

FOCUS TECH-LONG

聚焦達意隆

Series No. **23** January 2017

2017年1月 总第23期

达意隆·外部刊物 Tech-Long Magazine

www.tech-long.com





出版说明 Publication Details

主办：达意隆市场部

Sponsor: Marketing Department of Tech-Long

编委：张颂明、陈钢、张崇明

Editorial Advisory Board: Zhang Songming,
Chen Gang, Zhang Chongming

主编：杨柳

Chief Editor: Yang Liu

文案：易慧、刘露莹

Copywriter: Yi Hui, Liu Luying

设计：徐奎

Designer: Xu Kui

摄影：陈宇美

Photographer: Rainmy Chen

中文校稿：易慧、刘露莹

Proof Reader (Chinese): Yi Hui, Liu Luying

英文校稿：张琳、贾维伟

Proof Reader (English): Alice Zhang, Carter Jia

电话 Tel : (86 20) 62956888

传真 Fax : (86 20) 82266913

电邮 E-mail: market@tech-long.com

总第23期

出版时间：2017年1月

Series No.23

Publication Date: January, 2017

本刊图片和文字未经允许，不得以任何形式或方式转载或使用。
Pictures and characters in this publication are not allowed to be reprinted or used in any form or way without permission.

《聚焦达意隆》可通过电话或邮件方式免费索取
"Focus Tech-Long" magazine reservation can be applied freely through phone call or E-mail



卷首语 INTRODUCTION

- 5 沉淀的力量
Power of Accumulation

特殊报导 SPECIAL REPORT

- 8 先进制造 重塑强国之基
Advanced manufacturing,
reshaping the foundation of a powerful nation
- 12 舞狮贺岁 福瑞满园
Lion dance in order Fred garden
- 14 达意隆第四次荣获中国专利优秀奖
With the fourth won the recognition award
in China patent
- 16 关山初度路尤长 创新转型谋新途
The Road Ahead is Still Long, and Tehc-Long
Seeks New Ways through Innovation and
Transformation
- 32 专注品质 将工匠精神注入智造时代
Focusing on Quality and Adopting Craftsmanship
Spirit in the Era of Intelligent Manufacturing
- 40 SHOW出高端品牌 展现智造之魅
——达意隆携强大阵容闪耀Chinaplas 2016
Exhibit Our High-end Brands and Show
the Charm of Intelligent Manufacturing



— Powerful Lineup of Tech-Long Exhibits
at Chinaplas 2016

- 46** 达意隆再次入选广州开发区、黄埔区2015年度
专利创造20强企业
Tech-Long is Selected as One of the 2015 Top 20
Enterprises in Patent Development of Guangzhou
Development Zone and Huangpu District
- 48** 实现更可靠的无菌灌装
A More Reliable Aseptic Filling Technology
- 52** 达意隆超洁净整线设备在重庆品正顺利投产
Tech-Long Ultra-Clean Complete Line is smoothly
Put Into Operation in Chongqing Pinzheng
- 56** 达意隆荣获“中国专利优秀奖”
与“广东省专利金奖”
Tech-Long Wins “China Excellent Patent Award”
and “Guangdong Province Patent Golden Award”
- 58** 达意隆SAP ERP/OA项目成功启动
Successful Launch for Tech-Long SAP ERP/OA Project
- 60** 优化灌装技术 提高产品性能
Optimize Filling Technology and Improve
Product Performance
- 64** 助学·筑梦·铸人
—记达意隆2016年爱心慈善行之贵州·安顺行
Educational Supporter • Dream Builder
• Talent Cultivator
— Notes on Tech-Long's 2016 Charity Trip to
Anshun, Guizhou

实例 PROJECT CASES

- 72** 智造IKEA小相框 机器人兄弟一马当先
—达意隆集成自动化解决方案在宜家相框
包装的应用
Robots First Used in “Smart Manufacturing”
of IKEA Photo Frames
—Application of Tech-Long integrated automation
solution in packaging of IKEA photo frames
- 78** 创新应用领域再临行业高点
—达意隆顺利进军民爆生产自动化领域
An innovative application,
a new development orientation
—Tech-Long automation system's success in
fireworks production industry
- 80** 健康之水 “意”起分享
—达意隆携手兴伟集团打造贵州大健康水
Healthy Water Sharing
—Tech-Long Produces “Healthy Guizhou Water”
with Xingwei Group
- 84** 饮巴寨山泉 享圣水之妙
—达意隆携手巴寨山天然矿泉饮料有限公司
打造巴寨山泉
Bazhai Mountain Spring: Taste of “Holy Water”
—Tech-Long joins hands with Bazhai Mountain
Natural Mineral Water Drinks Co., Ltd. to
produce “Bazhai Mountain Spring”



90 再牵手 强势进攻新市场

—达意隆为越南Number One Hanam提供首条
36000BPH含汽中温灌装水汽两用线

Join hands again to dominate the new market

—Tech-Long Provides Vietnam Number One
Hanam with the First 36000BPH Warm Filling
Line for Water & Carbonated Drinks

94 等待花开 笑迎收获

—达意隆闪耀加拿大市场

Waiting for Blossom and Harvest

—Tech-Long Rises to Fame in Canada Market

98 共步成长之路

—达意隆再度为印度Megha Springs

提供双整线设备

Path for Joint Development

—Tech-Long once again Providing India Megha
Springs with Double Complete Line

102 携手创未来

—达意隆首次牵手沙特MARWA进军瓶装水市场

Work hand in hand to build a better future!

—Tech-Long Cooperates with Saudi MARWA for
the First Time to Barge into Bottled Water Market

106 匠心独运 携手共赢

—达意隆牵手Water World Group公司

打造世界好水

Creative Thinking and Win-Win Cooperation

—The cooperation with Water World Group
to produce "good world water"

技术与加工

TECHNOLOGY & PROCESSING

112 高速多功能灌装设备 助力价值提升

High-Speed Multifunctional Filling Equipment
Helps to Enhance Value

122 如何构建合理的瓶盖生产线

How to build an optimized cap production line

132 如何识别瓶盖的好与坏

How to Judge the Quality of Caps

市场动态

MARKET NEWS

138 2017年饮料行业八个“主要”趋势

Eight "Major" Trends of the Beverage Industry in 2017

沉淀的力量

昨天，有志青年愿为时代的追随者；
今天，有志青年甘当时代的沉淀者；
明天，有志青年将为时代的开拓者；

我们深知：

春生夏长秋收冬藏，
每一个故事都深刻着一个时代的烙印，
每一个时代又被上一个故事推着滚滚向前；
昨日的波澜壮阔呼唤了我们的坚定，
今日，我们将沉淀力量，树立精神的灯塔，
以又一番信念壮志造就下一个万丈光芒；

面对时代的浩荡洪流，
我们将在坚持中思变，于执着中创新，
我们将鼓起“赴百仞之谷而不惧”的勇气，
具备“乱云飞渡仍从容”的能力，
书写恢宏壮丽的“中国梦”新篇章。

Power of Accumulation

Yesterday, we were willing to follow the time;
Today, we are content to do our jobs well and accumulate experience;
Tomorrow, we will strive to become pioneers of the time;

We know that:

Everything follows the laws of nature.
The characteristics of the time are branded in every story,
And the stories drive the time forward.
Yesterday we made achievements through unremitting endeavors.
Today we accumulate experience and set up the lighthouse of spirits.
We will accomplish another success with resolute belief and great aspiration.

In the face of the challenges of our time,
We will innovate while adhering to our initial dream.
We will gather courage and be fearless of any difficulty.
Confronting challenges with calm,
We will write down a new grand chapter of our “Chinese Dream”.

A dynamic background image showing a close-up of water splashing upwards, creating a crown-like shape with several droplets suspended in the air. The water is clear and bright, contrasting with the deep blue background.

SPECIAL 特殊报导 **REPORT**



先进制造 重塑强国之基

Advanced Manufacturing Industry, Reconstruct Foundation of Our Powerful Country



2月广州，春寒料峭。相对于天气的寒冷，中国制造业乃至整个实体经济仍面临诸多挑战。在日前的人大广州团讨论会上，作为国内液态包装行业的领军企业，达意隆张颂明先生代表制造业界发出了呐喊：以先进制造业重塑中华民族的强国之基！

此次广东省政府工作报告中提到的“坚持制造业立省”，在实体经济严苛环境的今天，无疑给广东制造业的从业者们指明了方向，坚定了信念。以张颂明先生代表的制造业领军人物，积极响应政府的坚

定决心，同时又对当前的中国制造业现状表达了自己想法。

中国传统的装备制造业几十年来一直是以兢兢业业，脚踏实地的实业精神为支柱，而曾几何时，时代的变迁让中国传统制造业也发生了巨变，影响中国制造企业的心态和士气，形成了不利于制造业发展的氛围和环境。

制造业不重要了吗？如果企业家都不再投资制造业，

转而去搞房地产和互联网去赚快钱；青年人不再想去工厂工作，而是想一夜暴富轻松发财；个别互联网企业的快速发展，鼓噪起一些人所谓弯道超车改变经济形态的激情，社会大众则在舆论的裹挟中失去了方向，那么中国的强国之路和民族伟大复兴的目标从何实现？

作为全球最大的金融国和互联网发源地的美国想尽办法地让制造业回归，政府更是宣称要通过大幅度降低税收、对美国企业境外投资进行惩罚、加重进口商品关税等一系列极端手段，促进全球制造业企业回流美国。

事实上，无论是从企业数量，还是从就业人口数量，或是GDP中所占比重等经济指标衡量，制造业在中国经济中都占据着重要地位。制造业强，则中国经济强。作为全球最大的制造业大国，未来一定是全球第一大的消费大国，制造业是中国经济根基。

中国市场还需要更多高标准、高品质的产品，中国大多数精益制造企业还在发展中。中国的制造业强国之路依旧漫长。从中国经济容量来分析，如果中国的制造业企业都变成富士康、华为、格力，中国的强国目标也就实现了。“中国需要很多的富士康、华为、格力或是更多的行业小巨人和隐形冠军。”，张颂明先生认为。

毫无疑问，制造业更有资格成为中国的核心竞争力。制造业和高品质的制造产品才是互联网经济发展的根本；制造业及其实干精神，不断培养出真正拥有实际技能和创新精神的人才，为社会带来真正的价

值和不断的创新！一个国家一个社会，需要真正有活力、创造力和有创新的先进制造业！”

“是时候重新认识制造业的价值！”

—广州达意隆包装机械股份有限公司**张颂明**

The cold is still lingering in Guangzhou in spite of the advent of February, in which springtime arrives. Coincidentally, the manufacturing industry, even the entire real economy in China, seems damped by the bleak weather in the face of various challenges. At the panel discussion held among Guangzhou NPC representatives, Mr. Zhang Songming from Tech-Long, a leading enterprise in domestic liquid packaging industry, made his voice heard on behalf of the manufacturing industry: we must reconstruct the great foundation of China with advanced manufacturing industry!

Nowadays, the real economy is confronted with harsh conditions. However, “Stick to Manufacturing Industry for a Thriving Guangdong,” the proposition put forth in the work report of Guangdong Province, is undoubtedly a convincing lighthouse for the people in the manufacturing industry of the province. The leading figures in the industry, represented by Mr. Zhang Songming, not only made timely responses to the staunch decision of the



government but expressed their own views on the status quo of the present manufacturing industry in China.

The traditional equipment manufacturing industry has been bolstered by the conscientious and earnest real economy in China over the past decades. However, great changes are brought to domestic traditional manufacturing industry with the glide of times, undermining the industry in terms of confidence and morale. Consequently, unfavorable conditions have already taken shape for its development.

Is the manufacturing industry no longer important?

If entrepreneurs all speculate in the industries like real estate and Internet instead of making investment in the manufacturing industry; if young people all indulge themselves in making a fortune overnight instead of finding a job in a factory; if the fast development of some Internet companies make certain people preach the so-called concept of changing the economic pattern by corner overtaking and the public go stray because of the influence of negative public opinions; then how can our goal to rejuvenate China be accomplished?

As the largest financial market across the globe and the place from which the Internet was originated, the U. S. spares no efforts for the return of manufacturing industry. Furthermore,

a series of extreme measures, such as dramatic reduction in taxes, punishment to U. S. companies making investment outside America, and duty hikes for imported commodities, etc. have been put forward by its government to help the manufacturers get back to the country.

As a matter of fact, the manufacturing industry plays a significant role for the development of China's economy considering the number of manufacturing companies, the number of employees in the industry and the percentage it accounts for in the country's GDP. China will thrive if its manufacturing industry gets prosperous. As the largest manufacturing market in the world, China will definitely be the country featuring the greatest consumption potential in the future, so the manufacturing industry is the foundation of China's economy.

The China market still longs for more quality products that produced according to strict standards. The majority of lean manufacturing companies are still in the course of development. China still has a long way to cover in order to strengthen itself via a thriving manufacturing industry. According to the analysis made from the perspective of China's economic capacity, China will achieve its goal to become a powerful

country if China's manufacturers all evolve into Foxconn, Huawei and Gree. "China needs more companies like Foxconn, Huawei and Gree or more relatively small giant companies or leading enterprises that are rarely known to the public," according to Mr. Zhang Songming.

Undoubtedly, manufacturing companies are more qualified to become China's core strength. The manufacturing industry and the quality products it presents are the underlying foundation that bolsters the development of the Internet economy. The manufacturing industry and its hard-working spirit are the cradle of skilled innovative talents that continuously get into the society. Hence, it is they that bring the people real value and constant innovations. Indeed, the country and society need advanced manufacturers that are for sure vigorous, creative and innovative.

"It is time to rediscover value of the manufacturing industry!"

—Guangzhou Tech-Long Packaging Machinery Co., Ltd. **Zhang Songming**

舞狮贺岁 福瑞满园

Lion Dance, Auspiciousness New Year



岁喜芳华添媚色，人欢鸟唱万物兴。开工吉日，达意隆厂区锣鼓喧天，春意盎然，喜气洋洋，以龙腾狮跃的欢腾之势，欢天喜地迎开门大吉。

金鼓一响黄金万两 金狮点睛富贵繁荣

达意隆高层领导及中层管理人员在公司南门举行了隆重的开年仪式，并邀请了当地有名的舞狮队进行表演，会上，张颂明先生、陈钢先生分别向同事们致以新年的问候，祝愿大家新的一年万事如意，随后，两位领导为金狮点睛，赋予金狮祥瑞的灵性。

瑞气临门 生财有道 步步高升

舞狮队进行了精彩的表演，吐联、采青等环节将开

年仪式推入高潮。“水到渠成”、“生意兴隆”、“财源广进”、“身体健康”、“龙马精神”等美好的祝愿从金狮口中吐出，寓意着新的一年吉星高照达意隆。

最后，舞狮队从办公区一号楼出发，围绕达意隆各个区域进行旺场表演，将吉祥和好运散播到达意隆每个区域，散播给每一位达意隆人。

开年仪式在欢腾的氛围中圆满结束，2017年，注定是不平凡、充满“鸡”情的崭新的一年，达意隆人将以“团结、拼搏、正能量”为工作、生活的第一准则，撸起袖子加油干，为“中国智造”添上华丽的色彩！



The festive atmosphere makes the springtime increasingly charming while joyful faces and warbling birds herald that all things are about to come to life. On this auspicious day, Tech-Long holds its annual commencement ceremony at its factory with cheerful and jubilant performances of lion and dragon dances.

May Golden Drums' Beats Bring Fortune; May Tech-Long Get Prosperous by Reddening Golden Lions' Pupils

Senior leaders and managerial staff at mid-levels from Tech-Long attend the grand ceremony held at the south gate of the company, during which a locally well-known lion dance team is invited to give performances. At the event, Mr. Zhang Songming and Mr. Chen Gang greet the staff respectively with their best New Year wishes. Later, they redden the golden lions' pupils to make them lifelike, praying for auspiciousness.

Pray for Auspiciousness, Great Fortune and Higher Position

The ceremony is highlighted by the wonderful performances given by the lion dance team, especially the part in which the lions produce

couplets from and take greens with their mouths. Various greetings such as "Success will come when conditions are ripe", "Succeed in Business", "Great Fortunes", "Good Health" and "Spirit of Horse and Dragon", are written down on the couplets, an auspicious omen for good luck and thriving businesses in the new year.

In the end, the lion dance team, starting from No.1 Office Building, goes to every area of the factory to give performances so that each area and each person of the company will be exposed to the good luck and auspiciousness.

The ceremony draws curtain in an exultant atmosphere. The year of 2017, which is destined to be extraordinary and full of passion will definitely witness Tech-Long people add a gorgeous touch to the cause of "Intelligent Manufacturing in China" under the guidance of their top principle of "United, Industrious and Positive."



达意隆第四次荣获中国专利优秀奖

Tech-Long Wins China Patent Recognition Award for the Fourth Time



根据国家知识产权局网站对外公告的“第十八届中国专利奖授奖决定”名单，我司发明专利“一种分配器内轴结构的防转装置”（专利号：201310356393.5）荣获中国专利优秀奖，成为达意隆第四次获此殊荣的发明专利。

中国专利奖由国家知识产权局与国际知识产权组织联合举办，是我国知识产权领域的最高荣誉。此次获奖的发明专利“一种分配器内轴结构的防转装置”是由我司灌装事业部杨恢光、樊衡益、张聪敏等人自主研发，通过结构创新，提供一种可防止内轴结构出现摆动、降低磨损的分配器内轴结构的防转装置，提高灌装生产的效率以及灌装质量，并可降低相应部件的更换频率，节省大量的人力和时间。

截止至2016年底，我司已获得广州市专利优秀奖1项、广东省专利金奖1项、中国专利优秀奖4项。此

次获得中国专利优秀奖是我司近三年连续获得此殊荣。2016年8月还被列入了中国专利百强榜，排名76位，能有如此成绩充分彰显了达意隆公司强大的技术创新能力及知识产权重视和保护力度。

In accordance with the announcement on the “Winner List of the 18th China Patent Awards” published on the website of State Intellectual Property Office, Tech-Long was granted the China Patent Recognition Award due to its patent titled “an anti- rotating device for inner distributor spindle,” [Patent No.: 201310356393.5], which is the fourth time for our company to win this honor.

China Patent Award is jointly organized and held by State Intellectual Property Office of the P.R.C.

and World Intellectual Property Organization. It is the ultimate accolade in the realm of intellectual property in our country. The patent of "an anti-rotating device for inner distributor spindle" that won the award was developed independently by Yang Huiguang, Fan Hengyi and Zhang Congmin from the Filling Machinery Section of our company. Through structural innovation, they have developed an anti-rotating device that can not only prevent inner distributor spindle from swigging but reduce its abrasion so that relevant filling production becomes more efficient and the products produced accordingly are of better quality. In addition, better quality of the products also decreases the replacement rate of relevant

components, making it possible to save a lot of manpower and time.

As of the end of 2016, our company has been granted 1 Guangzhou Municipal Patent Recognition Award of Excellence, 1 Guangdong Provincial Patent Gold Award and 4 China Patent Recognition Awards. This is the third consecutive time for our company to win China Patent Recognition Award. In August 2016, our company ranked 76 on the list of China Top 100 Patent Inventors. This achievement manifests that Tech-Long not only possesses strong capacity of technological innovation but attaches great importance to intellectual property and its protection.

获奖项目	授奖部门	获奖名称	专利号	专利发明人
第一届广州市专利优秀奖	广州市知识产权局	液体定量灌装装置	200810028765.0	樊 缔
2016 年广东专利奖金奖	广东省知识产权局	用于吹瓶机的模架开合和底模升降的联动机构	201210477944.9	邹大群、吴志刚、宁远鹏、陈基盛、刘青山
第十三届中国专利优秀奖	国家知识产权局	瓶胚加温风流通系统	200810093470.1	邹大群、宋奎伟、邓志军
第十六届中国专利优秀奖	国家知识产权局	一种酱油灌装机	201110253723.9	谢棋柏、刘海丰、吴茂柿、胡秋嫻
第十七届中国专利优秀奖	国家知识产权局	一种星轮盘传动机构及其装配方法	201110163812.4	宋俊杰、张聪敏
第十八届中国专利优秀奖	国家知识产权局	一种分配器内轴结构的防转装置	201310356393.5	杨恢光 樊衡益 张聪敏

Award Item	Granted by	Award Name	Patent No.	Invented by
The First Guangzhou Municipal Recognition Award	Guangzhou Municipal Intellectual Property Office	A Liquid volumetric filling device	200810028765.0	Fan Di
2016 Guangdong Provincial Patent Gold Award	Guangdong Provincial Intellectual Property Office	a mechanical linkage for mold carrier opening & closing and bottom mold lifting up & down	201210477944.9	Zou Daqun, Wu Zhigang, Ning Yuanpeng, Chen Jisheng, Liu Qingshan
The 13th China Patent Recognition Award	State Intellectual Property Office of the P.R.C.	performs Heating Air Circulation System	200810093470.1	Zou Daqun, Song Kuiwei, Deng Zhijun
The 16th China Patent Recognition Award	State Intellectual Property Office of the P.R.C.	A Soy Sauce Filling Machine	201110253723.9	Xie Qibai, Liu Haifeng, Wu Maoshi, Hu Qiuxian
The 17th China Patent Recognition Award	State Intellectual Property Office of the P.R.C.	A star-wheel Transmission Mechanism and its Assembling Method	201110163812.4	Song Junjie, Zhang Congmin
The 18th China Patent Recognition Award	State Intellectual Property Office of the P.R.C.	An anti- rotating device for inner distributor spindle	201310356393.5	Yang Huiguang, Fan Hengyi, Zhang Congmin

关山初度路尤长 创新转型谋新途

**The Road Ahead is Still Long,
and Tehc-Long Seeks New Ways through
Innovation and Transformation**



翻开时光的扉页，我们挥手惜别艰难奋进的2016年，喜迎充满希望的2017年。新的一年，我们企业又踌躇满志地站在新的起点，春天的曙光正向我们走来，一起迎接新的机遇与挑战！神州大地上，众多选择和使用达意隆设备的每一家工厂机器都在高速运转，处处呈现生机勃勃的景象，民族品牌的自豪感洋溢在每一位达意隆人温暖的笑容上。无论绚丽辉煌，抑或低吟潜行，我们公司的宗旨和不变口号是：**为你而转！**



一、历史回眸

尽管近几年来宏观经济惨淡下行，但达意隆公司秉承广东企业家一贯的务实奋进风格，勤练内功，艰苦奋斗。

回顾过去数年，为保证先进型技术的行业领先地位，我司投入了巨大的物力和财力，持续发展和壮大了“技术研发中心”，为技术员工提供各种工作、学习和生活的便利，使他们全身心投入到新型技术的研发和试验中，以“吹、灌、旋一体机”为代表，迅速形成了公司的拳头产品，新技术带来新市场，创造了新的业务增长点，极大地增强企业的行业竞争力和市场影响，同时也培养了一支有战斗力的技术团队和一大批成熟的产业员工。多年来，我司积极引领行业发展的未来趋势，集行业责任与无限荣光于一身，始终处于行业领先者的地位。

我司是国内液态产品包装装备龙头企业，采取“液态包装自动化整线解决方案”和“基于机器人的工

业自动化解决方案”的双轮驱动战略，专注液态产品包装领域与工业自动化设备的研发。目前已形成涵盖前处理、注塑、吹瓶、灌装、吹灌旋、输送、贴标和二次包装、工业自动化全系列完整的产品链，是全球仅有的几家也是国内唯一一家能提供整线解决方案的综合供应商，多项产品均填补国内空白，彻底打破了国外设备垄断的局面，全面实现了替代进口。自2000年连续16年实现国内同行市场占有率第一名，主要客户包括可口可乐，百事可乐，雀巢，达能，怡宝、宝洁、蓝月亮、金龙鱼、海天等，是宝洁、百事可乐、可口可乐全球战略合作伙伴。

在工业自动化应用领域，达意隆是国内较为成熟的集成生产商之一，目前已经形成了国内系列齐全、性能先进的并联机器人多个系列，操作简单、安全性好，产品技术附加值较高，在提高生产自动化水平、提高劳动生产率、精密仪器加工、人工智能、改善工人劳动强度等方面，取得了令人瞩目的成果，彻底颠覆了传统制造业的思维和生产模式，已经成



为我司先进技术的重要支撑点，引起社会各层人士的广泛关注，未来在我国高端制造业4.0时代，具有广阔的市场前景。

而且，我司还拥有其他一批自主研发的高精尖技术，譬如：全自动高粘度灌装技术（应用于酱油、食用油、日化液体等行业）、全自动吹瓶灌装旋盖一体机技术（高速第五代吹瓶机）、含气灌装压盖设备技术、回转式全自动粘流体灌装封盖机技术等等，均由我司自主研发与设计，通过技术结构创新，突显数控化、精密化、高效化三大特点，设备操作更为简单、环保、低耗、节能，极大地提升了各应用行业的智能制造，生产出来的饮料、日化用品等成品质量、产量、单位成本都提升到一个新的等级，代表着目前行业的最高水准，以上这些进一步提高和巩固了我司行业的领先优势。

我司同时也是高新技术企业、国家知识产权优势企

业，建有国家级企业技术中心、国家地方联合工程中心和博士后科研工作站。截至2016年末，公司累计申请专利750项，累计授权专利450项，其中授权发明专利123项，授权实用新型专利301项，另有国际专利10项，稳居行业首位。我司在知识产权方面的努力得到了国家、省、市、区各级主管部门的认可，累计获得过4次国家专利优秀奖、1次广东省专利金奖、1次广州市专利优秀奖、广东省科技进步二等奖1项、广州市科技进步一等奖1项，此外，我司还积极参与起草了9项国家标准、10项行业标准，多次被评为广东省知识产权示范企业和国家知识产权优势企业，被外界赞誉“行业翘楚”。

过往数年，国际局势跌宕起伏，此起彼伏的金融动荡风险陡增，给实体企业经营管理带来诸多困难和额外成本。达意隆始终坚持“拼搏、创新、发展”的经营理念，坚定推进技术创新和优化成本，沉着应对风险挑战，保持基本平稳的态势。公司管理层



