



Operation & Service Manual

Model: 01A1185-0006

Portable Towbar

Sikorsky S-61 & S-70

Includes Illustrated Parts Lists

10/2002 – AA – Rev. OR

Tronair, Inc.

1740 Eber Road

Holland, Ohio 43528-9794

USA

Telephone: (419) 866-6301 • 800-426-6301

Fax: (419) 867-0634

Web Site: www.tronair.com E-mail: mail@tronair.com

**Model: 01A1185-0006
Portable Towbar
Sikorsky S-61 & S-70**

TABLE OF CONTENTS

PAGE

1.0	Description.....	1
1.1	Specifications.....	1
1.2	Features.....	1
2.0	Safety Information.....	2
2.1	General.....	2
3.0	Operation.....	2
3.1	Preliminary Checklist.....	2
3.1.1	Towbar.....	2
3.1.2	Towing Head.....	2
3.2	Usage Procedure.....	2
3.2.1	Aircraft Attachment.....	2
3.2.2	Tug Attachment.....	3
3.2.3	Couplers.....	3
3.2.4	Towing Operation.....	5
4.0	Training.....	5
4.1	Training Requirements.....	5
4.2	Training Program.....	5
4.3	Operator Training.....	5
5.0	Provision Of Spares.....	6
5.1	Spare Parts Can Be Obtained From The Manufacturer.....	6
5.2	Parts List & Illustrations.....	6
6.0	In-Service Support.....	6
7.0	Guarantees.....	6

Model: 01A1185-0006
Portable Towbar
Sikorsky S-61 & S-70

1.0 DESCRIPTION

The Tronair Model 01A1185-0006 Portable Towbar is a lightweight, carry-on towbar for Sikorsky S-61 & S-70 Aircraft manufactured by Sikorsky Aircraft.

The portable towbar includes a telescoping towbar tube for collapsible storage. The aircraft attachment is by machined pins on the towing head to the nose landing gear axle. There an eyebolt at the end of the towbar for towing.

1.1 SPECIFICATIONS

Aircraft Application: Sikorsky S-61 & S-70 Aircraft manufactured by Sikorsky Aircraft

Maximum Aircraft Gross Weight: 25,000 lbs (11.34 Metric tons)

Dimensions: Length: 139 inches (353.1 cm) From eyebolt centerline to aircraft attachment centerline when fully extended
59 inches (149.9 cm) Overall collapsed (towbar only)
27.9 inches (70.9 cm) Overall towbar head (separate from towbar)
Width: 16.9 inches (42.9 cm)
Height: 5.25 inches (13.3 cm)

Material: Towbar – Aluminum
Towing Head – Steel

Finish: Blue Powder Coat

1.2 FEATURES

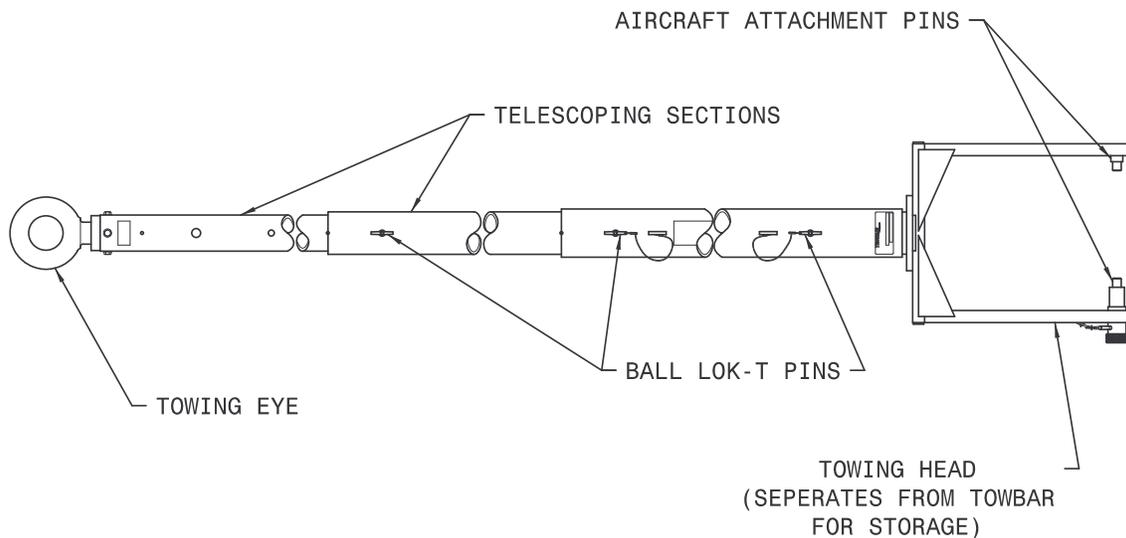


FIGURE 1 – Features

Model: 01A1185-0006
Portable Towbar
Sikorsky S-61 & S-70

2.0 SAFETY INFORMATION

2.1 GENERAL

The Tronair Model 01A1185-0006 Portable Towbar is used for moving Sikorsky S-61 & S-70 Aircraft only.

