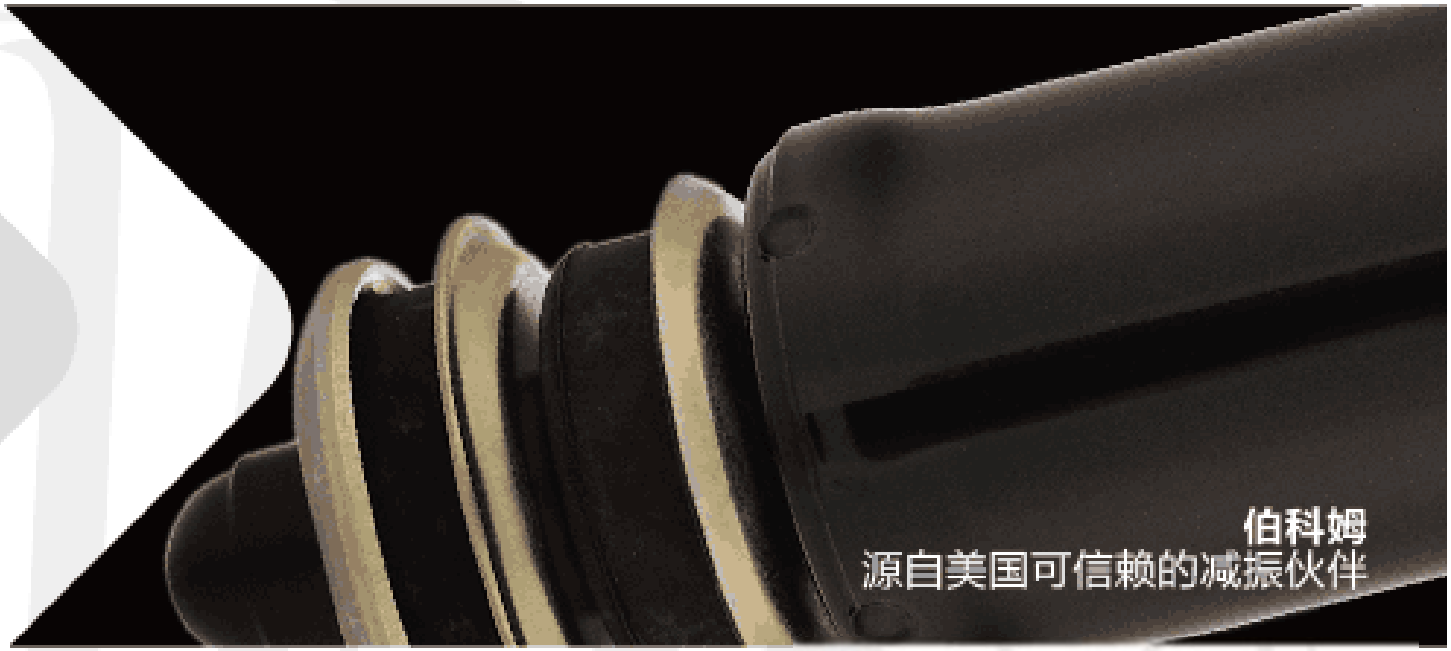



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# AUTO DAMPING SYSTEM

YOUR TRUSTED DAMPING PARTNER FROM USA



2018.V1

# Your Trusted Damping Partner ©
# 源自美国可信赖的减振伙伴

We will be recognized as the No. 1 manufacturer of dampers for the commercial vehicle and air suspension industry in China.

We will do this by always providing a world-class product which meets or exceeds our customer's ever changing requirements in China and the rest of the world.

Recognizing that we have competition in the market, we will continually invest into the development of our people and the innovation of our products and processes to meet the needs of our customers, shareholders, community and environment.