审时度势、科学决策，始终站在行业发展的全局高度，做出一系列前瞻性布局 and 战略调整，有效地克服了经济环境萧条、国内外市场竞争加剧等不利因素，使公司业务得于稳步回升，极大地改善了企业经营面貌，坚定了全体员工继续奋进的信心，公司品牌价值、核心竞争力得到较大提升。

二、顺势而为

孙子曰：善战者，求之于势，不责于人；故能择人而任势。任势者，其战人也，如转木石；木石之性：安则静，危则动，方则止，圆则行。故善战人之势，如转圆石于千仞之山者，势也。计利以听，乃为之势，以佐其外。势者，因利而制权也。

公司经营者始终站在国际化视野的角度，未雨绸缪，早在数年前就做出了战略布局，在企业创始人张颂明先生的指引下，于2011年12月在美国加州设立全资子公司，作为中国饮料包装机械行业的杰出代表

向欧美高端市场发出了进军号角，以坚实的行动印证从“中国制造”向“中国创造”的华丽转型。而后又在亚特兰大市建立了美东分点，占地25000平方英尺，聘用本地化专业人才和高级精英，提供注塑、吹瓶、灌装、工业自动化、零备件及售后服务，通过优良的技术支持体系，全面带动美洲区域的营销工作。

作为一家享有国际品牌声誉的液态包装设备系统供应商，达意隆公司是国内首家站在全球化视野下，基于对自身先进技术和优良制造的绝对信心，以及公司经营管理的综合实力，突破竞争对手的垄断和技术壁垒，率先登陆欧美高端本地市场，斥巨额投资全资子公司的中国企业。展现出来的这份自信，源自达意隆过去十几年发展积累的变革、创新、开放、分享、合作的基因，这支有战斗力、有激情、有理想、有担当的团队始终是我们坚定前行的最大源泉和财富。

我司在当地设立区域营销及管理机构，以中国制造的性价比和灵活多样的商务条款及技术服务，为区域内中、高端客户提供全面的液体包装解决方案。我们对美洲市场有一个非常清晰且长期的商业规划和管理体系，能够给该市场的广大新老客户一个非常明确的承诺，他们将得到最好的技术产品和优良的快速服务，积极帮助美洲世界级公司更好地展开其伟大的商业计划和投资活动，并提供低廉的成本资金和金融服务，协助他们完成投资、建厂、生产的整套方案实施，正因为此，许多战略客户对我们这个充满活力的本地化中国公司抱有非常热切的合作期望，达意隆美国子公司确实为经营所在地的经济和劳工就业提供了积极的社会贡献。

机会永远属于有准备的人。短短数年，美国子公司已先后在美洲市场销售出近33台吹瓶机，其中有15台设备销售在美国本地市场。除了设备销售和技术服务，我们更注重市场对我们专业技术和中国品牌的认知度，我们以最优质的设备及服务来贴近不同客户的差异化需求，以此赢得高端客户的赞誉和信任，并建立了长期合作的战略合作伙伴关系。

作为国内饮料包装机械行业仅有的标杆，因为对我国的领先技术、规模生产能力及售后服务体系的绝对信心，在积累了北美子公司的成功经验后，达意隆公司于2016年8月公司又在奥地利维也纳设立了另一家全资子公司，高薪聘请欧洲顶级专业人才和销售精英，继续推行本土化市场开发和运营管理，倾力打造达意隆国际大品牌形象，提升企业知名度和市场占有率，进一步构建海外销售网络和区域布局，深度挖掘区域市场资源，强化本土化快速服务能力。至此，美国子公司和奥地利子公司形成了公司整个销售体系中的“双星子座”，相辉呼应。

达意隆一向非常重视工业信息化建设和资源合理利用。近年来，随着公司各项事业的发展，为降低综合运营成本、提升组织执行效率，公司拨出巨额专项资金，对现有信息管理系统进行升级改造，启动了世界顶级的管理信息系统SAP ERP、泛微OA系统，以期全面提升企业经营管理效率。经过数个月的技术建设和专项小组的不懈努力，赶在2016年最后一个工作日（12月30日），公司在营销大楼隆重召开了《两化融合管理体系贯标启动大会》，广东省经





济和信息化委员会肖良颜处长、广州市工业和信息化委员会周智勇副调研员、广州开发区经济发展局王澍处长莅临我司指导，我司陈钢副董事长、程文杰副总经理、邹大群总工程师、全部中高层经理和部门代表共50余人参加了会议(部分出差在外人员以视频形式观看学习)。

启动大会上，陈钢副董事长介绍了两化融合贯标的背景，回顾了公司信息化建设的历程，重点介绍了我司在信息化建设及信息化融合过程中的突出成果，即研发出具备自适应、自调节、自决策功能的智能装备，建立了远程运维服务平台，覆盖多项业务数据，希望公司借两化融合贯标的良机，依照国家工信部的试行标准，紧紧围绕公司战略，深度打造信息化时代下智能制造的续航优势。

此外，为保证高品质的设备部件，我司在过去几年先后投入壹亿多元扩建“精密部件机加中心”，购买多台德系、日系多功能数控加工机床，用于精密零部件加工和生产，如此大手笔的投资在时下不景气的经济周期，突出彰显了达意隆公司的综合实力和对未来前景看好的雄心伟略，在同行业唯此一家。

三、未来已来

风雨多经志弥坚，关山初度路尤长。过去艰苦奋战取得的成绩并不代表我们前行之路从此平坦通畅，面对如此严峻的经济环境，我们要居安思危，始终保持清醒的认识和研判，努力提高企业经营战略的

前瞻性，注重“以人为本”的理念，优化企业架构，构建高效率组织，企业越大，架构越小，层级越少。适者生存已经不够，变者才有机会永存。达意隆正是因为持续发展才有今天。面向未来，我们要不断拓展，在否定自我中寻找突破，只有当我们到达新的边界，才能获得更多的生机与提升，迈向更高的平台。我们要培育产品领先能力，突破固有思维，改变研发环境和创新机制，发现价值，创造价值，主动提供差异化产品和服务。

积极探索“一带一路”和“走出去”战略。纵然我司产品已遍及四大洲近90个国家和地区，仍需深挖市场和客户资源，保持现有区域的经营改善和业务增长，加大全球化区域扩张，进入战略性新型市场，加大海外业务比例，构建国际化体系和营销网络。

见微知著，智者远虑。基于对未来中国乃至世界经济的发展脉搏，公司董事会在2016年底做出一个新的决议，设立“广州达意隆实业有限责任公司”(注资1个亿)，本次设立的全资子公司主要从事公司现有产品的销售、工程服务等相关业务，建立更清晰的管理职责和考核机制，以期提高上市公司整体运营效率，促进上市公司持续健康的发展。

该子公司目前正在办理工商、税务、外管、海关等部门的备案注册，预计在2017年二月启业。新的子公司将以一种独特的经营模式探索精细化市场，努



力提供差异化产品和技术服务，着力打造创新技术孵化平台，未来或有可能收购其他智能制造先进技术，整合母子公司的各类资源，结合实业技术和金融资本的协同力量，夯实产业结构，提高上市公司核心竞争力，保持行业领先地位，增强上市公司持续盈利能力。

展望未来，公司转型将向纵深方向推进。面对一个充满艰辛和希冀的未来，在保持战略定力的同时砥砺前行，我们必须强化执行、奋发进取，努力突破发展中的瓶颈。明年是达意隆创业20周年，达意隆风华正茂，俨然象一个青年，有许多梦想等待、召唤着我们，要在行业继续享有举足轻重的龙头地位，要成为世界著名品牌，要让我们的传统产品更先进智能化。我们要潜心把握未来趋势，积极拥抱技术进步，提高产品服务质量，促进产业升级换代；加大“走出去”步伐，为实现达意隆“做实、做强、做大”的远大目标奠定坚实的基础。

长风破浪会有时，直挂云帆济沧海。未来已来，让我们“17”出发，鑫心相印，勇往直前，共筑精彩人生，不负时代赋予我们的机遇、挑战和荣光，创造更优异的成绩，为公司二十华诞献礼！

Opening the title page of time, we bid farewell to the hard and progressive 2016 and celebrate a promising 2017. In the New Year, we start our journey with passion and the spring dawning is coming bringing the new opportunities and challenges for us! Throughout the divine land of China, many machines of plants that choose and use Tech-Long equipment are in high run, making for a vibrant outlook and each Tech-Long people is glowed with the pride of national brand. For glory or plain, our aim and constant slogan is: **Runs for You!**

I. History Review

Despite of macro-economic downturn in recent years, Tech-Long still keeps the consistent practical and progressive style of Guangdong entrepreneurs, enhancing its strength and making arduous efforts in progress.



Looking back, to maintain our leading position in the advanced technology industry, our company has spent enormous material resources and financial resources to develop and expand “Technology R&D Center”, provide convenience in work, study and life for the technical staff to enable their full devotion into the R&D and test of the new technology. The competitive products featured by “blowing-filling-capping integrated machine” have been developed rapidly and created new markets and new business growth points, greatly strengthened the industrial competitiveness and market effect and meanwhile cultivated one technical team with fighting capacity and a host of mature staff. Over the years, our company has proactively led the future trend of the industrial development, born both the industry responsibility and the infinite honors, and always acted as the industry leader.

Our company is a leading enterprise of liquid products packaging equipment in China, with adoption of two wheel drive strategy of “liquid packaging complete line automation solutions”

and “robot-based industrial automation solutions” and focus on the research and development in the liquid product packaging industry and industrial automation device. Currently complete product chains have been formed covering beverage treatment , injection molding, blow molding, filling, blowing-filling-capping, conveying, labeling and secondary packaging and industrial automation. Our company is one of the comprehensive suppliers around the world and the only one in China to provide the complete line solutions, multi-item products filling the domestic blank, breaking the monopoly of the foreign equipment and developing the substitutes for imported goods in an all-round way. Since 2000, we have occupied the highest position in the domestic industry for a consecutive 16 years, with major clients including Coca-Cola, Pepsi, Nestle, Danone, C’estbon, P&G, Bluemoon, Jinlongyu and Haitian etc., and shared the global strategic partnership with P&G, Pepsi and Coca-Cola.

Tech-Long is one of the relatively mature



integrated manufacturers in the domestic industrial automation application industry. Several complete series of parallel robots of advanced performance have been formed, with easy operation, high safety and high product technology additional value. Moreover, it has gained remarkable results at the aspects of improving the production automation level, raising labor productivity, precise instrument processing, artificial intelligence and reducing the labor intensity, has thoroughly overturned the thinking and production models of the traditional manufacturing industry and has become the important support for the advanced technology of our company as well as aroused wide concerns from people of all walks of life and has a broad market prospect in the age of high-end manufacturing industry 4.0 at home in the future.

Besides, our company boasts other batches of sophisticated technologies from independent research and development, such as full-automatic high viscosity filling technology (applied in industries like soybean sauce, edible oil and daily-chemical liquids), full-

automatic blowing-filling-capping integrated machine technology (high-speed G5 blow molding machine), carbonated filling-capping technology, rotary full-automatic viscous fluid filling capping technology. With innovation in technology structure and featuring in numerical control, precise and high efficient, the equipment can be operated in an easy, environmental, low-consumption and energy-conservation way, which greatly improves the intelligent manufacturing in each application industry. The quality, output and unit cost of such end products as beverage and daily-chemical articles are leveled up, representing the highest level of the current industry. The abovementioned features further improve and strengthen our leading advantages.

Our company meanwhile is a high and new technology enterprise, and enterprise with national intellectual property advantages, built with national-level enterprise technology center, national local united engineering center and post-doctor scientific research work station. Up to the end of 2016, a total of 750 patents have been applied and 450 patents have been authorized, including 123 invention patents authorized, 301 patents for utility models authorized and 10 international patents, ranking the first in the industry. Our company's efforts in the intellectual property have been recognized by state, provincial, municipal and district departments, awarded with 4 times of National Patents Excellence Award, 1 time of Gold Award of Guangdong Province patent, 1 time of

Excellence Award of Guangzhou patent, 1 second prize of Guangdong Science and Technology Progress Award and 1 first prize of Guangzhou Science and Technology Progress Award. In addition, our company has proactively drafted 9 national standards and 10 industrial standards, continuously rated as Guangdong Intellectual Property Demonstration Enterprise and National Intellectual Property Advantage Enterprise and praised as the "Industry Leader".

The past several years have witnessed ups and downs of the international situations and sharp risks growth due to unceasing financial turbulence has brought many difficulties and extra cost to the operation control of the entity enterprise. Tech-Long always adheres to the management principle of "Strive, Innovation, Development", firmly promotes technology innovation and cost optimization, calmly deals with the risk challenges and maintains the basically stable state. Management of the company sizes up the situation, makes scientifically decisions and makes forward-looking arrangement and strategy adjustment from the perspective of development of the whole industry, as well as has efficiently overcome such negative factors as stagnancy of the economic environment and the intensifying competition between markets at home and abroad, which has stably recovered the company's business, greatly improved the operation appearance, enhanced the confidence of staff in continuing making progress and greatly improved company's brand value and core competitiveness.



II. Trade with the Situation

Sun Tzu said: a skilled commander seeks victory from the situation and does not blame his subordinates, therefore, he selects suitable men and exploits the situation. He who utilizes the situation uses his men in fighting as one rolls logs or stones. Now, the nature of logs and stones is that on stable ground they are static; on a slope, they move. If square, they stop; if round, they roll. Thus, the energy of troops skillfully commanded in battle may be compared to the momentum of round boulders which roll down from a mountain thousands of feet in height. Having paid attention to my counsel and plans, the general must create a situation which will contribute to their accomplishment. By "situation" I mean he should take the field situation into consideration and act in accordance with what is advantageous.



Operators of the company always make plans ahead from the international perspective and made the strategic layout some years ago. Under the leadership of Mr. Zhang Songming, founder of the enterprise, a wholly-owned subsidiary was established in California, U.S.A in December 2011, which has sounded the clarion call into European and American high-end market acting as the outstanding representative of China beverage packaging machinery industry and represents the magnificent transformation from "Made in China" to "Created in China". The American-east subsidiary, later established in Atlanta city, covering 25000 square feet, staffed with localization discipline talents and advanced elites, provides injection molding, bottle blowing, filling, industrial automation, spare parts and after-sales service and mobilizes the marketing in America areas comprehensively with the system of excellent technology support.

Tech-Long, as a liquid packaging device system supplier with international brand reputation, from the perspective of international outlook, based on the absolute confidence in the advanced

technology itself and excellent manufacturing and the comprehensive strength in the operation and management, is the first enterprise in China that breaks the monopoly and technical barrier of the competitors, takes the lead in access to the European and American high-end local market and makes a huge investment in the wholly-owned subsidiary. Such confidence roots in the genes of transformation, innovation, openness, sharing and cooperation accumulated from the past decades of development of Tech-Long and such team with fighting capacity, passion, ideal and responsibility is always the greatest source and wealth for our firm advance.

Our company has established regional marketing and management organization in the local America, which provides overall liquid packaging solution for the medium-end and high-end customers within the region according to commerce clause and technical services featuring higher cost performance and flexibility and diversity of made in China. We have a very distinct and long-term commercial plan and management system in American market, which

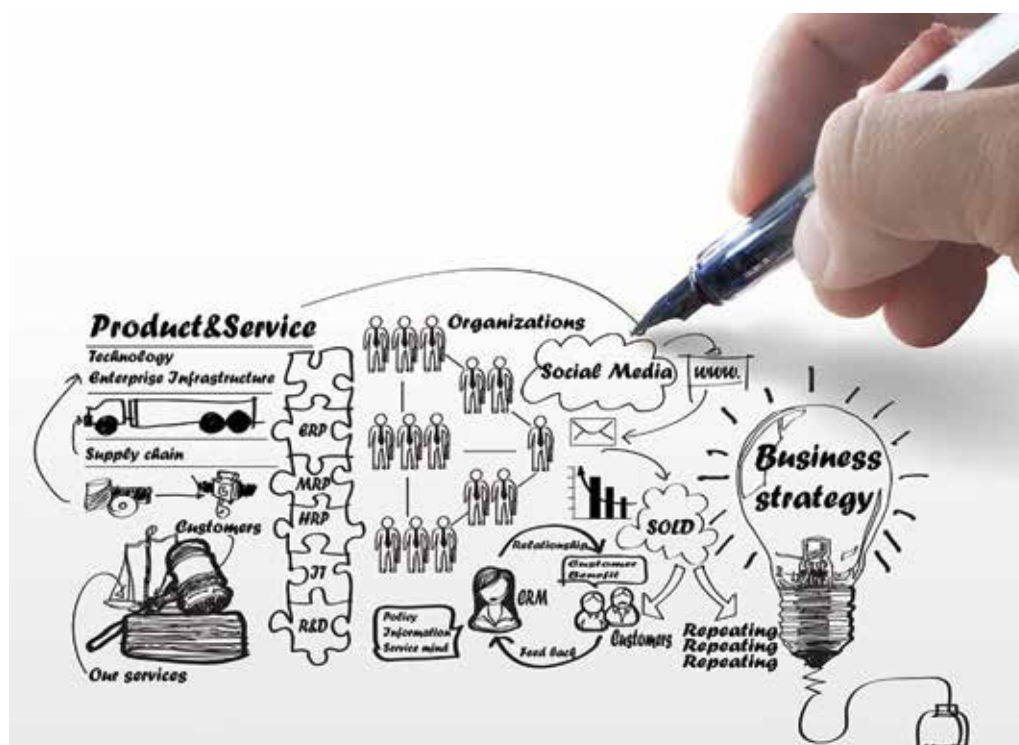


can make a clear commitment to broad masses of regular and new customers in the market where they will get the best technical products and excellent quick service; we proactively help the world-class companies in America to implement their great commercial plans and investment activities in a better way and provide cheap cost capital and financial service so as to give assistance in implementation of the complete solution of investment, plant construction and production, and hence many strategic consumers have a very earnest aspire in cooperating with us, the lively and local Chinese company. Tech-long American Subsidiary has indeed provided social contribution for the economy and labor employment where it is located.

Opportunity always favors those who are prepared. Only in a few years, the American Subsidiary has sold nearly 33 blow molding machine successively in America market, of which 15 machines are sold in American local market. In addition to equipment sales and technical service, we pay more attention to the market recognition to our professional skill and

Chinese brand; we meet differentiated demands of different customers with the best equipment and most excellent service, so as to earn the praise and trust from high-end customers and we have long-term cooperative strategic partnership.

As the only pacesetter of beverage packaging machinery industry in China, since we have absolute confidence in leading technologies, mass production capacity and after-sales service system of our company; upon the accumulation of successful experiences of North America subsidiary, Tech-Long established another wholly-owned subsidiary in Vienna, Austria in August 2016. We hire top professionals and sales elites for Europe with competitive salary and continue the practice of local market development and operations management so as to forge Tech-Long with a large international brand image, raise enterprise recognition and market share, further build the overseas sales network and regional distribution, deeply exploit regional market resources and strengthen the capability of localization quick service. Now the



American Subsidiary and Austria Subsidiary have formed the “Gemini” in the whole sales system of company, lighting and supplementing for each other.

Tech-Long always attaches great importance to industry information construction and rational utilization of resource. In recent years, with the development of each company business and for the purpose of reduce integrated operation cost and improve the organization execution efficiency, the company has appropriated large amount of special funds to upgrade and rebuild the existing information management system, and started up the top management information systems (SAP ERP and Weaver OA System) in the world so as to fully promote the enterprise operation and management efficiency. Through

several months’ technical construction and unremitting efforts of Special Team, the company grandly held the Initial Meeting for the Standard Implementation of Integrate Management of IT Application with Industrialization at the Marketing Building exactly at the last working day (December 30) of 2016; Xiao Liangyan, the Section Chief of the Economic & Information Commission of Guangdong Province, Zhou Zhiyong, Associate Consultant of the Economic & Information Commission of Guangdong Province and Wang Shu, the Section Chief of the Economic Development Administration of Guangzhou Development District were present and gave instructions; over 50 participants of our company attended the meeting, including Chen Gang, the Vice-president, Cheng Wenjie, Deputy General Manager, Zou Daqun, Chief Engineer, all



medium and senior managers and department representatives (part of employees on business trip learnt the meeting by watching the video).

At the Initial Meeting, the Vice President Chen Gang introduced the background of standard implementation of Integrate of IT Application with Industrialization, reviewed the history of information construction and emphatically introduced the prominent achievements in the process of information construction and information integration, including the research and development of intelligent equipment with functions of auto-adaptation, automatic adjustment and automatic decision, the foundation of remote operation and maintenance service platform, which covers multiple business data; the Vice President hoped the company can take the good opportunity standard implementation of integrate of IT application with industrialization according to the tentative standard of the Ministry of Industry and Information Technology of the People's Republic

of China, focus on the company strategy closely and forge the enduring advantage of intelligent manufacturing under the information age.

Furthermore, in order to guarantee the equipment parts of high quality, our company has invested over RMB one hundred million successively in the past years to build the "Precision Parts Machining Center", purchased several German and Japanese numerically-controlled machine tools of multiple functions to use for the processing and manufacturing of precision parts. Such large amount of investment under the stagnant business cycle highlights the comprehensive strength of Tech-Long and its great ambition for optimistic future prospect, which is unique in the same industry.

III. The Future has Come

The ambition shall be more determined through a few of trails and hardships; it's just the beginning of journey, we still have a long way to go. The achievements we acquired through arduous efforts in the past makes no indication that the way we forward is flat and unobstructed therefrom; facing such tough economic conditions, we shall be prepared for dangers in times of peace, always maintain the clear recognition and study and judge, strive to improve the prospect of enterprise management strategy, emphasize the concept of "people oriented", optimize the enterprise structure and build efficient organization to realize that the larger the enterprise is, the simpler structure and less hierarchy are.

"Survival of the fittest" is far from enough and



only the adaptable shall last forever. It is exactly the continuous improvement that makes Tech-Long today's achievements. Looking forward to the future, we shall continuously develop and search for breakthrough in self-negation; only by arriving at new boundary, shall we acquire more vitality and promotion to march towards higher platform. We shall cultivate the product leading capability, break the conventional thinking, and change the R&D environment and innovation mechanism to discover and create value and initiatively provide differentiated products and services.

Actively explore the "Belt and Road Initiatives" and "Go Global" strategies. Even though our products have been in used all over the four continents in nearly 90 countries and regions, it is still necessary to deeply exploit market and customer resources, maintain the current regional operation improvement and business growth, increase the global regional expansion, enter the strategic new market, enlarge the

proportion of overseas business to build an international system and marketing network.

A straw shows which way the wind blows; a wise man thinks in a long-term and thorough way. Based on the economy development pulse of future China even the world, the Board of Directors made a new resolution at the end of 2016, which is to establish the "Guangzhou Tech-Long Industrial Co., Ltd." (Capital injection of RMB 100 million). This wholly-owned subsidiary is mainly engaged in sales of existing company products and engineering service and other relevant businesses, establish a clearer management responsibility and assessment mechanism so as to improve the overall operation efficiency of listed company, promote the listed company for continuous and healthy development.

The subsidiary is now in the procedure of filing and registration in such departments as the State Administration of industry and commerce, State Administration of Taxation, State Administration of Foreign Exchange and General Administration of Customs, and is predicted to be open for business in February 2017. The new subsidiary will explore and refine the market in a unique operation mode, strive to provide differentiated product and technology service and forge to build an incubation platform for innovative technology; in the future, it is likely to acquire other advanced technologies of intelligent manufacturing and integrate various resources for the parent company and the subsidiary; it shall strengthen the product structure based on the collaboration of industrial technology and financial capital so as to promote the core competitiveness of



listed company, maintain the leading role in the industry and enhance the listed company for its sustained profitability.

Looking forward to the future, the company shall boost the transformation in depth. Facing the future of hardship and hope, we shall forge ahead over maintaining the strategic composure and we shall strengthen executive ability, make efforts and look forward, strive to break the development bottleneck. Next year is the 20th anniversary of Tech-Long and Tech-Long is in its primes, just like a youth, full of dreams waiting for us and calling us to maintain the important and leading position in the industry, to become the world famous brand and make our traditional products more advanced and more intelligent. We shall grasp the future trend with great concentration, embrace technical progress in active manner, improve the product and service quality and promote the industry for upgrading and updating;

we shall speed up the pace of “go global” so as to set a solid foundation for Tech-Long to realize the ambitious goal of “being practical, getting stronger and getting larger”.

A time will come to ride the wind and cleave the waves; I will set my cloud-white sail and cross the sea which raves. The future is coming; let's go together (in Chinese “17” have the same pronunciations as “Yiqi”, which means “together”); let's attach our hearts to each other and march forward courageously to build a wonderful life together; live up to the opportunities, challenges and honors endowed by the age and create more excellent achievements as a gift represented for the company's 20th birthday!

