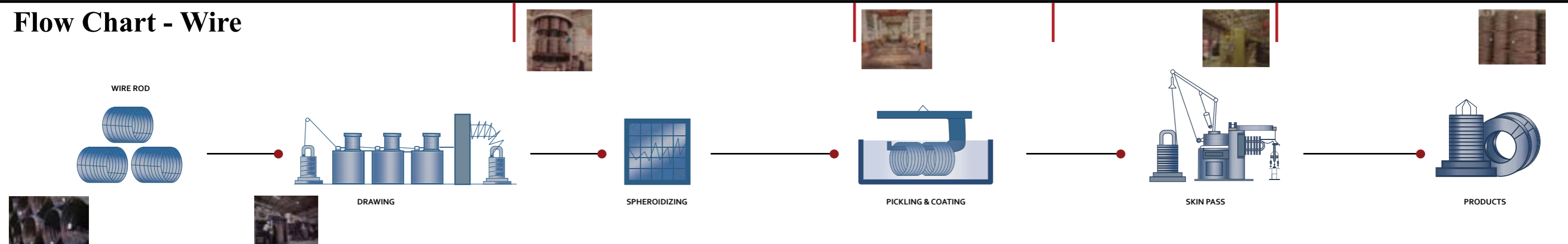
• 酸洗廠

设备：線材酸洗線 2 條。
设计产能：可達18,500噸 / 月

• 精抽廠

设备：台湾精抽机组34台。
产品：以生产 \varnothing 2.2 mm. – \varnothing 25.0 mm. 之低酸鋼線材为主。
设计产能：可達10,500噸 / 月

Flow Chart - Wire



Wire Rod / BIC Specification

| Designation | Title of Specification | Symbol |
|-------------------------|---|---|
| JIS G 3101 | Rolled Steel for General Structure | SS400 |
| JIS G 3505 TIS-348 | Low Carbon Steel Wire Rods | SWRM 6, 8, 10, 12, 17, 20, 22 (R, K) |
| JIS G 3507-1 | Carbon Steel for Cold Heading : Wire Rods | SWRCH 6A, 8A, 10A, 12A, 15A, 18A, 22A, 35K, 38K, 45K |
| JIS G 4105 | Carbon steel for machine structural use | S15C, S20C, S35C, S40C, S45C |
| JIS G 4053 | Low alloy steel for machine structural use | SCM 435, SCM 440 |
| ASTM A 510 SAE J 403 | Wire Rods and Coarse Round Wire, Carbon Steel and Alloy Steel | SAE, AISI 1006, 1008, 1010, 1012, 1015, 1018, 1022, 1035, 1045, 10B21, 10B22, 10B33 |
| BS EN 10269 | Steels alloys for fasteners | 20MnB4 |
| Available Size (mm.) | 5.5 – 42.0 | ----- |

Annealing Product

| Product Name | Available Size (mm.) | Designation | Title of Specification | Symbol | Process Code | Production Process |
|----------------|----------------------|-------------------------|---|---|--------------|--|
| Wire rod / BIC | 5.5 - 42.0 | JIS G 3507-1 | Carbon Steel for Cold Heading : Wire Rod | SWRCH 18A, 22A, 35K, 38K, 45K | SA | AS-Rolled ⇒ Pickling ⇒ Spheroidize Annealing |
| | | JIS G 4053 | Low alloy steel for machine structural use | SCM 435, 440 | | |
| Wire | 2.2 - 25.0 | JIS G 3507-2 | Carbon Steel for Cold Heading : Wire | SWCH 6A, 8A, 10A, 12A, 15A, 18A, 22A, 35K, 38K, 45K | PC | AS-Rolled ⇒ Pickling & Coating |
| | | | | | HD | AS-Rolled ⇒ Pickling & Coating ⇒ Skin Pass |
| | | JIS G 3508-2 | Boron steel for cold heading : Wire | SWCHB320 | SAPP | AS-Rolled ⇒ Pickling ⇒ Spheroidize Annealing ⇒ Pickling & Coating |
| | | JIS G 4053 | Low alloy steel for machine structural use | SCM 435, SCM 440 | SAFS | AS-Rolled ⇒ Pickling & Coating ⇒ Drawing ⇒ Spheroidize Annealing ⇒ Pickling & Coating |
| | | ASTM A 510 SAE J 403 | Wire Rods and Coarse Round Wire, Carbon Steel and Alloy Steel | SAE, AISI 1006, 1008, 1010, 1012, 1015, 1018, 1022, 1035, 1045, 10B21, 10B22, 10B33 | SAD | AS-Rolled ⇒ Pickling ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ Drawing |
| | | | | | SAIP | AS-Rolled ⇒ Drawing ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ Skin Pass |
| | | BS EN 10269:2013 | Steels alloys for fasteners | 20MnB4 | PASAFS | AS-Rolled ⇒ Pickling ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ Drawing ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ |
| | | | | | PASAIP | AS-Rolled ⇒ Pickling ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ Drawing ⇒ Spheroidize Annealing ⇒ Pickling & Coating ⇒ Skin Pass |

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