FQA 常见问题回答

DOUSH

1	**Product Range (clamping force and Injection Volume)?** **产品范围**
	We make worldwide machines, rubber mould, cold runner and automation. Rubber machines injection volume from 30ccm up to 20000ccm, Injection pressures are always more than 1800 bar which allows use of smaller diameter runners and still achieve fast injection time, higher temperature rise and resulting fast cure time. -. vertical machines from 50 ton to 1200 tons, -. C frame machines from 40 tons to 200 tons, -. Horizontal machines from 100 tons up to 300 tons, -. big size machine main cylinder move out machines from 450 tons up to 1200 ton, -. multi press from 40 tons up to 250 tons; -. compression machine -. rubber mould; -. cold runner -. automation equipments 我们在全球范围内供橡胶注射机、橡胶模具、冷流道和自动化。 注射机注射量从30ccm 到20000ccm，注射压力一直保持在1800bar之上，其优势在于通过使用小直径的流道仍能达到更快速的注射时间、升温时间及缩短硫化时间。 -. 立式橡胶注射机：50吨 到 1200吨, -. C 型机：40 吨到200吨, -. 卧式橡胶注射机 100吨到300吨 -. 主缸移出系列大型橡胶注射机 450 吨到1200吨, -. 多组份橡胶注射机40吨到500吨; -. 模压机 -. 橡胶模具; -. 冷流道 -. 自动化辅助设备
2	**Machine Price / Why our machine price same level as Europeans?** **设备价格 / 为什么我们的设备价格跟欧洲设备同一水平?**

	price is result of the cost, cost result the value machine bring for you, our machine high performance reduce cycle time, power cost and rubber wastage. And the price depends on bellow 3 factors. 成本决定价格, 价格提升价值，我们的设备将为你降低周期时间，减少电耗和材料浪费，而设备价格取决于以下三个方面。 1. Design (mechanical parts, special steels, special heat treatment etc). Machines are designed for 20 years life and for high speeds and pressures. Our movements are 500 mm/s and hydraulic pressures are 275 bar. We need strong mechanical parts to deliver perfect parallelism which will last for many years. Less flash, more cavities and fast cycle needs strong and stable mechanical structure. We use special alloy steels for our parts which are result of German engineering. Example the tie bars which go though induction hardness, straightening and regrinding and further processes. If we use tie bars like others then our manufacturing cost would be 1/3 rd but machine will loose parallelism or tie bars can get damaged if hit by the mould while loading in the machine. 设计部分（机械部件、特殊钢材、特殊加热装置等等）。我们机器的设计标准是在高速和高压的工作状态下能长达２０年之久，系统压力为275bar。我们使用的高质量机械配件能延长机器的运转寿命。少飞边、多模腔以及快速的生产周期都是要在高质量和稳定的机械结构基础上才能够达到的。我们使用德国工艺的特殊合金钢为材料做配件。如….假设我们使用其它…我们的生产成本则会下降三分之一 2. Controls, we are using Rexroth servo motor and pump with fast PLC control KEBA brand from Austria: our controls are one of the highest end hardware in the world. But they offer fast control which is must to use high speeds. They offer considerable reduction in power consumption as pump is only made to create pressure when required in the cycle. Shot to shot variation is controlled and also the injection speed is maintained even with variation in rubber compound viscosity. This guaranties consistent quality and minimum rejections. 控制系统（我们使用Rexroth伺服驱动以及快速尖端的 PLC控制）；我们的KEBA控制系统是世界上最尖端的硬件之一；他们提供快速控制用于机器的快速动作。由于控制系统可以精准控制伺服驱动系统，根据每个阶段所需要的功率输出，因此能够大大的节约电耗。每一次注射的变化都由控制系统控制，因此即使在胶料粘度变化的情况下注射速度也能够保持一致。