专注品质 将工匠精神注入智造时代

Focusing on Quality and Adopting Craftsmanship Spirit in the Era of Intelligent Manufacturing

在刚结束不久的全国两会会议上，李克强总理提出了“工匠精神”，鼓励企业开展个性化定制、柔性化生产，培育精益求精的工匠精神，增品种、提品质、创品牌。倡导企业提升服务精神，智能制造不仅意味着智能化程度的提升，还应从客户的角度出发，在现有的认知范围内尽可能满足其个性化需求。





2017年，“工匠精神”备受关注，它被写入国家发展的重要规划，成为时代的呼唤。这对于坚持“以技术研发创新为主导”、“以质取胜”的达意隆来说，是认可，更是机遇。对达意隆而言，工匠精神不单是一种理念、态度和传承，更是一种全面植入企业研发、制造、营销、服务和文化等各个环节的基因。新形势下，百舸争流，站在时代的风口浪尖，达意隆再度以领导者的地位，阐释着工匠精神内涵。

以匠运心 以始为终

自改革开放以来，中国迅速崛起为全球制造业的翘楚。三十年的快速发展，中国企业给了世界一副急速奔跑的形象，从工业1.0飞奔入工业4.0的大时代里，日益加快的现代化进程缩短了各种技能的“有效期”，新的社会分工不断出现，这是一个冒险家的乐园，而不是一个工匠的田园。人们在某一领域的坚守和潜心变得不易，很多企业追求市场利益最大化，采取牺牲质量求利润，速度为王、无序竞争、破坏人类的自然环境等问题鳞次栉比。

毫无疑问，时代需要工匠精神的回归。但“工匠精

神”并不是可以移植的，它是长期积累、传承形成的文化传统，达意隆自成立之初就确定了“专注品质”的初心和方向，在产品质量参差不齐的机械制造行业，达意隆始终重“讲究”，不“将就”，将技术创新作为主要的驱动力，精益求精，造最好的产品，做最好的服务！

与时偕行 以“质造”筑“智造”

工匠精神是品牌延续的灵魂产物。它不仅是对品牌的严格要求，更是在心中对产品和品牌一种坚持不懈的信念，不论遇到挫折或是诱惑，即使在时代变迁中也能找准定位。

追求卓越品质是工匠精神的根本，也是达意隆历经16年快速成长的支柱和核心。当下，为满足智能时代下的企业应用需求，达意隆致力于通过研发创新产品和一流的专业知识，以智能的方式涵盖工厂全生命周期。智造时代，以质为本。从实验研究、工艺设计，到生产制造、设备供货、组织施工、客户保障、配件供应、客户培训，每一环节达意隆都将始终追求产品过程中的最佳品质：



研发创新

达意隆高度重视研发，拥有雄厚的科技研发技术和优秀的专业化人才，从事研究开发人员达364人，占职工总数的25.89%。目前公司累计申请相关专利300多项，每年开发出3到5项新产品，相继获得“国家标准起草单位”、“国家级企业技术中心”等多项殊荣。多年来，达意隆始终把提高企业自主创新能力作为实现可持续发展的突破口，并为此成立了专门的研发中心与质检机构，通过建立国家级企业技术中心，形成科学技术研发体系，致力于为客户研制安全、可靠、智能、高效的全面解决方案。

生产制造

达意隆是ISO9001国际质量体系认证、欧盟CE认证的包装机械制造商。多年来，自主研发生产了多个创新产品，并填补了多项国内技术空白。这其中，为有效增加生产制造能力，达意隆始终持续在增加加工设备数字化、自动化方面的投入。完善的质量控制流程、先进的检测设备、一流的加工设备，达意隆能为国内、外客户提供全面的、高精度的零件加工及整机制造服务。未来，达意隆将不断增加对加工设备数控化、自动化方面的投入，持续以精益生产管理，建立严格、高标准、系统化的产品生产体系，为客户提供始终如一的高品质产品。



质量管理

完美的品质保证源于严谨的质量控制。达意隆拥有质量检测中心正式成立，是迄今为止同行业中检查手段最先进，设备最齐全，项目最齐备的检测中心，能准确地向技术人员提供参考数据，科学选择最适合材料和配件，从而有效地控制零部件的质量关；同时向技术、品质人员提供数字信息，从多方面确定零件加工后的可行度。

用户保障

为了更好的服务于全球各地客户，近年来，达意隆逐步把营销网点、售后服务逐渐本土化，至今为止，已经铺设多处服务网点为客户提供全面的服务渠道与高效的设备维护。同时，达意隆以客户需求为中心，通过开设新实训中心、为客户储备培养技术人员、改革项目服务、区分管理工程服务等系列服务新举措为客户带来前所未有的价值体验。

经济新常态下，各界对于产品质量的关注，激促企业精益求精，并以创新的思维完成对“中国制造2025”大战略的推动。达意隆也将以集成创新和系统创新的物联网思维，不断继承和延伸工匠精神的内涵，将工匠精神，注入智造时代。

At the recently-concluded NPC and CPPCC meetings, Premier Li Keqiang advanced craftsmanship spirit, indicating that the government encouraged enterprises to carry out customization and flexible production and to cultivate excellence-seeking craftsmanship spirit, so as to expand their product categories, improve quality and create well-reputed brands. The government also advocates enhancement of service spirits. Intelligent manufacturing not only means high level of smart production, but also means thinking from the perspective of clients and satisfying their individual needs as much as possible within the current range of knowledge.

The term "craftsmanship spirit" attracts much attention in 2017. It is included in the important planning for national development and becomes the call of the era. For Tech-Long, a company that adheres to "focus on technological research and development and innovation" and "assuring success by quality", craftsmanship spirit means recognition and opportunities. Tech-Long believes that craftsmanship spirit is more than a concept, an attitude or a legacy. It is a gene that is comprehensively embedded in R&D, manufacturing, marketing, service, corporate culture and every other link of an enterprise. Under the new circumstances of fierce competition and facing challenges of the new era, Tech-Long will elaborate the connotation of craftsmanship spirit as the leader of the industry.

Keep Exquisite, Stay True to Ourselves

China has risen rapidly since the reform and opening-up and becomes a great power in global manufacturing. During these three decades of



rapid development, Chinese enterprises leave the world an impression of fast development. When China is dashing from Industry 1.0 to Industry 4.0, the accelerating process of modernization shortens the “validity period” of various skills. New divisions of labor emerge one after another. Manufacturing in China becomes a paradise for adventurers instead of craftsmen. It becomes difficult for those who are willing to devote themselves in this industry. Many enterprises seek maximum market profits by sacrificing quality. Many problems arise one after another, such as giving priority to speed, disordered competition and damage of natural environment.

It is undoubted that this era requires return of the craftsmanship spirit. This spirit, however, cannot be transplanted. It is a cultural tradition that comes into form after long-time accumulation and inheritance. It has been the very beginning mind and direction of Tech-Long to “concentrate on quality” since its establishment. In the industry of machinery manufacturing where product quality is uneven, Tech-Long has been attaching great importance to “exquisite workmanship” and will not make do with what it has. Regarding technological innovation as its major driving force, Tech-Long will continue pursuing excellence to provide best products and best services to its clients.



Keep in Pace with the Time and Realize Intelligent Manufacturing through Quality

Craftsmanship spirit is the soul of a brand. It represents not only the strict requirements for the brand but also a belief of persistent perfection of the products and the brand. With this spirit, in the face of setback or temptation, an enterprise will be able to find its position despite change of the time.

The essence of craftsmanship spirit is pursuit of excellent quality, which is also the core belief and the pillar that supports 16 years of rapid development of Tech-Long. Nowadays, in order to meet the application demands of enterprises in this smart era, Tech-Long is dedicated to applying smart technologies to whole life cycle of plants through product R&D and innovation and development of first-rate expertise. In the era of intelligent manufacturing, Tech-Long will continue to be quality-oriented. It will always pursue best quality throughout every link of production from experiment and research, process design to manufacturing, equipment supply, construction organization, customer assurance, part supply, and client training.



R&D and Innovation

Tech-Long pays high attention to R&D. It has a strong R&D technical strength and excellent professional talents. As many as 364 employees are engaged in research and development, accounting for 25.89% of the total staff. Tech-Long has applied for more than 300 patents in total by now. It develops three to five new products every year. It has won many honorary titles including "National Standards Drafting Unit" and "State-Level Enterprise Technology Center". For years Tech-Long always regards





improvement of its independent innovation ability as the breakthrough to realize sustainable development. For this purpose, it sets up an R&D center and quality inspection lab. During establishment of the state-level enterprise technology center, Tech-Long develops its scientific technological R&D system and is dedicated to providing customers with safe, reliable, smart and highly-efficient all-round solutions.

Manufacturing

Tech-Long is a packaging machine manufacturer whose products have obtained ISO9001 International quality system certificate and European Union CE Certificate. It has independently researched and developed many innovative products and filled in several technological gaps in China. In order to effectively enhance its manufacturing capability, Tech-

Long continues to increase investments in digital control and automation of processing equipment. With a complete quality control flow, advanced test equipment and first-rate processing equipment, Tech-Long will be able to provide domestic and foreign clients with comprehensive and high-precision part processing and machine manufacturing services. In the future, Tech-Long will continue to increase its input in digital control and automation of processing equipment, stick to lean production management and establish a strict and systematic production system of high standard, so as to provide clients with high-quality products as always.

Quality Management

Perfect quality assurance derives from rigorous quality control. The quality inspection center of Tech-Long is so far the most advanced and fully-equipped inspection center capable of most



complete inspection items in the industry. It will provide technical personnel with accurate reference data, so that they will scientifically select most suitable materials and accessories to effectively control the quality of parts and components. Meanwhile, the center will provide technical personnel and quality assurance personnel with digital information to enable them to evaluate usability of processed parts from multiple aspects.

User Assurance

To better serve the clients all around the world, Tech-Long gradually localizes its marketing outlets and after-sale service in recent years. It has established many service outlets to provide clients with a comprehensive service channel and highly-efficient equipment maintenance service. Meanwhile, centering on client demands, Tech-Long brings clients with unprecedented

value experience through a series of new actions, such as setting up a new practical training center for better instructing and training technical personnel and establishing a talent pool for the clients, reforming project-based services with separated management services and engineering services.

Under the “new normal” economic situation, as people from all walks of life pay much attention to product quality, enterprises are driven to keep improving and to promote execution of the “Made in China 2025” strategy with innovative thinking. Tech-Long will utilize the thinking of network of things featuring integration innovation and system innovation and constantly pass down and extend the meaning of craftsmanship spirit to infuse this spirit into the era of intelligent manufacturing.

SHOW出高端品牌 展现智造之魅

**EXHIBIT OUR HIGH-END BRAND AND
SHOW THE CHARM OF INTELLIGENT
MANUFACTURING**



达意隆携强大阵容闪耀Chinaplas 2016

Powerful Line-up of Tech-Long Exhibits at Chinaplas 2016



溢彩三十 呈现未来

2016年4月25-28日，第三十届CHINAPLAS 2016国际橡塑展在上海浦东国际新馆隆重举行，本次展会以“绿塑创新，智造未来”为主题，再一次创举了国际橡塑业界的行业盛事。今届展会亮点频爆，无论展品还是配套活动，均以创新、自动化及环保科技为主线，贯穿不同应用行业及产品生命周期的每一环节。世界知名材料及设备供应商因势而动使出“杀手锏”，携全球领先解决方案，共同“塑”造美好未来，开启时代新篇章。

据不完全统计，本次展会参展观众共计148,575，其中海外观众占：39,454 [26.55%]。

谋智造·亮未来

作为中国高端液态包装机械领导者，达意隆携手广州一道、广州晶品、香港雅琪等多家实力企业，以豪华阵容闪耀登场CHINAPLAS 2016，分别在W4馆J41展位与E5馆J41展位，向世界充分展示了中国民营企业的精诚合作。

展会期间，整个达意隆展台现场人头攒动，往来参观者络绎不绝，达意隆领军者的品牌光芒也闪耀绽放。W4馆J41展位上，洗衣液自动化生产整线成为观众瞩目的焦点，从挤塑吹瓶机、机械手理瓶机、流量计灌装机、视觉贴标机到全自动高速装盒机，整条自动化生产线设备的稳定连续运行成为本次展会一道靓丽的风景，“智造工厂，智能技术”的理念彰显无疑，达意隆包装技术的领军地位再一次展示在世人面前。达意隆表示，很高兴能通过本次展会向世界诠释以智能的方式涵盖工厂全生命周期。在工业4.0的大环境中，面对日益苛刻的生产要求，达意隆将帮助企业降低成本和提高运营效率，积极应对今天的各种挑战并将挑战转化为机遇，以自动化系统完美契合客户工厂运营的需求，用最好的方式为客户提供面向未来的解决方案。

亮点纷呈 缤纷不断

在E5馆J41展位上，达意隆联袂广州一道，向观众展示了从“注塑”到“吹瓶”的过程。多年来，达意隆的吹瓶设备一直走在技术创新领域的前端，本

次展出的五代吹瓶机更是具有创新的设计理念和高速稳定的吹瓶性能，在吹瓶效率和降低能量消耗方面有着卓越表现。注塑与吹瓶的同台演绎更是吸引了很多观众的驻足、围观、洽谈。高新的设备技术，连续稳定的设备运行，实力的完美展现让来自世界各地的客户赞叹不绝。

值得一提的是，达意隆还展示了PET瓶模具。基于精益求精的优越机械加工技术，达意隆用最先进的CNC设备加工特殊的合金材料，可生产出适用于所有旋转式吹瓶机的模具。达意隆PET模具可满足最严苛的速度需求，所有模具均经过测试，可更好地配合与保护产品。

因势而谋 每一步都是未来

变的是时代，不变的是创新。达意隆表示，在新的

工业环境下，惟有不断挑战技术和服务的极限、不断提升满足客户需求的能力才能让企业迈向更高层次。未来，达意隆将始终聚焦优势，在优势的资源上不断技术创新；聚焦坚持，在高速的发展中坚持优质服务。相信，每一步都是未来！

Green Innovation for a Better Future

From April 25 to 28, 2016, the 30th International Exhibition on Plastics and Rubber Industries, CHINAPLAS 2016, was grandly held at Shanghai New International Expo Center (Pudong). Themed on "Greenovation for a Smart Future", this show was a grand occasion in the international plastics and rubber industries. At this exhibition, innovation, automation and green technology as the main line are demonstrated in the exhibits



and auxiliary activities of different application industries and every link of product life cycle. Many world-renowned material and equipment suppliers participated in this event and displayed their world-leading solutions. Jointly, they will create a better future and start a new chapter of the time through innovations in the plastics industry.

According to statistics, this exhibition received 148,575 visitors, including 39,454 foreign visitors, accounting for 26.55%.

Intelligent Manufacturing for a Brighter Future

As a leading high-end liquid packaging

machinery manufacturer in China, Tech-Long, together with Guangzhou Unique, Jeepine, AKEI Holdings, participated in CHINAPLAS 2016 as a member of the luxury exhibitor delegation. At Booth J41 in Pavilion W4 and Booth J41 in Pavilion E5, they showed the world how Chinese private enterprises sincerely cooperated with each other for mutual success.

During the show, visitors crowded the booth of Tech-Long. The brand of Tech-Long as the leader in the field starred the exhibition. At Booth J41 in Pavilion W4, the automated laundry detergent production line became the focus of the visitors. The complete automated production line equipment from stretch blow molding





machine, bottle unscrambler, filling machine, visual labeling machine to fully automatic high-speed case packer, caught the eyes of visitors with steady and uninterrupted operation. It undoubtedly demonstrated the concept of “intelligent manufacturing plant and smart technologies”. Tech-Long showed the world its leading position in packaging technology. According to its spokesman, Tech-Long was glad to show the world how smart technology was applied to whole life cycle of plants through this exhibition. In the context of Industry 4.0 and in the face of increasingly demanding production requirements, Tech-Long will help clients to cut costs and improve operation efficiency to actively meet various challenges of today and turn the challenges to opportunities. It will supply automation systems that meet satisfy clients’

requirements for plant operation and provide clients with future-oriented solutions in best ways.

Highlights

At Booth J41 in Pavilion E5, Tech-Long, together with Guangzhou Unique, showed the visitors the process from injection molding to bottle blowing. Tech-Long has been taking the lead in technological innovation of blow molding machine for years. The G5 blow molding machine displayed at the exhibition impressed the visitors by its embodiment of the innovative design concept of Tech-Long, high-speed and steady performance, and excellent performance in efficiency and low energy consumption. Many visitors were attracted by the performance of injection molding and bottle blowing together.



Some even sat down for business discussion. Clients around the world highly appraised the machine for its high technology, continuous and steady operation and perfect demonstration of its strength.

It is worth mentioning that PET bottle moulds of Tech-Long were also displayed at the show. Based on superior machining technology, Tech-Long utilizes the most advanced CNC equipment to process special alloy material to produce the moulds applicable to all rotary blow molding machines. PET moulds of Tech-Long are able to meet the strictest speed requirement. All moulds are tested to better match with the machines and protect the products.

Basing on Current Situation and Making Plans for the Future Development

Innovation runs through every era. Tech-Long believes that an enterprise will progress only through constant push of technological and service limits and upgrade of its ability to meet client's demands under the new industrial environment. In the future, Tech-Long will focus on its strong points and stick to its very beginning mind as always. It will utilize advantageous resources to achieve constant technological innovation and adhere to quality service during high-speed development. We believe that each step we take will lead us to a brighter future!

达意隆再次入选广州开发区、 黄埔区2015年度专利创造20强企业



为表彰先进、树立典型，加快知识产权强区建设，促进区域专利事业跨越式发展。2016年3月30日，在广州开发区、黄埔区科技创新和人才工作会议上，区内专利创造20强企业受到了隆重表彰。

达意隆继2012之后，再次入选广州开发区、黄埔区专利创造20强企业。为不断提升自主创新能力，达意隆在持续加大研发投入的同时，不断通过自主知识产权的保护，提升行业竞争力。截至2016年3月底，累计申请专利646项，其中国际专利8项，发明专利254项。累计授权专利380项，其中发明专利96项，实用新型专利280项，稳居行业首位。

目前，达意隆在知识产权方面的工作得到了国家、省、市、区各级主管部门的认可，获得中国专利优秀奖3项，广东省专利金奖1项，广州市专利优秀奖

1项，并先后被评为广东省知识产权示范企业和国家知识产权优势企业。未来，达意隆将再接再厉，进一步提升企业技术实力，打造企业核心竞争力，在自主创新领域再上新台阶，为促进中国包装装备行业发展贡献力量。

In order to appraise the outstanding enterprises and set a good example for other enterprises, to accelerate construction of strong zone in intellectual property rights and to promote leap-forward patent development, Top 20 enterprises in patent development were appraised at the scientific and technological innovation and talent work meeting of Guangzhou Development Zone and Huangpu District on March 30, 2016.

Tech-Long is Selected as One of the 2015 Top 20 Enterprises in Patent Development of Guangzhou Development Zone and Huangpu District

It was the second time that Tech-Long was selected as one of the Top 20 enterprises in patent development of Guangzhou Development Zone and Huangpu District after 2012. In order to upgrade its ability of independent innovation, Tech-Long constantly improves its competitiveness in the industry through protection of proprietary intellectual property rights while increasing its investment in R&D. By the end of March 2016, Tech-Long had applied for 646 patents in total, including 8 international patents and 254 patents for inventions. It licenses 380 patents in total, including 96 patents of inventions and 280 patents of utility models, ranking the top in the industry.

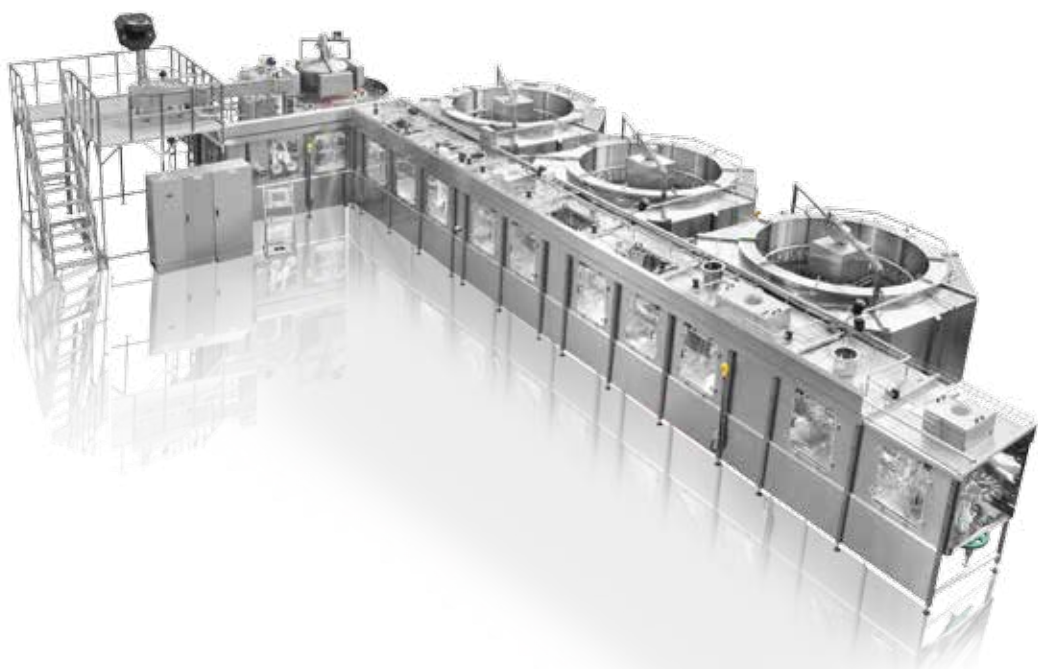
Tech-Long's work in protection of intellectual property right is recognized by authorities at

national, provincial, municipal and district levels. It has won three China Excellent Patent Awards, one Guangdong Province Patent Golden Award, and one Guangzhou City Excellent Patent Award. It has also been awarded the titles of Guangdong Province Model Enterprise of Intellectual Property Right and National Competitive Enterprise of Intellectual Property Right. In the future, Tech-Long will continue its unyielding efforts to further enhance its technological strength, improve its core competence, and promote its independent innovation to a higher level, so as to make its contributions to the development of packaging equipment industry in China.

Text by: Yu Lutao

实现更可靠的无菌灌装

东鹏特饮公司投资引进达意隆新型高速无菌吹灌旋设备



这套达意隆无菌吹灌旋设备是东鹏饮料引入的全套36000瓶/小时吹灌旋生产线的组成部分，安装在该公司安徽省新建工厂，作为高技术解决方案，用于生产东鹏特饮功能性饮料。根据东鹏饮料发展规划，该项目顺利投产后，将会在全国其余工厂分布推进该生产线。

成功实施达意隆技术方案

此台达意隆无菌灌装机组采用模块化设计，将消毒机、冲瓶机、灌装机和旋盖机组合成五合一机组(100x100x100x72x18)。五合一机组采取吹灌旋的联机方式，直接与前段吹瓶机连接，吹制完成后的

瓶子再直接通过星轮传递到灌装主机，无须经过风道，降低能耗和节省场地的同时也避免了传输过程中的二次污染。利用隔离罩将机台面以上部分全密封，采用符合卫生标准的平台结构。冲瓶机采用插入式喷嘴，可进行多次无菌水冲洗、沥干，使得残留浓度小于0.5ppm。灌装阀采用非接触式流量计式定量灌装，有效防止二次污染。采用进口灌装阀专用电磁流量计，计量精度高；设置有自动假杯机构，在CIP清洗和SIP灭菌时自动装上。旋盖机采用恒扭矩式旋盖头。旋盖前用无菌水冲洗瓶螺口，旋盖后用无菌水对瓶外表进行冲洗。采用夹瓶口输送方式，其特点在于灌装两种不同的瓶子时，若瓶口尺寸相同，便无须更换瓶型件，从而减少停机时间。

A More Reliable Aseptic Filling Technology

Eastroc Beverage Introduces in the New High-Speed Aseptic Blowing-Filling-Capping Monobloc of Tech-Long



无菌灌装保障

- 设备表面清洁与灭菌
- 物料的灭菌与储存
- 环境净化与灭菌
- 介质的灭菌
- 包装容器的灭菌与清洗
- 瓶盖的灭菌与清洗
- 管路的清洁与灭菌



无菌灌装技术

- 非接触式灌装，防止二次污染
- 隔膜阀控制开关，确保灌装的卫生
- 电磁流量计定量灌装，计量精度 $\pm 0.2\%$
- CIP假杯自动安装
- 上下均设有液封装置，确保灌装区域的净化等级
- 旋盖机卫生型设计，可冲洗



Eastroc Beverage introduces in this new Tech-Long aseptic blowing-filling-capping monobloc as a part of its 36 000BPH complete line. Erected in the new plant of Eastroc Beverage in Anhui Province, this hi-tech solution is used to produce Eastroc Super Drink. According to the development plan of Eastroc Beverage, when the plant is successfully put to use, this production line will be duplicated to its other plants step by step in nationwide.

Successful implementation of Tech-Long's Technical Solutions

Tech-Long adopts modular design for this aseptic filling machine to integrate, two sterilizers, one rinser, one filler and one capper into a whole unit bloc(100x100x100x72x18).Integrating

blowing, filling and capping, this five-in-one filling machine is directly connected to blow molding machine in the front part. Bottles are directly conveyed to filling machine through star wheel without going through the air conveyor. In this way, the machine saves energy and space and prevents secondary contamination during conveying. Isolating enclosure is used to seal the parts above working table, whose structure conforms to relevant hygienic standards. For rinser, insert-type nozzles are used. It can repeatedly rinse bottles with sterile water and dry them so that the residual concentration will be lower than 0.5ppm. Contactless flow meter-type filling valves are used for volumetric filling, so as to effectively non-contact secondary contamination. Imported filling valve-specific



electromagnetic flow meters of high accuracy are used. Automatic fake cup mechanism is provided, which will be automatically installed during CIP cleaning and SIP sterilizing processes. For the capping machine, constant-torque capping head is used. Before capping, bottle neck is rinsed with sterile water. After capping, the outside of the bottle is rinsed with sterile water. Bottles are conveyed by neck grip. When it needs to fill different bottle sizes with same neck, there is no need of bottle change over, so as to reduce machine stop time.

