

APS140N, the acclaimed best-seller in the “Red Power Line” series of Portable Actuators based on petrol engines, is a product that doesn’t need further presentation. Equipped with a 4-stroke Honda GX35, the APS device is now widely used and appreciated, with high performances of power and durability, and also offering reliability and safety of use even in the most demanding situations.

The usage is very simple and intuitive: the output torque in Nm and the related output speed (rpm) are adjustable according to the pressure exerted on the accelerator button. If fully pressed, the APS tool operates at the continuous torque value, further reaching the maximum torque if it encounters some “resistance” during the operation; above these values, the GX engine will stop and shut off automatically. The integrated centrifugal clutch regulates the Nm output based on the number of revolutions supplied by the gear case, allowing the device to operate for an unlimited time without overheating.

Practical and robust, **APS140N** is still the ultimate tool for water operators looking for high power combined with great autonomy in the daily – and emergency – interventions on valves and gates, as well as representing a valuable alternative to the ‘classic’ electrified fixed actuation systems.



APS140N – Features

Max torque	: 147 Nm / 108,42 Ft/lb
Continuous torque	: 96 Nm / 70,81 Ft/lb
Output speed	: 110 rpm
Engine speed	: 8500 rpm
Reduction ratio	: 1/77
Engine model	: Honda GX35 (1.3 HP)
Tank capacity	: 630 ml
Dimensions	: 526x250x313 mm
Weight	: 13 Kg
Connection	: Q24x24x5 mm

APS140N Standard supply:



(A)



(B)



(C)



(D)

(A) **Metal case**: for the easy and safe transport of the APS device, coupled with the practical **fuel tank 5 lt.** for refueling the Honda GX engine during the daily interventions.

(B) **Anti-rotation Pin Set**: in three different sizes and interchangeable, they always guarantee the correct and safe ‘block’ of the Portable Actuator to the gate/valve.

(C) **Shoulder Belt**: it must be connected at the support bracket and it allows the operator to easily transport and handle the APS unit during the various stages on the intervention sites.

(D) **Light Kit – available separately as additional kit**: installed on the control handle, it allows to easily operate during night time or in absence of light. In case of need, the kit can be removed from the APS and installed on the operator’s helmet.

APS140N features:



(1) **Honda GX35 4T 4-stroke engine** for unleaded petrol: certified for usage also in the territories of North America/Canada, it guarantees high performances in terms of both power and durability.

(2) **Inner clutch**: placed between the Honda GX35 and the gear case, it sets the Nm torque limit of the tool, avoiding any damage to the portable actuator itself and to the valve/gate.

(3) **Gear case**: made in light and resistant Ergal aluminum alloy, it contains a series of hardened steel gears placed in oil bath; this allows the APS devices to work continuously with no risk of overheat.

(4) **Support Foot** for the APS unit: manufactured in painted stainless steel, in order to ensure more stability to the device and a high protection from scratches and accidental blows.

(5) Anti-slip anatomical **Control Handle**: made of rubber, with ON/OFF switch on its top, and the accelerator made of two safety buttons that must be pressed together to start the rotation movement.

(6) **Support Bracket** for the control handle: manufactured in painted stainless steel, it guarantees to the APS device sturdiness and solidity in any working position.

(7) **Gear Reversal**: placed on top of the gear case, the lever allows the rotation in both Right/Left directions, passing through the neutral point.

(8) **Side Handle**: mountable on the left or right side of the tool, it facilitates the use of the APS140N to both left/right-handed operators.

(9) **Anti-rotation Pin**: adjustable in its plate, it guarantees a quick, safe and stable fixing of the pin itself during the connection between the APS actuator and the gate/valve.

(9) **Safety Split** with steel cable: applicable on both left/right side of the APS actuator, it allows and easy and safe coupling between the APS140N device and the gate/valve to be moved.

(10) **Spindle**: made of steel, it's the point where the operator must install the proper bushing in order to transmit the rotation movement from the APS140N actuator to the bevel gear installed on the gate/valve.