这保证了质量的一致性以及最低的废品率。 3. Reliable buyout parts like heaters, seals, hoses, electrical parts etc. we buy from best even in china to give Chinese company machines with high reliability and low down time. We buy components from world top makes which are also available in china for spare parts. Like seals from Trelleborg, hydraulic components from Rexroth, safety compounds system from Pilz and SICK etc. we ensure that running cost is kept low over many years and customers can use machines 24x 7. 值得信赖的外购零部件，例如加热棒，密封圈，管道，以及电子产品等。即使在中国我们也坚持购买最好的品牌，以保证国产机器的高可靠性和低维修率。我们的部件从直接顶尖的供应商购买，并且在中国也有备件；比如说特瑞堡的密封件，力士乐的液压元件；Pilz和Sick安全模块等. 我们确保机器在多年时间内的运行成本能够保持很低,并且运转24小时7天每周. Finally the above three factors add up to higher input cost for our machines, but every penny is well spent (I would say Invested) so that our customers get lower cost of production, faster returns and end of the day make much more profits than with other machines. 以上三个因素决定了我们设备成本的增加，但是花的每分钱都是值得的（更合适的说应该是投资）这样对于我们的客户来说就降低了生产成本，并且快速回本，以及到最后跟其他设备相比收益更多。
3	**Mould and CRB (who design and manufacture them? and it's price? mould support can be in various levels.** 模具和冷流道(谁设计以及生产模具?价格?): 模具支持有很多不同的级别

	Concept level : basic ideas, cavity layout and function of mould (free) Mould design Support: for complex parts and for customers who are weak in design, we will training customer how to use and increase customer production efficiency. Base on we have rich experience in whole rubber injection production package. 模具概念等级:基本概念,模腔排布以及模具功能(免费) 模具设计支持:对于复杂的产品,以及针对设计方面比较的客户，同时我们会教会如何更好的使用模具和提高生产效率。 基于我们有丰富的整套橡胶注射生产应用经营，我们可以提供整套我们担保的项目包括机器、模具和冷流道，有时还会包含自动化。 All the moulds designed and manufactured by DOUSH. We have high precise machining machines and inspection equipment. We are willing offer one stop buyer for customers, also share some application technology with our customers. 所有模具和冷流道都是由斗士设计并制造。我们有高精密的加工设备和检测设备，同时，我们很乐意为客户提供一站式服务，并为与客户共享一些应用技术，帮助客户提升整体生产能力。
4	**Why our machines' Cure Time can be So short?** **为什么我们设备的硫化时间如此之短?**
	In Injection moulding “Shear Energy” is created. Now Shear Energy can be created by Shear Stress (Injection Pressure) or Shear strain (injection speed + plasticizing speed). Higher the pressure on rubber more heat is created. Faster the rubber flows more is the kinetic energy given to the compound. When cross section decreases, velocity increases, increasing the shearing. 注射成型使用最大的剪切加热,在最短的时间内(硫化时间)给予胶料所需的能量,并且”均一到每一个分子”.在注射成型中”剪切能量”是创造出来的.剪切能量可以通过剪切压力(注射压力)或剪切张力(注射速度+塑化速度)来产生.在胶料上施加更大的压力,就会产生更多的热量.加快橡胶的流动性是给橡胶提供动能;当横截面减小,速度增加;则增加了剪切能量. Now Why We are faster : With FIFO design, we can achieve higher temperature in the nozzle which is the beginning point of the race. We can do this without scorching rubber in nozzle which is major problem with local machines. Rubber in nozzle for FIFO is always fresh stock. Our design helps to cool/ heat the nozzle till its tip. If local machine they have to purge rubber between shots at 75 degrees, with FIFO we can go 85 degrees easily without any wastage. We have one of the highest injection pressures and speeds. Our user can make smaller diameter runners and save material, while keeping injection time still very fast. When rubber travels through narrow cross section with higher pressure, it is heated more and uniformly. Thus the temperature of rubber entering the mould in case of DOUSH is 20 to 30 degrees higher than others. This immediately reduces cure time by 30 to 40%. 