

**PACIFIC  
SUPPORT  
EQUIPMENT**



**Ours is a World of  
Quality, Integrity,  
Commitment,  
and Pride.**

## INTRODUCTION TO THE COMPANY

Pacific Support Equipment Ltd. (PSE) established in 1987 specializes in the manufacture of high quality Aero Engine Tooling, Industrial Gas Turbine Tooling, and Aircraft Ground Support Equipment, including our own proprietary line of Aircraft Towbars.

We have an excellent reputation for supplying high quality products on time and at a competitive cost. We have the ability to design and manufacture to the customer needs as well as being able to modify or refurbish existing equipment. We stand behind all of our manufactured products and offer complete after sales service.

Quality is a priority for all of our products. Our quality assurance program ensures consistent, accurate production during all of our manufacturing operations. Our certified proof load testing facility guarantees reliability of all of our load lifting and handling tools.

## PRODUCT CATEGORIES

Our Ground Support Equipment products fall into four main categories:

- |    |                                 |                     |
|----|---------------------------------|---------------------|
| 1. | Aircraft Towbars                | Reference Section A |
| 2. | Aero Engine Maintenance Tooling | Reference Section B |
| 3. | Aircraft Hanger Equipment       | Reference Section C |
| 4. | Special Purpose Tooling         | Reference Section D |

## CONTACT INFORMATION

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## SECTION A

### AIRCRAFT TOWBARS

PSE's proprietary "Narrow Body" and "Wide Body" towbars offer you a total commonality of all running gear and hydraulics as well as towhead interchangeability for handling the wide range of aircraft sharing today's airport ramps. All of our towbars are accompanied with an operations manual complete with spare parts lists, shearpin data, and maintenance procedures.

All of our towbars and towhead equipment comply with the current SAE Specifications for ground support equipment as follows:

- general requirements for aerospace G.S.E. ARP 1247B
- minimum safety requirements for special purpose G.S.E. AIR 1375
- aerospace recommended practice ARP 1915
- commercial aircraft towbar attach interface AS 1614
- Aircraft – Towbar attachment fittings interface ISO 8267-1

Towbar features include:

- four ply pneumatic, foam filled, or solid rubber tires on steel wheels for the Narrow & Wide Body towbars and 10" or 12" solid rubber tires on steel wheels for the Regional aircraft towbars
- Enerpac hydraulic assisted wheel extension and spring retraction mechanism (on narrow & wide body towbars; optional on regional towbars)
- shearpin fail indicator (wide body towbars only)
- shock absorbing tractor toweyes to minimize shock loads to the NLG.
- spare shearpin storage bracket adjacent to towhead

Towhead features include:

- replaceable shearpin bushings
- heavy duty overcentering latching handle mechanism (narrow & wide body towheads only)
- size calibrated and gauged aircraft locking jaws (narrow & wide body towheads only)
- durable corrosion resistant "all weather" zinc finish

The following illustrations of the towbar equipment refer to all of the part numbers required for ordering complete towbar assemblies as well as complete listings of spare or replacement parts.

**SECTION A**

**NARROW BODY TOWBARS**



**Illustration of a Extended Fly-Away Narrow Body Towbar equipped for Embraer use.**

The narrow bodied towbar is designed for airline ramp use on all narrow bodied aircraft i.e. Boeing B727, B737, B757, Airbus A318, A319, A320, A321, Embraer ERJ-175/190, SSJ-95/100, and TU-204/214 aircraft. Each towbar includes torque and tow limiting shearpins designed and manufactured according to each aircraft manufacturers' specifications.

The towbar is well balanced and easy to maneuver around the ramp area with its wheels in the locked down position. After the towbar has been attached to the aircraft tow vehicle, the wheels are to be released to the raised position to give the required ground clearance during towing operation.

The towhead mechanism engages the landing gear towing lugs and locks in place with a spring loaded, over center retaining latch. This latch may be released by hand to disengage the Nose Landing Gear (NLG).

The towbar is designed to handle all of the aircraft listed above to the maximum allowable towing loads. Each applicable shearpin value has been calculated to protect the NLG from both towing and torque overload. A cushioned swivel toweye allows attachment of the towbar to the tow vehicle hitch pin on uneven or inclined ramp surfaces.

