



# **SURFACE VEHICLE RECOMMENDED PRACTICE**

J1307™

OCT2023

Issued 1981-05  
Revised 2023-10

Superseding J1307 AUG2002

## (R) Excavator and Backhoe Hand Signals

## RATIONALE

This document has been updated to make references more current, improve the quality and diversity of the figures shown, and update the scope.

## 1. SCOPE

This SAE Recommended Practice applies to excavators and backhoe loaders, as defined in ISO 6165.

## 1.1 Purpose

This document provides a set of uniform hand signals for use by a signalperson to direct an operator in the movement of the load or the working equipment or travel of a mobile excavator or backhoe.

## 2. REFERENCES

## 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

### 2.1.1 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO 6165 Earth-Moving Machinery - Basic Types - Identification and Vocabulary

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### 3. SIGNALS

#### 3.1 Standard Signals

When earthmoving machinery work conditions require hand signals, they shall be provided or posted conspicuously for use of both signalperson and operator. Hand signals, as specified in 3.2, shall be the standard signals. No earthmoving machinery motions shall be made unless signals are clearly understood by both signalperson and operator.

#### 3.2 Hand Signals

Hand signals shall be executed as defined and illustrated in Figure 1. Direction and motion of the hands and arms with respect to the machine shall define the intended signal, regardless of location or body orientation of the signalperson.