为什么我们更快: 由于先进先出设计,胶料能够在注射头部位得到更高的温度,这是比赛的起点. 我们能够更高的提升温度并保证胶料不会在注嘴部位灼烧(预硫化),预硫化是其他机械的主要问题.在先进先出注射单元中的残留胶料永远是最新鲜的.我们的设计能够加热/冷却注射嘴直到其尖端.国产机器设置在75度时必须在每一次注射前挤料;但是使用我们的先进先出机器可以达到85度没有任何胶料浪费. 我们的机器拥有最大的注射压力和注射速度.我们的客户可以使用更小尺寸的流道来节约胶料并保持快速的注射时间.当胶料通过较窄的截面并承受很高的压力,那就会吸收更大的热量并更加均一.这样使用DOUSH机器,胶料进入模具时的温度就要比使用其他机器高出20到30度.因此硫化时间会减少30%-40%

5	**Our Advantage in turn-key solution, good knowledge in machine, mould, CRB and project automation?** **我们的优势在整体项目，在机器、模具、冷流道以及项目整体自动化有这非常丰富的经验。**
	We have 30 years of experience in mould and prodution. More than 50% machines of DOUSH worldwide are sold as projects. We have in-house mould making (not only designing like REP，DESMA，Maplan where they have no experience with actual troubleshooting), we have huge data which we had successed experience in a big range of rubber parts in pass 30 years. 我们拥有30年的模具和生产经验.全世界超过50%的斗士机器是项目销售的.我们拥有自己的模具生产车间(不象REP，DESMA，MAPLAN那样仅设计，但没有实际的解决故障经验). 我们拥有同一个设计数据库,因此所有的内部资源是共享的.
6	**Difference Between Other Machines, especially other Chinese machines** **与其他机器相比不同之处，特别是其他国产机器。**
	Refer answer 2 and 4 参照2和4的内容
7	**Customer Base, how many customers we have in their industry?** **客户信息，我们在这个领域中已有多少个客户?**
	60% of our customer are European customers, including some international customer in their branch in China, detail please See enclosed new sales presentation. we delivery around 300 unit machines over the world per year, most of our customers in automotive industrial. 我们的60%客户来自欧美，其中包含这些公司在中国的子公司，请查看我们最新的销售概况, 我们每年交付约300台设备到全球客户，同时，我们的客户绝大多少集中在汽车行业。
8	**Service Response time and price? Free maintain time?** **服务响应时间和费用? 保修时间?**
	Normally, we will attend the problem within 8 hours, and solve or give solution within 24 hours, for long distances it can be up to 48 hours. spares parts can be shipped by local airlines and can reach very fast. Take our standard service charge list from service. 通常情况下，我们会在8小时内做出响应，并在24小时内解决或者给出解决方案，远一些的地区和国家可能需要48小时。机器零件以空运的方式很快能发至客户那里。服务费是按我们服务项目清单上的收费标准进行收费的。
9	**Why our machine is so Productivity?** **为什么我们的机器很有效率?**
	Fast cure time, fast machine time (500 mm/s speeds), With strong clamping unit and large size platens, more cavities can be accommodated, which multiplies the output. Free assess to mould from 3 sides, makes de-moulding easy Variety of automation options possible because of 3 side assess and large daylights NO intermittent purging is required, so cycles are continuous. 硫化时间快, 机器运行速度快 （500 mm/s 速度） 更大的锁模力以及更大尺寸的热板;能够布置更多的模腔数;并达到更多的产出 可以在机器3个方向进行操作,脱模更加简单 由于3面敞开以及更大的开模空间;更多的自动化生产方式成为可能 不需要挤料,因此可以连续循环生产。

10	**Special Requirement To Rubber?** 对于胶料是否有特殊的要求?