**SECTION A**

The following is a summary list of Pacific Support Equipment’s Narrow Body Towbars:

**Towbar Assemblies**

<b><u>Listing:</u></b>	<b><u>Description</u></b>
PSE 190	Universal Narrow Body Towbar Assembly (For use with interchangeable heads as listed below.)
PSE 190F	Universal Fly-away Narrow Body Towbar Assembly



PSE 190E	Extended Narrow Body Towbar Assembly
PSE 190EF	Extended Fly-Away Narrow Body Towbar Assembly
PSE 190C	“Econo-Bar” Assembly for Narrow Body Aircrafts



**Towhead Assemblies**

<b><u>Listing:</u></b>	<b><u>Description</u></b>
PSE 191	B727 Towhead Assembly
PSE 192	B737 Towhead Assembly





**SECTION A**

PSE 193 A320 Towhead Assembly (A318 / A319 / A320 / A321)



PSE 194 B757 Towhead Assembly



PSE 196 Embraer ERJ-175/190 Towhead Assembly (to be used on PSE-190E or PSE-190EF towbar assemblies)

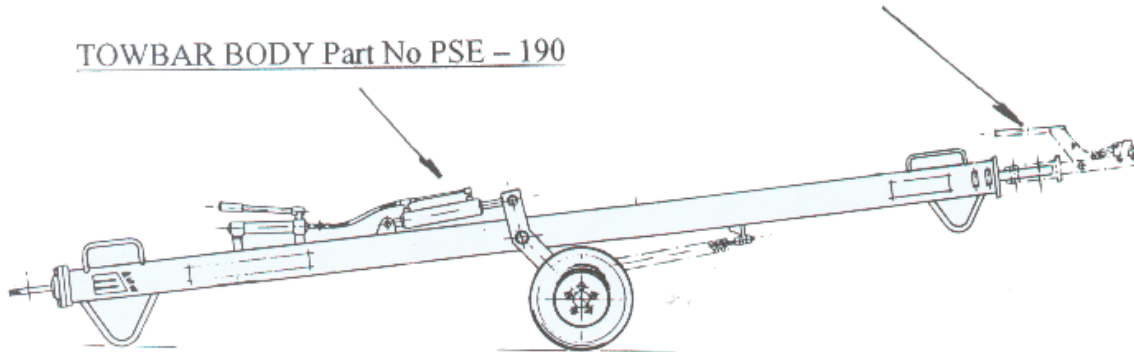


PSE 197 Sukoi SSJ-95/100 Towhead Assembly

PSE 198 Tupolev TU-204/214 Towhead Assembly

SPECIFIC AIRCRAFT TOWHEAD  
(as selected from listing page A-4)

TOWBAR BODY Part No PSE – 190



**NARROW BODY AIRCRAFT TOWBAR CONFIGURATION**

<b><u>Statistics</u></b>	<b><u>PSE-190</u></b>	<b><u>PSE-190F</u></b>	<b><u>PSE-190C</u></b>
Fully assembled length	178 in (452 cm)	110 in (279 cm)/ 78 in (198 cm)	178 in (452 cm)
Length without towhead	165 in (419 cm)	same	same
Max C/L height (wheels down)	25 in ( 64 cm)	same	21 in ( 53 cm)
Fully assembled weight	430 lbs (195 kg)	440 lbs (200 kg)	260 lbs (136 kg)

**Torque and Tow Limiting Shearpins**

The narrow body towbar utilizes a pair (2) precision-machined shearpins to limit the torque and towloads that can be imposed upon the aircraft landing gear. These shearpins are designed for easy, fast replacement. The following part numbers should be referenced when ordering replacement shearpins.

**NOTE:** A pair of “spare” shearpins are shipped with each new towbar.

**Shearpin Ordering Data (All Narrow Body Towheads Require 2 Shearpins)**

<b><u>Part No.</u></b>	<b><u>Aircraft</u></b>	<b><u>Part No.</u></b>	<b><u>Aircraft</u></b>
PSE 193-10-1	A320/A321	PSE 192-10-1	B727
	A318/A319	PSE 192-10-2	B737
PSE 196-10-1	ERJ-175/190	PSE 192-10-3	B737-800/900
PSE 194-7-1	B757	PSE 197	SSJ-95/100
PSE 198	TU-204/214		