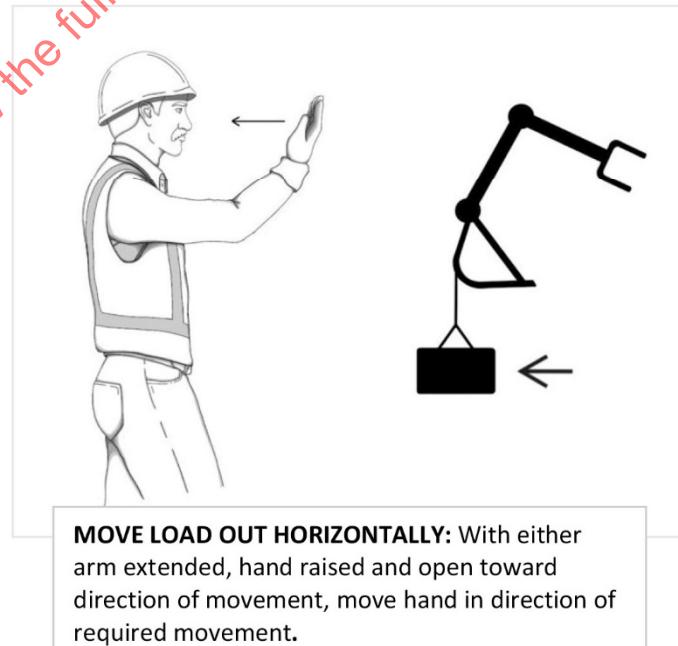
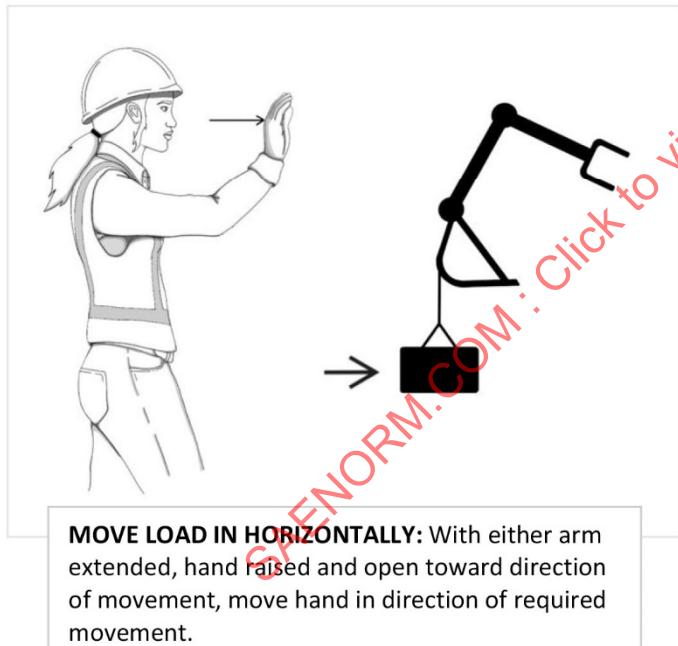
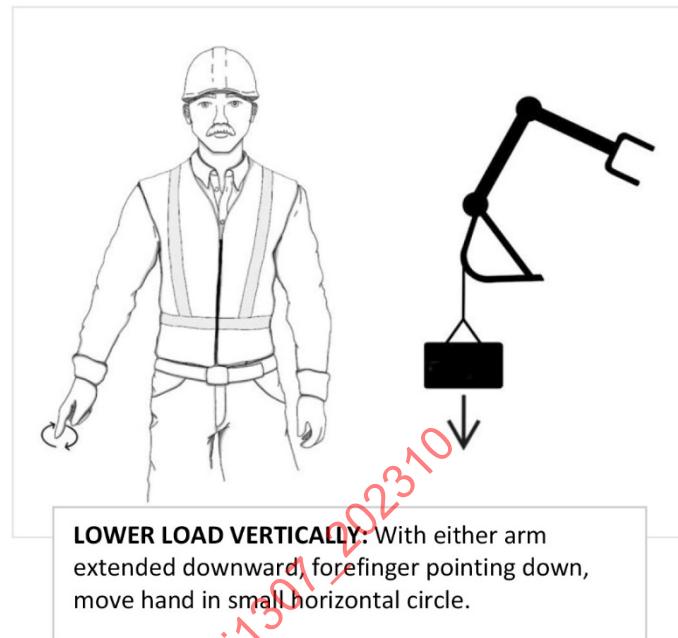
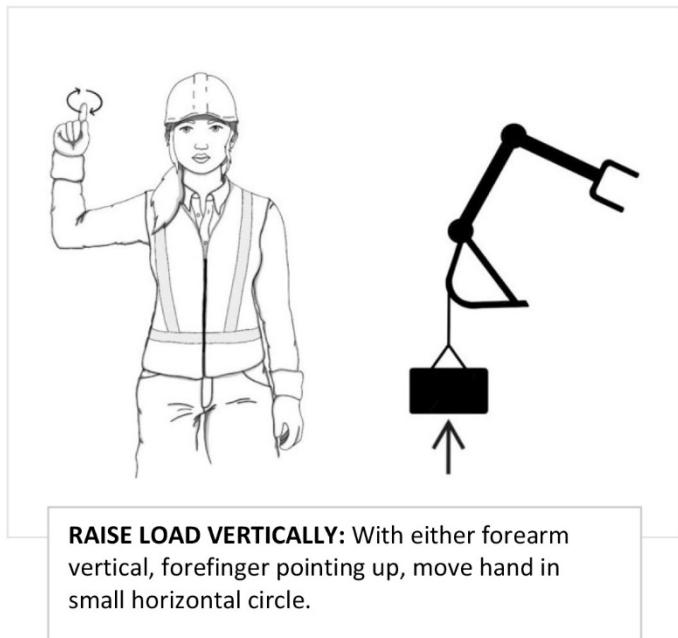
#### 3.3 Special Signals

When signals for auxiliary equipment functions or conditions not covered in 3.2 are required, they shall be agreed upon in advance by the operator and signalperson. They shall not conflict with the specified standard hand signal.