Assurance of Aseptic Filling

- Cleaning and sterilizing equipment surfaces
- Sterilizing and storing filling materials
- Purifying sterilizing filling environment

- Sterilizing associated media
- Cleaning and sterilizing packaging containers
- Cleaning and sterilizing bottle caps
- Cleaning and sterilizing all pipelines

Aseptic Filling Technology

- Non-contact filling to prevent secondary contamination
- Diaphragm valve control to ensure filling hygiene
- Electromagnetic flow meter for volumetric filling, with an accuracy of $\pm 0.2\%$
- Automatic installation of CIP fake cups
- Liquid seal devices on both upper and lower parts to ensure purification of the filling area
- Washable capping machine of hygiene design

Text by: Zheng Lishen

达意隆超洁净整线设备在重庆品正顺利投产

Tech-Long Ultra-Clean Complete Line is smoothly put into operation in Chongqing Pinzheng





这套超洁净吹灌旋设备是重庆品正引入的达意隆24000BPH吹灌旋生产整线的组成部分，灌装主机采用模块化设计，将消毒机、冲瓶机、灌装机和旋盖机组合成四合一机组(60x60x50x15)。项目设备安装于重庆璧山区客户新建工厂，用于生产宜简苏打水。

超洁净配置 无菌要求

为了使无菌生产技术得到更广泛的应用和发展，为产品定制更高性价比的生产工艺，达意隆在无菌线核心技术应用的基础上推出了超洁净灌装工艺（超洁净冷链工艺、超洁净常温工艺、超洁净中温工艺）。此次项目采用的是超洁净常温工艺：利用无菌灌装的微生物控制技术，以严格的消毒工艺，在20~35℃常温百级环境下对产品进行灌装，以保证产品在灌装过程中不受外部因素的污染。目前，该项目已经顺利通过无菌微生物认证并顺利投产，连续生产周期高达72小时以上。

常温灌装、无添加防腐剂、长货架期

该项目产品为弱碱性苏打水，产品PH值 ≈ 7.5 。在常温状态下进行灌装，可最大限度的减少饮料的受热时间，保持产品的原汁原味。同时，在不添加任何防腐剂的情况下，产品保质期长达12个月。

包材成本低、设计多样化

值得一提的是，超洁净常温灌装技术突破了热灌装的设计局限，瓶型设计不需考虑耐热因素，可实现包装材料外形设计多样化和轻量化，减轻瓶重，精简成本。

扩展应用

超洁净常温灌装不仅能应用于苏打水等弱碱性饮料，同样还适用于高、低酸性的饮料（如宝矿力、脉动等维生素功能饮料）。



As a composition of Tech-Long 24000BPH blowing-filling-capping production line introduced by Chongqing Pinzheng, this ultra-clean blowing-filling-capping monobloc is of modular design (60x60x50x15), integrating the functions of sterilizer, rinser, filler & capper. This production line is installed in the new plant of Pinzheng Company in Bishan District, Chongqing, and is used for packaging of Yijian soda water.

Ultra-clean Configuration to Meet Sterile Requirements

Tech-Long develops the ultra-clean filling process (ultra-clean cold filling process, ultra-clean ambient filling process and ultra-clean warm filling process) on the basis of application of the core technology of sterile production line,

for the purpose of more extensive application and development of sterile production technology and customization of more cost-efficient production process. For this project, ultra-clean ambient filling process is adopted. Microbial control technology of sterile filling and strict sterilization process are utilized for filling under one-hundred grade environment at ambient temperature of 20~35C°, so as to prevent pollution of the product during filling.

Now the project has successfully passed the sterile microbiological certification and put into operation. Its continuous production cycle is as long as 72 hours.



Ambient filling, zero preservatives and long shelf life

This project is used to produce weakly-alkaline soda water, whose pH value is around 7.5. Products are filled at ambient temperature to minimize the heating time of the beverage and maintain its original flavor. Meanwhile, the shelf life of the products is as long as 12 months, without addition of any preservative.

Low Cost of Packaging Materials and Diversified Design

It is worth mentioning that the ultra-clean ambient filling technology breaks the design limits of hot filling. Thermo-tolerant factors may not be considered during bottle shape

design. Packaging materials can be diversified in appearance design and light to reduce bottle weight and cut costs.

Expansion of Application

Ultra-clean ambient filling technology is applied not only to weakly-alkaline drinks like soda water but also to highly-acid and weakly-acid drinks (vitamin energy drinks such as Pocari and Mizone).

Text by: Zheng Lishen

达意隆荣获“中国专利优秀奖”与“广东省专利金奖” Tech-Long Wins “China Excellent Patent Award” and “Guangdong Province Patent Golden Award”



近日，达意隆荣获了“中国专利优秀奖”与“广东省专利金奖”两项殊荣。

其中，“一种星轮盘传动机构及其装配方法”荣获第十七届中国专利优秀奖，是达意隆继第十三届“瓶胚加温风流通系统”及第十六届“一种酱油灌装机”后第三次荣获此殊荣的发明专利。该项发明设计、结构简单，性能可靠，既能提升装配速度与精度，又能使星轮盘传动机构更平顺准确地对瓶子进行过渡、传送。应用了本专利的饮料灌装设备得到香港太古可乐、安徽松源、海南农垦、中工国际、熊津食品以及国外等客户的一致好评。

而后，达意隆的“用于吹瓶机的模架开合和底模升降的联动机构”（专利号：ZL201210477944.9）被拟授2016年广东专利金奖项目。该专利技术的运用将为达意隆吹瓶机带来诸多益处：第一，模具的开合运行实现了内部独立联动，不受整机振动影响，更容易保证配合精度，提高运动关联性和稳定性，提升吹瓶机的单模产量（单模产量由1800瓶/小时提高

至2400瓶/小时，达到世界领先水平）；第二，降低生产能耗（节能约10%-15%）；第三，有效减少吹瓶机体积，提高生产车间的空间利用率（减少近10%）；第四，可大幅度降低噪音强度与震动，噪音由90dB降低到83dB，滚轮运行的线速度由6.91米/秒下降至1.73米/秒，提高滚轮与相应部件的使用寿命；第五，降低相应部件的制作、工艺、以及安装难度，进一步降低生产成本。这是达意隆继今年发明专利入选国家专利优秀奖后又一重要突破，进一步体现了强大的新技术新产品研发实力及知识产权保护力度。知识产权是企业翘首行业的坚盾，也是挤压同行竞争对手的又一利刃。

长期以来，达意隆对技术创新、研发投入及知识产权保护都给予了高度重视。目前达意隆共获得过中国专利优秀奖3项、广东省专利金奖1项，广州市专利奖1项，是国家知识产权优势企业、广东省知识产权示范企业之一，也是广州市开发区专利创造20强企业。

Tech-Long won "China Excellent Patent Award" and "Guangdong Province Patent Golden Award" recently.

Its "star wheel transmission mechanism and its assembly method" won China Excellent Patent Award at the 17th China Patent Awards. It is the third invention of Tech-Long that wins this honor after its "bottle pre-form heating and ventilation system" at the 13th China Patent Awards and its "soy bean sauce filling machine" at the 16th China Patent Awards. This invention is of simple design and structure but reliable performance. It improves assembly speed and accuracy as well as enables the star wheel transmission mechanism to smoothly and accurately convey bottles. this invention is highly appraised by Swire Coca-Cola Hong Kong, Anhui Songyuan Co., Ltd., Hainan State Farms, CAMCE, Woongjin Foods and many overseas clients.

Later, it was proposed to grant Tech-Long the 2016 Guangdong Province Patent Golden Award for its "linkage used for opening and closing of mould base and lifting of bottom mould of blow molding machine" (Patent No.: ZL201210477944.9). The application of this patented technology greatly benefits the blow molding machine of Tech-Long. First, it enables internal independent linkage of mould opening and closing. It is easier to ensure accurate fit without vibration effect of the equipment, so as to improve movement connectivity and stability and increase single-mould output of the blow molding machine (the output increases from 1800BPH to 2400BPH, reaching the

world leading level); second, it reduces energy consumption for production (energy saving by 10%-15%); third, it effectively reduces the volume of the blow molding machine and increases space utilization (by nearly 10%); fourth, it may effectively reduce noise strength and vibration. Noise is reduced from 90dB to 83dB and linear speed of roller drops from 6.91m/s to 1.73m/s. In this way, of the roller and corresponding components are prolonged; fifth, it makes the fabrication, process and installation of relevant components easier, so as to further cut production costs. It is another major breakthrough of Tech-Long after its invention wins China Excellent Patent Award this year. It further reflects the strong strength of Tech-Long to research and develop new technologies and products as well as its strength in protection of intellectual property right. Intellectual property right is the shield to ensure an enterprise takes a leading position in the industry as well as a powerful weapon to defeat its competitors.

Tech-Long has always paid great attention to technological innovation, R&D and protection of intellectual property rights. So far, Tech-Long has won three China Excellent Patent Awards, one Guangdong Province Patent Golden Award, and one Guangzhou City Patent Award, rendering it one of the National Competitive Enterprise of Intellectual Property Right, Guangdong Province Model Enterprise of Intellectual Property Right and Top 20 Enterprise of Patent Development of Guangzhou Development Zone.

Text by: Cao Xiaohong

达意隆SAP ERP/OA项目成功启动



2016年7月19日上午，达意隆重召开了SAP ERP/OA项目启动大会。达意隆、汉得、泛微各公司领导及项目顾问等八十余人出席了会议。

为实现“降低企业运营成本、提升企业组织执行效率”的企业信息化战略，公司决定对现有的管理系统进行升级，启动世界顶级的管理信息系统SAP ERP/OA。

会议由公司信息技术部负责人徐永佳主持。达意隆、汉得与泛微公司各项目经理就达意隆项目目标、项目范围及计划、实施项目组织结构及管理办法等工作内容分别做了介绍。上海汉得领导发表讲话，表

示将全力支持达意隆SAP ERP/OA项目，共同推进达意隆健康、持续发展。

会上，公司运营负责人张崇明先生就达意隆目前的发展现状做了阐述，强调了实施该项目的重要性。面对日趋激烈的市场竞争，加强信息化的管理就显得尤为重要。公司在管理上进行升级，SAP ERP/OA作为信息化管理的基石，在信息化管理中发挥着不可替代的重要性。以SAP ERP/OA为主线的信息化建设，是促进企业在管理理念、管理机制和管理能力等方面向先进水准看齐，实现管理水平的跨越和提升的重要途径。也是实现企业内部有效沟通、实时协作、资源有效配置的重要手段。

Successful Launch for Tech-Long SAP ERP/OA Project



On the morning of July 19th, 2016, Tech-Long held the SAP ERP/OA Project Launch Conference. Over 80 persons from Tech-Long, Hand, Weaver, etc., attended the conference.

In order to reduce operation cost and improve the execution efficiency”, Tech-Long has determined to upgrade the current software and introduce the top level information system SAP ERP/OA.

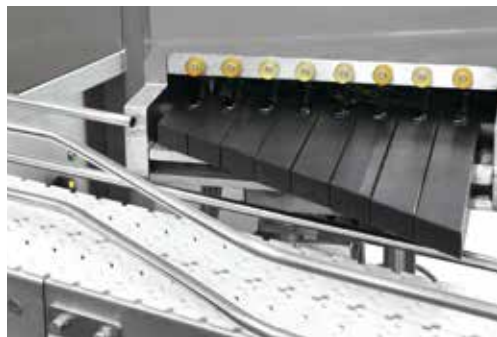
The conference was hosted by Xu Yongjia, Director of IT Department. The project managers from Tech-Long, Hand and Weaver introduced the objective of Tech-Long project, scope and plan, organization structure for project implementation and the management regulations. The leader of Shanghai Hand gave a speech and expressed to give full support to Tech-Long SAP ERP/OA Project, and to be willing to jointly promote the healthy and sustainable development of Tech-Long.



On this conference, the operation director of Tech-Long Zhang Chongming introduced the current developing situation of Tech-Long, and emphasized the significance of project implementation. Facing the increasingly fierce competition in the market, to enhance the informationization management becomes more and more critical. As SAP ERP/OA is the foundation of informationization management, it plays an important and irreplaceable role in the upgrade of management. The informationization construction, with SAP ERP/OA as the core, is an important approach for the enterprise keeping pace with the advanced level in the aspects of management philosophy, management mechanism and management ability to achieve a leap development of management level. In addition, it is also an important measure to achieve effective communication, real time collaboration and effective configuration of resources within the enterprise.

Text by: Liu Luying

优化灌装技术 提高产品性能



近日,继为纳爱斯总部实施的首条高速洗洁精生产整线成功投产后,广州达意隆为纳爱斯分基地又顺利交付两条高速线。后继项目方案中,达意隆精益求精,在灌装技术上取得新突破,新技术效果显著,以超客户预期的性能完成项目。

优化灌装阀降低温度干扰

以往,物料灌装多采用电磁流量计定量灌装的方式,使用单速灌装阀。为了达到较高的灌装精度,需要限定物料流速。这种灌装方式对物料性状要求较高。物料受温度变化容易产生性状改变,高温处于拉丝状态,低温处于结晶状态。针对这一问题,达意隆对灌装阀进行了优化改进,首先采用双速(快慢)灌装阀,快速灌装可以节省灌装时间,慢速灌装可以提高灌装精度;其次,增加了回吸功能,有效减少拉

丝现象;另外,优化了灌装机物料罐结构,在不同温度下可以调整灌装压力,从而减少物料性状变化所带来的影响,有效的解决了温度干扰问题。

同步螺杆传输技术避免产品溢出

洗洁精灌装后,瓶子的液位很高,在高速输送时容易溢出。此前项目中,达意隆将灌装机、各级输瓶带、旋盖机采用联动方式,虽有效解决产品溢出的问题,但程序较为复杂,尤其在控制方面要求极为细致严谨。新项目采用同步螺杆传输技术,是在灌装出瓶星轮与旋盖进瓶星轮之间使用螺杆进行同步传输瓶子,这种传输方式中,瓶子始终保持固定间距,不会发生挤压、碰撞现象,从而可有效避免产品在旋盖前输送过程中的溢出现象。与之前的技术相比,同步螺杆传输技术不仅程序简易,并且在灌装机与旋盖机之间节省了大量的输瓶带,有效为客户节省了成本和空间,生产线的布置也更简洁美观。

提高灌装精度 节约客户成本

该项目还应用了达意隆新研发的称重定量灌装技术,取代之前的电磁流量技术。称重定量灌装技术使用了称重仪对产品进行定量灌装,采用双速灌装。终端测量能极大程度的提高灌装精度,为客户节约生产成本。

Optimize Filling Technology and Improve Machine Performance





Recently, Tech-Long delivered two high-speed production lines to the branch of Nice Group after its first high-speed dish washing detergent production line was successfully put into operation in the headquarters of Nice Group. In the proposal of this subsequent project, Tech-Long kept improving and achieved breakthrough in filling technology. The new technology produced remarkable effect and the performance of the project was more than customer's expectation.

Optimize filling valve to reduce temperature interference

In the past, electromagnetic flow meter and single-speed filling valves were generally for volumetric filling of materials. In order to achieve

high filling accuracy, it is required to control product flow rate. This filling method imposed high requirements on properties of the product, which, however, may be easily affected by the change of temperature. The product may be in wire drawing state under high temperature and be in crystalline state under low temperature.

To solve these problems, Tech-Long optimizes the filling valve. First, two-speed (fast and slow) filling valve is adopted. Fast filling can save filling time while slow filling can improve filling accuracy. Second, suction function is added to effectively reduce wire drawing. In addition, Tech-Long optimizes the structure of the material tank of the filling machine. Filling pressure can be adjusted according to different temperatures,



so as to reduce the influence of the change in product properties and effectively solve the problem of temperature interference.

Synchronic screw conveyance technology to prevent overspill

After filling of dish washing detergent, the liquid level is high and the product may overspill easily during high-speed conveyance. In previous projects, Tech-Long linked the filling machine, bottle conveyor belts at all levels and capping machine together. Though this method effectively solved the problem of product overspill, the procedure was complicated and it especially required careful and rigorous control. For the new project, Tech-Long adopts synchronic screw conveyance technology, which uses screw for synchronic conveyance of bottles between bottle outlet star wheel of filling and bottle incoming star wheel of capping. This conveyance method enables bottles to keep a constant distance without squeezing or collision, so as to effectively prevent product overspill during

conveyance before capping. Compared with previous technologies, the synchronic screw conveyance technology does not only have simple procedures but also saves an amount of conveyor belt between the filling machine and capping machine. It effectively saves costs and space for clients. In addition, the arrangement of the production line is much simpler and good-looking in appearance.

Improve filling accuracy and save client's costs

In this project, the newly-developed weighing and volumetric technology is also applied in place of previous electromagnetic flow meter technology. The weighing and volumetric technology utilizes a weighing instrument for volumetric of product and two-speed filling is adopted. Measurement at the terminal can greatly improve filling accuracy and saves production costs for the client.

Text by: Chen Nan

助学·筑梦·铸人

—记达意隆2016年爱心慈善行之贵州·安顺行



Educational Supporter•Dream Builder•Talent Cultivator

- Tech-Long's 2016 Charity Trip to Anshun, Guizhou





心中有爱，心系未来，达意隆在前进的路上时刻关注着贫困山区儿童，为他们加油，让他们勇敢的为梦想努力。

贵州省安顺市镇宁县本寨乡鱼凹村，在这个贫困落后，与世隔绝的山区，学校只有12位老师，274名学生，其中171名是留守儿童。也许只有努力学习，走出大山，勇敢飞翔，才能改变命运，追寻自己的梦想。

在达意隆运营负责人张崇明先生的带领下，达意隆慈善基金会每年资助2-4所贫困小学，7月9日，2016年慈善爱心行第一站，小组成员跋山涉水，远赴贵州省安顺市镇宁县本寨乡鱼凹村黄佩球希望小学，进行了为期四天的慈善活动。山路崎岖，颠簸不平，爱心行小组经历了层层山路，开车一路推推停停，深深感受到山区孩子的不容易。不管刮风下雨，日晒雨淋，他们每天凌晨6点徒步十几公里山路来学校上学，虽没有爸妈的守护，却依然坚持不懈，努力学习。



黄佩球鱼凹希望小学墙面斑驳，桌椅破烂，门窗破旧不堪，黑板坑坑洼洼，爱心行小组找人对学校进行了全方面的修缮，令学校的风貌焕然一新。除了给他们带来书包、文具、电脑、铁架床等等外，还给他们带来了精神食粮—书籍。爱心行小组成员鼓励孩子们努力学习，奋发进取，坚信知识改变命运，走出大山，回报家乡。看着他们一张张纯真灿烂的笑颜，一双双对未来充满期待的眼神，顿觉所有的努力和艰辛都是值得的。

爱，不止是物质的给予，更是精神的传递！





We have love, we care our "future". on the road of progress, Tech-long keeps focusing on the children in poor areas and encourage them to bravely seek their dream.

In Yu'ao Village, Benzhai Town, Zhenning County, Anshun City, Guizhou Province, an impoverished and isolated mountain area, there are only 12 teachers, who are responsible for teaching 274 students, among whom 171 are left-behind children. Only by hard working can these children leave this underprivileged area and pursue their dreams.

Tech-Long Charity Found, led by Mr. Zhang Chongming, Operational Director of Tech-Long, provides financial aid to two to four impoverished primary schools every year. On July 9, the first stop of the 2016 charity trip, the team members made an arduous journey to Huang Peiqiu Hope Primary School located in Yu'ao Village, Benzhai Town, Zhenning County, Anshun City, Guizhou Province and carried out a four-day charity event. Driving on the bumpy mountain road, each team member experienced how life was for the kids in remote mountain areas. Every day, they get up



at 6 am and walk over 10 km to school despite scorching sun or freezing cold. They persevere in their study even without the accompanying of their parents.

The team asked several workers to do an all-round renovation on Huang Peiqiu Yu'ao Hope Primary School, which has mottled walls, worn-out tables and desks, shabby windows and doors and pitted blackboards. In addition to bring students schoolbags, stationary, computers and iron-shelf beds, the team offers them a special

gift—books. The team members encourage students to forge ahead and thrive on the belief that knowledge can change one's fate. Looking into their eyes, which are filled with innocence and anticipation, the team members feel like all their hardships and efforts are paid off.

Love is not just about giving; instead, it is spiritual inheritance.

Text by: Rainmy Chen



PRODUCT RUNNING



STATUS实例

智造IKEA小相框 机器人兄弟一马当先

—达意隆集成自动化解决方案在宜家相框包装的应用



容声塑胶位于佛山顺德,是海信旗下生产塑料产品的公司,也是IKEA的优质生产商。2015年年底,善于创新的容声塑胶新添了一道风景线——国内首条相框包装自动装配线。该装配线为达意隆研发设计,配备两台机器人,以16个/分的高速度生产IKEA小相框!

2015年5月,容声塑胶公司正式启动IKEA小相框自动装配线的建设。从项目构思、考察、验证到评估,达意隆凭借丰富非标自动化经验和完善的方案在众多竞争中对手脱颖而出成功中标。经过容声塑胶的配合和达意隆的日夜奋战,2015年11月,该项目成功验收。对于该项目,容声塑胶表示,“相框自

动装配是一个全新的挑战,在业内没有类似的先例,论证项目可行性的时候是看中达意隆作为上市公司的品牌实力以及丰富的自动化应用经验,在达意隆提交机器人装配方案后,非常惊喜,立刻增强了合作的信心”。

兄弟机器人:速度与精度的完美结合

在该项目方案中,在流水线前端,机械手从注塑机中取料、剪水口,放在平台上,六轴机器人从平台取一组相框上盖放到装配定位机构上,并联机器人抓取两张PS片及一张说明书放在上盖上定位好,六轴机器人再次把相框下盖放到装配定位机构上,这

Robots First Used in Smart Manufacturing of IKEA Photo Frames

-Application of Tech-Long integrated automation solution in packaging of IKEA photo frames



时候相框压合机构对摆放好的相框进行压紧啮合，并联机器人再次把压合好的相框搬运到输送线上；同样相框的底座由机械手从另一台注塑机中取出带水口的底座，自动剪水口机构剪水口后输送到并联机器人待抓区域，接并联机器人再把相框底座放到压合好的相框上，底座和相框顺着输送线送到膜包装机工位进行包膜，包膜后的成品在通过传送带准备装入纸箱。

两台机器人协作系统每分钟生产16个小相框，这一速度是人工作业难以企及的。若采用人工模式，将取上下盖、剪水口、取PS片、取说明书、取相框底座和压合，每一个工序都需要安排1人，即共需要6

人作业，而现在，只需一名操作人员负责开机即可，几乎实现无人化生产。

高柔性、高智能

这套机器人装配系统有着优异的柔性，是一套高度开发系统，非常方便客户技术人员编程操作，加上机器人易维护、少耗材，精度高和稳定性强，使产品的合格率大大提升。另外，采用机器人智能装配相框，作业人员不需在生产线上长时间进行单一重复枯燥的工作，劳动力将被从基础劳动中解放出来，投入到更有价值的创新、规划、协调工作当中去。



IKEA中国包装专家在看完生产线后表示，这条机器人装配线的成功投产令他们深受鼓舞，对未来更多的IKEA工厂自动化扩建很有帮助，也希望达意隆能为更多的IKEA产品提供自动化解决方案。我们相信，未来，二者将携手共助中国制造站上新起点，把握机遇，赢得智造新未来！

机器人优势：

- 高速度，大产能；
- 两台机器人协作每分钟装配16个小相框；
- 高精度，大幅提供产品良品率；
- 改善员工工作条件，告别体力耗费大、安全隐患多的人工作业；
- 可靠性强，投资回收期短。

Rongshen Plastic Co., Ltd., situated in Shunde District, Foshan City, is a plastic product producer owned by Hisense as well as a quality producer of IKEA. In the end of 2015, innovative Rongshen Plastic introduced in a new production

line, the first automatic photo frame fitting line in China. Developed and designed by Tech-Long, this packaging line is equipped with two robots and can assemble IKEA small photo frames at a high speed of 16 pieces per minute.

In May 2015, Rongshen Plastic Co., Ltd. officially commenced construction of the automatic IKEA small photo frame assembly line. From project design, investigation, validation to evaluation, Tech-Long beat many opponents and was awarded the contract with its abundant experience in customized automation equipment and perfect solution. The project was successfully accepted in November 2015 through the cooperation of Rongshen Plastic and day and night hardworking of Tech-Long people. According to Rongshen Plastic, "automatic assembling of photo frames is a brand new challenge and there is no similar precedent in



the field. We are impressed by the brand strength of Tech-Long as a listed company and its abundant experience in automation application during discussion of project feasibility. We are very pleased when we read Tech-Long's proposal of robot assembly line and it enhances our confidence in cooperation."

Robot application: perfect combination of speed and accuracy

According to the project proposal, a manipulator picks materials from the injection molding machine and places the materials on the platform. A six-axis robot places a group of top covers of photo frames on the locating mechanism. A parallel robot grasps two PS pictures and one sheet of instruction on the top cover and locates them properly. The six-axis robot places the bottom cover on the locating mechanism again. At this time, the frame

pressing mechanism presses and engages the properly placed covers together to produce a photo frame. The parallel robot places the finished frames on the conveyor belt. For the base of the photo frame, the manipulator picks bases with gates from another injection molding machine. After cutting by the automatic gate-cut mechanism, the bases are conveyed to the waiting area of parallel robot, which places the bases on the engaged photo frames. Then bases and photo frames are conveyed to the film wrapping machine station for film wrapping. The properly-wrapped finished products are conveyed to the packing station and ready to be packed in cartons.

This two-robot collaboration system produces 16 small photo frames per minute, and it is difficult for manpower to produce the frames at this speed. If the frames are produced manually, one

worker is required in each procedure from taking top and bottom covers, gate-cutting, grasping PS pictures, reclaiming of instructions, picking base to engagement. In another word, six workers are required. When the robot fitting line is installed, only one operator is needed for start-up. It also realizes unmanned production.

High flexibility and intelligence

This highly-developed robot fitting system has excellent flexibility to facilitate technicians of the clients in programming operation. In addition, the robots are easy to maintain. Their few consumables, high accuracy and strong stability greatly improve the acceptability of the products. What's more, application of robot to smart fitting of photo frames relieves operating personnel from dull repeated work at the production line for a long time. It releases labor from basic work so that labor can be input in innovation, planning and coordination work of higher value.

