



液压泵试验台

HYDRAULIC PUMPS TEST STAND

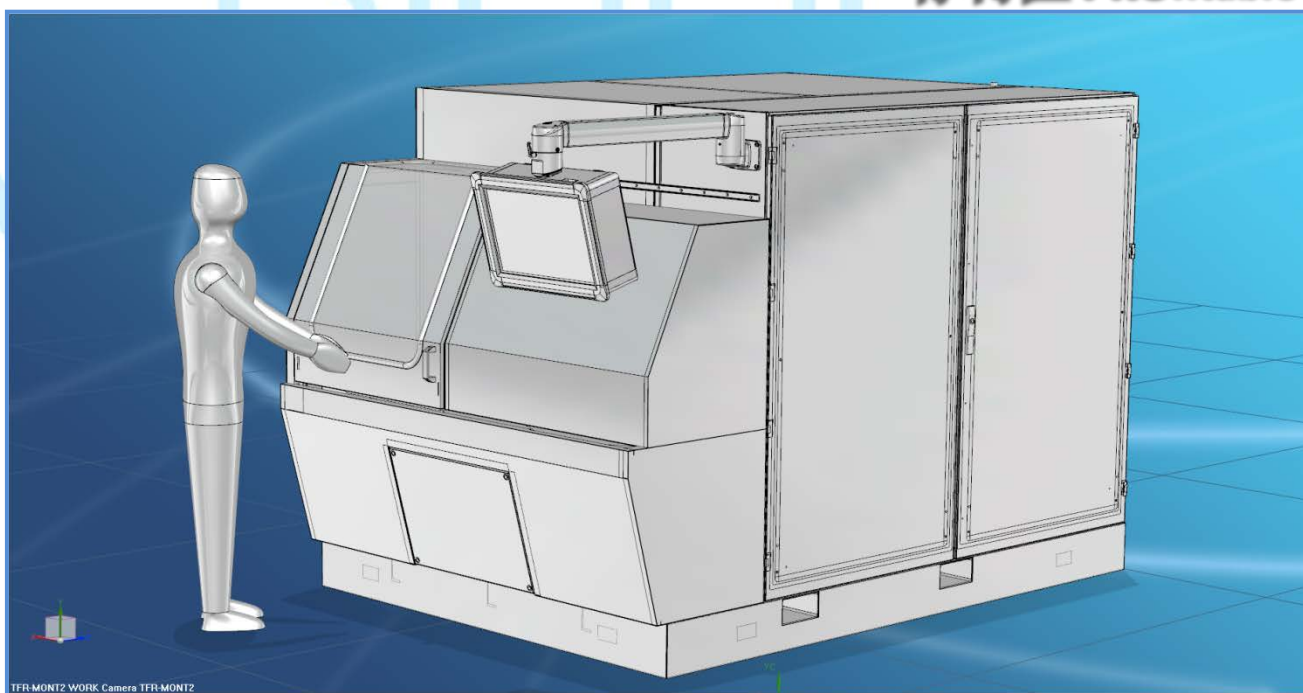
TBP 12

PRO 系列

专业性 PROfessional

可靠性 PROven

有利性 PROfitable



TFR-MONTZ WORK Camera TFR-MONTZ



BIMAL TESTING MACHINES S.P.A.

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总说明书



GENERAL SPECIFICATIONS

TBP12 试验台可用于运行和测试液压单齿轮泵或相似的，右转或左转的，group 1 或 group 2 的。

试验台将对泵进行运行并且验证其是否符合最终成品所必需的条件。此外，操作者还可以根据自身需求设定压力和速度参数，通过该数据结合的曲线来设置测试循环（不逾试验台性能限制）。

试验台可以测试流量最高 70 升每分钟和压力最高 320 巴的齿轮泵，（不逾电发动机 30 千瓦功率限制）。

测试区域有个通用的法兰，与其相对的也将安装一个过渡法兰。泵必须与此过渡法兰相连接，并通过手动夹紧的方式固定。

动力供给连接以及各部件的固定都必须由操作者手动进行的。试验台进行流量、压力以及速度的测量，而且计算测试中元件的容积效率。

标配含一个欧式过渡法兰给 group 1、一个欧式过渡法兰给 group 2、一个 1:8 锥形轴适配器给 group 1、一个 1:8 锥形轴适配器给 group 2。