*- Bob Carlstedt, President*

我们将会被认可为中国商用车和空气悬架行业减振器第一生产商。

为此，我们将会一直提供可以满足或超过客户在中国和世界其他地方不断变化的需求。

意识到我们在市场上的竞争，我们将会持续投入开发我们的人员，产品创新和过程从而满足我们客户，股东，社会和环境的需要。

*- 鲍勃 卡尔斯泰德, 总裁*



**President/CEO: Bob Carlstadt**

- ø 30+ years automotive experience by working with major OEMs, China -10 years
- Management Strategy and Systems, Mergers, Acquisitions and Operations
- Shock/Strut Design/Development, Chassis Engineering
- Experience in passenger cars, light trucks, minivans, SUV's, commercial trucks and trailers, bus, motorcycle, ATV's, snowmobiles and military vehicles
- MBA, BS-Mechanical Engineering

**总裁/首席执行官: 鲍勃.卡尔斯泰德**

- ø 30多年与国际大型汽车主机厂合作的经验，有10年在中国工作经验
- 多年管理策略和 系统, 兼并， 收购和运营经验
- 底盘工程和管理， 减振器及其总成设计/开发
- 广泛涉猎乘用车，轻卡，面包车，SUV，商用卡车和挂车，大巴，摩托车，沙滩休闲车，雪地车以及军用车
- 工商管理硕士， 机械工程学士



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# 双频耐久测试-美国SGS

# 156.8万次后循环阻尼力失效超过20%。

一代
阀系
-活塞



**Durability Test Results**

| Sample | Rig | Start Date | End Date | Total Cycles | SOT Weight (g) | 1M Weight (g) | EOT Weight (g) | Comments |
|---|---|---|---|---|---|---|---|---|
| S.1916 | 1,2 | 6/17/16 | 9/5/16 | 1,310,625 | 3,354 | 3,159 | 3,147 | Suspend test. Sample 36% loss of load & Rod discoloration noted. No oil leakage noted. Replace with Slave Shock #3 (Replacement) |
| | | | | | | | | |
| Birkom# 2 | 1,2 | 8/12/16 | 9/13/16 | 1,568,926 | 3,656 | 3,584 | 3,571 | Test Suspended per customer request. Shock still operating normally. Discoloration noted. No oil leakage noted. |

国际知名品牌的测试结果；

BIRKOM的测试结果；

暂停测试，样品负载损失36%，螺杆变色，无漏油迹象；

根据客户要求暂停测试，样品仍可正常工作，有变色情况，无漏油迹象；
















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# 双频耐久测试-BKM实验室

# 138万次循环阻尼力失效超过20%。

二代
阀系-
活塞











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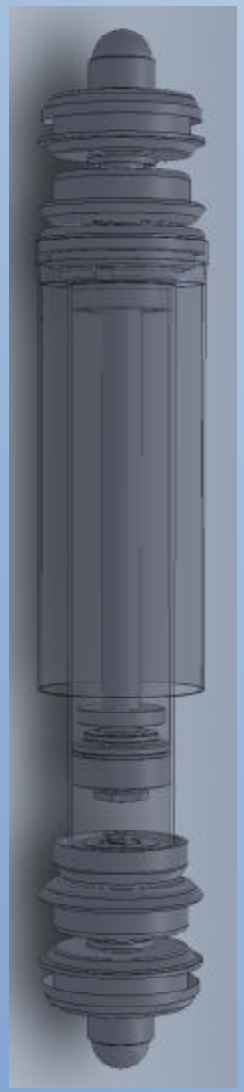
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# 性能测试-BKM实验室

- Product Benchmarking
- Blend of US & European Design
- 产品标杆比对
- 美国和欧洲设计混合





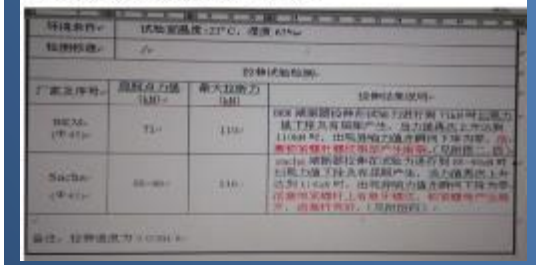


**2 拉伸实验**

BKM 减振器在拉力 71KN，液压限位器拉脱；在 110KN 活塞杆拉脱。拉伸强度高于欧洲 70KN 标准。

Sachs 减振器在 85KN 液压限位器拉脱；在 116KN 活塞杆端头拉脱。

BKM 减振器拉伸强度与 Sachs 相近。



**3 高低温实验**

按照 QC/T-2007《汽车减振器性能要求及台架试验方法》-30 度在 520mm/s 压尼力值衰减率不小于-200%，80 度在 520mm/s 压尼力值衰减率不大于 90%.