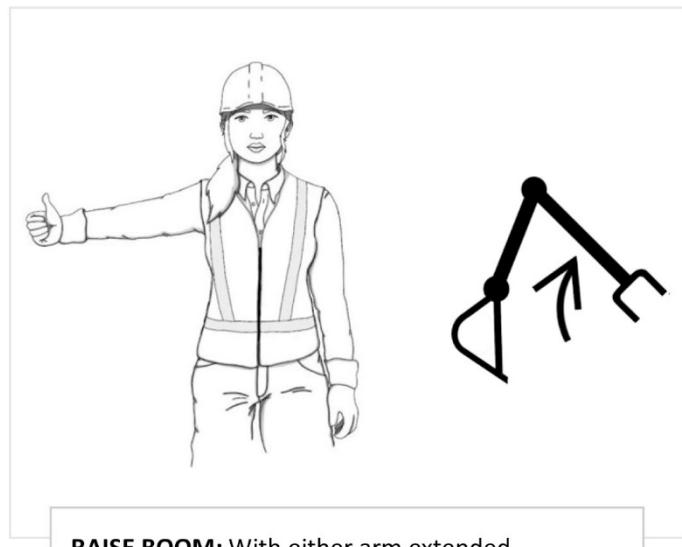
#### 3.4 Instructions

When it is desired to give instructions to the operator other than provided by the established signal system, all excavator or backhoe motions shall first be stopped and the engine switched off prior to work-site personnel approaching the machine.

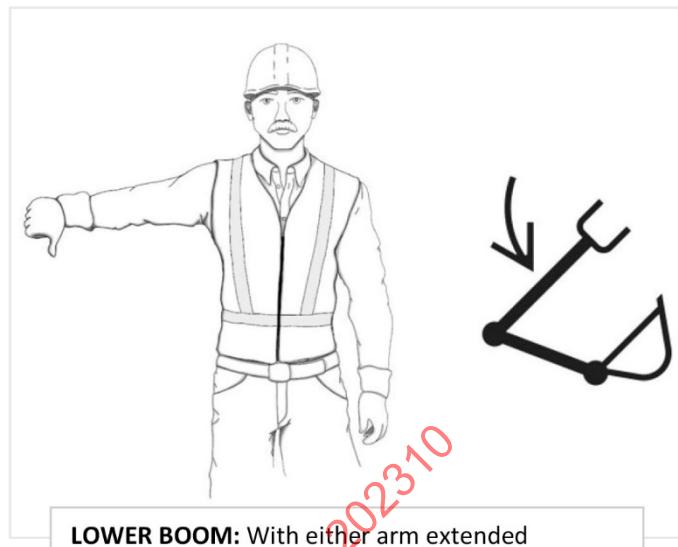
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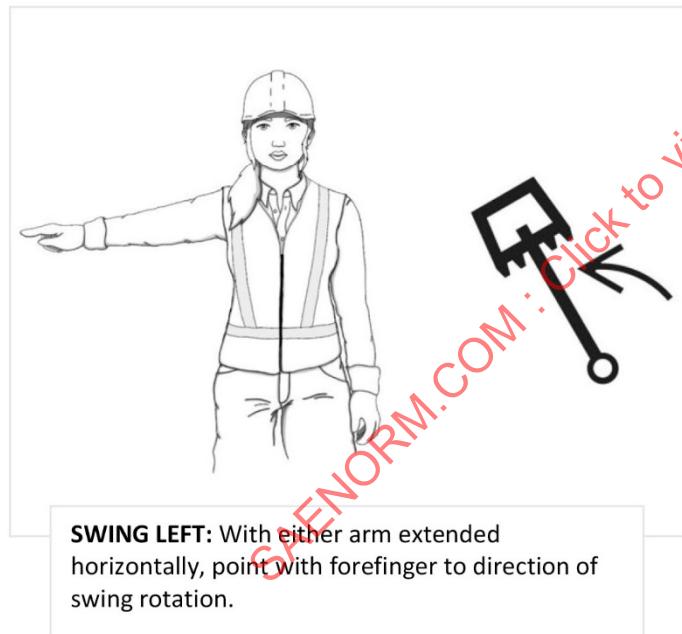
**Figure 1 - Standard hand signals for controlling excavators and backhoes**