技术指标:

- 可变伺服通风电发动机:
30 千瓦-4 杆- 400 伏特 (500÷3000 r.p.m.)
- 最高流量: 70 升每分钟
- 最高压力: 320 巴
- 主输送口含: 前置过滤器 25 μm 、过滤器 10 μm 、比例阀、齿轮流量计以及压力传感器
- 油库: 250 升
- 脱机回路通过水油交换器来进行温度调节，通过 10 μm 过滤器来进行对油的清洁，并且通过热敏电阻进行温度测量
- 臂式 PC 含: 17" 显示屏、装有集成定点装置的工业键盘、以及比尔玛软件
- 最高油温: 60 摄氏度

仪器*:

- 齿轮流量计（精度度 $\pm 0.3\%r.v$ ）
- 压力传感器（精度度 $\pm 0.25\%f.s.$ ）
- 温度计 PT100 cl. A
- 可选项: 扭矩计（精度度 $\pm 0.01\%f.s.$ ）

*全部仪器标配含校准证明书

安全装置:

- 紧急按钮
- Lexan 板组成的一个滑动门保护测试区域
- 油回收容器

动力供给:

- 电气三相标准供应: 400 伏特 - 50 赫兹 - 40 千瓦特
- 工业压缩空气: 5 ÷ 6 巴
- 工业冷却水温度 $T \leq 20$ 摄氏度

尺寸和重量:

- 试验台关门情况下: 2000 x 2900 x 2000 毫米(长, 宽, 高)

颜色:

- 标准色: 灰色 Bimal RAL 7035

TBP12 is a production test stand for running in and testing of **hydraulic single gear pumps** or similar, right or left, group 1 and 2.

The machine executes the running in of the pump and verify its performs in accordance with the necessary qualifications of the final product. Furthermore, it carries out customizable testing cycles by editing combined curves of pressure and speed, within the performance limits of the test stand.

The test stand can test pumps with flow rate up to 70 lt/min (18.5gpm) and pressure up to 320 bar (4641.2 psi) considering the power of the electric motor of 30 kW.

The testing area is provided with an universal flange onto which the relative transitional flange will be mounted. The pump must be connected to the transitional flange and fixed through manual clamps.

The connection to the supply networks and the component fixation must be manually executed by the operator.

The machine performs the measurement of flow rates, pressures and speeds, calculating the volumetric efficiency of the UUT.

The supply includes a European transitional flange for group 1 and one for group 2; a 1:8 tapered shaft adaptor for group 1 and one for group 2.

TECHNICAL DATA:

- electric motor variable speed servo-ventilate:
30kW - 4 p. - 400 V (500÷3000 r.p.m.)
- max flow: 70 lt/min(18.5 gpm)
- max pressure: 320 bar (4641.2 psi)
- main outlet with prefilter 25 μm and filter 10 μm , proportional valve, gear flow meter, pressure transducer
- reservoir: 250lt (66 gallons)
- off-line circuit performing heat conditioning through water/oil exchanger, oil cleaning through filter 10 μm and temperature acquisition through thermoresistor
- armmounted PC with 17" display, industrial keyboard with integrated pointing device and BIMAL software
- maximum oil temperature: 140°F

INSTRUMENTATION*:

- Gear flow meter (acc. $\pm 0.3\%r.v.$)
- Pressure transducer (acc. $\pm 0.25\%f.s.$)
- Temperature meter PT100 cl. A
- Optional torque meter (acc. $\pm 0.01\%f.s.$)

*all instruments are supplied together with their calibration certificate

SAFETY DEVICES:

- emergency push button
- test area sheltered with a sliding door of lexan panels
- oil recovery vessel

POWER SUPPLY:

- electric standard supply: 400 VAC - 50 Hz - 40 kW
- compressed air: 5÷6 bar (72 ÷ 87 psi)
- industrial cooling water $T \leq 20^\circ\text{C}$ (68°F)

DIMENSIONS: (L; D; H)

- test stand: 2000 x 2900 x 2000 mm (79" x 114" x 79")

COLOUR:

Gray Bimal RAL 7035

测试循环的自动化是由一款 NI 可重新配置的嵌入式测控系统和一台内嵌式 PC 来控制的。比尔玛特制的软件允许编程和归档不同的运行和测试配置，操作者只要在时间基准上设定要得到的速度或压力参数。

通过输入零件号或条码阅读器（标配不含的）可以找回保存过的测试设置。

在压力和速度曲线上可以设定最多三个控制点来读取感兴趣的数据：输送压力、流量和泵速度，以及因此产生的容积效率。

序列号的分配和批次的管理可保证测试过产品的可追溯性。

每次测试后，试验台都将自动保存一个包含所有感兴趣数据的测试报告。数据可以在屏幕上显示、保存并导出为 CSV 格式。

报告管理也使用同样的追溯方法即通过序列号。

通过 PC 还可以按周设定来预先将油加热，这样可以确保在操作者到时，机器已经准备好可以立即使用。

此外，为了更好的帮助客户解决问题、更新软件或设置等，提供的 PC 也允许进行不可缺少的远程连接服务。

A NI Compact Rio and a built-in industrial PC, provide the control to run automatically test cycles.

The customized Bimal software allows to program and file different running in and test configurations, simply setting on a time base the values of pressure and speed to be reached.

The filed test configurations can be recalled inputting the part number or through a bar code reader (not included in the supply).

On the pressure and speed waves it is possible to set up to three check points to read the quantities of interest: pressure of delivery, flow rate, pump speed and consequently volumetric efficiency.

The traceability of the UUT is guaranteed by the assignment of a serial number or through the batches management.

For each test, the machine automatically files a test report with all the readings of physical quantities of interest. The readings can be displayed on the screen, filed and exported as CSV. The method of traceability via serial number works also for the reports management.

The PC allows to manage the oil pre-heating which can be programmable weekly, to ensure that at the arrival of the operator the machine is ready for use.

Furthermore, the PC is prearranged for the remote support connection, useful to help the customer in troubleshooting, software updates, configurations etc.

可选项:

扭矩计允许计量测出的扭矩并计量泵的机械效率。

OPTIONAL:

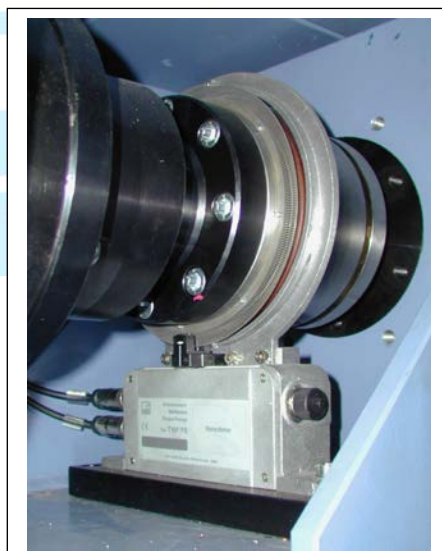
The optional **torque meter** allows the acquisition of the absorbed torque and the calculation of the mechanical efficiency of the pump.



Pic.1



Pic.2



Pic.3

Pic.1: 图像展示一个泵已固定在测试区里的详细视图：符合人体工程学的设计以及即宽大又方便接近的测试区将连接和固定操作变得又容易又快速。

Pic.2: 臂式 PC 允许操作者调整它至最合适的位置。

Pic.3: 图像展示可选项扭矩计与驱动抽连接的详细视图。

Pic.1: The picture shows a detail view of the testing area with the pump already fixed: the ergonomic design and the easy accessibility of the testing area make the connection and fixing operations extremely easy and quick.

Pic.2: The arm mounted PC allows the operator to regulate its position at the best.

Pic.3: The image shows the optional torque meter linked to the shaft.