	NO special requirement, even high hardness FKM 无特殊要求，即便高硬度的氟橡胶。
11	**Temperature Radiation Of Heating Platens?** 热板温度一致性
	With PID control, we can achieve =/- 3 degrees across platens using a test block and proper insulation. Our platens are designed for heating more on the four edges as mould looses more heat near edges (radiation losses). 由PID控制，板面温差+/-3度,在使用测试块并适当绝热的情况下. 我们的热板设计成边缘加热功率大于中间;以抵消热量在边缘的散失. 同时，我们设备在热板四周安装了隔热棒，确保温度的一致性，同时也减少了温度的损耗，提高了硫化效率和节约用电。
12	**Barrel and nozzle Temperature?** 储量、注射缸和注嘴内温度一致性?
	+/- 1 degree can be achieved under temperature control +/-1度,在模温机的控制之下
13	**Injection Precisions?** 注射精确度?
	+/- 1 mm , 3 to 4 ccm. Depends on the piston diameter and screw speed of the last phase. With 3 phase plasticising customer can achieve close to theoretical accuracy in practice. +/- 1 mm; 3到4ccm.根据活塞尺寸以及螺杆在最后塑化阶段时的速度. 当使用3阶段塑化时,在实践过程中客户能够达到接近理论精确度的效果.
14	**Why Can we Do This?** 为什么我们可以?
	Close loop control is main reason. Quality and technology of transducers, PID, temperature controllers is very good. We use one of the most expensive ones. 闭环控制是主要原因.传感器,PID控制,温控的质量与技术非常好; 我们使用最贵的硬件。
15	**Advantage compare to Europe machine?** 斗士相比欧洲品牌有哪些优势?
	Point 1: More competitive price compare to Europe machines. As you know, DOUSH machine compounds are almost from Europe, we buy these material cost high than European companies, why our machine's price lower than Europeans like DESMA, REP and MAPLAN, it should be thanks our higher efficiency production line. In the other, we are control our profit which give our customer better price Point 2: DOUSH provides more flexible services, including customer-customized specification, functions and after-sales service. We have ourselves mould, cold runner and automation service team. 第一：DOUSH设备价格相比于欧洲设备更具性价比。 如你所知，DOUSH的配件技术全部购自欧洲品牌，然而我们购买这些配件相比于欧洲品牌购买同样配件价格更高，那么为什么我们机器价格还能保持更低呢？这得益于我们更高效的生产线和装配线；另一方面是我们控制我们利润点，将更优的选择给到我们的客户。 第二：斗士提供更灵活服务，包含客户定制参数和功能，以及售后服务。 我们有自己的模具、冷流道和自动化部门。

16	**How to satisfy European customer requirement?** **是如何满足欧洲客户需求的?**
	60% of DOUSH customers are European companies. Cooperating with these companies has given us rich experience. How to meet the existing mould and process production requirements of these companies, so the hardware and software of our equipment can be well satisfied to applications for European and American customers. DOUSH machine electrical compounds from Schneider, Siemens, Gefran, Sick, Pilz. Hydraulic system from: Rexroth, Parker. Controller system from: KEBA, all these compounds are well know brands from Europe. Customer easy to know and easy to find it. 斗士的60%客户均为欧洲公司，与这些公司合作，让我们获得了巨大的经验，如何去配合这些公司的现有模具和工艺生产要求，因此我们设备的硬件与软件均能很好地满足欧美客户的应用。 DOUSH的电气配件来自施耐德、杰弗伦、西门子等，液压系统选自力士乐和帕克，控制系统选择KEBA，所有这些配件对欧洲客户来说是非常熟悉并很容易找到的。
16	**What's DOUSH unique point in technology and ability?** **斗士在技术和能力上是否有绝无仅有的点?**