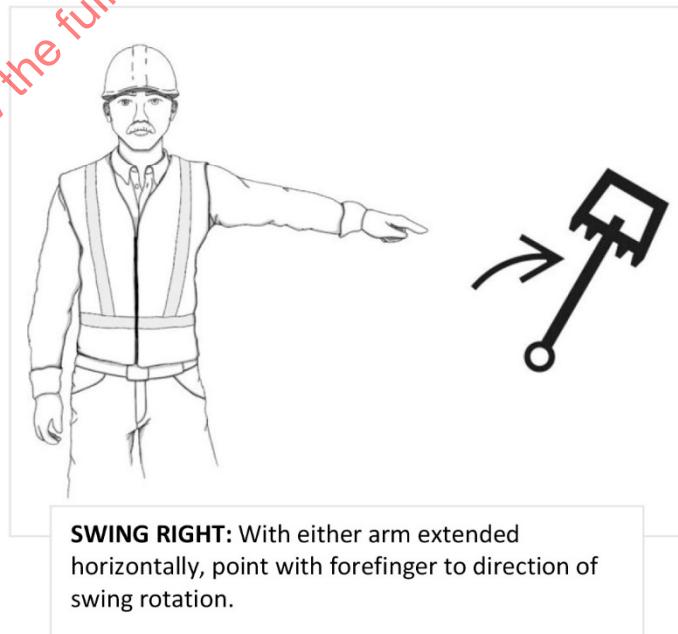
**RAISE BOOM:** With either arm extended horizontally, fingers closed, point thumb upward.



**LOWER BOOM:** With either arm extended horizontally, fingers closed, point thumb downward.



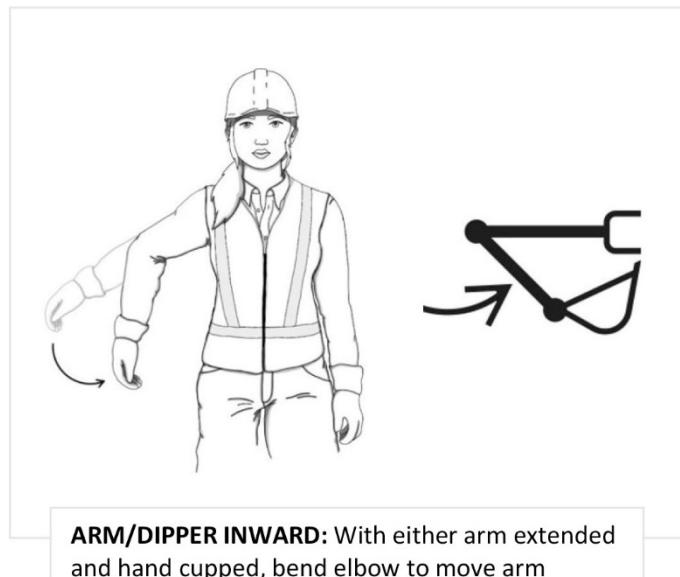
**SWING LEFT:** With either arm extended horizontally, point with forefinger to direction of swing rotation.