循环试验报告和记录

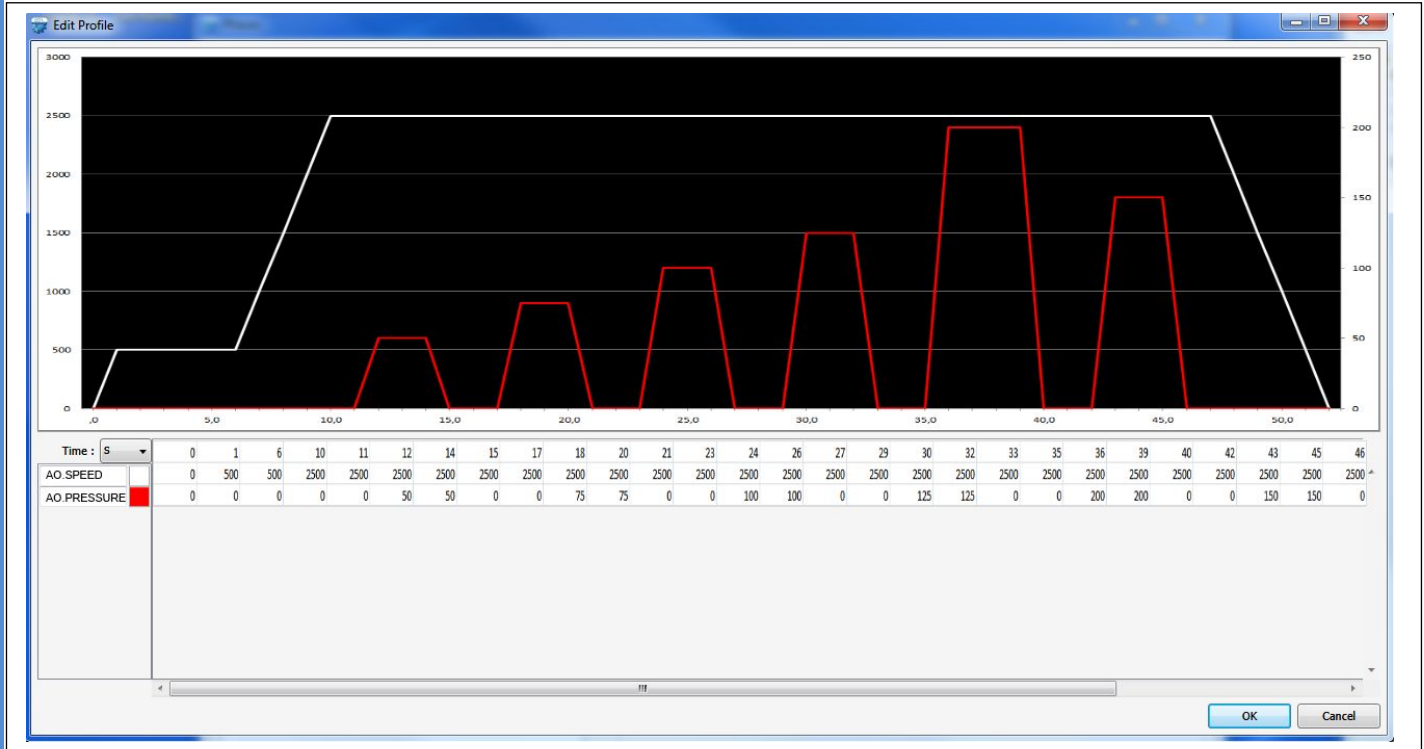
试验报告概括了识别数据和最重要的一些数据如温度、压力以及速度。该报告可保存为 CSV 和 PDF 文件格式。试验历史记录文件还可以保存所有类似的数据、警报以及事件。

以下图像展示测试循环设置的界面。在下面的表格里，可以输入识别数据的参数值，该参数会在上面的曲线图上自动展示出来。

CYCLE TEST REPORT AND LOGGER

The cycle test reports summarize the identification data and the most important values such as temperature, pressure and speed. They can be exported in CSV and PDF file format. The test history logger file can also be saved with all the analogical values, alerts and events.

The image shows the interface for the test setting. In the table below, it is possible to input the numerical values of the quantities of interest, which will be automatically visualized in the graph.



TESTING MACHINES

建议用油:

试验台可以使用工业液压油，如 ISO VG 32 和 ISO VG 46。在首次启动的时候，试验台需要约 300 升油。

技术规格可无通知而改变

SUGGESTED OIL

The test stand can operate with hydraulic industrial oils such as ISO VG 32 and ISO VG 46. The test stand needs about 300 (~ 79 gallons) liters of oil at the first start up.

Technical specifications can be changed without notice

订货号- ORDER CODE:

TBP12



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