PNEUMATIC AND HYDRAULIC MODULES

Présentation:

A series of modules (small consoles) are used to meet the requirements of the auxiliary energies reference system.
These modules are designed "to develop the knowledge and methods required for a functional and structural approach to the various systems that use pneumatic and hydraulic energy" (according to the BEP MVM reference system (French National Education)).

Methodology:
These modules allow for a global and concrete approach. Each module reproduces an assembly or subassembly fitted with real operational components that perform the function being studied (production, storage, use, etc.).
Trainees can use the system, see it in operation, take measurements, etc.
Each module is derived from a real system that we believe is the most relevant in order to study the selected function. In this way, each module can be used to meet at least the requirements of phase 1 of the reference system:
Phase 1: on a vehicle or a training system

Proposed method for trainees	**Structure of the module in order to follow the proposed approach**
1 – Identify the function	The module is really operative and, by observation, can be used to identify the function.
2 – Identify the main functions	Each module can be used to easily perform a functional breakdown, in particular by using the separate components.
3 – Identify the functional chain(s)	The links between the components and their layout facilitate the functional understanding of the studied system or subsystem.
4 – Make the automation functions apparent	See the "Sensors, pre-actuators and actuators" collection.
5 – Measure and/or view the input and output values used to validate simple functions	The instrumentation associated with each module can be used to measure the relevant functional parameters.

The table below shows the modules associated with S2.2 PRODUCTION AND USE OF HYDRAULIC ENERGY and S2.3 PRODUCTION AND USE OF PNEUMATIC ENERGY.

Each module is associated with PC training software that gives details of all the operational phases, with a detailed analysis of each component.

PURPOSE OF THE MODULE Media used	COMPONENTS USED	PHOTOS
PRODUCING HYDRAULIC ENERGY **"The basic components of all circuits"** **Réf : MPH-PEH** fuel circuit lubrication circuit (passenger cars, industrial vehicles, agricultural vehicles, public works vehicles) **Portable console**	Functional assembly, including: - **positive displacement pumps** - **adjustable pressure limiters** - **pressure flow rate measurement devices**	
USING HYDRAULIC ENERGY **Réf : MPH-EUH1** **Hydropneumatic rear suspension (passenger vehicles)** Tipper trucks (industrial vehicles) Arm of a pallet transporter (Manitou) (agricultural or public works vehicles) **Portable console**	Functional assembly, including: - **a hydraulic generator** - **a simple effect actuator with flow limiter** - **a 2/2 solenoid** - **a manual control to raise/lower the skip** - **a pressure measurement device**	
USING HYDRAULIC ENERGY 2 **Réf : MPH-EUH2** Tipper truck cab (industrial vehicles) **Skip tipper truck (industrial vehicles, public works)** Fork base lifter (agricultural vehicles) **Portable console**	Functional assembly, including: - **a hydraulic generator** - **a double effect actuator with flow limiters** - **a 4/3 distributor** - **a manual tipper control** - **a pressure measurement device**	
PRODUCING AND STORING PNEUMATIC ENERGY **Réf : MPH-PSEP** "The basic components of all circuits" **Workshop air circuit (all dominants)** **Portable console**	Functional assembly, including: - **a compressor** - **a tank** - **a safety valve** - **a pressure switch** - **pressure flow rate measurement devices**	
CONDITIONING PNEUMATIC ENERGY **Réf : MPH-CEP** "The basic components of all circuits"	Functional assembly, including: - **a filter** - **a regulator** - **a settler** - **a lubricator**	

Workshop air circuit (all dominants) **Portable console**		
USING PNEUMATIC ENERGY (all-ornothing by solenoid) **Réf : MPH-UEP.TOR1** **Suspension (passenger and industrial vehicles)** Engine EGR (public works and agricultural vehicles) **Portable console**	Functional assembly, including: - **a simple effect actuator** - **2/2 and 3/2 solenoids** - **a manual raise-lower control** - **a pressure measurement device**	
USING PNEUMATIC ENERGY (all-ornothing by distributor) **Réf : MPH-UEP.TOR2** **Bus door (industrial vehicles)** **Portable console**	Functional assembly, including: - **a double effect actuator** - **one 5/2 distributor and three 3/2 distributors with manual controls** - **adjustable flow rate limiters** - **a pressure measurement device**	
USING PNEUMATIC ENERGY (modulation of pressure according to the effort applied to the control) **Réf : MPH-UEP.PROP** **HGV brakes (industrial vehicles)** (agricultural and public works vehicles) **Portable console**	Functional assembly, including: - **a simple effect actuator (industrial vehicle type brake chamber)** - **a pressure regulator (industrial vehicle type brake control valve)** - **a quick-fit valve** - **a pressure and control effort measurement device**	

Trainees use training systems made up of real components in their usual operating environment. These simulators are intended for all BEP MVM courses (French National Education). A complete teaching kit is provided. (on CD-ROM).

Energy (V) and (bar)

Electric: 220
Pneumatic 3

Dimensions (mm) :

Length= 500
Width= 350
Height= 320

Weight (Kg) :

10

Options :

- Storage box
- Alimentation fully protected

☒CAP ☒BAC PRO ☐BTS ☐SUP

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