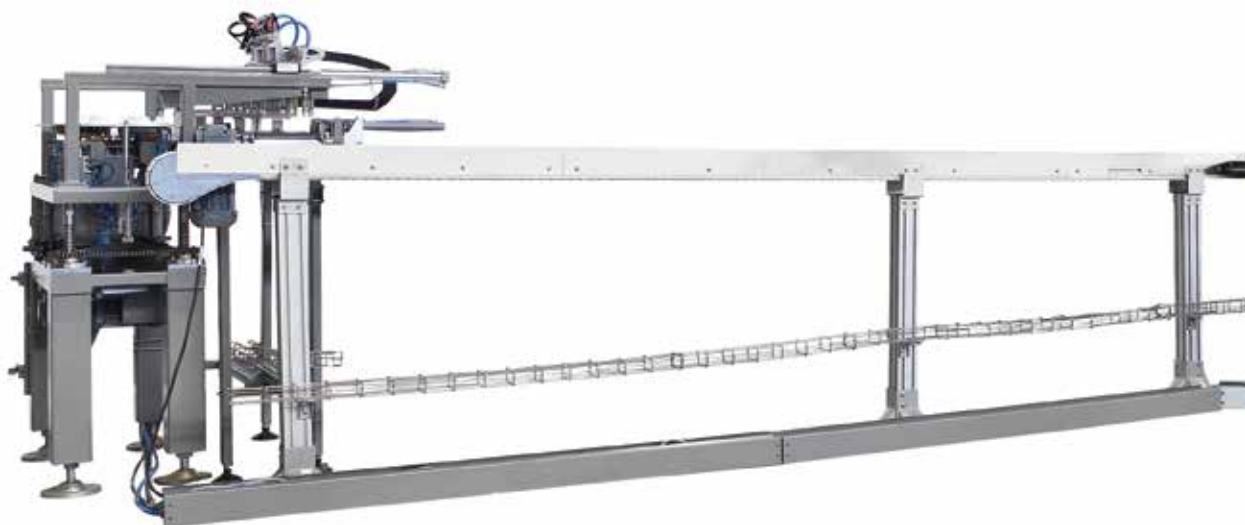
When the packaging experts of IKEA China see

the production line, they are greatly inspired by the successful operation of the robot assembly line. They believe it is helpful for automation expansion of more IKEA factories in the future and they expect Tech-Long to provide automation solutions to more IKEA products. We believe that Tech-Long and IKEA will join hands to help China Made stand on a new starting point. We will grasp opportunities to realize the bright future of intelligent manufacturing.

Strong points of robots:

- High speed and large capacity;
- Two robots cooperate to fit 16 small photo frames per minute;
- High accuracy to greatly improve acceptability of products;
- Improving working conditions of workers and relieve them from strenuous manual operations with many potential safety hazards;
- Strong reliability & short investment return period.

Text by: Peter He





IKEA公司介绍

- 1943年由英格瓦·坎普拉德在瑞典成立；
- 如今宜家已成为全球最大的家具家居用品商家,销售主要包括座椅/沙发系列、办公用品、卧室系列,厨房系列、照明系列、纺织品、炊具系列、房屋储藏系列、儿童产品系列等约10,000个产品；
- 年营收额287亿欧元（约合2280亿人民币）；
- 全球超过43个国家和地区有IKEA门店，其中在中国有14家分店；
- 全球超过150000名员工

COMPANY PROFILE OF IKEA

- It was founded by Ingvar Kamprad in Sweden in 1943;
- IKEA now has become the world largest retailer of furniture and home supplies. It mainly sells chairs/sofas, office supplies, bedroom furniture, kitchen wares, lighting, textiles, cooking utensils, storage utensils and children's products, totaling about 10,000 products;
- Its annual revenue amounts to EUR 28.7 billion (approximately RMB 228 billion);
- It opens retail outlets in more than 43 countries and regions throughout the world and there are 14 outlets in China.
- It has more than 150,000 employees throughout the world.



创新应用领域再临行业高点

—达意隆顺利进军民爆生产自动化领域



日前，达意隆为广东某民爆企业制造的工业炸药自动打包带检测、贴标和装车系统顺利通过验收，并得到客户的好评！至此，达意隆正式迈入了民爆生产自动化领域，开辟了一个新的市场和成长空间。

这套系统实现了工业炸药生产线后续处理的全自动化，包括打包带检测、贴标和装车，生产速度为每小时600箱，完全满足整个生产线的产能要求。在未使用该系统前，该企业的装车完全依靠人工，每箱炸药重25KG，劳动强度非常大，生产效率低下；而更为重要的是，工业炸药具有极高的危险性，生产过程中存在诸多安全隐患。达意隆为其提供的系统实现了全自动化，有效减少了现场操作工人的数量，既能降低远期的人力成本，更能大大降低一旦发生爆炸对人产生的危害。

在整套系统中，我司技术人员创新性地将蜘蛛手应用于贴标环节，取得了意想不到的效果。相较传统的贴标方式，蜘蛛手贴标非常灵活，可根据需要任意变更贴标的位置，其兼容性能更好地适应产品型号纷繁，贴标位置多变等情况。

在装车环节中，技术人员使用了工业机器人，由机器人将整箱炸药整齐地码放在封闭的车厢中，这种应用不仅在民爆行业中是首次应用，在国内整个装车领域也是首创，填补了国内市场的空白，占领了行业制高点。此装车机器人应用概念先进，适应性强，在装车市场这一领域将大有可为，是达意隆工业自动化产品向物流行业进军的拳头产品。

An innovative application , a new development orientation

-Tech-Long automation system's success in fireworks production industry

Recently, automatic packing and detection, labeling and loading system of Tech-Long was accepted by one of fireworks company in Guangdong Province and also get a good feedback from customer. Since then, Tech-Long has officially marched into the fireworks production industry, and developed a new market.

This system realized fully automation fireworks production line, including packing and detection, labeling and loading. The speed is 600 boxes per hour, it can fully meet requirements of the whole production line. Before the system being put into use, loading is operated manually, with each box of explosive of 25KG, high intensity labor and low production efficiency; more importantly, industrial explosive is of high risk, causing many safety hazards during the production. The system provided by Tech-Long has realized full automation, and reduced the number of operators on site effectively, which can not only reduce the labor cost in the long term, but also substantially reduce harm to people once explosion occurs.

In the whole set of system, Tech-Long has applied manipulator in labeling process in an innovative way, which gains unexpected effect. Compared with traditional labeling method, manipulator labeling is very flexible, and the labeling location can be changed as needed. With



sound compatibility, it can better adapt to diverse product model and variable labeling location, etc.

In loading process, we have introduced industrial robots who will pile up the whole box of explosives neatly in an enclosed container truck. This is the first application in fireworks industry, and even first in the whole loading sector of China, filling the blanks in Chinese market, standing the leading level of the industry. With advanced concept and high adaptability, the loading robot application shall make a difference in the sector of loading market. It can also be one of our competitive industrial automation products to march into logistics industry.

Text by: Yu Lutao

健康之水 “意” 起分享

达意隆携手兴伟集团打造“贵州大健康水”

火眼金睛 洞察市场机遇

说起贵州，人们往往会想到茅台酒、贵州烟以及旅游产业，它们就像是贵州的三张独特响亮的名片。鲜为人知的是，贵州作为全国少有的工业污染较少的省份，可用水资源也非常丰富，而且，因为其特有的喀什特地貌，矿泉水中还富含有益人体的天然锶元素。然而，拥有着如此稀有水资源的贵州省，并没有充分发挥利用这些优势，因此，贵州水也未能流向世界。

贵州省兴伟集团董事长王伟先生敏锐地洞察到其中的商机，推出自主品牌“贵州大健康水”，该品牌旨在为人们提供富含矿物成分，适合人体需求，安全健康且经济实惠的饮用水，致力于提升贵州水在饮用水业的地位及激发其巨大的市场潜力。品牌创办的背后更是肩负着打造自主创新民族品牌的企业理念，希望贵州水走向世界，与茅台酒、贵州烟、旅游产业并驾齐驱，形成贵州的四大名牌。

一直以来，王伟董事长致力于精准扶贫，不断探索产业创新模式。自从他提出的“秀水五股”模式获得成功之后，又马上投身到更大项目——“兴东大健康产业园”的建设中。该项目总用地面积约6000

亩，总投资约200亿元，最终目标是形成以食品、药品、保健品生产为主，兼医疗、养老、养生、文化、旅游、休闲等为一体的综合性产业基地。而“大健康水”则是建设该园区的首要项目。

迎难而上 实力推动项目快速发展

该项目自启动以来就一直备受业界和市场的关注，兴伟集团项目组更是倾尽心血推动项目进展，2016年4月底率团来广州达意隆实地考察。作为我国饮料包装机械制造行业龙头企业，达意隆掌握着行业内最先进的装备技术以及世界级的加工水平，其完善的质量保障体系和优秀的管理团队得到兴伟集团负责人的高度认可。秉承着自主创新民族品牌的共同理念，最终双方达成合作意识，顺利签订了一条43200BPH的小瓶灌装整线和一条4000BPH的4.5L瓶整线，以及配套的注塑、压盖、空压等配套设备。

在洽谈过程中，如何在饮用水旺季及时推出产品成为了双方公司的难题。因此，在签订合同的第二天，达意隆全力投入，成立了兴东项目小组，多管齐下保证项目如期完成：

第一，确定产品定位和市场推广手段。由资深的专

Healthy Water Sharing

Tech-Long Produces "Healthy Guizhou Water" with Xingwei Group

业营销策划团队为产品进行战略性定位、打造一系列宣传方案。以多年积累的经验，对瓶型、瓶盖、标签、纸箱等包材提供产品建议，以及为产品推向市场提供创意性方案。

第二，项目经理统筹整个项目，推动生产线开工。在整厂方案布置图尚未确定的情况下，即刻安排经验丰富的项目经理对在建厂房进行规划设计与指导，对厂房进行全方位点对点的指导，确认设计方案以及规范厂建流程。

第三，人才培养和团队组建。制定详细的培训计划，对兴伟集团选拔出的14位优秀员工进行系统的培训，为项目储备人才。

顺利交付钥匙 突破饮料水行业记录

在公司充分调动优势资源和正确决策的推动下，生产线各环节井然有序地运转。2016年7月18日，项目进行了试生产，与客户一起检收项目成果。从设计、制造、安装、调试直至生产所有环节皆顺利开展，完成交钥匙工程。前后工期短短2个月零10天，创造了饮用水行业的新纪录。

Penetrating Insight

When talking about Guizhou Province, people always think of Maotai, Guizhou Cigarette and tourism industry which are just like three unique and famous marks of Guizhou Province. It is rarely known that as one of few provinces in China with less industrial pollutions, Guizhou Province has abundant available water resources, in addition, due to unique karst landform in Guizhou, the mineral water here is full of natural strontium elements which are beneficial to the human body. However, with such rare water resource, Guizhou Province has never given full play to these advantages, which leads to Guizhou Water never flowing to the world.

Mr. Wang Wei, President of Xingwei Group in Guizhou province, acutely perceives the opportunity and timely launches its own brand "Guizhou Great Healthy Water", aiming at providing people with safe, healthy and affordable drinking water which contains rich mineral ingredients, and adapts to human body

See through Market Opportunity with



requirements. It is dedicated to enhancing the position of Guizhou water in the market and further tapping the huge market potential. Behind the brand it rests with the enterprise concept of "creating the independent and innovative national brand." It hopes to assist Guizhou water to go global, along with such local famous brands as Maotai Wine, Guizhou tobacco and tourism industry, thus forming four major brands of Guizhou.

For a long time, President Wang Wei has devoted to the targeted poverty alleviation and constantly explored the industrial innovation modes. Since the success of the model of "Five kinds of shares at Xiushui (literally, the shares consist of per-

capita shares, land shares, benefit shares, shares of filial piety and development shares]" put forward by him, Wang Wei immediately has got involved in the construction of the "Xingdong Great Health Industrial Park", another large project. The project covers a total land area of approx.6,000 mu, with the total investment of RMB 20 billion and its ultimate objective is to form the comprehensive industrial base which focuses on the production of food, medicines and health care products, and concurrently engages in such sectors as medical care, seniors supporting, preservation of health, culture, tourism and leisure activities. The "Great Healthy Water" represents the primary project in the construction of the Park.

Forge ahead when Facing Difficulties and Boost the Fast Development of the Project

The project has got the attention of the industry and the market from the commencement, and the project team of Xingwei Group made greater efforts to push the project forward. At the end of April 2016, it led a delegation to conduct an inspection to Tech-Long in Guangzhou. As the leading enterprise in the sector of manufacturing packaging machines for beverage in China, Tech-Long has grasped the most advanced equipment technology in the industry and possesses the processing level of world class. Its excellent quality assurance system and management team is recognized by the leaders of Xingwei

Group. Adhering to the common concept of “independently creating new national brands”, both parties reached the memorandum of cooperation and signed up for a 43200BPH small bottle filling line and a 4000BPH 4.5L bottle filling line, as well as the supporting equipment such as injection molding, cap pressing and air compressing equipment.

During the discussion, how to timely launch products in the peak periods of drinking water became the head-scratching problem of both parties. Hence, on the following day of signing the contract, Tech-Long commenced to operate in a full swing by setting up the Xingdong project team in order to complete the task as scheduled in multiple directions:

Firstly, determine the product positioning and marketing approaches. The strategic position of products was designed by the senior and professional marketing and planning team and so were a series of promotional plans. With the experience accumulated for many years, it had provided suggestions for such packaging materials as bottle shapes, bottle caps, tags and cartons, as well as the innovative schemes for the products' being released in the market.

Secondly, the project manager coordinated the whole project to facilitate the project construction. In the condition that the plan arrangement map of the whole factory had not been determined, an experienced project

manager was immediately deployed to provide guidance for the planning and design of the factory buildings under construction, as well as the comprehensive and point-to-point guidance for such factory buildings, and confirmed the design plan and regulated the process of factory construction.

Thirdly, training of talented staff and team building. Detailed training plan was made to provide 14 selected excellent employees from Xingwei Group with systematic training, thus storing talented workers for the Group.

Smoothly Deliver the Key to the Project and Break the Record of the Beverage Water Industry

All processes of the production line were in orderly operation under the full mobilization of advantageous resources of the company and correct policies. On July 18, 2016, the trial production was conducted and the project results were checked with the customer. All processes including design, manufacturing, installation, commissioning and production were smoothly carried out, and the turnkey project was thus completed. The period of construction was shortened by 2 months and 10 days, setting a new record in the drinking water industry.

Text by: Yuan Wei

巴寨山泉

享圣水之妙

达意隆携手巴寨山天然矿泉饮料有限公司打造“巴寨山泉”

Bazhai Mountain Spring: Taste of “Holy Water”

Tech-Long joins hands with Bazhai Mountain Natural Mineral Water Drinks Co., Ltd. to produce “Bazhai Mountain Spring”

饮“曲纱圣水” 祈福享安康

巴寨沟境内群山连绵，奇峰林立，山泉飞瀑腾空直泻，是舟曲县主要的风景区之一。在这里，流传着一个“曲纱圣水”的神话故事。从“昂让”雪山百米高的悬崖石孔中喷涌而出的一帘瀑布和崖下十几眼清泉被当地群众称为“曲纱”圣水。据说“曲纱”圣水中撒有仙药，沐浴和饮用此水，能医治百病，净化身心，消灾避难。

故事虽为流传，圣水却确有其妙处。巴寨沟水源地处海拔3947米的巴寨山雪山林海深处，赋存于古生代三叠纪地层基岩的断裂缝隙中。泉水经深层循环、运移，溶解了岩石中大量人体所需的有益矿物质元素，含有的各种微量元素达20余种，丰富的矿物质元素含量和独到的医疗保健功能深受各地消费者的青睐，“圣水”尊称当之无愧！

巴寨山天然矿泉饮料有限公司（文内简称：巴寨山泉）是舟曲县新兴企业，企业前身一直从事化工、酒店等行业。随着环境污染的日益严重及国家对环保的日益重视，客户希望能逐渐转型到可长远、持续发展的行业。正是对巴寨优越地理环境和丰富水资源的充分认可，“巴寨山泉”准备开发丰富资源，生产优质矿泉水，让越来越多的人享受到这片净土的曲纱圣水。

2015年8月，“巴寨山泉”项目正式开启。如何引进先进生产设备，并有序管理生产成为客户重点需要解决的问题。经考虑，客户计划由北向南一路考察国内设备供应商企业。10月初，考察人员抵达达意隆，一番考察及对比后，客户对达意隆的规模实力有了充分的了解，达意隆在部件品牌、整机精度、整线效率等方面的卓越性能更是让其高度肯定了达意隆的卓越水准。“巴寨山泉”投资人当即表示，



无需再考察其他厂家，决定携手达意隆展开合作之旅。

而后，根据巴塞山泉的实际需求，达意隆团队主动为其提供科学合理的设备平面布局、工艺流程等系统之整体设计与规划；同时，为其提供了专业的营销策划与资深顾问进行市场规划与预测。2015年12月，双方正式达成合作。

对巴塞山泉而言，从接触考察、技术交流、正式合作，短暂的两个月内，达意隆所展现出来的专业和负责任的态度充分体现出过硬的核心竞争力。巴塞山泉项目也是达意隆首次与藏族地区的合作，双方对首次合作都充满了期待。相信在共同努力之下，“曲纱圣水”的神话会被越来越多人流传，双方的合作的道路也会越走越宽。





Drink “Qusha Holy Water” for health and welfare

Bazhaigou Valley, one of the major tour attractions in Zhouqu County, features continuous mountains, peculiar peaks and waterfalls. The myth of “Qusha Holy Water” is widespread in the valley. The waterfall dashing out from a 100m-high cliff of Angrang Snow Mountain and the dozens of clean fountains at the bottom of the cliff are called “Qusha Holy Water” by local people. It is said that “Qusha Holy Water” contains cure-all. Anyone who bathes in or drinks this water will be cured of any disease, become purified both physically and mentally and be warded off any ill fortune.

Though the story is merely hearsay, the water is beneficial. Water source of Bazhaigou Valley

is located in the depth of the immense forest of Bazhai Snow Mountain with an elevation of 3947m. It exists in the fracture gap of the bedrock of Triassic formation of the Paleozoic era. The spring water dissolves an amount of beneficial mineral elements that human body needs after deep circulation and migration. It contains as many as more than 20 trace elements. It gains popularity among consumers around the country for its rich content of mineral elements and unique healthcare function. It undoubtedly deserves the title of “Holy Water”!

Bazhaishan Natural Mineral Spring Water Co., Ltd. (hereinafter referred to as “Bazhaishan Spring”) is an emerging company in Zhouqu County, which is transformed from a business engaged in chemical engineering and hotel



industry. As the environment protection is attached importance to in China due to an increasingly worse pollution, client expects to be gradually transformed into a sustainable developed industry in the long run. Since Bazhai area boasts unique geographical conditions and fully recognized water resources, "Bazhaishan Spring" is planning to develop abundant resources for producing high-quality mineral water. By doing so, an increasing number of people can enjoy the holy water of Qusha in this pure land.

As "Bazhaishan Spring" project was launched in August 2015, how to introduce advanced technology and equipment and to manage production has become the focus of problems to be solved by client. Through consideration, the

client planned to make a survey on equipment suppliers from north to south in China. In early October, investigator arrived at Tech-Long for survey and comparison. The client therefore had a better understanding on the scale and strength of Tech-Long. In addition, Tech-Long's excellent performance in product brands, precision of complete machine and efficiency of the whole production line was highly praised by the client. The investor of "Bazhaishan Spring" immediately expressed his decision to cooperate with Tech-Long, without additional survey on other enterprises.

Afterwards, Tech-Long proactively provided "Bazhaishan Spring" with scientific and reasonable equipment layout plans, process flow diagrams and other overall system designs

and planning based on the actual demands of the client. Meanwhile, Tech-Long provided professional marketing plan and assigned senior consultant to help the plant with market planning and forecasting. And then, both sides began their cooperation in December 2015.

The past two months witnessed not only Bazhaishan Spring's contact and survey, the technical exchanges and formal cooperation between both sides, but also the core competitiveness of expertise and responsibility demonstrated by Tech-Long. As Tech-Long's first cooperation with Tibetan area, "Bazhaishan Spring" project is highly expected by both parties. They believe that their joint efforts will allow for a greater popularity of "Holy Water of Qusha" and bring about more exciting opportunities for both parties.

Text by: Li Haiping

相关链接

巴寨山泉天然矿泉水源地处海拔3947米的巴寨山雪山林海深处，赋存于古生代三叠纪地层基岩的断裂缝隙中。泉水经深层循环、运移，溶解了岩石中大量人体所需的有益矿物质元素，含有的各种微量元素达20余种。其中，锶元素含量达3.018mg/l，居甘肃省矿泉水之冠，可有效预防人体高血压、心血管疾病，促进人体新陈代谢；钙量达41.31 mg/l，有利于儿童骨骼生长发育，并可预防老年人骨质疏松和骨骼老化；泉中所含“锌”和“硒”元素，可代替或节约维生素E，提高人体免疫力，常饮该水，可有效预防糖尿病和儿童龋齿，降低食道癌、胃癌、直肠癌的发病率。经国家和省级资质认证单位多次检测化验和论证评审，各项理化指标均符合国家饮用天然矿泉水（GB8537--95）标准，并经甘肃省矿产储量委员会和甘肃省国土资源厅批准进行开发生产。本产品以丰富的矿物质元素含量和独到的医疗保健功能深受各地消费者的青睐，被民间群众尊称为“曲纱圣水”，每年农历端午节，在该矿泉水产地

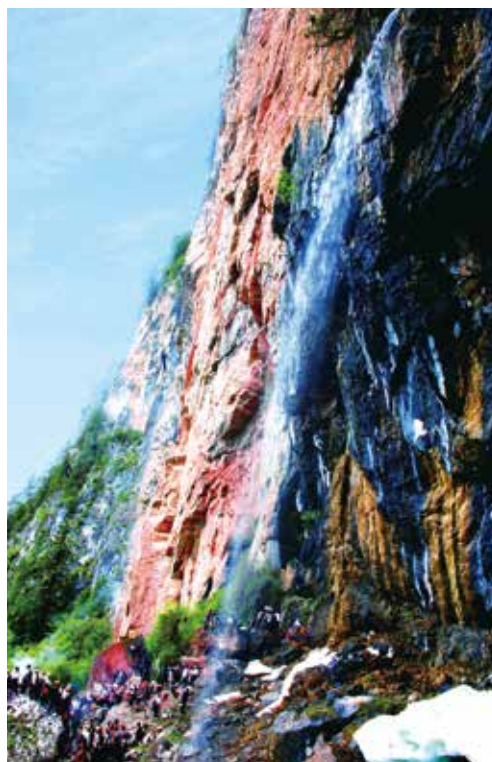


巴塞沟举行规模盛大的“朝水节”活动。因此，您想拥有一个健康的体魄，就请关注生活饮用水，提高饮用水质量。“巴塞山泉”天然矿泉水是您生活饮用水最理想的选择，它将为您的健康之路导航，寻求生命中的永恒。

Relevant links:

Originating from the lush forest of snow-capped Bazhai Mountain (elevation: 3947), “Bazhaishan mineral spring water” is well preserved in the faulted joint of bed rock of Paleozoic Triassic stratum. Through circulation and flowing in deep layers, the spring water dissolves voluminous useful mineral elements required by human body, including over 20 micronutrients. For example, strontium (Sr), as an effective preventer of hypertension and cardiovascular disease as well as a metabolic promoter, is estimated up to 3.018mg/L, ranking the top among mineral water brands in Gansu Province. The content of calcium reaches 41.31mg/L, which can facilitate bone growth and development for children and prevent rarefaction and aging of bone for seniors. Radon (Rn) (radioactive element, fat soluble gas), contained in Bazhaishan spring water, can regulate neurologic functions, which is also an exciting cure of skin diseases, neuritis and arthritis. Zinc and selenium contained in the water can be used for replacing or saving Vitamin E, which improve immunity. A long-term drinking of this brand water will effectively prevent diabetes and childhood caries and reduce the incidence of esophagus, gastric and rectal cancer. After several times of testing, examining and reviewing by national and provincial qualification appraisal agencies, all the physicochemical indexes of the product

conform to Code for Drinking Natural Mineral Water (GB8537 - 95). Its production is approved by Gansu Province Ore reserves Committee and Gansu Province Office of Land and Resources. The product enjoys great popularity of consumers across the country for the rich content of minerals and special health care functions. Therefore, it is praised as the “Holy water of Qusha”. At the Dragon Boat Festival every year, the grand “Water to Water Festival” is celebrated in Bazhaigou, the production place of the brand. If you want to keep fit, you should pay close attention to drinking water and improve its quality. “Bazhaishan Spring” natural mineral water will be your best choice of drinking water which will help you stay healthy and live a better life in the future.



再牵手 强势进攻新市场

达意隆为越南Number One Hanam提供首条36000BPH含汽中温灌装水汽两用线



闪耀的THP Group

THP Group是越南地区啤酒饮料行业最知名的企业之一。该集团生产各种不同的产品，包括THP和Number One品牌，集团公司的产品占据着当地35%以上的啤酒饮料市场。从2000至2016年，该集团共计建有4家生产厂，其中总计使用15条达意隆饮料生产整线、12套饮料前处理和8台各类饮料灌装单机。2015年初，基于扩大整个越南市场的影响力以及提升市场竞争力、节省运营成本，THP GROUP 有计划地在越南北部、中部、南部建立Number One品牌三家工厂（其中Number One Hanam为其北部工厂）。借此，强势开启了越南北部市场的开发。

机遇与挑战

Number One Hanam新工厂计划投入一条36000BPH的水汽两用吹灌旋生产整线。基于与THP Group的长期友好合作关系，达意隆第一时间就收

到了Number One Hanam的项目参与邀请，该项目要求同一灌装设备能够兼顾处理水与含汽两种产品，其中很多要求都达到了国际最先进的水平。

- 含汽产品的灌装温度要求：12-15℃
- 灌装精度为 $\pm 1.2\text{ml}$
- 水产品为轻量瓶，瓶克重低且灌装物是没有电导率的纯净水
- 产品的二氧化碳含量为 $7\pm 1\text{g/L}$
- 糖度控制精度为 ± 0.05

精巧、有效的解决方案

根据客户需求，达意隆专项设计了一台新的机型——四合一吹灌旋设备。该设备采用一台吹瓶机配两台灌装机（一台机械阀灌装机做水产品，一台电磁流量计灌装机做含汽产品），再共用一台旋盖机进行旋盖。此方案中，含汽与轻量瓶水分别使用

Join hands again to dominate the new market

Tech-Long Provides Vietnam Number One Hanam with the First 36000BPH Warm Filling Machine for Water & Carbonated Drinks



不同的灌装机，不同产品可使用不同的产品管道及CIP管道，可保证产品在切换时味道等各方面均不混合以及相互影响。同时，在产品的切换过程只须更换瓶型件，效率高而且CIP时间短，生产一种饮料的同时，可对另一台饮料灌装机进行CIP清洗。

初步方案成型后，THP Group表示了高度认可及赞赏。而后，为了更大程度的节约空间与投资成本，双方进行了多次技术交流，最终方案确定采用达意隆的吹灌旋一体机，灌装机采用质量流量计的设计。双方的高度重视并就该项目方案最终达成一致意见，此项目为后续其它工厂项目打下了良好的基础。

开创新的时代

这是一个优良项目，是双方友好合作关系的又一次延续。对THP Group，新项目的成功将为其在越南北部地区的开发奠定良好的基础；对达意隆，运用

质量流量计实行含汽产品中温灌装的水汽两用生产线是一次全新技术的挑战！

日后，越南THP Group公司必定会继续快速发展，达意隆也必将与THP Group加深合作，相互支持，共同发展，共创辉煌！

The Shining THP Group

As one of the renowned beer producers in Vietnam, THP Group provides a wide range of products (including THP and Number One) and it take up over 35% of the local beer market shares. From 2000 to 2016, the group operates 4 plants, equipped with 15 complete Tech-Long beverage production lines, 12 sets of beverage treatment systems and 8 sets of separate filling machines of different sizes. At the beginning



of 2015, in order to improve the popularity and competitiveness in the entire local market and cut operation cost, THP Group was scheduled to establish three Number One plants in the north, central and south Vietnam, among which Number One Hanam is its north branch. By this means, THP Group launched its development of market in the north of Vietnam.

