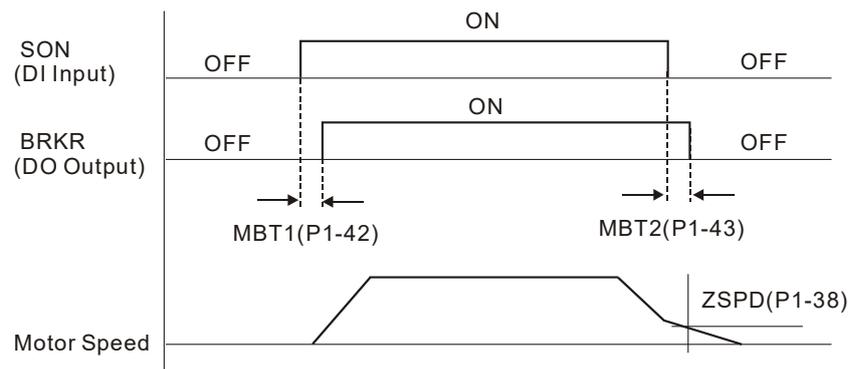


### 6.6.4 The Use of Mechanical Brake

When operating mechanical brake via servo drive, if the DO signal, BRKR is set to OFF, it means the mechanical brake is not working and the motor will be locked. If BRKR is set to ON, it means the mechanical brake is working and the motor can operate. The operation of mechanical brake has two kinds. Users can set the relevant delay via register MBT1 (P1-42) and MBT2 (P1-43). It is usually applied in Z axis in order to reduce the heat generated when servo motor puts up resistance and shorten its lifetime. In order to avoid the error of mechanical brake, it must be worked when the servo drive is off. To operate the mechanical brake, the brake has to be activated before the motor stops running (Servo OFF). The brake has to be released after Servo ON. Otherwise, it would become the loading of the motor and might damage the brake.

If it works during the process of acceleration or constant speed, the servo drive needs to generate more current to resist the brakeforce of mechanical brake and it might cause the alarm of overload warning.

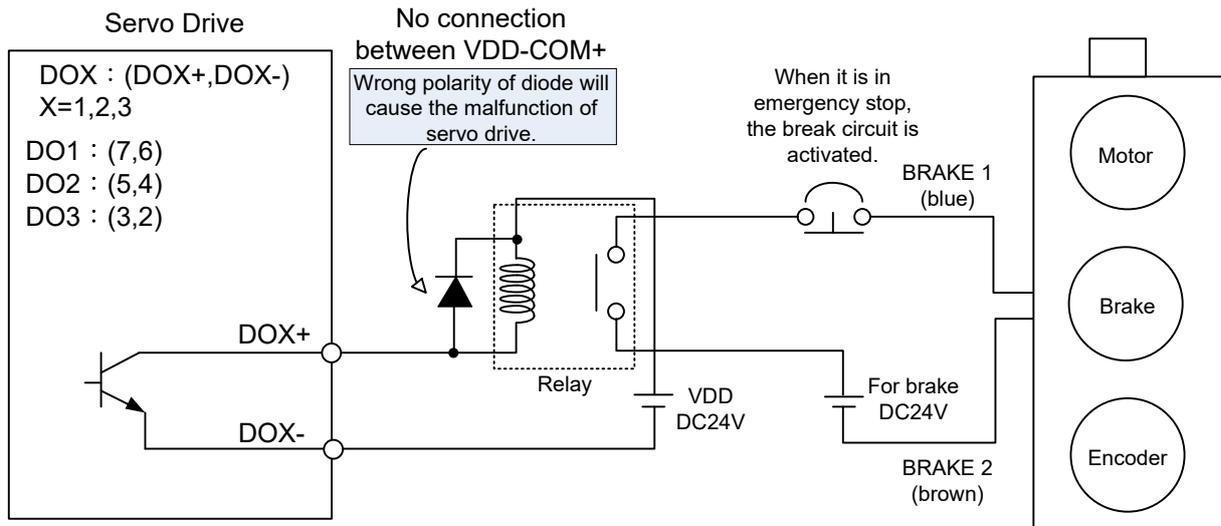
Timing diagram of mechanical brake control:



The output timing of BRKR:

1. When Servo OFF, go through the time set by P1-43 and the motor speed is faster than the setting in P1-38, DO.BRKR is OFF (mechanical brake is locked).
2. When Servo OFF, has not reached the time set by P1-43 but the motor speed is slower than the setting in P1-38, DO.BRKR is OFF (mechanical brake is locked).

The wiring diagram of using mechanical brake:



**NOTE**

- 1) Please refer to Chapter 3, Wiring.
- 2) The brake signal controls the solenoid valve, provides power to the brake and enables the brake.
- 3) Please note that there is no polarity in coil brake.
- 4) Do not use brake power and control power (VDD) at the same time.

Timing diagram of control power and main power:

