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Operator Controls on Industrial Equipment			

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1. **Scope**—This SAE Standard is intended to improve operator efficiency and convenience by providing guidelines for the uniformity of location and direction of motion of operator controls used on industrial wheeled equipment. The controls covered are those centrally located at the operator's normal position.
 - 1.1 **General**—These guidelines are based on the principle that a given direction of movement of any control produces a consistent and expected effect.
 - 1.2 Where confusion may result from the motion of the control, the effect from movement of the control shall be clearly and permanently identified.
2. **References**—There are no referenced publications specified herein.
3. **Definitions**
 - 3.1 **Industrial Wheeled Equipment**—That class of tractors and associated equipment used in operations such as landscaping, construction services, loading, digging, grounds keeping, and highway maintenance.
 - 3.2 **Propelling Machines**—Tractors or self-propelled units.
 - 3.3 **Towed, Semi-Mounted and Mounted Equipment**—Equipment used in conjunction with propelling machines defined in 4.2.
 - 3.4 **Right-Hand, Left-Hand, and Forward Designations**—Those related to the operator when sitting in the operating position.
4. **Brake Control**
 - 4.1 The brake pedal(s) shall be actuated by the operator's right foot with the direction of motion forward and/or downward for engagement. When traction control is not foot actuated, brakes may be operated by either foot.
 - 4.2 When separate brake pedals are provided for the independent right-hand and left-hand brake control, it shall be possible to obtain combined and/or equalized control.

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4.3 The parking brake or parking device control shall be located convenient to the operator.

5. **Clutch Control**

5.1 **Traction Control**

5.1.1 When a foot pedal control is provided, it shall be actuated by the operator's left foot with the direction of motion forward and/or downward for disengagement.

5.1.2 When a hand-operated control is provided, it shall be moved toward the operator (generally rearward) for disengagement.

5.2 **Combination Clutch and Brake Control**—When a foot-operated combination tractor clutch and brake control is used, it shall be left-foot operated with the direction of motion to be forward and/or downward to cause clutch disengagement and brake engagement.

5.3 **Power Take-Off Control**

5.3.1 When a hand-operated clutch control is provided, its movement shall be generally rearward and/or downward for disengagement.

5.3.2 The combination tractor clutch and constant running or transmission-driven power take-off clutch controls are governed by 5.1.1 and/or 5.1.2.

5.4 **Master Implement, Header, or Gathering Unit Clutch**—(For self-propelled implements)

5.4.1 When a hand-operated clutch control is provided, its movement shall be generally rearward and/or downward for disengagement.

5.4.2 When a foot-pedal clutch control is provided, it shall be governed by 5.1.1.

6. **Engine Speed Control**

6.1 The engine speed control shall be convenient to the operator.

6.2 When the direction of motion of the engine speed hand control is in a plane parallel to the longitudinal axis of the propelling machine, the direction of motion shall be generally forward or upward to increase engine speed.

6.3 When a foot-operated engine speed control is provided, it shall be right-foot operated with the direction of motion forward and/or downward to increase engine speed.

7. **Ground Speed and Direction Control**

7.1 The transmission speed selector level(s) shall be conveniently located, and the shifting pattern(s) shall be clearly and permanently identified.

7.2 When a hand-operated forward-reverse directional control lever (non-variable speed) is provided, it shall be moved forward for forward machine motion and be moved generally rearward for rearward machine motion. If a neutral position is provided, provisions shall be made to prevent accidental movement of the control.

7.3 When a hand-operated variable speed control is provided, it shall be moved generally forward and/or upward to increase speed.