Opportunities & Challenges

A 36000BPH carbonated drinks & water Blower-Filler-Capper Production Line is planned to be built for the new plant project of Number One Hanam. Based on the long-term partnership with THP Group, Tech-Long received the invitation for participating in Number One Hanam Project right away. In this project, the filling machine shall provide both water treatment and carbonation functions as per requirements, many of which are leading globally.

- Filling temperature of carbonated product: 12-15°C
- Filling precision: $\pm 1.2\text{ml}$
- Water product is adopted with lightweight bottles which are low in gram weight, while the filling is purified water without conductivity .
- CO₂ Volume: $7\pm 1\text{g/L}$
- Brix Tolerance: ± 0.05

Exquisite and Effective Solutions

According to client's needs, Tech-Long designed a new model – four-in-one blower-filler-capper monobloc.

The equipment is composed of one blowing unit, two filling units (one unit for water with mechanical valve filling, the other for carbonated drinks with flow meters) and one capping unit. In this plan, carbonated water and lightweight bottled water will adopt different filling machine.



In this way, different product pipes and CIP pipes will be provided for different products to protect the product from mixing tastes or other interaction effects during product shift. When it needs to change into other product, it only needs to change bottle size parts, because one filler can be running, while the other one is in CIP. So there is high efficiency and short CIP time.

The initial plan prepared was accepted and highly praised by THP Group. After that, both parties conducted several technical exchanges for reduction of space and cost to the larger extent. Therefore, the final plan is adopted with Tech-Long blower-filler-capper monobloc, with the filling machine equipped with mass flow meters. Both companies paid high attention to the project and reached an agreement on the final plan which served as an exemplary basis for projects of other plants afterwards.

Creating a New Era

This is a win-win project which continues the tradition of cooperation between both companies. On the one hand, the success of the new project will lay a solid foundation for THP Group to expand business in the northern Vietnam. On the other hand, it is a new technical challenge for Tech-Long to create an water and carbonated drinks filling line with warm filling technology.

In the future, THP Group will undoubtedly pace up its growth, and both companies will strengthen their cooperation, mutually support and make progress together!

Text by: Oscar Feng

A hand holds a small, vibrant pink flower with multiple petals, positioned in front of a clear, empty glass bottle. The background is a bright, clear blue sky with soft, wispy white clouds. The lighting is natural and bright, creating a clean and fresh aesthetic.

等待花开 笑迎收获 Waiting for Blossom and Harvest

达意隆闪耀加拿大市场
Tech-Long Rises to Fame in Canada Market

加拿大市场开发的探索

谈及加拿大，人们经常将其与美国混为一谈。无论是地理、政治、还是文化因素，二者都大同小异。然而，这个国家有着自己的特点。

加拿大地靠北极，有众多雪山、冰川和湖泊等水资源，其工业污染小，水质保存非常好，可开发资源丰富。人口稀少，且分布不均，主要密集在东部五大湖区和西部温哥华地区。

然而，在这个国度，市场上的产品主要来自美国，就水和饮料行业，其国内产品的市场份额相对较小。虽然为发达国家，但其教育的两极化比较严重。许多人由于无法承受高昂的学费，受教育程度普遍不高。

人口稀少与教育程度的双重因素，导致其生产制造行业的人才匮乏，很多投资者在之前都没有涉足水行业，投资者对供应商的依赖性较大，无形中加大在该地工厂实行交钥匙工程的难度。

因此，对水饮料设备供应商而言，想要在加拿大市场获取成功，一方面需要具备绝对的设备制造和生产能力，一方面需要专业与全面的服务型能力，而后者尤为重要！

贴近客户需求 打造标杆项目

2014年，达意隆与加拿大NGW公司合作的36000BPH灌装线成为了该地区的标杆工程。合作初始，达意隆良好的硬件设施与过硬的实力为项目打开了一个良好的开端。而后，长达6个月的项目洽谈时段，达意隆项目团队始终围绕客户需求，及时为客户解决问题，布局图修改多达15次！同时，达意隆美国分公司很好的为客户提供了本土化服务，有效为客户提供了项目管理与良好的售后服务。目前，该项目设备已经顺利验收，试运行效率与质量得到客户的一致好评。后续项目也再次展开！

乘势而上 顺势前行

2016年，达意隆与First Choice Beverage签订了一台五代吹瓶机，该客户是多伦多地区可口可乐的代工厂。该项目含一台6个头的五代吹瓶机，模具，及其它辅助设备，用于冷链产品的PET瓶的吹制。由于瓶子不是用于在线灌装，因此需考虑到瓶子在放置72小时的收缩率。这对模具和吹瓶工艺是一个非常大的挑战。在达意隆技术人员的努力下，该项目正按计划进行。

此次合作，意味着达意隆的吹瓶机将在美洲可口可乐系统获得认可，它的成功意义重大，将会使达意隆吹瓶机在美国东北部和加拿大多伦多地区影响非凡。2016年加拿大市场必将迎来花开。

Exploration in Canada Market

People might well confuse Canada with America due to a general resemblance with minor differences between the two countries from geography, politics to cultures. However, Canada has its own characteristics.

Close to the Arctic Pole, Canada boasts numerous snow mountains, glaciers, lakes and other water resources which are minable and well preserved with high quality due to less industrial pollution. As a sparsely-populated country, the population is unevenly distributed with its majority residing in the Great Lakes region in the east and the Great Vancouver in the west.

Most of the products in the local market, however, are imported from America. Water and beverage industry calculate a small market share of domestic products. As a developed country, the education there is seriously polarized. As a result, many people are not well educated for they cannot afford the high tuition fees.

The under population and the education conditions result in the lack of human resources in manufacturing industry. Since many investors are not involved in water & beverage industry before, they rely much on suppliers, which make it even difficult for many local plants to carry out turn-key project.

Therefore, as for water & beverage equipment

suppliers, if they want to succeed in Canada market, they should, on the one hand, be dominantly capable of manufacturing equipment, and on the other hand provide professional and comprehensive services which are especially important.

Create Benchmark Project Based on Customer's Need

In 2014, 36000BPH filling line carried out by Tech-Long and Canada NGW became the benchmark project in this area. At the beginning of cooperation, the project had a good start because of the sufficient hardware facilities and excellent technical strength of Tech-Long. After that, during six-month project-related negotiation, Tech-Long's project team is always devoted to customer's needs and dedicated to solving problems as soon as possible. The team modified the layout for 15 times. At the same time, Tech-Long INC. provides NGW with localization services, project management service and trustworthy aftersales services. At present, the equipment of the project has been accepted, with customer's acclaim on the efficiency and quality of test run. And then, follow-up works are carried out by Tech-Long!

Seize the Opportunity to Leap Forward

In 2016, Tech-Long and First Choice Beverage, a Coca Cola OEM based in Toronto, concluded an agreement on a G5 blow molding machine. The project is a G5 blow molding machine with 6 cavities, molds and other auxiliary equipment



for manufacturing PET bottles of cold chain products. Since bottles are not filled right away after blow molding, it is necessary to consider the shrinkage of the bottle being placed for 72hrs. This poses a great challenge on molds properties and blow molding process. However, the project proceeds as planned due to efforts of Tech-Long technical personnel.

The success of this cooperation is of significance on Tech-Long for it will be recognized by Coca Cola system in the America. And it will also expand implications of Tech-Long bottling system on the northeastern USA as well as Toronto.

Tech-Long will achieve great success in Canada market in 2016.

Text by: Carter Jia



共步成长之路

达意隆再度为印度Megha Springs提供双整线设备



Path for Joint Development

Tech-Long once again Providing India Megha Springs with Two Complete Lines

海德拉巴，特伦甘地邦的首府，位于印度中部。以其富饶的历史和建筑、清真教寺、庙宇而著名。它是印度的第六大城市，不仅历史悠久，还是一座商业发达的现代都市。铁路、公路、机场设施应有尽有，经济十分发达。

2015年，印度Megha Springs PVT. LTD. 在海德拉巴买地建厂，用于兴建二期工厂。Megha Springs是一家饮料和膨化食品的生产商，旗下饮料产品有芒果汁，汽水，纯净水和苏打水等。近年来，Megha旗下由达意隆提供设备生产的“Jeera”香料口味含汽饮品随着产量的飙升而闻名印度南部。此前，Megha Springs一直采用传统直线式吹瓶半自动生产设备。2014年，达意隆所提供18000BPH含气饮料设备整线投产后，Megha Springs步入了中高速旋转式吹灌旋自动化阶段。短短两年过去，“Bindu”成为最受欢迎的本土品牌之一，Megha的市场及品牌知名度也大幅增加，蓬勃的市场需求对产量提出了更高的要求。对Megha Springs而言，选择在海德拉巴新增工厂，既是对产能需求的满足，更是一次品牌的强势扩张。

为了更好的开展新工厂筹备工作，2015年5月，在达意隆中东分公司CEO Jinesh及印度分公司销售总

监Vithal的陪同下，印度Megha Springs饮料公司董事长Mr. Shanka携同家眷及资深项目技术顾问Mr. Bangera再次造访达意隆，为新工厂生产线项目进行洽谈。本次造访，双方就一条28000BPH含汽整线及一条12000BPH水线项目进行技术及商务洽谈。基于早前的良好合作，Megha Springs对达意隆的设备及技术品质深信不疑，双方很快达成了合作意向。

然而，市场风云变化莫测。2016年6月，受欧洲经济增长陷入停滞及欧洲央行量化宽松预期影响，欧元大幅贬值，项目陷入了漫长而又艰难的等待。达意隆一边承受着欧元贬值带来的负面影响，一边积极对原有方案进行改进，竞争对手也利用低价，试图以更优惠的条款打动客户。最终，达意隆提出以更先进的流量计灌装技术，为客户赢得了极大的信心。在一次为期三天的闭门会议中，双方就所有合作事宜达成一致，共步成长！

此次合作，达意隆在南印度将增加两条示范性生产线。目前，项目正在有序进行，Megha Springs与达意隆对此都极具信心。日后，Megha Springs定将收获更多饱满丰盈的果实，达意隆品牌的卓越口碑也必将响彻南印度市场！



施工中的新厂房
New Plant on Construction

Located in central India, Hyderabad, capital of Trent Gandhi Bond, is renowned for its history, architecture, mosques and temples. As the sixth largest city in India, it is a modern city integrated long history with prosperous business. Hyderabad is economically developed and easily accessible by rails, highways and air.

In 2015, Megha Springs PVT., LTD. a local beverage producer, purchased land there for building Phase II plant. As a beverage & puffed food supplier, Megha Springs produces a wide collection of beverages, such as mango juice, soft drinks, pure water and soda water. In recent years, the production plant provided by Tech-Long allows "Jeera", a spice-flavored carbonated beverage under Megha, to gain a wide popularity in the southern India with a soaring output. Before then, Megha Springs operated traditional semi-auto linear blow molding machine. In 2014, the complete line of 18000BPH carbonated beverage plant provided by Tech-Long was put into use, which upgraded Megha Springs into an automatic production with the middle-and-high speed rotary blower-filler-capper line. "Bindu"

grows to one of the most popular local brands within two years only. Consequently, Megha records a new high in its market expansion and the popularity of brands. The greater demands of market put forward higher requirements on its yield. Accordingly, Megha Springs' decision on building plant in Hyderabad not only meets the capacity requirements, but also largely expands its brand influence.

For a better preparation for the new plant, in May 2015, accompanied by Mr. Jinesh (CEO of Tech-Long Middle East Branch) and Mr. Vithal (Director of Sales of Tech-Long India Branch), Megha Springs President Mr. Shanka, his family and Mr. Bangera (senior project technical consultant) visited Tech-Long once more for negotiation on production line of the new plant. Both parties carried out technical and commercial discussions on a complete 28000BPH carbonated water production line and a 12000BPH water line. On account of previous cooperation, Megha Springs is confident on Tech-Long's equipment and technical quality. Therefore, they reached an agreement on cooperation very quickly.

With the unpredictably change in the market, however, in June 2015, the project suffered a torturously long suspension due to the the sluggish growth in Europe, Quantitative Easing Monetary Policy implied by ECB as well as a sharp depreciation of euros. Under the adverse effects from the depreciation of euro, Tech-Long proactively improves its original scheme, while its rivals attempted to convince the client with lower price and more favorable offers. At last, Tech-Long decided to provide more advanced flow meter filling technology to win customer's trust. In a three-day private session, both sides reached a consensus on all cooperation items to embrace the joint development.

In this project, Tech-Long will add two exemplary production lines in south India. So far, the project is proceeding well on schedule, on which Megha Springs and Tech-Long believe firmly a great success will be achieved. In the future, Megha Springs will gain exciting returns, and the excellence of Tech-Long brand will win a sweeping popularity in the south India market.

Text by: Wayne Liu

携手创未来

**Work hand in hand to build a
better future!**

达意隆首次牵手沙特MARWA进军瓶装水市场
Tech-Long Cooperates with Saudi MARWA for the
First Time to Barge into Bottled Water Market



沙特，地处亚洲西南部，属于热带沙漠气候。夏季炎热干燥，最高气温可达50℃以上；冬季气候温和，年平均降雨不超过200毫米。因独特的地理环境和气候状况，当地饮用水市场需求非常庞大。日常生活中，无论饮用还是煮食，居民都会使用纯净水或矿泉水，瓶装水和桶装水也因此成为一个庞大而繁荣的产业，在当地，越来越多的瓶装水生产企业随之而起，MARWA便是其中一员。

金牌口碑促成首次合作

作为新生企业，MARWA原设想采购注塑机专门生产瓶胚销售，但该项投资太大，至少需要采购4-6台注塑机，继而决定先做水线。通过一系列的前期准备，2015年初，MARWA正式开启了新工厂项目。如何引进先进技术设备，并有序管理生产成为客户重点需要解决的问题。经考虑，MARWA计划从中国或欧洲采购水线设备，身为中国液态包装行业龙头企业的达意隆一开始便引起客户的关注。MARWA了解到，从2002年至今，达意隆已为沙特Hana、Fayha、Tania等一系列当地知名品牌提供过生产设备，并获

得极大的肯定，近几年在当地市场占有率已排名第一。初步沟通后，MARWA就决定深入达意隆进行实地考察。在参观完达意隆工厂及相关水线生产现场后，MARWA深深的被达意隆的卓越水准所震撼，当即选择了达意隆，双方快速签订了一条14400BPH水线整线设备。

软服务助力价值提升

而后，达意隆完善的培训机制与服务更是让MARWA感到非常满意。为了更好的帮助MARWA工厂后期生产管理，达意隆为其生产经理安排了为期3个月的培训，帮助其操作人员充分学习生产操作技能和相关的管理经验，这将有效地帮助MARWA解决技术人员水平不佳的难题，从而让设备生产提高效益，获取更大收益。

目前，该项目已完成FAT验收，预计在8月将顺利投产。同时，MARWA也做好了继续采用达意隆中高速生产线的准备。相信在不久的将来，双方的合作将进一步加深，愿双方共创繁荣、共享硕果。



Saudi Arabia is located in southwest Asia and has tropical desert climate. It is hot and dry in summer, and the highest temperature is up to 50 °C; winter has a mild climate, and the annual average rainfall does not exceed 200 mm. Due to the unique geographical and climatic conditions, the demand in local drinking water market is huge. In daily life, residents will use purified water or mineral water for drinking and cooking. Therefore, bottled water and barreled water become a large and thriving industry, and a growing number of bottled water manufacturers emerge in local area. MARWA is one of them.

Good Reputation Helps to Bring About the First Cooperation

As an emerging enterprise, MARWA was originally intended to purchase injection machine and specialized in the production and sale of bottles, but the investment for this was too large (which requiring at least 4-6 injection machines), so MARWA decided to engage in waterline firstly .Through a series of early-stage preparation, MARWA officially started a new plant project in early 2015. How to introduce advanced technology and equipment and to manage

production has become the focus of problems to be solved by client. After consideration, MARWA planned to purchase waterline equipment from China or Europe, therefore, Tech-Long, the leading enterprise in Chinese liquid packaging industry, caused the customer's attention at the very start. MARWA learned that since 2002, Tech-Long had provided many well-known local brands in Saudi Arabia such as Hana, Fayha, Tania, etc. with production equipment and got great recognition and ranked first in the local market share in recent years. After preliminary communication, MARWA decided to visit Tech-Long to have on-the-spot investigation. After visiting Tech-Long factory and related waterline production sites, MARWA was deeply shocked by the excellent standard of Tech-Long, immediately chose Tech-Long, and quickly signed an entire 14400BPH water line equipment with Tech-Long.

for its production manager to help operators to fully learn production operation skills and relevant management experiences, which would effectively help MARWA to solve the problem of poor technical skills of its personnel, and thus improve the efficiency of equipment to obtain greater profits.

Currently, the project has completed its acceptance and is expected to smoothly go into operation in August. At the same time, MARWA also gets ready to continue to use Tech-long medium-high-speed production line. Believe that the cooperation of the two sides will be further deepened in the near future and hope the two sides to co-create prosperity and share great achievements.

Text by: Tony Tian

Soft Service Helps to Enhance Value

After that, MARWA was very satisfied with the sound training system and service of Tech - Long. In order to give MARWA factory a better help on the final-period production management, Tech - Long arranged a three-month training

匠心独运 携手共赢

Creative Thinking and Win-Win Cooperation

达意隆牵手Water World Group公司打造"世界好水"

The cooperation with Water World Group to produce "good world water"





Water World Group（以下简称WWG），是加拿大市场专业生产和销售瓶装水的跨国企业，拥有自己独立的品牌，并在全球范围设有多处经销分部。WWG企业创始人之一的Denis Beauvais在食品和饮料行业拥有逾75年的丰富经验，其产品销售网络遍布世界各地。

源头活水 信赖源于品牌实力

水的发源地决定了水的品质。WWG公司工厂坐落在世界珍稀水源带Moraine Frontale d'Abitibi附近，水源补给来自6-17亿年前冰川融化的天然水，水质天然无污染，富含钾、钙、镁、锂等多种有益人体健康的天然矿物质和微量元素，是独一无二的世界上好水。WWG公司利用其得天独厚的水资源，将重点开发冰川矿泉水项目。

2015年6月，WWG中国区负责人Michael Berube首次踏上对达意隆的考察之旅。达意隆高品质的硬件设施与过硬的实力为合作奠定了良好的基础。经过为期半年的达意隆考察，于2015年11月7日与达意隆

签订了8000-10000BPH 瓶装水整线设备，设备包含吹灌旋一体机、OPP热熔胶贴标机、PE彩膜膜包机、机器人码垛系统、缠绕膜机。

围绕客户需求 突破技术难题

项目洽谈中，WWG公司对产品生产设备提出了极为严苛的要求。面对诸多挑战，达意隆项目组立刻全力投入，凭借多年来在液态产品包装行业的丰富经验与强大的设计研发力，突破种种技术难关。始终围绕客户需求，针对项目每个环节进行深究，及时解决问题。2016年6月，该项目设备已经顺利验收，达意隆的自身实力、设备质量、团队沟通、售后服务等方面皆表现优越，得到WWG公司的高度赞赏。

此次与加拿大Water World Group公司的合作，是达意隆在加拿大市场上的一份骄人的成绩，为达意隆北美洲市场的进一步开拓又打下了坚实的基础；相信在双方的紧密合作下，该项目一定会取得圆满成功，期待双方在未来共同发展，共创辉煌！





Water World Group (WWG) is a multinational corporation specializing in producing and selling bottled water in Canadian market. As an independent brand, WWG has distribution divisions all over the world. Denis Beauvais, one of WWG founders, boasts over 75 years' experiences in food and beverage industry with product marketing network throughout the world.

Fresh Water from the Origin, Brand Strengths Create Trust

The headstream of water determines the quality of water. WWG company factory is located near Moraine Frontale d'Abitibi, the world's rare and precious water conservation, which provides the company with natural water coming from melted glaciers 600-1700 million years ago. The water, which is rich in multiple beneficial natural mineral substances and microelements, such as potassium, calcium, magnesium and lithium, is natural and pollution-free, which makes it the world's one-of-a-kind high-quality water. WWG,



by taking advantage of its advantaged water resource, will give priority to develop glacier mineral water project.

In June 2015, Michael Berube, the person in charge of WWG's branch in China, came on an inspection trip to Tech-Long, which was the Company's first time. And Tech-Long's high-quality hardware facilities and competitive strength has laid a perfect foundation for cooperation. After a half-year inspection, on November 7, 2015, WWG signed a contract with Tech-Long on 8000-10000BPH bottled water whole-line equipment, covering blow-fill-cap bloc, OPP hot melt labeler, PE color film wrapper, robotic palletizer and wrapper.

Focus on Customer Demands, Break through Technical Problems

During project negotiation, WWG Company put forward extremely strict requirement on product manufacturing equipment. Facing various challenges, Tech-Long project team

fully engages in it and breaks through various technical problems relying on rich experience and strong design and R & D strength in liquid product packaging industry. They always focus on customer needs, deeply analyze every link of the project and timely solve problems. In June 2016, the project equipment was successfully accepted, the strength, equipment quality, team communication and after-sales service of Tech-Long received high appraisal from WWG Company.

The cooperation with Canadian Water World Group is one proud performance of Tech-Long in Canadian market, which lays a solid foundation for further development of Tech-Long in North America market; under close cooperation of both parties, it is believed that the project will certainly gain a great success and we are looking forward to achieving mutual development and glory in the future!

Text by: Yolanda Qin





技术与加工

TECHNOLOGY &



x PROCESSING

高速多功能灌装设备 助力价值提升

HIGH-SPEED MULTIFUNCTIONAL FILLING EQUIPMENT HELPS TO ENHANCE VALUE

灌装机传统包装工艺的改革需求以及新兴饮品品类不断增多，促使多功能灌装机械市场潜力无限。

With the daily increasing demand for the reform of traditional packaging process of filling machine and for the variety of emerging drinks, the market potential of multi-functional filling machine is unlimited.

灌装机在不同的灌装方式下对灌装物种的要求向不同，当前数量多、型号多而不同、批量少、企业之间支撑配套差成为灌装机发展中存在的问题，灌装机需在传统的包装工艺上进行改革。同时，随着我国饮料行业的高速成长，行业新的热点与增长点的不断涌现，新兴饮品品类不断增多，多功能灌装机机械市场发展潜力巨大。

价值提升

2013年，孟加拉国全球领先的食物生产商PRAN引入达意隆一台30000BPH的三合一多功能灌装设备。该

设备能同时满足水、热饮料、含气饮料等多类产品需求。PRAN生产的含气饮料——雪碧，含气灌装温度可达到10-12℃。而普通含气灌装机械灌装温度在4~6℃。从能源角度来讲，很大程度上节省能源。同时在灌装阀结构上的改进，使液体沿瓶壁均匀流下，减少了液体撞击所产生的气泡。

此外，PRAN生产热灌装饮品芒果汁。芒果汁在灌装时极易产生气泡，且气泡的消失时间长（该影响对灌装极其不利）。而达意隆灌装机在灌装阀结构上的改进，使液体沿瓶壁均匀流下，减少了液体灌





装时撞击瓶壁所产生的气泡。同时，采用定量的灌装可做到无回流。而普通灌装机灌装回流量一般在15%，回流量大，再次灌装有风险，将为再次处理增加能源消耗。另外，需要投资其他过滤等操作设备，额外增加附加设备的投入。

多功能灌装机配置流量计计量，质量流量计可以同时满足灌装含气饮料与纯净水的要求，也可以灌装果汁等热饮料，适用范围较广。灌装阀的设计可以满足中温含气灌装的要求，另外还可以做到良好的CIP效果。

优势明显

流量计计量灌装机与传统的机械阀灌装机相比，基本灌装原理相同，都是利用等压灌装原理。但在灌装定量方式上不同，传统机械阀灌装利用排气管来确定饮料在瓶内的液面高度；流量计定量的灌装则是利用流量计本身的计量特点，直接计算确定灌入瓶内液体的容积。

由于定量方式的不同，而使流量计定量的含气灌装阀与传统的机械式含气灌装阀在结构和性能等方面

有了诸多不同，且明显优于机械式含气灌装阀，但成本高昂（电磁流量计成本较低，但不能用于纯净水的灌装）。

实际生产中，多功能设备能生产水，含气，热灌装，运动功能等饮料产品；客户投资一台设备就可以完成原来多台设备所能完成的事情，大大降低成本和管理费用。

配置设备

- 底板架采用整体式结构设计，刚性好、强度高、震动小、不易变形。
- 整体式底板架覆盖不锈钢面板，封闭式围框，保证灌装机工作区洁净度；一体式的底板架结合周边接水槽，防止灌装区域的水乱流到地面上。
- 底板架采用数控龙门加工中心加工，能完全保证整机的运行精度要求。
- 传动系统采用标准化设计星轮座，结构统一、零件互换性好。
- 传动系统使用一体式齿轮传动，结合底板架采用数控龙门加工中心精密加工，相比连轴器连接方

式，能更有效提高传动精度。

- 整机由齿轮同步，由一个SEW的变频电机减速器提供动力，传动准确。
- 传动系统相比采用键连接的旧设计，标准星轮座使用胀紧套设计，能有效消除加工间隙、装配间隙及因长期运行引起键磨损的间隙，轴向位置可任意调节，星轮间传递、瓶子交接更平稳。
- 每一个标准星轮座都配置有扭矩限制器，在机器出现撞瓶、卷入衣物等异常情况时，能及时使星轮自动脱开机器传动，并通过电气检测停机，避免机器损坏、人员受伤，提供设备运行的安全性。
- 传动系统配置有电气保护检测装置，能有效、及时地检测出异常情况，并通过电气控制系统判断，使机器减速、停机，保证机器、人员安全。
- 超洁净围框：外观新颖漂亮，表面凹凸有致，整个外形看起来具有立体感，谐调自然。围框内所有表面都是竖直或倾斜的，面与面之间过渡圆滑，这种结构使冲洗变得简单方便，冲洗水很快排干，防止了表面积水而滋生细菌。门窗密闭性好，有



利于隔绝外面空气的污染，保证灌装环境的正压和洁净度。门采用夹层钢化玻璃，不易刮花，长久不变色，时间久了也是新的样子，玻璃是夹层的，碎裂后还会粘在一起，不会往下掉落砸伤人体，保证人体安全。

- 全新电气控制系统：所有站点采用以太网和设备层环网技术(DLR)。双向通讯，单点网络故障不影响系统运行，且自愈恢复时间3ms。分布式I/O减少配线和故障发生点，维护方便。故障自诊断，实时监测各站点的运行情况，出现故障及时报警，快速发现。自制高度编码器，可记住灌装、旋盖每种瓶型的工作高度，一键自动升降到设定高度。各种参数以配方形式保存，更换产品快速方便。

实施功效

- 灌装精度更高：采用质量流量计与电磁流量计灌为计量的灌装，可以保证准确的灌装量。
- CIP清洗彻底：CIP自动假杯，机械结构稳定可靠；
- 采用全自动清洗假杯装置，假杯通过气缸导轨实现假杯密封板的伸出与收回。

自动清洗假杯有两个作用：一是温度回流功能。当物料罐的温度计显示灌装物料温度低于设定值时，密封板自动伸出与灌装阀密封，物料罐内的灌装物料通过灌装阀与外部前处理的回流罐连接，实现物料罐内物料的温度回流功能。当物料罐温度逐渐升高达到设定温度，密封板自动收回，即可进行正常灌装；二是CIP功能。进行CIP时，密封板自动伸出与灌装阀密封，CIP液对整个灌装机内部进行清洗杀毒，当CIP完成后，密封板通过导轨装置收回。

- 灌装调整灵活方便，可远程控制，可实现故障诊断；利用流量计调整灌装所需量，全程通过电气触摸屏操作控制，以及各种流量液位的控制。
- 液损降低；利用流量计灌装，可控制灌装量，做到少回流或无回流（只需一次调整即可灌装容积的变化，只需要在触摸屏中选择相应的灌装量即可。



- 配方更换时，选择相应的配方，一次调整保存，需要切换产品时一次切换即可。图中即为，不同饮品，不同瓶形之间的切换。
- 含气灌装时可实现相对较高的灌装温度，节省能源消耗；
- 灌装过程可实现快慢灌切换，使灌装过程更稳定；
- 适用范围广，可灌装含气饮料、水饮料、果汁饮料等几乎大部分液体饮品。

价值在延续

- 2015年，越南NUMBER ONE客户购买36000瓶/小时吹灌旋多功能设备，目前已在客户现场正常投产；
- 2015年，广元娃哈哈客户购买48000瓶/小时（水）和30000瓶/小时（含气）的吹灌旋多功能设备，目前已在客户现场正常投产；
- 2016年，广东健力宝客户购买24000瓶/小时（含气）的三合一多功能设备，目前已在客户现场正常投产；
- 2016年，印度Megha客户购买28000瓶/小时（含

气）的吹灌旋多功能设备，现正在发往印度途中。

随着饮料市场的多样化，从水、果汁、含气到含果肉（纤维、果肉）固体物质饮料的推广，以及粘稠度越来越高的饮品（酸奶，果酱等），客户在包材方面进行节省和包装容器及材料方面的改变以节省成本。种种因素促使客户对多功能灌装设备工艺、结构的要求越来越高，一台机器在所有灌装类产品的应用是未来挑战的目标，也是多功能灌装设备的发展潜力所在！

In different filling ways, filling machine has different requirements for the products to be filled. At present, problems existed in the development of the filling machine include various filling materials to require different machine models but with less standardization, batch production is hard to accomplish, and poor mating support among enterprises relating to filling equipment. It needs to reform the traditional packaging process of the filling



machine. Meanwhile, with the rapid growth of Chinese beverage industry and the continuous emerging of new hotspots and growth points in the industry, new beverage category is growing and multifunctional filling machinery market is of great development potential.

Value Enhancement

In 2013, PRAN, a world's leading food manufacturer in Bangladesh, introduced a Tech-Long 30000BPH triple multifunctional filling equipment. This equipment can simultaneously meet the demand for various products like water, hot beverage, carbonated beverage etc. The filling temperature of Sprite(a carbonated beverage produced by PRAN) can reach 10-12°C. While, with ordinary carbonated filling machine the temperature shall have to be 4-6°C. From an energy-saving viewpoint, the energy is largely saved. In addition, improvements in filling valve

structure make the liquid flow along the sidewall evenly and reduce the bubble generated due to the impact of the liquid.

Moreover, PRAN also produces hot filling beverage mango juice. Mango juice is easy to produce bubbles when filling , and it will take a long time for the bubbles to disappear (it has extremely negative impact on the filling). However, the improved filling valve provided by Tech-Long can allow the mango juice to smoothly flow into bottle along its sidewall and greatly reduce bubbles generated due to the liquid impact. At the same time, the use of volumetric filling can achieve zero reflux. While the filling reflux rate of the ordinary filling machine is generally 15%. The reflux is large, and it is risky for the next filling cycle to be handled and will increase energy consumption for reprocessing. Furthermore, it needs to invest

in other operating equipment such as filtration equipment, which additionally increases the investment in auxiliary equipment.

Multifunctional filling machine is equipped with flowmeters to measure. Mass flowmeter can simultaneously meet the demand for filling carbonated beverage and purified water, and can also fill fruit juice and other hot beverages, with a wider scope of application. The design of filling valves can meet the requirements of mid-temperature carbonated beverage filling, and also can achieve a good CIP results.

Obvious Advantages

Compared to traditional mechanical valve filling machine, flowmeter filling machine has the same basic filling principle, i.e. using isobaric filling. But they have a different liquid control method. The traditional mechanical valve uses vent tube to determine final liquid level in the filled bottle, while flowmeter uses meter itself to directly measure liquid volume to be filled into bottle.

Due to different liquid control method, carbonated beverage filling valve with flowmeter is significantly better than that of mechanical valve in terms of structure and performance, but it costs much more (if with electromagnetic flow meter, the cost can be lower but purified water cannot be filled at the same time).

In practical production, this multifunctional equipment of Tech-Long can be used to fill water, carbonated beverages, hot drinks, functional drinks and other beverage products; clients can accomplish various production



originally done by multiple machines in such one equipment, greatly reducing investment costs and management costs.

Equipment Configuration

- Base frame uses integrated structure, with good rigidity, high strength, low vibration and less deformation.
- Front panel in stainless steel works together with enclosed framework to ensure cleanliness of entire filling zone; base frame is connected to surrounding water collector for the protection of water in filling area from flowing to the floor.
- Precise CNC center is applied for the manufacturing of base frame and running accuracy of overall plant can be assured in this way.
- Transmission system adopts standardized star



wheel base, with unified structure and good interchangeability.

- Transmission system uses integrated gear drive, and the combined base frame is critically processed by CNC gantry machining center. Compared to couplings, it can more effectively improve the transmission accuracy.
- The complete machine is synchronized by engaging gears driven by one SEW motor, with accurate transmission.
- Compared to the old design using key connection, tension sleeve is used on standard star wheel base to effectively eliminate machining gap, assembling clearance and the gap caused by worn key due to long-time running, and assure flexibly adjustment of star wheel in axial direction and enable bottle to be transferred more smoothly.

- Each standard star wheel base is configured with a torque limiter. In the event of abnormal situations, such as bottle bumping, clothing drawn in machine and etc., the star wheel will automatically disengage from the machine transmission in time, and stop the machine via electrical detector so as to avoid damage to the machine and injury to personnel, providing the safety of the equipment operation.
- Transmission system is equipped with electrical protection detectors which can effectively and timely detect the unusual situations, and make a judgement via the electrical control system to slow down and shut down the machine to ensure the safety of personnel and the machine.
- Ultra-clean enclosure frame: the appearance is novel and beautiful, the surface has smooth curve, and the shape is three-dimensional,



harmonious and natural. All surfaces in the enclosure frame are vertical or inclined and transitions between the surface are smooth, which make it easy and convenient to wash and make wash water quickly be drained so as to prevent surface water and bacteria-breeding. Doors and windows have good tightness, being beneficial to cut off outside air pollution and ensuring the positive pressure and cleanliness of the filling environment. The door is made from laminated tempered glass, which is difficult to be scratched, and its color will not change for a long time, so, it looks still new over time. And the glass is laminated glass, which will stick together after fragmentation and will not fall down and injure human body, so as to ensure human safety.

- The new electrical control system: all sites use Ethernet and Device Level Ring (DLR). Two-way

communication: single-point network failure does not affect the operation of the system, and self-recovery time is 3ms. Distributed I/O reduces wiring and failure points, being convenient for maintenance. Fault self-diagnosis, real-time monitor the operation of each site, and quickly find and timely alarm if there were malfunctions. Homemade altimeter coder can record the working height of the filling and capping of each kind of bottles, and can automatically lift to the required height by one-key. Various parameters are saved in the form of recipe, being quick and convenient to replace the product.

Implementation effect

- Filling accuracy is higher; the filling using mass flowmeters and electromagnetic flowmeters for the measurement can ensure the accurate



filling volume.

- CIP thorough cleaning: CIP automatic fake cup, with stable and reliable mechanical structure;
- Automatic cleaning fake cup device is used, and the extending and retracting of the sealing plate of false cup is achieved by cylinder rail.

Automatic cleaning fake cup has two effects: First, the function of temperature reflux. When the thermometer of the material tank shows that the temperature of filling material is below the set value, the sealing plate automatically extends to seal with filling valve, and the filling material in material tank is connected to outside pre-treated return tank via filling valve, so as to reflux temperature of the material in material tank. When the temperature of material tank gradually rises to the set value,

the sealing plate automatically extracts, and then normal filling can be performed; second, CIP function. When performing CIP, the sealing plate automatically extends to seal with filling valve, and then the CIP liquid cleans and disinfects the inside of the filling machine. After completing CIP, the sealing plate is extracted by rail device.

- Filling adjustment is flexible and convenient, and remote control and fault diagnosis can be realized; use the flowmeter to adjust the desired amount of the filling, of which the operation and control during the whole process are realized by electrical touch-screen, and control the level of various flow liquid.
- Liquid loss is reduced; when using flowmeters to fill, the filling volume can be controlled, so that there is little or no reflux (filling volume

can be changed by only one adjustment, i.e., select appropriate filling volume in the touch screen.

- When changing recipe, select the appropriate recipe, adjust and save the recipe at a time, and switch at a time if required to switch products. The figure shows the switching between different beverages and different bottle shapes.
- When filling carbonated beverage, a relatively higher filling temperature can be achieved, saving energy consumption;
- During the filling process, switching between quick filling and slow filling can be achieved, making the filling process more stable; the following figure is CIP diagram.
- It can be widely applied, being able to fill most of the liquid like carbonated beverage, water beverage, fruit beverage and others.



- moreover, 28,000 BPH (carbonated) blow molder-filler-capper multifunctional monobloc purchased by India Megha in 2016 is on its smooth way to customer site.

Value is Continuing

- The Tech-Long 36,000 BPH blower-filler-capper multifunctional equipment bought by Vietnam NUMBER ONE in 2015 is now putting to use in customer site;
- the blowing-filling-capping multifunctional equipment at the speed of 48,000 BPH (for water-fill) and 30,000 BPH (for carbonated-fill) bought by Guangyuan WAHAHA in 2015 works now perfectly on the site of customer;
- 3-in-1 multifunctional filling bloc for the client of Jianlibao Group has been putting into operation successfully at the speed of 24,000 BPH in its Guangdong plant;

With the diversification of beverage market and the promotion of water, juice, carbonated beverage, and solid beverage containing flesh (fiber and flesh), as well as the beverage with higher and higher viscosity (yoghurt, jam, etc.), customers reduce packaging materials consumption and change packaging container and material to save costs. Various factors impel customers to have higher and higher requirements on multifunctional filling equipment's operating procedure and structure. And the target of future challenges is to use one machine to complete the filling of all products, which is also the development potential of the multifunctional filling equipment!

如何构建合理的瓶盖生产线

HOW TO BUILD A PROPER CAP PRODUCTION LINE



优质的瓶盖源自稳定的生产工艺，稳定的生产工艺主要依赖于几个方面，包括性能良好的机器和精密可靠的模具，还有科学合理的成型工艺，除此以外，可能很多人往往会忽视一个最原始的影响因素，那就是瓶盖生产线设计合理与否，也就是说，要生产出优质的瓶盖，首先要设计出一条科学合理的瓶盖生产线。下面，晶品公司就和大家分享下关于如何构建科学合理的瓶盖生产线方面的知识。

踏足珠三角长三角等制造业发达地区，发现很多中小型瓶盖厂家生产线构架不够合理，而这些瓶盖厂往往经常为客户的各种投诉和退货返工疲于奔命，如今天被客户投诉瓶盖变形，明天客户反映瓶盖漏气漏液，隔天又有瓶盖断环不良或高歪盖比例高等各种各样的问题，瓶盖质量时好时坏，实在不胜其烦。其实，他们的设备质量也不差，性能也相对稳定，质量管理也不会很差，为什么做出来的瓶盖就是差强人意呢？答案也许在这里，和设计不合理的瓶盖生产线有很大关系。举个例子，压塑工序出来的瓶盖直接进入切环机，中间没有任何的缓冲仓，切环机稍有不顺停顿几分钟，压盖机做出来的瓶盖就无处堆放而被迫使用人工接盖，而有些产线的后工序速度又比前工序快太多，导致速度快的机器要等待瓶盖而总是开开停停，这样更加会引起产品质量不稳定。下面，我们就以最典型的1881单片防盗瓶盖为例一起探讨如何将这条瓶盖生产线合理化，这款瓶盖需要经过压塑，折边，切环，顶部印刷四个工序，此生产线是按专供可口可乐1881碳酸饮料盖的标准设计的，两台压盖机生产瓶盖，后续由一台折边及切线机，和一台印刷机组成，每台压盖机速度为800pcs/分钟，所以整线生产速度为1600pcs/

分钟，时速为96000pcs/小时，属于传统意义上的高速瓶盖生产线。

首先从上料系统说起，通常瓶盖原料由树脂与色母混合搅拌组成，有特殊要求的瓶盖的原料可能会由两种不同的树脂按规定比例混合，然后加入色母及爽滑剂之类的辅助配方。一般的小型瓶盖厂都是依靠人工称量色母及原料然后人工混合后使用，这样就会带来配比不稳定的问题，为瓶盖颜色偏差的问题埋下隐患。中大型的瓶盖厂都是采用自动计量机，如松井计量混合装置，也有很多国产的计量混合系统。使用自动计量机，原料配比会严格按照设定值进行，避免人为偏差，还有一个现实问题就是高速瓶盖生产线依靠人工混料是基本是不可能的，只有小型工厂才会为了降低成本而人工拌料。

瓶盖从压塑机出来后，温度通常是很高的，如果这个时候在瓶盖输送时候稍有挤压瓶盖就会变形，变形的瓶盖会对后线的折边及切环带来不良影响，同时很多客户都会对变形瓶盖敏感度较高，瓶盖变形往往是投诉率较高的缺陷之一。所以瓶盖从压盖机出来后，特别是类似于1810，1881,38mm的顶厚大的瓶盖，最好不要马上进入折边机，应该使用冷却皮带或爬坡式送盖器，或滚筒式冷却器，让瓶盖在输送过程中得到冷却。除此还有另外一种也是很好的冷却方式，就是使用鼓风机，瓶盖从压盖机出来后直接进入鼓风机，瓶盖在风力的作用下在输送管道里运行，风力的作用既可充分冷却瓶盖，又可达到输送瓶盖的目的。

很多人去一些大型瓶盖厂参观可能会发现，他们的



生产线往往有好几个中转仓，基本上每个工序之前及之后都有对应的瓶盖中转仓，可能有人会觉得这些中转仓做不太必要，既占地方又增加成本。其实不是的，这些中转仓的存在是有意义的，对瓶盖的连续稳定性有很大的帮助。

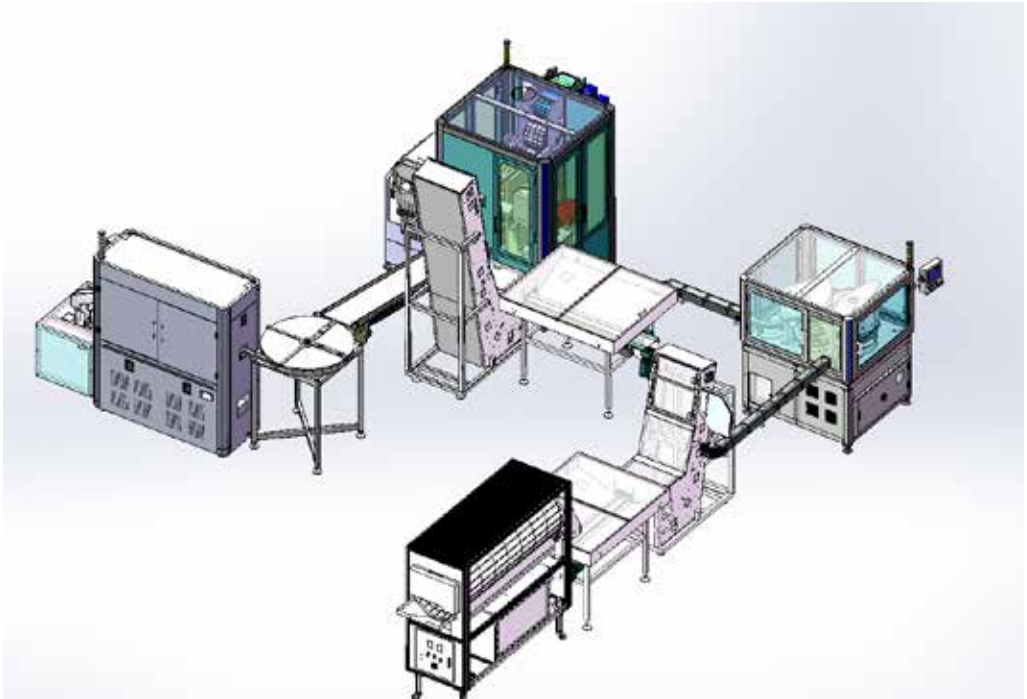
压盖机瓶盖出来后通过输送管道进入折边前的中转仓，中转仓数量为两个，每台压盖机对应一个中转仓，每个中转仓容积为2立方米，基本可容纳压盖机1小时的产量。每台压盖机对应独立中转仓，而不是集中到一个大中转仓，其目的是生产过程中如果其中一台机的瓶盖出问题可及时隔离，降低扩散到另外一台压盖机瓶盖的风险。

中转仓的设计也是有一定技巧的，并不是简单的一个铁框，大家可看到，仓里面会增加几个斜面，其目的是避免瓶盖直接堆压造成变形。中转仓外部是

采用透明亚克力板，从外面可以随时看到中转仓的瓶盖堆积情况。

中转仓下面有个输送皮带，瓶盖从中转仓底部进入一个鼓风机，瓶盖进入折边前的中转仓，中转仓出来后是一个大型垂直理盖器，理盖器采用电眼监测瓶盖堆积量，保持定量的瓶盖进入理盖器。垂直理盖器的作用是将瓶盖全部朝上，通过轨道进入折边机，折边机的速度是1700pcs/min，比压盖机速度快6%左右，这种速度差比较合理。既不会比前工序快太多，不会经常停机待盖，生产中折边机如有小问题处理也不会耽误压盖机，毕竟压盖机后面还有一个能容接近1小时产能的中转仓，科学的工序设计基本都是后线比前线快6%至8%即可。

理盖器瓶盖出来后会进入一个蛇形轨道，这种蛇形轨道是起到一个缓冲作用。和节假日的各大火车站



汽车站类似，进站前有很多拐来拐去的铁码隔栏，虽然离进站口就几米距离，但是大家要绕好几圈才能进站，这样可保证良好的进站秩序。

S型轨道的作用基本类似，就是让瓶盖一个接一个紧贴着稳定畅顺地进入折边机，以保证良好的折边工艺，如果缺少此S型轨道，瓶盖就会从理盖器轨道下来后直接进入折边机的星轮转盘，瓶盖与瓶盖之间跟随不紧密，容易出现卡盖或折边及切环不良。

折边和切环是采用一体机，也就是折边后的瓶盖通过星轮转盘后马上按先后顺序进行切环。折边和切环采用齿轮联动，其转盘转动速度是一致的。折边和切环采用一体机，可有效降低机器占地空间及节省一些辅助的理盖器和中转仓。

折边和切环后出来的瓶盖经过在线检测系统后进入鼓风机后输送到印刷前的中转仓，此中转仓约可容

量接近2小时左右的产量，做过印刷的人都知道，瓶盖印刷机需要人工介入的几率较高，如生产一段时间后可能会慢慢印刷模糊或印刷偏浅的，这时需要停机进行人工洗擦印版和胶条，或者微调上墨量，所以印刷前中转仓的容量设计大一些是非常合理的。印刷机的速度设计为1900pcs/分钟，与折边切环速度快200pcs/分钟，其原因也是因为印刷机需要停机的时间和次数较多。

瓶盖在印刷机里面经过火焰处理，上油墨，UV灯固化三个步骤后出来就是成品瓶盖了，印刷机出口端设置了计数器，瓶盖会进入自动包装系统，一箱装满后纸箱会自动往前移开，下一个空箱会移到装盖处。

总体来说，压盖机一般是不停机的，除非出现异常情况，折边切环可允许偶尔停机，一个班约2到3次，印刷机停机几率就相对较多。各个工序按先后顺序



采用合理的拉动式的速度差，尽量保证瓶盖稳定连续生产。

广州晶品智能压塑科技股份有限公司在瓶盖机械领域处于国内领先地位，在合理化产线布局方面有丰富的经验，海内外客户众多，有大量的瓶盖生产线布局样本可作为设计参考所用。一切以客户需求出发，晶品公司提供的不仅是性能卓越的瓶盖生产装备，还有一体化的瓶盖生产设计方案。

High quality cap arises from the stable production technology, and the stable production technology mainly depends on several aspects including good machines and reliable and precise molds, as well as scientific and reasonable molding technology. In addition, one of the most original factors is ignored by many people, namely, the

reasonability of the design of the cap production line, in other words, a scientific and reasonable cap production line should be designed firstly so as to produce high quality cap. Next, Guangzhou Jeepine shares knowledge with you on how to build a scientific and reasonable cap production line.

When setting foot in regions with developed manufacturing industry such as the Pearl River Delta and the Yangtze River Delta, it found that production line structures of many small and medium cap factories were not reasonable, and these factories were often tired and exhausted from running about on missions like a variety of complaints, returns and reworks from customers, for example, cap deformation complaints in



today, cap leakage in tomorrow, poor twisting ring and high proportion of high and crooked caps in next day and other problems. The quality of caps is unstable, which is too troublesome. In fact, the quality of their equipment is not bad, the performance is relatively stable, and the quality management is not bad. So why the cap produced is barely satisfactory? Perhaps the answer has a great relationship with the unreasonable design of the cap production line. For example, cap directly enters into ring cutting machine after coming out from compression molding, without any surge bin between the ring cutting machine and the compression molding. If the ring cutting machine paused for a few minutes due to some reasons, caps produced from molding machine have nowhere to stack and are forced to be

received by hand, however, the speed of post working procedure of some production lines is much faster than that of preceding working procedure, resulting in that the machine having fast speed is always started and shut down to wait caps, which makes the quality of products more unstable. Here, we take the most typical 1881 pilferproof cap as a case to explore how to rationalize the cap production line. This cap needs to go through 4 working procedures: compression molding, folding, ring cutting, and top printing. The production line is specially designed for Coca-Cola 1881 cap, including two compression molding machines, one folding and ring-cutting machine, and one top printing machine. As the speed of each compression molding machine is 800pcs / min, the speed of



the whole production line is 1600pcs/min, and the speed per hour is 96000pcs/h, as a traditional high-speed cap production line.

First of all, we start from the feeding system. Generally the raw materials for bottle caps are the mixture of resin and color master batch. The raw materials for bottle caps with special requirements may be the mixture of two different kinds of mixed according to proper proportions with the addition of such auxiliary materials as color master batch and slip master batch normal. Small bottle cap factories normally weigh and mix the color master batch and raw materials by hand, which may cause the problem of unstable composition and leave potential hazards for the problem of color deviation. All medium and large bottle cap factories use automatic metering machine such as Matsui metering and mixing device, along with homemade metering systems. Automatic metering machine can ensure that the raw material ratio strictly complies with the set value so as to avoid deviation. Another practical problem is that it is impossible for



high-speed bottle cap production lines to rely on manual mixing, and only small factories will mix manually to reduce the cost.

As the bottle cap coming out from the compression molding usually has high temperature, a slight press can cause deformation to the bottle cap, which may affect the followed folding and ring-cutting effect. At the same time, many customers are highly sensitive to the deformed bottle cap, which is a defect with high complaint rate. Given this condition, the bottle caps, especially those with thick and large tops (1810, 1881, 38mm) shall not enter the folding machine right after coming out from the molding machine, but be cooled down through the conveying process by the cooling belt or hopper-type cooler. Besides, another good way for cooling is to let the bottle cap directly enter the air blower right after coming out of the molding machine and then be conveyed by the air conveyor which can not only sufficiently cool off but also convey the bottle cap.