Usage of the APB/APS Portable Valve Actuators on gates/valves

In order to transfer the 'rotation' from the Portable Actuator to a bevel gear installed on a gate/valve, it is necessary to install a **Bushing** (photo 1) on the actuator's spindle by using the n. 04 screws supplied.

In consideration of the fact that the APB/APS devices produce very high Nm outputs, it is also necessary to install an **Anti-Rotation Flange** (photo 2) on the bevel gear of the gate/valve. This flange avoids the 'snatch' rotation of the APB/APS while in operation, and prevents any potential injuries to the operator. The safety system is completed by the **Anti-Rotation pin** and its **Safety Split**, that allow to keep the portable actuator 'locked in position' while operating. This is a safety mechanism required by law.

The manufacturing company is not responsible for any damage to people (o properties) resulting from its failure or incorrect use.

Therefore, once the correct bushing has been installed on the APB/APS and the proper A-R flange on the bevel gear, all that's left to do is to connect the bushing to the reducer's shaft, make sure that the A-R pin enters the A-R flange, then close it using its safety split. Now, you are 100% ready to operate.

Photo 3 shows this connection phase (this procedure is the same for both sluice gates/penstocks/valves)



1. Bushings (to mount on the APB/APS)



2. A-R Flanges (to mount on the bevel gear)



3. Connection of the APB/APS to the gearbox shaft

About the interventions on multiple series of gates/valves

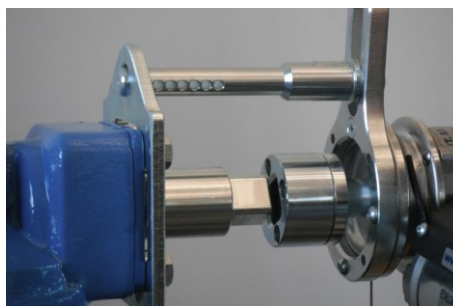
When planning to operate on several gates/valves with different bevel gears – with shafts of different diameters – it is necessary to standardize them all by installing a series of **Adaptors** with the male part – square 24x24mm – that fits the "standard" square 24x24mm female bushing installed on the actuator.

All the **Adaptors** (photo 4) have a 24x24mm square male connection and a cylindrical female part of different sizes. It is therefore necessary to previously identify which types are necessary, and then proceed with their installation, along with the corresponding anti-rotation flange; after their installation, it will be possible to operate on all the gates/valves without continuous changes of bushing (photo 5).

However, at this point it will no longer be possible to use the original hand-wheels. So, in order to still perform the manual interventions, it will be necessary to use the **Square 24mm Hand Crank**, that combined with the **Padlocking Kit** allows also to lock the bevel gear on the gate/valve (photo 6) in order to avoid unauthorized movements.



4. Q24x24 adaptor mounted on the bevel gear



5. Connection of APB/APS to A-R flange + Q24 adaptor



6. Q24 hand crank + locking system on bevel gear

Manual emergency interventions on electric actuators

'Emergency operations' refers to all those manual interventions, performed on Electrified Actuators in absence of electricity, by using the small manual hand-wheel placed on the body of the actuator itself.

With the aim of providing a full service to its Customers, Scapin has designed and created a series of custom kits to install on the emergency of the most common models of **AUMA** / **BIFFI** / **DREHMO** / **ROTORK** electrical actuators.

The installation of these **Emergency Kits** is very simple: once the hand-wheel has been removed from the electric actuator, it will be sufficient to mount the adaptor and the anti-rotation flange using the supplied screws. After that, the emergency can be performed using an APB/APS device.

Once the intervention has been completed and the Portable Actuator disconnected, it is possible to restore the manual hand-wheel as it was originally by mounting the appropriate Q24 adaptor (supplied with the kit) on it and then, if necessary, lock it using a removable padlock (see the photos below).



Emergency Kit on AUMA Electric Actuator



Emergency Kit on BIFFI Electric Actuator



Emergency Kit on DREHMO Electric Actuator



APB/APS tool on AUMA Electric Actuator



APB/APS tool on BIFFI Electric Actuator



APB/APS tool on DREHMO Electric Actuator



Visit our YouTube Channel to see our HD videos showing the APB/APS actuators at work