	Point 1: DOUSH E-balancer technology eliminates the need for balance weights for the mold transfer device, which greatly saves equipment space and achieves higher reliability with fewer accessories. Its working characteristic is hydraulic and controlled to replace the traditional mechanical balance. Point 2: DOUSH is the only one true one-stop shopping provider, really allows customers to sit back and relax. we only need to informed the products drawing and quantity need to be made. We provide project analysis, mould selection, machine selection, whether to use cold runners and automation, and Provide financial budget, cost recovery cycle forecast. 第一点：斗士的E-balancer技术使得移模装置无需平衡重，大大节省了设备使用空间，较少配件而达到更高的可靠性，它的工作特点式由液压和控制的取代传统的机械平衡。 第二点：斗士提供的一站式服务，真正意义上的让客户高枕无忧，只需要客户告知需要做的产品和产能需求，剩下的由我们提供项目分析，模具选型、机器选型、是否用冷流道和自动化，并提供财务预算，成本回收周期。
17	**How is the internal processing capability? Which parts are processed in-house?** **斗士的内部加工能力如何？哪些零部件是在公司内部加工的?**
	DOUSH factory has SHW large-scale processing centers, five sided machining, Milling planer, Mazak processing centers, Mikron high-speed milling and internal and external circular grinding, which can meet the high-precision processing of all equipment racks, templates and molds. At the same time, Zeiss and other inspections equipments. Except the parts that need heat treatment such as tie-bar, screws and barrel, all other mechanical parts are processed by DOUSH itself, and the processing quality and delivery cycle are well guaranteed. 斗士工厂有SHW大型加工中心，五面体、龙门、Mazark加工中心，米克朗高速铣以及内外圆磨，满足所有设备的机架，模板和模具的大小配件的高精密的加工，同时有着蔡司等检测设备。 除去拉杆和螺杆等需要热处理零部件，其他所有机械零部件都由DOUSH公司自己加工，并很好地保证加工质量和交货周期。
18	**Imported Components and why we import them?** **重要组件以及为什么我们要进口这些组件?**

	Main reasons are quality, reliability and cost of replacing them because of frequent failures in future. We can always select cheap local parts which would last more than our warranty period but then customer has to face down time of machine after 2- 3 years. The cost of downtime based on sales price of parts which could not be produced due to machine stopping, is many times higher than the component price. 主要的原因是质量问题、可靠性以及当未来时常损坏而产生的替换成本。其实我们完全可以采购一些国产的较便宜的组件，这些组件也能维持到保修期之外，但这样做客户就要面临机器在运行2到3年后会出现故障或者停机的现象。停机所造成的损失取决于在停机的这段时间里失去生产产品的零售价总额的损失，这往往要比这些进口组件要来得更昂贵。 It is very easy to reduce machine price by using cheap components, but we do this compromise at the cost of customer. We have to think about long term well being of our customers and not for short term goals, so we continue to buy standard proven quality parts. If they are not available in china, we import, if available in china, we buy locally like vacuum pump, cables, etc. But only buy high quality and reliable brand. 其实我们要降低设备的价格很容易，我们只需使用便宜的设备零件，但是为了客户的利益我们不这么做。我们不会只为了要达短期的目标而对客户的长期发展不负责任，所以我们不断采购高品质的配件。如果这些配件在中国无法购买到，我们就通过进口的途径获取，如真空泵、电缆等配件在中国购买得到的话，我们都在本地直接采购, 但仅限于高品质、可信赖的品牌。 Injection unit is imported. Rest of the mechanical assemblies are made locally with strict adherence to material specifications and drawing tolerances. Buyout parts are used with globally same specifications in Germany, India or China. so many parts are imported from Europe if not made in China. like PLC , OP, transducers, Hydraulic pump, servo motor, valves, insulating plates and safety compounds etc. 注射单元很重要，机械装配都是严格按照原材料规格和图纸进行特制的。采用的外购配件都是按照最高安全和品质标准订购。很多部件如果不是在中国制造的话都是从欧洲进口，如PLC、OP、 传感器、液压泵、阀、绝缘板和安全模块等等。