BKM 减振器-30 度在 520mm/s 拉伸阻尼力值变化为-1.2%，压缩力变化为-1.1%；80 度在 520mm/s 拉伸阻尼力值变化为 6.3%，压缩力变化为 9.4%；



**4 性能实验**

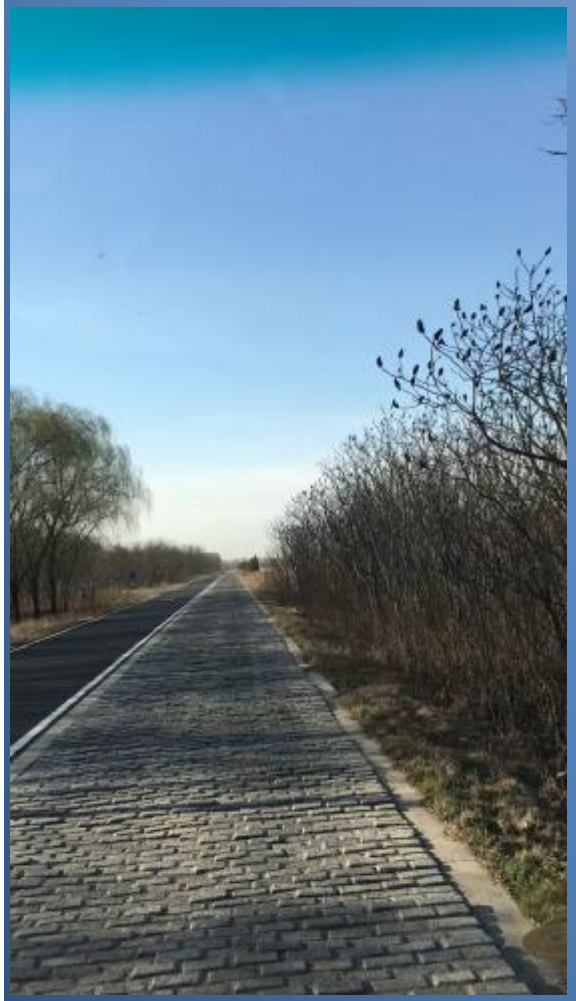
BKM 减振器 100%检测 520mm/s 速度点阻尼力，并在每个减振器外筒打追溯码。



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# 试验场验证 Testing Ground Validation



北京交通部试验场Proving Ground
（视频链接Video Link）

## BKM 减振器通过北京通州试车场 3500KM 强化路面测试说明

BKM 减振器于 2016 年 3 月到 2016 年 4 月搭载我司试验车，车牌号：沪 SV4707，在北京通州试车场进行强化路面道路测试。减振器零件号：前减 8564000001（3096），后减 8564000002（0831）。经 3500KM 测试结束后，减振器状态正常，未发现漏油，异响，断裂失效。

上海申龙客车有限公司技术部

签字

盖章









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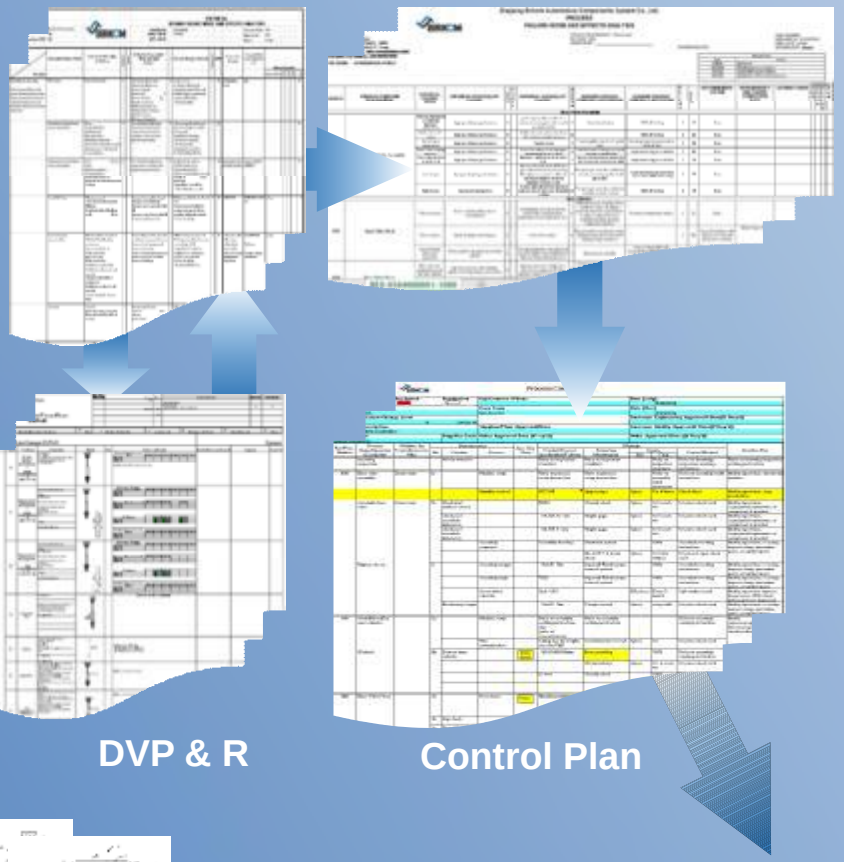
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# Technology Management技术管理

