

Scapin's new battery-operated portable actuator **APB150N** takes benefit from the most recent technical innovations to offer the ultimate cutting-edge product.

Compact and reliable, equipped with the newest version of the Hikoki 36V brushless motor, and coupled for the first time with a double micro-reducer, **APB150N** offers maximum power and efficiency in an 'eco-friendly' way, for a reduced energy consumption and reliability over time.

The usage is very practical and intuitive: the output torque in Nm and the related output speed (rpm) are adjustable according to the pressure exerted on the accelerator button placed in the soft-grip handle.

In the event of excessive absorption, the tool is equipped with a resettable thermal circuit breaker that will turn off the APB device in order to avoid overloads.

Powerful and fast, with performances of **30% higher than the previous APB models**, the **APB150N** device is the perfect choice for water operators looking for an "all-in-one" solution in the case of multiple 'short' daily movements of valves and gates, and also in particular environments such as underground rooms with low or insufficient ventilation.



APB150N - Features

Max torque	: 192 Nm / 141,60 Ft/lb
Continuous torque	: 155 Nm / 114,32 Ft/lb
Output speed	: 98 rpm
Engine speed	: 31300 rpm
Reduction ratio	: 1/320
Engine model	: Hikoki Brushless 36V
Battery	: Hikoki 18-36V 4,0 Ah
Dimensions	: 330x220x360 mm
Weight	: 7,4 Kg
Connection	: Q24x24x5 mm

APB150N Standard supply:



(A)



(B)



(C)



(D)

(A) **Plastic case:** with internal shockproof foam padding on the inside, for an easy and safe transport of the APB150N device to the sites of the interventions.

(B) **N. 02 Hikoki Multivolt 18-36V li-ion batteries:** the newest updated 2024 version from Hikoki, including the practical LED charge status indicator.

The 2024 batteries are also fully compatible with the previous 2021 "Green Power Line" series.

The batteries are supplied along with the **Hikoki Charger**, including features as: fast charging system, USB connection, cooling fan and LED system indicating charging and/or any failure.

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

(D) **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.

APB150N features:



- (1) **Hikoki 36V engine:** based on 'Brushless' technology, it offers maximum efficiency, power and reliability in an 'eco-friendly' way, guaranteeing a very reduced energy consumption.
- (2) **Gear case:** composed by a couple of micro-reducers, that guarantee high Nm output and also ensure sturdiness and high reliability over time of the APB150N device.
- (3) **Control Handle:** with a practical and soft-grip anatomical shape, it includes the accelerator button and the selectable lever for the rotation on Left/Block/Right positions.
- (4) **Hikoki 36V Battery connection:** with a renewed design that makes everything very compact, ergonomic and balanced, it includes also an automatic LED light for night work.
- (5) **Protection cover:** made of painted stainless steel, it ensures strength and solidity to the APB device; at the same time, it guarantees the correct ventilation of all the internal electrical parts.
- (6) **Side Handle:** mountable on the left or right side of the tool, it facilitates the use of the APB150N to both left and right-handed operators.
- (7) **Thermal circuit breaker:** it's the electrical protection of the tool against any overloads. In case of absorption higher than 25A, the breaker turns off the APB device (until the manual 'reset' of the operator)
- (8) **Anti-rotation Pin:** adjustable in its plate, it guarantees a quick, safe and stable fixing of the pin itself during the connection between the APB150N actuator and the gate/valve.
- (8) **Safety Split:** galvanized and with its steel cable, it allows an easy and safe coupling between the APB150N device and the gate/valve to be moved.
- (9) **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 APB150N 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

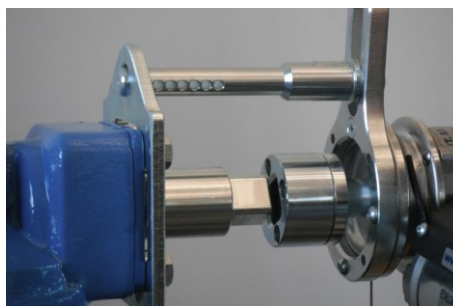
When planning to operate on several gates/valves with different bevel gears – with shafts of different diameters – it is necessary to standardize them all by installing a series of **Adaptors** with the male part – square 24x24mm – that fits the "standard" square 24x24mm female bushing installed on the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