



STANDARD OPERATING PROCEDURE_OPS004

Connection/Disconnection of TWT

Version/Rev	Date	Section	Amendment
V2/R1	11.03.2024	Reference	Reference added
V2/R2	26.08.2025	Steps Reference	Cross-Reference added Reference added

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PURPOSE

This SOP establishes a standardised process for the safe connection and disconnection of towbar trucks/tugs (TWT) to aircraft.

It ensures compliance with safety, operational and regulatory requirements, and provides a reference for training and oversight.

OBJECTIVE

The objective of this SOP is to:

- guide Turnaround Coordinators (TRCs) in ensuring correct connection and disconnection of TWT equipment;
- prevent damage to aircraft nose landing gear (NLG) and pushback equipment;
- ensure correct use of chocks, bypass pin and alignment during operations;
- maintain safe communication and hand signal procedures with tug drivers;

APPLICATION

Operations department:
Turnaround Coordinator

ABBREVIATIONS & DEFINITIONS

TWT = Towbar Truck/Tug

MLG = Main Landing Gear

NLG = Nose Landing Gear

GPU = Ground Power Unit

ASU = Air Starter Unit

Procedure

Before connecting the Pushback Vehicle

Step	Action
1.	<p>Ensure the appropriate nose gear steering bypass pin is correctly installed prior to towbar connection to the aircraft. This will depressurize the aircraft steering system.</p> <p>On E170/190/195 aircrafts: Nose gear steering <u>mechanisms</u> are set as required by flipping the steering switch on the control panel.</p> <p>The steering bypass pin is:</p> <ul style="list-style-type: none"> ▪ Labeled with the specific aircraft type(s) for which it can be used. ▪ Identified with a "Remove Before Flight" streamer.
2.	<p>Prior to connecting the towbar and truck or lifter, confirm with PIC that the aircraft parking brake is set.</p> <p>Note: Removing of Main Landing Gear (MLG) chocks only AFTER towbar and tug or lifter have been connected to Nose Landing Gear (NLG) and secured (parking brake of the pushback tug set).</p>

Connecting Pushback Tug and Towbar

Step	Action
1.	Connect the towbar to the nose gear first.
2.	<p>Ensure the towbar connection is secured and a locking pin is in place.</p> <p>Note: Only the recessed pin ensures that the hitch is locked.</p>
3.	Ensure the tug and towbar are aligned with the centerline of the aircraft while connecting.
4.	Raise the towbar so its head is at the same height as the tug connection.
5.	Approach the towbar slowly until the connection aligns with the pushback tug.
6.	Ensure the front wheels of the tractor remain straight and the tug is in line with the centerline of the aircraft.
7.	<p>The pushback tractor shall only be connected to the aircraft once all GSE is detached/removed from the aircraft.</p> <p>Note: With the exception of GPU and ASU which may be left connected, if required.</p>
8.	Secure the towbar connection to the pushback tug.
9.	Raise the towbar wheels by releasing pressure on the hydraulic pump.
10.	<p>To minimize the possibility of injury:</p> <ul style="list-style-type: none"> ▪ Face the tractor when connecting the towbar to the tug.

	<ul style="list-style-type: none"> ▪ Stand with both legs on the same side of the towbar during the connection/disconnection procedure (i.e., do not stand astride/over the towbar).
11.	After towbar and tug connected request chocks to be removed.

Wheel Chock Removal

Prior to removal of chocks the TRC shall:

Step	Action
1.	Via the interphone confirm the aircraft parking brake is set.
2.	Check all GSE have been disconnected from the aircraft, except for the GPU and ASU when air start is required.
3.	Check the passenger boarding devices have been retracted from the aircraft, if applicable.
4.	Check that the pushback tug and towbar are fully secured to the nose gear.
5.	Give clearance to ground staff members to remove chocks.

Note: In case tug/towbar needs to be removed after being connected already, chocks need to be placed again, before removal of towbar/tug.

After Pushback completed (pushback tug and Aircraft comes to full stop)

Disconnecting Pushback Tug and Towbar:

Step	Action
1.	Tug driver gives hand signal (thumps up) to TRC
2.	The TRC requests the cockpit crew to set the brakes of the aircraft
3.	The TRC confirms „breaks set“ to the tug driver by using the "closed fist" hand signal (the tug driver can then release the brakes from the tug to relieve the pressure on the tow bar to the nose landing gear)
4.	TRC can release the tow bar after lowering the tow bar wheels on the aircraft tug. Note: The tow bar wheels should only be pumped down so far that the wheels touch the ground lightly and the tow bar eyelet does not jam in the tow tugs's towing jaw.
5.	The tow bar is then first disconnected from the tug and only then from the aircraft. Note: The coupling lever must be held firmly when disconnecting from the tug so that it does not accidentally lock again.
6.	When finished the TRC then gives the signal (thumbs up) to the tug driver.

7.	The TRC removes the by-pass pin and hands it over to the tug driver.
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➤ For subsequent pushback and communication procedures, refer to SOP_OPS005.

Hand Signals to pushback tug driver

Open Fist -> Parking break released

(With fist clenched, extend fingers, palm inward)

Closed fist -> Parking break set

(With extended fingers, clench fist, palm inward)



Right arm and hand raised horizontally in front of body.

Thumps up -> Pushback start

Thumps down -> Pushback stop

REFERENCE

DHS GOM 4.6.4.2 – Connecting Pushback Tractor and Towbar

DHS GOM 4.6.5 – Wheel Chock Removal

DHS GOM 4.6.9.1 – Pushback Tractor and Tow Bar disconnection

DHS GOM 3.4. – Hand Signals