- APQP Process
- D/PFMEA
- DVP&R
- Innovation



- 质量先期策划流程(APQP流程）
- 设计/过程FMEA
- 设计验证计划和报告
- 创新流程




创新流程



Intellectual Property

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# Quality Control质量控制

- Formal selection and audit process(PAPA)
- Strict incoming inspection
- In-process inspection
- 正规的筛选和审核流程（PAPA)
- 严格的进料检验
- 过程检验

在生产过程中，每一支减振器都须经过检验与规定值进行比较，以提供给客户性能合格，稳定的减振器



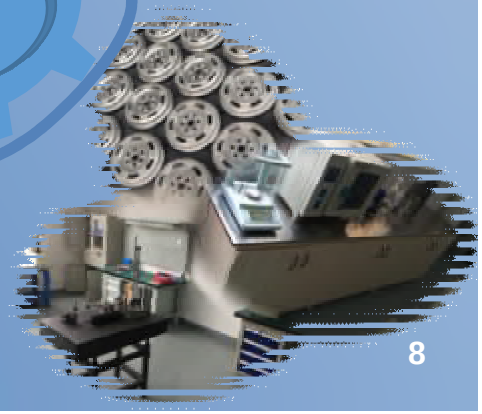














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# Manufacture Philosophy制造理念

- Continuous Improvement
- Lean Manufacturing
- 5S
- Employee Safety
- Environmental Responsibility
- 持续改进
- 精益制造
- 5S管理
- 员工安全
- 环境责任



**One-piece flow单件流**

- Benefits of one-piece flow
  - Immediate quality feedback
  - Reduced working process inventory
  - Improve traceability
  - Production leveling/pull system

单件流的好处

立即质量反馈
降低工作流程库存
提高可追溯性
生产平准化/拉动系统



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# Plant Floor Management制造车间管理

- Kanban inventory management
- Visual Management
- ERP(Plex)
- 看板库存管理
- 可视化管理
- ERP(Plex)










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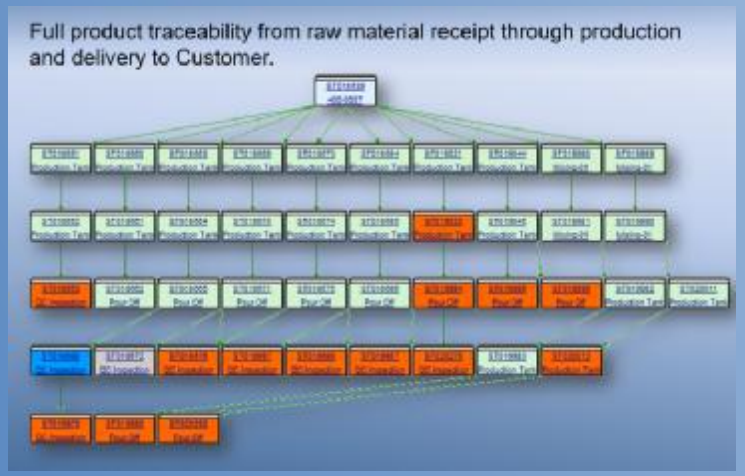
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# Serialization & Traceability序列化和可追踪性








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# Supplier Management供应商管理

- World-class KPIs
- Supplier Portal(Online)

- 一流的关键性能指标
- 供应商端口（在线）










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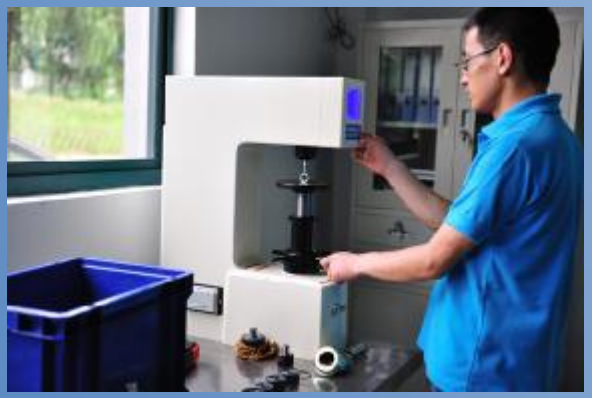
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# Quality Inspection质量检验

## Receiving Inspection
来料检验



## Quality Inspection Lab
质量检测办公室









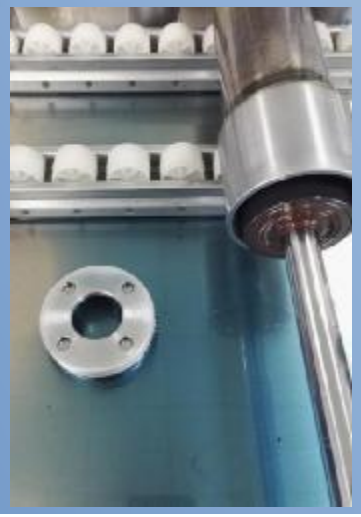
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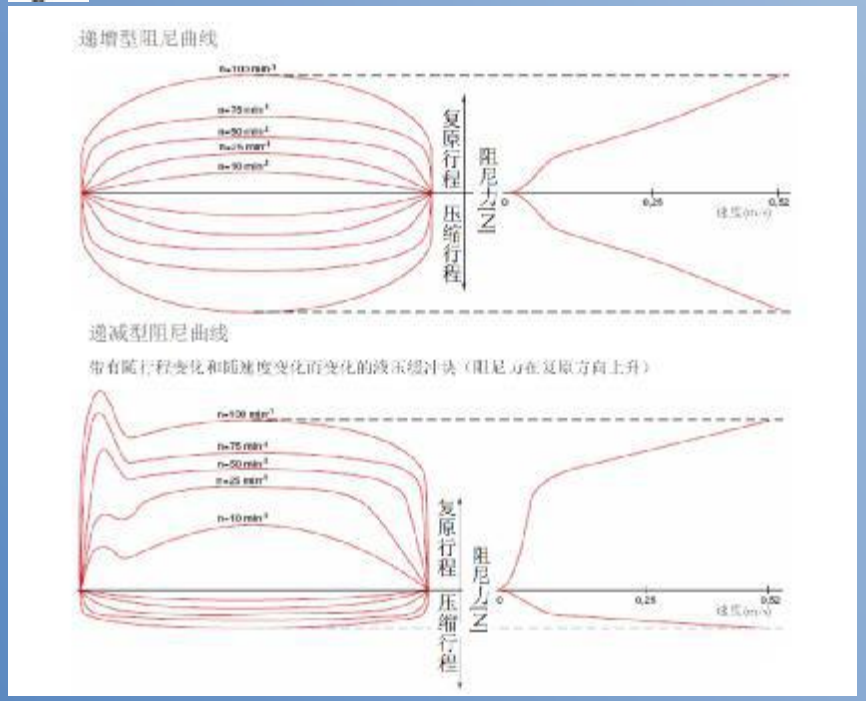
# Tuning on-site 现场调试

- Vehicle Tuning Services.....
- At Birkom we understand the primary responsibility of our dampers is to help our Customer to improve their vehicles' ride and handling, consistently and reliably. Our tuning services support our customers on site, at their locations with full engineering capabilities to change the internal damping forces to evaluate and improve their vehicle performance.
- 车辆调试服务
- 伯科姆减振产品的主要目标是协助客户提高车辆的平顺性、操纵性、持续性和可靠性。调试服务是在客户工厂或测试场，给客户提供现场服务。伯科姆拥有完整的工程能力调整产品内部阻尼系数以评估和提高车辆的性能。









