PROTERIAL
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液压制动软管总成

BHR：Brake Hose of Rubber

制动软管可根据客户需求进行开发
制动软管是车辆底盘系统中使用的关键安全部件，
它通过软管传递液压压力以使车辆停止。
该部件具有硬管无法提供的低膨胀性和高柔性

Rubber Brake Hose (BHR) tailored to customers' needs have been deve
The brake hose is a critical safety component used in the vehicle's chas
It transmits hydraulic pressure through the hose to stop the vehicle.
It requires low expansion and flexibility that steel pipes cannot provide.

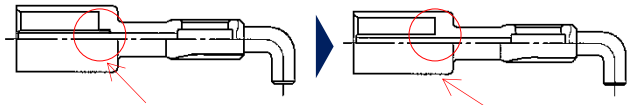
概 要

- ✓ **自1969年以来全球稳定交付记录**
  World-top-class delivery record since 1969
- ✓ **高温下出色的低膨胀性能和抗弯耐久性能（HTF-4）**
  Excellent high-temperature expansion and flexural durability performance(HTF-4)
- ✓ **通过锻造一体成型工艺减少接头焊接工序，**
  无接口工艺可防止接头泄露的可能性。
  Shorter lead times by eliminating rework of endurance tests that take a long time
- ✓ **可在公司内部进行耐久性能评估及布局优化**
  In-house evaluation of durability and layout optimization

产品应用
底盘/悬架 Chassis/Suspension
液压制动软管 Hydraulic pressure brake hose

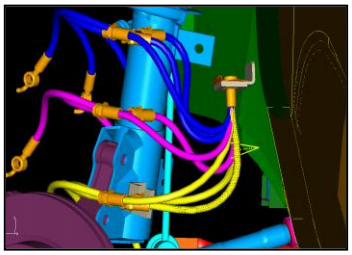
锻造一体化

传统产品 Conventional Product　　开发产品 Developed



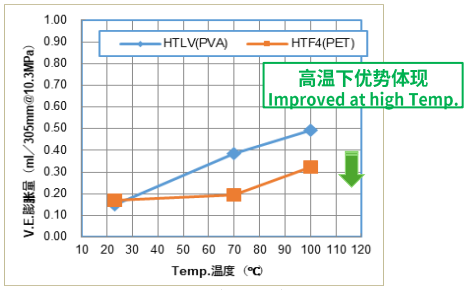
钎焊 Brazing　　锻造一体 Forged one body

评估设备与性能

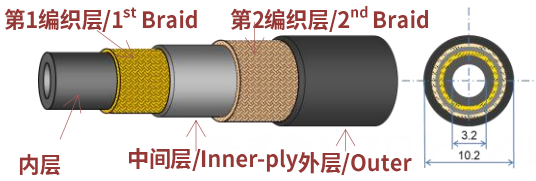


布局测试系统
Fig. Layout measurement system

耐久试验机及布局　（PRL原始布局）
Fig. Durability testing machine and installation(PRL Original Layout)



温度膨胀值（液耗法）
Fig. Expansion value by temperature
(liquid consumption method)



管体内部结构
Fig. Internal structure of the hose

制动软管性能　Table. Property of representative brake hose

软管类型/Hose type	HTLV	HTF-4
内层橡胶/Inner	EPDM	EPDM(Hard type)
第1编织层/1st Braid	PVA	PET
中间层橡胶/Inner-ply	IIR/EPDM	EPDM
第2编织层/2nd Braid	PVA	PET
外层橡胶/Outer	EPDM	EPDM
内径/外径 I.D./O.D. (mm)	Φ3.2/Φ10.2	Φ3.2/Φ10.2
特性 Feature	常温下低膨胀性 Low Expansion Hose	高温下低膨胀性和高抗弯耐久性 Low expansion at High Temperature High flexural durability
弯曲耐久性 (PRL原始布局) Flexural Durability (PRL original Layout)	约80万次 Approx. 800k times	约300万次 Approx. 3,000k times

PET: Polyethylene Terephthalate, PVA: Polyvinyl Alcohol, EPDM: Ethylene Propylene Diene Monomer, IIR: Butyl Rubber