**SWING RIGHT:** With either arm extended horizontally, point with forefinger to direction of swing rotation.

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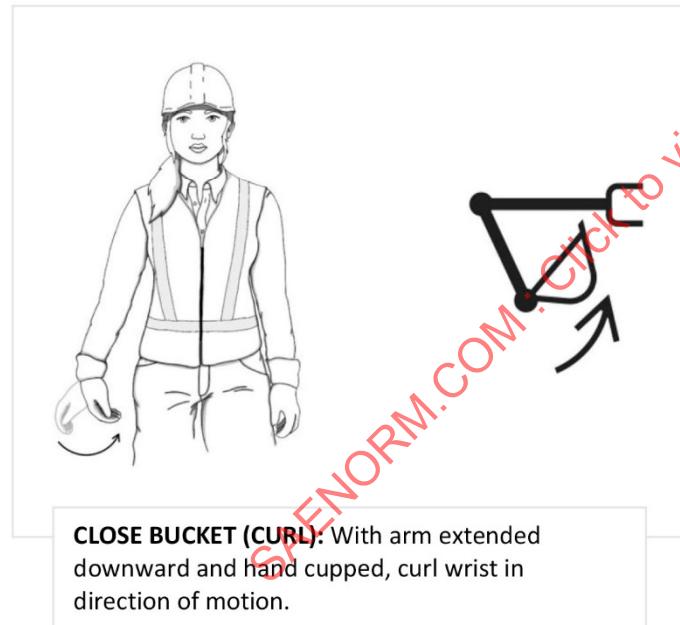
**Figure 1 - Standard hand signals for controlling excavators and backhoes (continued)**



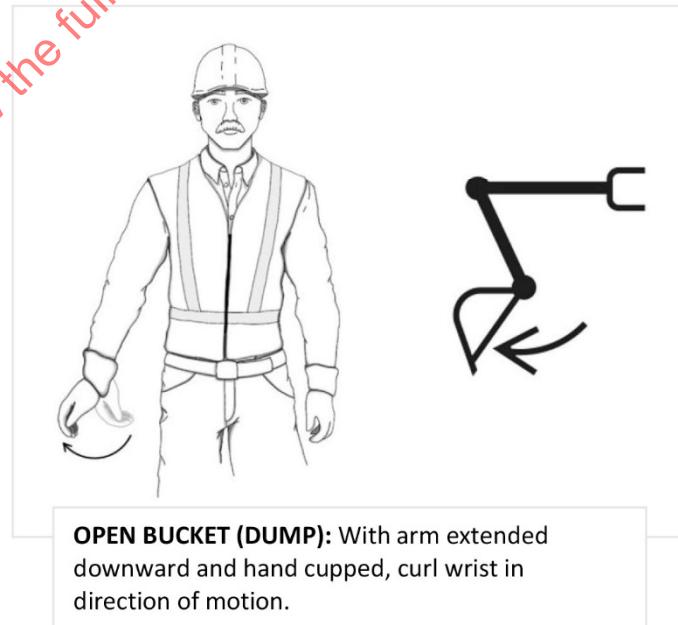
**ARM/DIPPER INWARD:** With either arm extended and hand cupped, bend elbow to move arm inward.



**ARM/DIPPER OUTWARD:** With either arm extended, bent at elbow, and hand cupped, straighten elbow to move arm outward.



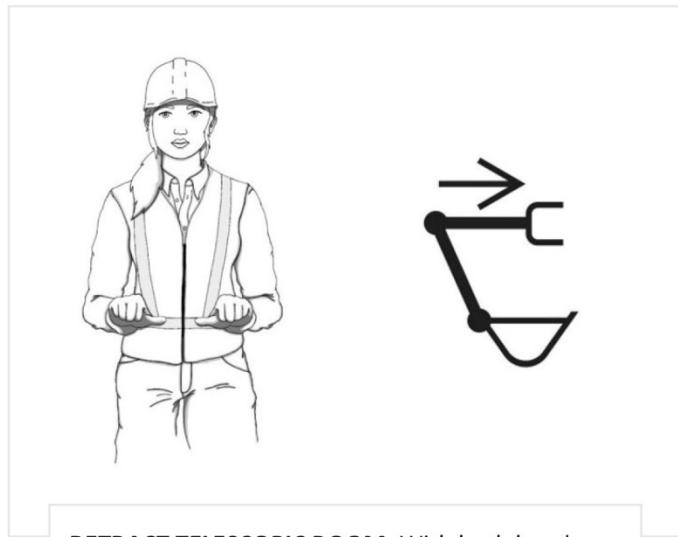
**CLOSE BUCKET (CURL):** With arm extended downward and hand cupped, curl wrist in direction of motion.



**OPEN BUCKET (DUMP):** With arm extended downward and hand cupped, curl wrist in direction of motion.

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**Figure 1 - Standard hand signals for controlling excavators and backhoes (continued)**



**RETRACT TELESCOPIC BOOM:** With both hands clenched, point thumbs inward.



**EXTEND TELESCOPIC BOOM:** With both hands clenched, point thumbs outward.



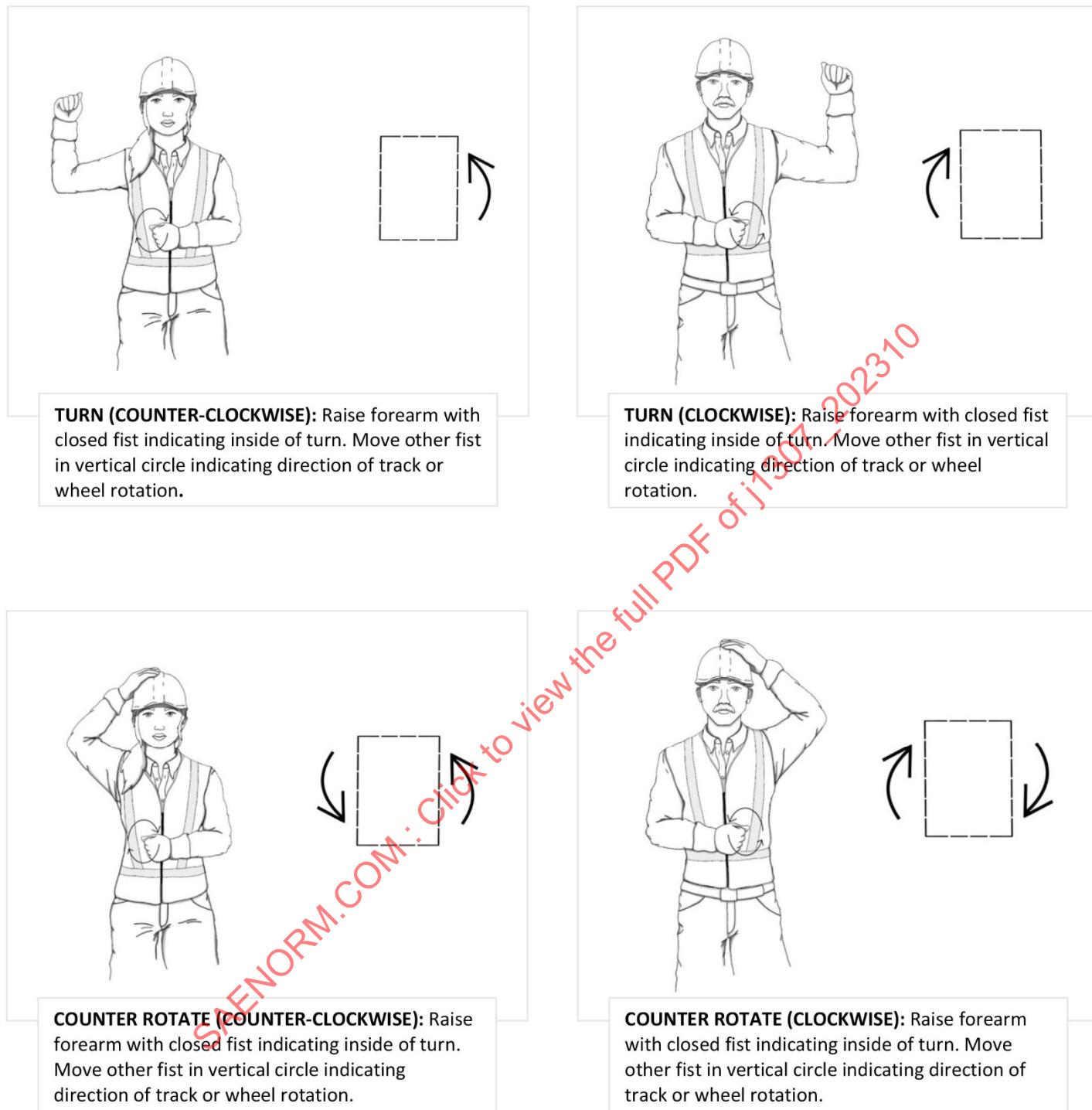
**RETRACT TELESCOPIC ARM/DIPPER:** With either arm outstretched horizontally in front of body, close fingers and point thumb in direction of required movement.