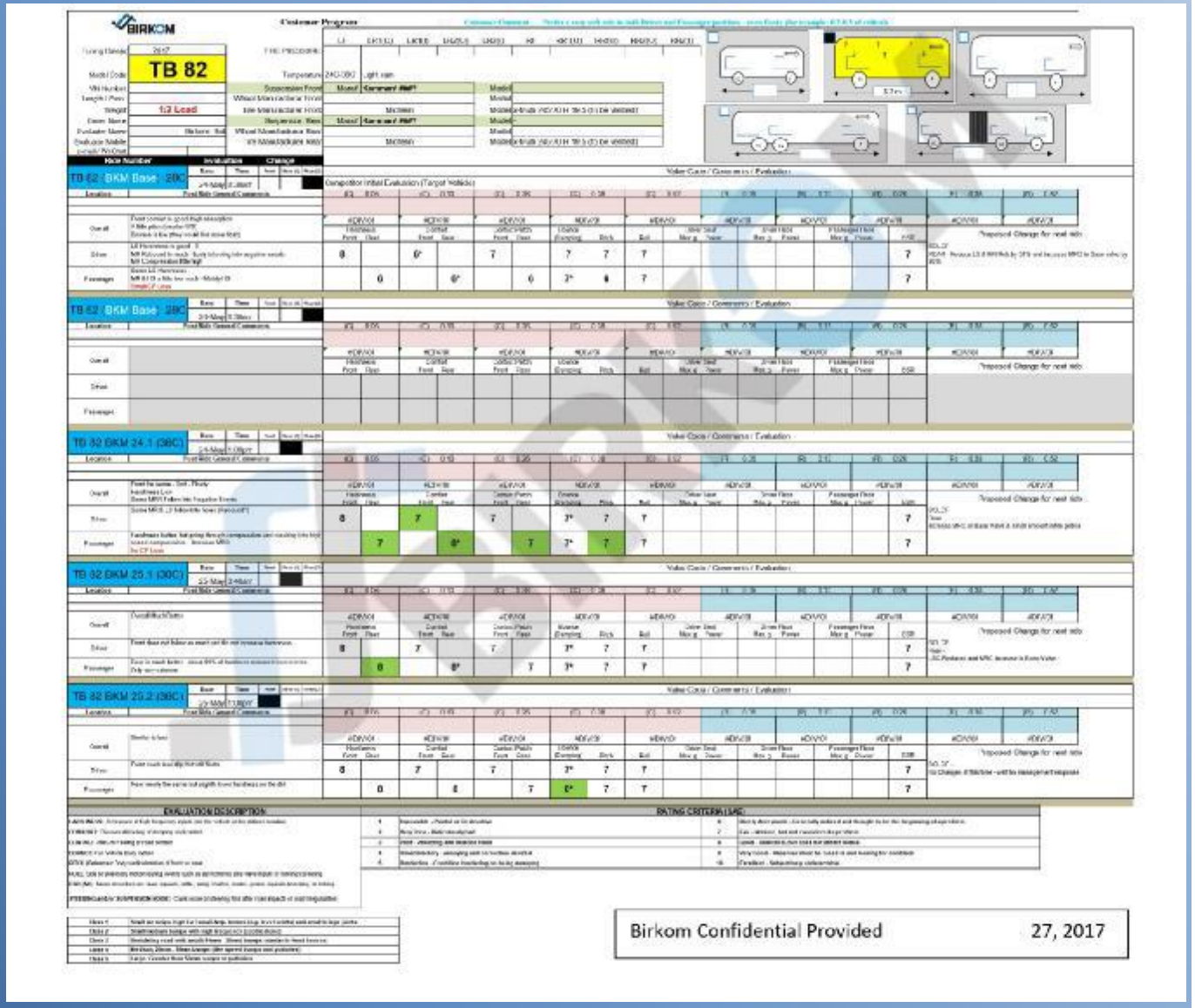

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# Tuning on-site 现场调试

Evaluation Description 评价描述

- Ø Harness不平顺性或冲击特性
- Ø Comfort 舒适性
- Ø Contact patch接触冲击
- Ø Bounce跳动
- Ø Pitch(Balance)俯仰
- Ø Roll:侧倾
- Ø BSR(All)噪音
- Ø Steering &
  or Suspension noise
  转向和悬架噪音




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YOUR TRUSTED DAMPING PARTNER ©

