Traverse motors with progressive start and stop

A few problems such as swinging of suspended loads, slipping of trolley wheel on rails, the breakage of some delicate mechanisms can occur on traverse applications. All these problems can be solved using progressive start/stop systems such as clutches, hydraulic couplings, slip-ring motors or soft start devices. Experience has shown that progressive start/stop brake motor is a valid alternative to all the other adducted systems. Traverse motors are provided with a flywheel whose dimension and weight are calculated in order to have an adequate moment of inertia. The ratio of rated torque to starting (locked rotor) torque is calculated in order to achieve the best progressive performance.
The flywheel accumulates energy during the start and gives it back during the stop resulting in a progressive change of the rotating speed. PV series motors don't need adjustments with load change or any special maintenance and the progressive action is directly proportional to the load increase. During the planning stage it is necessary to carefully choose the proper motor power as an insufficient power could cause overheating while a too powerful motor could reduce the effect of the flywheel progression.
PV series motors are designed with a special rotor to reduce the starting (locked rotor) current so to allow heavy start/stop duty cycle, even if the starting period doesn't have to be too long in order to avoid overheating.
BAPV series motors provide a reduced brake torque, resulting in a really progressive braking action. The brake torque of BAPV motors is about the half of the corresponding BA standard brake motors while BM and BMPV series motors have the same brake torque.
BAPV motors are fitted with a flywheel strongly secured to the motor shaft while BMPV motors are fitted with cast-iron cooling fan replacing the thermoplastic one.

PV series motors are available with the following features or option:
- Separate brake supply,
- Manual brake release,
- Suitable for mounting in any position (vertical, horizontal, etc.)
- Two speeds

The table below shows the moment of inertia increase (Kgm2) for BAPV and BMPV series.

Motor Type	63	71	80	90	100	112	132
BAPV	-	$2.97 \bullet 10^{-3}$	$6.78 \bullet 10^{-3}$	$1.11 \bullet 10^{-2}$	$1.82 \bullet 10^{-2}$	$2.89 \bullet 10^{-2}$	$5.8 \bullet 10^{-2}$
BMPV	$3.1 \bullet 10^{-4}$	$1.93 \bullet 10^{-3}$	$3.12 \bullet 10^{-3}$	$9.97 \bullet 10^{-3}$	$1.52 \bullet 10^{-2}$	$1.52 \bullet 10^{-2}$	-

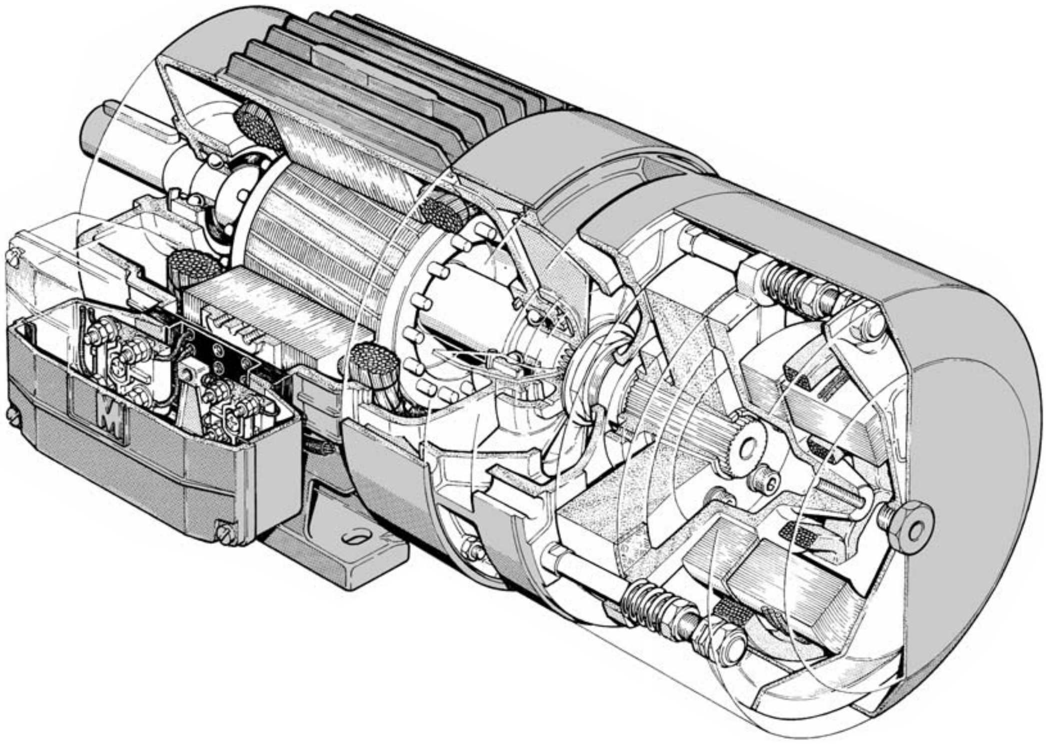
The total moment of inertia of a chosen motor is the moment of inertia of a standard brake motor (see motors technical data) plus the flywheel moment of inertia (shown in table above).

Example: moment of inertia of BAPV 71 B4 = moment of inertia of BA 71 B4 + flywheel type BAPV 71 B4 moment of inertia = $8.1 \bullet 10\text{-}4 + 2.97 \bullet 10^{-3} = 3.78 \bullet 10\text{-}3$ Kgm^2.

The table below shows the maximum brake torque (Nm) for BMPV with DC brake and BAPV motors with AC brake or DC brake:

Motor Type	63	71	80	90	100	112	132
BMPV	5	5	10	20	40	60	-
BAPV - A.C.	-	7	9	19	25	40	75
BAPV - D.C.	-	4,5	7,5	15	21	30	60

BAPV series



BMPV series