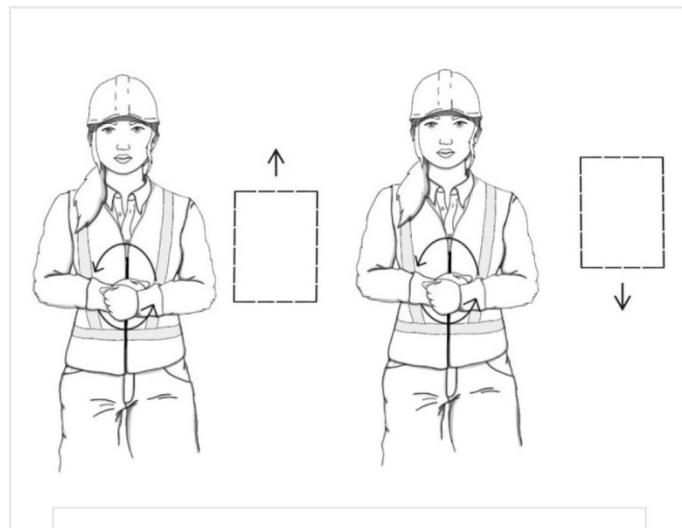
**EXTEND TELESCOPIC ARM/DIPPER:** With either arm outstretched horizontally in front of body, close fingers and point thumb in direction of required movement.

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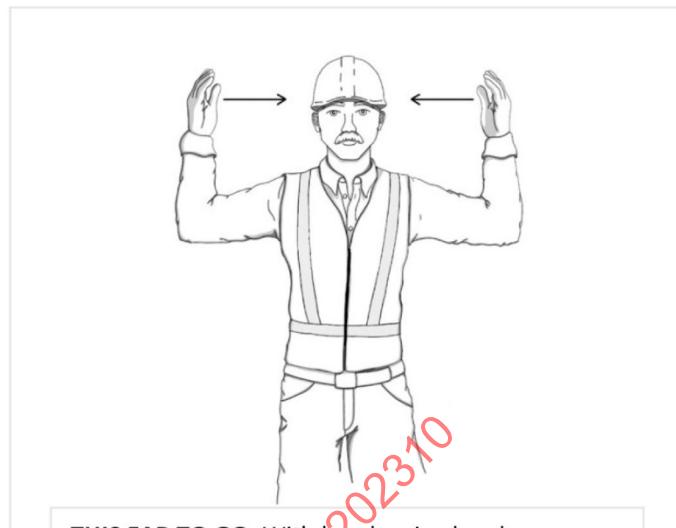
**Figure 1 - Standard hand signals for controlling excavators and backhoes (continued)**



**Figure 1 - Standard hand signals for controlling excavators and backhoes (continued)**



**TRAVEL:** Move fists in vertical circle about each other in direction of track or wheel rotation.



**THIS FAR TO GO:** With hands raised and open inward, move hands laterally, indicating distance to go.



**MOVE SLOWLY:** Place one hand motionless in front of hand giving motion signal. (Raise load slowly is shown.)



**STOP:** With either arm extended laterally, hand open downward, move arm back and forth.

**Figure 1 - Standard hand signals for controlling excavators and backhoes (continued)**