# Tuning on-site 客户现场调试

调试服务
优化车辆性能







Microsoft
owerPoint 演示文

减震器调校介绍-2018年4月

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# Products产品

- Commercial Vehicle Shock absorber
  - Coach, Bus, Truck, Trailer
  - 45, 50 & 36mm bores
- Automotive air suspension shock absorbers and struts
- Transportation Industry
- 商用车减振器
  - 舒适大巴，大巴，卡车，挂车
  - 45,50 和 36mm 缸径
- 乘用车空气悬架减振器及总成
- 交通运输行业








1）长度范围：压缩长度最小值：292mm，行程190mm

Length: Full compress Min 292mm with 190mm stroke

2) 阻尼值范围（已通过高速双频强化测试）

Damping force(valve code validated by halt test):

复原力：2000N 至16000N； Rebound, from 2000N to 16,000N

压缩力： 470N 至 6000N； Compress, from 470N to 6000N

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# Business Development业务开发

- China
- North America
- Europe & Asia
- 中国
- 北美
- 欧洲和亚洲

| 伯科姆零件号 | 参考零件号 | 复原 | 压缩 | Min | Max |
|---|---|---|---|---|---|
| 8564000001-1000 | 481700003096 | 8900 ~ 10880 | 650 ~ 870 | 355 | 545 |
| 8564000002-1000 | 481700000831 | 5290 ~ 6470 | 3260 ~ 4420 | 421 | 661 |
| 8564000003-1000 | 481700009834 | 8800-10760 | 2280-3080 | 421 | 661 |
| 8564000004-1000 | 481700131897 | 13430 ~ 16410 | 700 ~ 1000 | 395 | 625 |
| 8564000005-1000 | 471700000961 | 6190 ~ 7570 | 630 ~ 870 | 409 | 649 |
| 8564000006-1000 | 481700009602 | 5870 ~ 7170 | 1390 ~ 1890 | 410 | 635 |
| 8564000007-1000 | 481700001076 | 10080 ~ 12320 | 2420 ~ 3280 | 381 | 591 |
| 8564000008-1000 | 481700009016 | 10980 ~ 13420 | 1350 ~ 1830 | 346 | 531 |
| 8564000020-1000 | 471700009836 | 5120-6620 | 690-930 | 381 | 610 |
| 8564000021-1000 | 481700000964 | 11050 ~ 13510 | 1260 ~ 1700 | 373 | 583 |
| 8564000022-1000 | 481700124951 | 4320 ~ 5280 | 470 ~ 630 | 357 | 537 |
| 8564000023-1000 | 481700005936' | 7500 | 540 | 421 | 661 |
| 8564000024-1000 | 471700010635 | 3480-1260 | 1070-1450 | 421 | 661 |
| 8564000025-1000 | 481700002287 | 5240 ~ 6400 | 2520 ~ 3420 | 394 | 624 |
| 8564000033-1000 | 481700010944 | 9000-11000 | 650-1000 | 347 | 577 |
| 8564000034-1000 | 471700010626 | 2700-3300 | 850-1150 | 569 | 369 |
| 8564000035-1000 | 481700002287 | 5240 ~ 6400 | 2520 ~ 3420 | 394 | 624 |
| 8564000036-1000 | 481700001893 | 8930 ~ 10910 | 1150 ~ 1550 | 370 | 570 |
| 8564000037-1000 | 481700009673 | 6470-7910 | 2590-3510 | 448 | 738 |

SUV | 轻客 | 大中巴ϕ36-ϕ45 | 卡车 | 牵引车 | 挂车









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# Market Distribution市场分布

- 中国
- 北美



**调校/二级供方审核主机厂**

海格客车 HIGER　FOTON 福田汽车 AUV 福田欧辉　THACO TRUONG HAI AUTO

**实现量产装车主机厂：**

安源客车　JAC 江淮汽车　DFM　广通客车 GRANTON BUS　申龙客车　中国中车 CRRC

Yinlong　亚星客车　DAEWOO　CHERY　BYD　BLK BONLUCK 百路佳客车　星凯龙客车

HOPE 广西华奥　申沃客车 SUNWIN　源正汽车　青年汽车 YOUNG MAN　上饶客车　江特·九龙汽车

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# Contact Information联系信息

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Zhejiang Birkom Automotive Componenets & Systems Co., Ltd.
Plant Add： Xiaquan, Anji Development Zone, Zhejiang Province, 313300, China
Tel: +86 572 5079675　Fax: +86 21 59881592*818
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**北美分公司（底特律）**

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