You might notice there are several turnover iron boxes on the production site of some large bottle cap manufacturing plants. Basically, each processing procedure has its corresponding turnover box to connect to the next process. It is not just cover space or increase the cost as you might think, but most importantly it indeed play a vital role in the improvement of continuous stability of the caps.

Bottle cap enters turnover box before the folding process through the conveying track. There are two turnover boxes, corresponding to each molding machine respectively. Each turnover box has a volume of 2 cubic meters, enough for accommodating one hour's output of the molding machine. Each molding machine has an independent turnover box, rather than share a large one, with a purpose to isolate the faulty bottle caps on one molding machine and reduce the risk of them spreading to the other.

Rather than a simple metal frame, the turnover box is designed in a smart way by designing a couple of slopes in it so as to avoid the deformation caused by the direct stacking of the bottle caps. The exterior of the turnover box is made of transparent Acrylic plate so that the stacking in the relay cabin can be observed from the outside.

Below the turnover box is a conveying belt. The bottle cap enters an air blower through the bottom of the turnover box. Then the bottle



cap enters the turnover box before the folding machine. There is a large vertical cap sorter, which relies on an electric eye to monitor the stacking volume of bottle caps and ensures that a certain quantity of bottle caps can enter the cap sorter. The function of the vertical cap sorter is to make all bottle caps upward and enter the folding machine through the track. The speed of the folding machine is 1700pcs/min, around 6% faster than the molding machine, a rather reasonable speed difference. On the one hand, it shall not be much faster than the previous process to such extent that it needs to frequently halt to wait for new caps. On the other hand, even if small problems arise on the folding machine, they won't affect the molding machine. After all, there is a turnover box with an accommodation capacity of nearly one hour's output. In most scientific design processes, followed procedure of a production line shall be 6%-8% faster than the previous one.

After coming out, the cap sorter will enter



a serpentine track, which will have a buffer function. Quite similar to various large train stations/bus stops on holidays and festivals, there are many metal fences. Although they are only several meters from the entrance, people need to make detours before getting in so as to maintain good order at the entrance.

S-shaped track has a similar function, which is to allow bottle caps to enter the folding machine one after another in a stable and smooth manner to ensure perfect folding process. If the S-shaped track is lacking, the bottle neck would directly enter the start wheel of the folding machine to create a large space between bottle caps, which may cause the caps to be stuck or result in faulty

folding or ring cutting.

Folding and ring cutting are completed by an all-in-one machine, with which flanged bottle caps go through ring cutting one by one right after passing through the star-wheel rotary table. Folding and ring cutting are completed under the function of engaged gearing to ensure synchronous rotating ratio. In this way, floor space of the machine can be effectively saved with also less auxiliary cap sorters and turnover boxes.

The bottle caps that have completed folding and ring cutting enter the air blower through the online detection system and then are conveyed



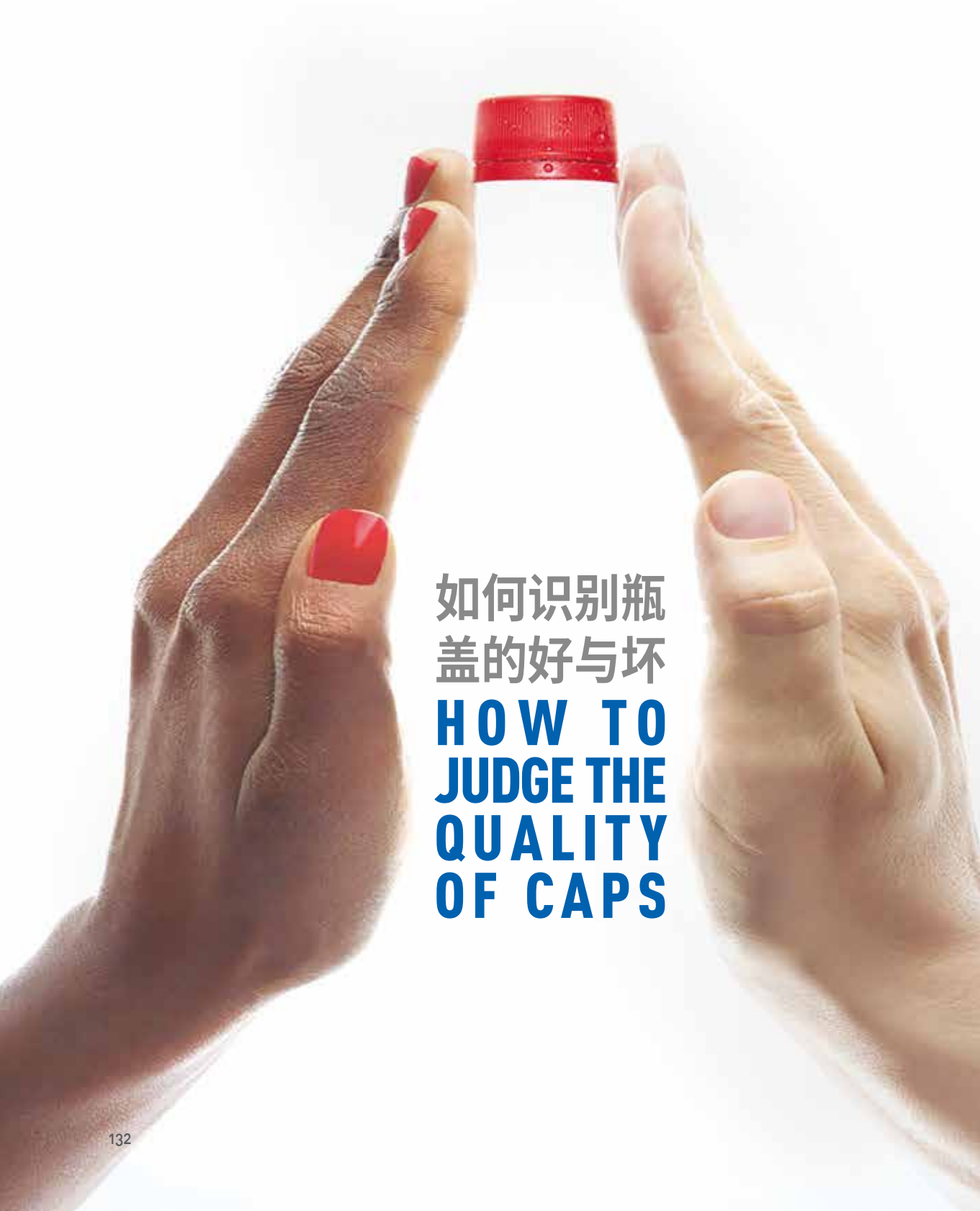
to the turnover box before printing. The turnover box has an accommodating capacity for around two hours' output. All who have been in the printing industry shall know that cap printers are highly likely to require human intervention. For example, after a period of production, the printing may become fuzzy or with light colors, when the printer needs to halt for manual scrubbing of the printing plate and rubber strip or slight adjustment of the ink volume. Therefore, it is very reasonable to design large-volume turnover box before the printing. The design speed of the printer is 1900pcs/min, 200pcs/min faster than the folding and ring cutting speed, due to the fact that the printer needs to be stopped more frequently for a longer time.

The bottle cap will become finished products after three steps, i.e. fame treatment, the application of printing ink and UV light. A counter is arranged at the exit end of the printer so that the bottle caps can enter the automatic packing system. Once a box is filled, the box will

automatically move forward, leaving the space to the next empty box.

In general, the molding machine won't stop unless in abnormal situations. Folding and ring cutting allow occasional stops, two or three times for one batch. By contrast, there is a much higher likelihood for the printer to halt. There shall be a reasonable sequential pull-type speed difference between different processes to maintain continuous production of the bottle caps.

As a domestic leader in the field of bottle cap machines, Guangzhou Jeepine boasts rich experience in rational production line layout and a large number of overseas clients, with a wide variety of layout patterns for bottle cap production lines for other enterprises to refer to. All for customers. What Jingpin offers is not only excellent production equipment for bottle caps, but also integrated production line designs.



如何识别瓶
盖的好与坏
**HOW TO
JUDGE THE
QUALITY
OF CAPS**

现在市场上做饮料盖的企业很多的，做盖的竞争也比较激烈，各种各样的企业都有。有规模大的，有规模中等的，也有只有一两台机的“个体户”的，有用压塑技术做的，也有用注塑技术的，有国外品牌的机器，也有国内品牌的机器，五花八门，各式各样。那么问题来了，什么样的瓶盖才算如意瓶盖？

一、安全性

首先，好的瓶盖必须是安全的。这个安全包含两个层面，一个是食品安全，一个是功能安全。

食品安全即为天，作为一个供盖厂，它必须能给你提供QS认证，必须有洁净的生产环境和规格的质量控制，必须要使用合法合规的PE或PP原料。不得使用回收料，粉碎料和来路不明的原料，它必须要给你提供原料采购合规性证明。作为一个饮料厂，如果用了旧料废料，回收料做的盖子，或者用了没有QS认证的盖子，恭喜你，你分分钟都可能要关门。

功能性安全是盖子本身的应有之一。任何饮料在经过繁杂的清洗，消毒，杀菌等等工序后，最终都要进行灌装和封盖，盖子是保持消杀成果的守护神，在所有包装材料里面，盖子具有神一样的地位，是灵魂，是领袖，如果盖子在它本身的密封安全性上出了问题，那么这个盖子做的再好看，再创意，都是白搭。所以，稳定的，经得起各种工况环境检验

的密封性能是一个好盖子的最重要的检验标准。比如说，这个厂的盖子，它是不是每一批次的密封性都是可靠的？它会不会偶尔有些批次会漏水漏气？它在饮料的有效期内（一般是一年）内的密封性怎么样，会不会三个月的漏气漏水？它在运输与颠簸过程中会不会漏气漏水？它在冰冻后会不会漏气漏水？所以说，稳定的经得起各种工况环境检验的密封性，才是真正的密封性，而不是在试验室测一下压力那么简单。

二、消费者体验

其次，好的瓶盖一定要让消费者有好的消费体验，也就是说开盖一定要轻松。“专注瓶盖那点事”注意到，广东有家著名的纯净水品牌，它的盖子是出了名的难开，不要说小孩和女孩，就是几十岁的老男孩开起来也很辛苦，有时在大庭广众之下显得这些消费者不爷们，真是手无开盖之力啊！

三、与产品生产线的匹配率

好的瓶盖一定是能提高饮料线的生产效率，而不是降低生产线的效率。有些瓶盖因为盖形设计的原因，盖子质检的原因或者饮料工艺的原因等，会经常导致生产时出现高歪盖，卡盖等问题，导致生产线停机，让生产效率大打折扣，这样的盖子就算买的便宜，用起来还是贵的。



Nowadays, there are a huge number of beverage bottle cap manufacturers of varying quality on the highly competitive market. Of these manufacturers, medium and large enterprises coexist with self-employed entrepreneurs that only operate on one or two machines. Some rely on compression molding, while others opt for injection molding. Some machines are homemade, while others are imported. In a word, the products are manufactured with diverse techniques and tools. Here comes the question: what bottle caps can be regarded as perfect?

I. Safety

First of all, bottle caps of good quality shall be safe. Safety has two levels of meaning. One is food safety and the other is functional safety.

Food safety is of vital importance. A bottle cap manufacturer shall have obtained QS certification, created a clean production environment and standard quality control and use legal and compliant PE or PP materials for its production. It shall not use recycled materials, crushed materials or any material of questionable origin and shall present the compliance certificate for the procured raw materials. If a beverage factory manufacturers bottle caps with old or scrap materials or without QS certification, its closedown is only a matter of time.

Functional safety is one of the essential attributes of the bottle cap. All beverages shall be packed and capped after going through a series of processes like cleaning, disinfection and sterilization. Caps are the guardian for

the fruits of these laborious processes. In all packing materials, caps enjoys a status of supremacy as the soul and the leader. If the caps themselves have problems in sealing, they would be of no use no matter how gorgeous and innovative they look. Therefore, stable sealing performance that can stand the tests of all kinds of working conditions and environment is the most important inspection standard for a good cap. For example, do all batches of bottle caps of the factory have reliable sealing property? Will there be water or air leakage for some batches? How is its sealing performance during the period of expiration (usually 1 year) and will there be water or air leakage in three months? Will there be water or air leakage in the transport process? Will there be water or air leakage after frozen? Therefore, only stable sealing performance that can stand the tests of various working conditions and environment are acceptable, and a simple test pressure in the lab is far from enough to do the job.

II. Consumer Experience

Secondly, bottle caps of good quality shall be able to give consumers excellent consumption experience. That is to say, the cap shall be easy to open. "Focus on cap" noted that a famous established purified water brand in Guangdong is well-known for its extremely-difficulty-to-open caps. Strong middle-aged men may make painstaking efforts to open the cap, not to mention little kids and slim girls. Sometimes it is a shame for a man who can barely open the cap of a bottle in public!



III. The Matching Ratio with the Production Line

Good bottle caps can raise rather than reduce the production of the production line. Due to such factors as design, quality inspection or beverage processes, bottle caps after capping may have problems like high-caps or skewed-caps, which may cause the production to halt and greatly affect production efficiency. Although bought at a cheap price, these caps can be expensive to use.



MARKET M



NEWS 市场 动态

2017年饮料行业八个“主要”趋势

Eight “Major” Trends of the Beverage Industry in 2017

饮料行业是世界上最具活力的产业之一，每天都有新产品推出。据预测，2017年饮料业发展有8大趋势。消费者越来越需要天然、美味、健康产品，饮料行业必须适应这些要求



植物水

每个人都知道，近10年推出的椰子汁是一个成功的饮料种类，但现在新玩家在推town-plant水。

桦树液水就是一个例子，这种水的收集通常在地球北部地区。这是一个非常独特的和有限的原材料，采集期只有两到四个星期。就像椰子汁，桦树汁对人类健康有着积极的影响。它富含抗氧化剂，天然矿物质，木糖醇，天然糖。许多人认为，它可以帮助治愈关节炎、痛风、甚至减少脂肪聚集。在春天它的味道非常温和，让人联想到水。

植物水的另一个潜在来源是仙人球，它是仙人掌的一种，有强势替代椰汁或芦荟汁的趋势。仙人掌的好处听起来真的令人印象深刻：适用于糖尿病患者，有助于抗高胆固醇，甚至可以治疗宿醉。

自然酿造茶和咖啡

冰茶类饮料已经流行了几十年，这一类饮料是时候该创新了。目前，在饮料行业，天然和健康是主要的话题。茶叶频繁取代中草药提取物，就像咖啡豆代替粉提取物。



自然酿造是一个伟大的产品解决方案，味道像自制的咖啡或茶。茶叶的收集，不需使用萃取过程，就可用于即饮饮料生产。这类产品不需要添加糖或甜味剂，因为主要目标是尽可能多的保留自然风味和天然抗氧化剂。

其中最受欢迎的茶叶是木槿或栗色。这种植物来自非洲，是以控制胆固醇和高血压的能力而闻名的。木槿叶提供一个清爽的轻酸味和美丽的天然红色。

氨基酸的运动饮料

健身饮料行业一直是一个小众市场，但现在是主流。由于随之而来的各种运动饮料的需求不越来越大，各种产品的增长速度比以往任何时候都更快。

创建一个美味的配方，提供一个良好的结果，对功能饮料来说是一个巨大的挑战。氨基酸是化学合成，这些成分不是天然的。因此，通过使用天然甜味剂，色

素，口味，甚至酸化剂，保持其余配方成分尽可能天然是非常重要的。

有健康意识的人群更专注于最好的功能性饮料，但他们仍然关心他们的身体处于什么样的状态。与单靠节食相比，使用氨基酸饮料与低热量饮食相结合可能更有利于减肥。这种饮料可以帮助运动爱好者保持肌肉质量和提高运动性能。

零食饮料

在人们紧张的日常生活中，越来越多的人都在努力找时间吃一顿像样的饭。因此，开发出了新snack-type饮料市场，饮料包含苋欧鼠尾草种子、亚麻种子、藜麦和荞麦。快速健康的零食是一个很好的解决方案，可提供天然来源的矿物质、维生素、纤维和其他营养素。

零食饮料，是不能填饱或提供一顿饭所有必需的营养



养物质。因此，这种饮料只能作为正餐的补充。例如，长时间工作时，高吸水的种子可以起到保湿身体，饮料富含纤维可以清洁消化系统。

辣味饮料

过去几年里，只有在“成人饮料”中看到。然而，营销人员通过不断地定位，使成人饮料来代替酒精饮料。最近，这个类别已开始回升。

这种类型的饮料含有辛辣成分，通常不受孩子或年轻一代的喜欢。例如，果汁饮料可以调整使用辣椒粉、辣椒提取物或者姜汁或提取。

辣椒的好处包括减轻癌症、消化性溃疡、更年期问题，降低心血管疾病和糖尿病的风险。在辣椒中含有其他重要的生物活性化合物生物碱和单宁，这个成分不仅可增加香料和饮料的味道，也会带来宝贵的健康属性。

植物蛋白饮料

由于受各种过敏源的影响，消费者正在寻找替代乳清蛋白和动物蛋白质替代品。有麸质过敏症、乳糖不耐症的人可使用植物蛋白质。

这种植物蛋白粉主要用于果汁和果汁饮料，包括麻、大米、大豆、螺旋藻和扁豆蛋白质。

消费者对增加蛋白质摄入量仍然表现出很强的兴趣，越来越多的关注集中在特定类型的蛋白质。渴望清洁标签、易消化、避免过敏原、兼容素食和纯素食的生活方式以及持续性的担忧动物蛋白使消费者更加将关注植物蛋白质。

日本抹茶

抹茶(绿茶类别)已经在过去的几年里得到发展。一个完全不同的抹茶的外观，结合特定的味道、功能、



浊度是创建销售的一个独特卖点。浑浊的外观和独特的口感，增加了消费者对冰红茶抹茶的兴趣，这是一个极其敏感的成分，储存应避免阳光直射。

由于这种独特的产品特性，含有抹茶饮料应用铝罐或利乐包。在2016年，各种新品牌和创新口味的组合抹茶饮料是强势进入饮料市场。2017年，我们可以预期这个成分，会做出更令人惊讶的事情。

高压处理(HPP)饮料

高压处理技术在果汁或果汁饮料是最常见的，能够保持新鲜水果和蔬菜成分。新鲜果汁饮料要求无污染、天然、无防腐剂，为了确保这些，对饮料进行巴氏灭菌是一种常用的方法。然而，由于大多数天然维生素和抗氧化剂对高温非常敏感，生产商和品牌所有者通常需要处理加热给功能成分带来的重大损失。

高压泵能克服一些这样的损失，但技术本身也有自己的优点和缺点，应该考虑。创建一个几乎未经加工的饮料，这也意味着更短的产品保质期、冷藏储存条件的严格要求，只有特定的包装材料可以满足使用。

消费者越来越要求天然、美味、健康产品，饮料行业必须适应这些要求。明年可能会继续突出相同趋势的无糖、低卡路里和更多的功能。饮料品牌所有者的主要任务是满足消费者的需求和保持其产品的效率。

信息来源：食品在线

The beverage industry is one of the most dynamic industries in the world, with new products being introduced every day. It is predicted that the beverage industry in 2017 will take on eight major trends. Since consumers increasingly require natural, delicious and healthy products, beverage industry must adapt to these requirements.





Plant juice

Everyone knows that coconut juice introduced in recent decade years is a very successful kind of beverage, but now the trend setters are bringing in town-plant water.

Take birch juice as an example. It is usually collected in the northern part of the earth. It is a kind of very unique and limited raw material, available for only two to four weeks. Just like coconut juice, birch juice also has a positive impact on human health. It is rich in antioxidants, natural minerals, xylitol and natural sugar. Many people believe that birch juice can help to cure arthritis, gout, and even reduce fat accumulation. In spring, it tastes very mild, which makes people connect it with water.

Another potential source of plant juice is globular cactus, a kind of cactus, which is likely to take the place of coconut juice or aloe juice. The

benefits of cactus sound really impressive: It is applicable to people with diabetes, helpful in treating high cholesterol and even hangovers.

Naturally brewed tea and coffee

Iced tea has been around for decades, and it is high time to bring some new blood into the bottle. At present, the beverage industry emphasizes nature and health. Tea is frequently replacing herbal extracts, just as coffee beans replacing powdery extracts.

Natural Brewing is a great product solution, with the taste just like that of homemade coffee or tea. The tea can be used for the production of ready-to-drink beverage without the extraction process. These drinks do not require additional sugar or sweeteners, as the main objective is to retain as much natural flavor and antioxidant as possible.



The most popular tea is hibiscus or sorrel, which origins from Africa and is known for its effect in controlling cholesterol and high blood pressure. Hibiscus leaves give a refreshing light sour taste and a beautiful natural red color.

Energy drink with amino acids

The fitness beverage industry used to be a niche, but now it has become the mainstream. With the increasing demand for all kinds of sports beverages, the industry will grow faster than ever before.

It is a great challenge for functional beverage to create a delicious recipe and provide a good result. Amino acids are chemically synthesized, and these components are not natural. Thus, it is very important to keep the other ingredients as

natural as possible by using natural sweeteners, pigments, flavors, and even acidulants.

Health-conscious people are more likely to patronize the best functional beverage, but they also care about how their bodies are doing. Compared with going on a diet alone, the use of amino acid beverages combined with low-calorie diet may be more conducive to weight loss. Such a beverage can also help sports enthusiasts maintain their muscle quality and improve athletic performance.

Snack beverages

In fast-paced daily life, more and more people are having trouble in finding time to eat a decent meal. As a result, a new niche of snack-type beverages has been developed, which contains



chia seed, flax seed, quinoa and buckwheat. Healthy and convenient snack is a good solution, which is able to provide natural minerals, vitamins, fiber, and other nutrients.

The snack beverage is not enough to fill an empty stomach or provide all the essential nutrients of a meal. Therefore, it can only be used as supplement to a dinner. For example, when you have worked long hours, hydrophilic seeds can help to moisturize your body. And beverage being rich in fiber can clean your digestive system.

Spicy beverage

Over the past few years, it can only be found in the "adult beverage". However, through the unceasing positioning of marketers, the adult beverage gradually replaces alcoholic beverages.

Recently, this category has started to rise again.

This beverage contains a spicy ingredient and is usually unpopular among children or the younger generation. For example, fruit juice beverages can mix or extract the chili powder, chili extract or ginger juice.

The benefits of chili include easing cancer, peptic ulcer and climacteric problem, and reducing the risk of cardiovascular disease and diabetes. Other important bioactive compounds (alkaloid and tannin) contained in chili, which can not only increase the taste of spices and beverages, but also bring valuable health properties.

Vegetable protein beverage

Due to the effects of various allergens,



consumers are looking for alternatives of whey protein and animal protein. People with gluten anaphylaxis and lactose intolerance can use vegetable proteins.

This kind of vegetable protein powder is mainly used in fruit juices and fruit juice beverages, which includes sesame, rice, soybean, spirulina and lentil proteins.

Consumers continue to show a strong interest in increasing protein intake and pay more and more attention to specific types of proteins. The thirst for a lifestyle with clean labels, digestible, avoiding allergens, compatible vegetarian diet and vegan diet as well as persistent worry on animal proteins make consumers put more attention on vegetable proteins.

Japanese matcha

Matcha (green tea category) has been developed over the past few years. A unique selling point to create sales is the completely different appearance, combined with the specific taste, function and turbidity. The cloudy appearance and unique taste increase the interest of consumer in ice black tea (matcha). Matcha is an extremely sensitive ingredient, so the storage should avoid direct sunlight.

As a result of the unique product feature, beverages containing matcha should be packaged by aluminum cans or tetra Pak. In 2016, a variety of new brands combination matcha beverages with innovative tastes strongly access to the beverage market. In 2017, we can expect that this ingredient will make even more surprising progress.



High pressure processed (HPP) beverage

HPP technology is the most common technology used in fruit juices or fruit juice beverages and is able to maintain fresh fruit and vegetable ingredients. Fresh fruit juice beverages are required to be non-polluting, natural and preservatives-free. And in order to ensure that, pasteurization is a common practice for beverage. However, since most natural vitamins and antioxidants are very sensitive to high temperature, manufacturers and brand owners often have to deal with the significant loss of functional ingredients due to heating.

Although high-pressure pumps can overcome some of these losses, advantages and disadvantages of the technology itself shall be considered, too. The creation of beverage that is

almost unprocessed means a shorter product guarantee period and more strict requirements for refrigerated storage conditions. And only specific packaging materials can meet the requirements.

Since consumers increasingly require natural, delicious and healthy products, beverage industry must adapt to these requirements. Next year, the same trend of sugar-free, low-calorie and more other functions may continue to be highlighted. The main task of the beverage brand owner is to meet the needs of consumers and to maintain the efficiency of their products

Source: Food Online



初生 (摄影者: 洪峰 达意隆营销总部)
Newborn (Photographer: Hong Feng Sales And Marketing Headquarters)


TECH-LONG 广州达意隆包装机械股份有限公司
TECH-LONG PACKAGING MACHINERY CO.,LTD.

广州总部—生产基地
Headquarters & Manufacturing Base - Guangzhou
广州市萝岗区云埔一路23号
No. 23 Yunpu 1 Road, Luogang District, Guangzhou, 510530, China
国内销售热线 Sales Hotline (Domestic): +86 20 62956808
国际销售热线 Sales Hotline (Overseas): +86 20 62956800
传真 Fax: +86 20 82266913
E-mail: market@tech-long.com

东莞生产基地—东莞达意隆水处理技术有限公司
Dongguan Plant—Dongguan Tech-Long Water Treatment Technology Co., Ltd.
广东省东莞市东城区莞龙路432号
No. 432 Guanlong Road, Dongcheng District, Dongguan, 523000, China
电话 Tel : +86 769 22656500
传真 Fax: +86 769 22652638

股票代码 (Stock Code) : 002209