

1/2 **SELF-PROPELLED PUMP FOR A SHARED USE**

With a simple movement of the commutator is possible to have alternatively the pump operation and the cargo's moving. This system involves obvious benefits on human efforts, time's advantages, economic and ecological profits. It's a simple and solid

**SPPFSU (FDG)**

**WHAT DO YOU NEED:**  
 Cargo bike  
 Photovoltaic panel  
 Motor  
 Centrifugal pump  
 Commutator  
 Voltage regulator  
 Bike chain  
 Bike Crown  
 Pipe duct (7m long)  
 Non-return valve  
 Collector irrigation

**WORKING PRINCIPLES:**  
 -The photovoltaic panel is assembled on the top of the cargo's caisson; it's hinged on one side with the possibility to be lifted with a metallic support. In this way it's better to pick up the sunlight.  
 The photovoltaic panel produces electric energy that arrives to the voltage regulator, than to the commutator and, at the end, to the motor.  
 -The commutator is assembled on the handlebar. It inverts the power polarity that arrives to the mover. So the commutator inverts the motor axis's rotation.  
 -Our motor is 1.5HP, 1.1KW.  
 On the motor axis there are assembled two bike crowns with a smaller diameter than the one placed on the pump axis and the one situated on the cargo. The crowns transmit the movement through two bike chains that connect the motor to the bike crown and the mover to the pump.  
 -The centrifugal pump isn't a submerged one.  
 We consider that the flow is  $< 9 \text{ (m}^3\text{)}/\text{h}$ .  
 The pump is connected to the motor with a chain drive and a gear with a freewheel mechanism.  
 In addition is provided a pipe duct with a non-return valve at the end.

**PARTICULARITY:**  
 With a simple movement of the commutator is possible to have alternatively the pump operation and the cargo's moving. This system involves obvious benefits on human efforts, time's advantages, economic and ecological profits. It's a simple and solid system and can be bought and shared by the farmers of neighbors villages

**Solution**

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Creative's profile



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