To ensure safe operation, please read the following statements and understand their meaning. This manual contains safety precautions which are explained as follows. Please read carefully.



WARNING! is used to indicate the presence of a hazard that can cause *severe personal injury, death, and/or substantial property damage* if the Warning Notice is ignored.

CAUTION! is used to indicate the presence of a hazard which will or can cause *minor personal injury or property damage* if the Caution Notice is ignored.



WARNING!

A damaged or bent towbar should not be used. Towbar should be repaired or replaced.

3.0 OPERATION

3.1 PRELIMINARY CHECKLIST

3.1.1 Towbar:

- Check lunette for bending, excessive wear and deformity.
- Check tube section ball lok-T pins. Ensure ball lok-T pins are securely attached to the lanyard tabs. Ensure ball lok-T pins are not missing.

3.1.2 Towing Head:

Check welds between side rails and head rail for cracks:

- Check welds between side rails and stationary pin. Also sliding pin wear sleeve for cracks.
- Check sliding pin ball lok-T pin. Ensure ball lok-T pin is securely attached to the side rail via its lanyard. Ensure ball lok-T pin is not missing.
- Check sliding pin for bending or excessive wear. Ensure sliding pin slides freely.
- Check sliding pin roll pin. Ensure roll pin is not loose or missing.

3.2 USAGE PROCEDURE

3.2.1 Aircraft Attachment:



CAUTION!

It is recommended that your towbar to attached to the aircraft first, and then connected to the tug to avoid possible aircraft damage.

- Ensure the sliding pin is locked in place using the ball lok-T pin.

3.2 Usage Procedure continued on following page.

TRONAIR

10/2002 – AA – Rev. OR

3.2 USAGE PROCEDURE (con't)

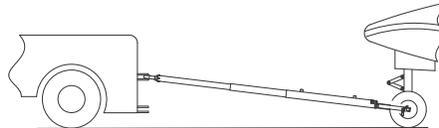
3.2.2 Tug Attachment:



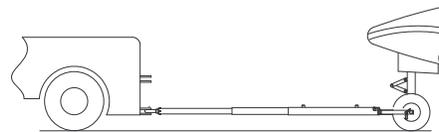
CAUTION!

Damage to the towbar or aircraft can result from an excessive towbar angle during towing operations. *Reference Figure 2.*

- Use a pintle height so that the towbar is as level as possible during towing. Also, the pintle hook height should prevent contact of the towbar with the ground during towing.



Incorrect Angle



Correct Angle

FIGURE 2

3.2.3 Couplers:



CAUTION!

Damage to the towbar or aircraft can result while towing with the following types of couplers:

- Lift Head
- Standard Duty Latch
- Vertical Side Swing Latch
- Swivel Hook

The couplers listed above are known to cause binding and failure in the lunette eye. Indicators of binding are wear on outside diameter of the eyebolt and indentation on the inside diameter of the eyebolt. *Reference Figure 3.*

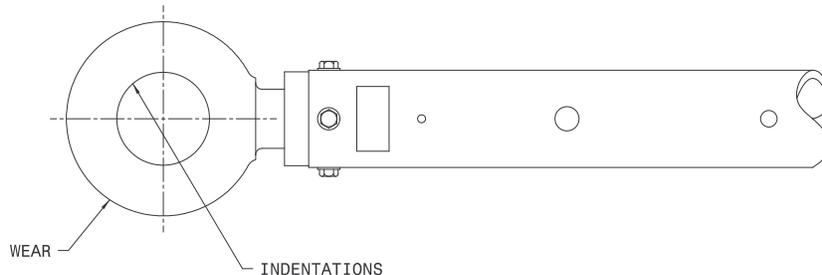


FIGURE 3

3.2.3 Couplers continued on following page.

Model: 01A1185-0006
Portable Towbar
Sikorsky S-61 & S-70

3.2 USAGE PROCEDURE (con't)

3.2.3 Couplers:

Tronair recommends a telecoupler pintle hook arrangement. This arrangement is known to eliminate binding. Tronair offers a Standard Telecoupler, Model Number 01-1950-5000, for use on tugs. *Reference Figure 4.*

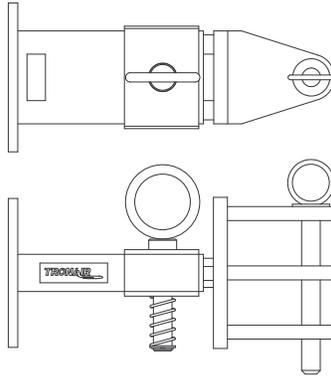


FIGURE 4 - 01-1950-5000 Standard Telecoupler

Damage to the towbar and/or aircraft can result by towing or pushing an aircraft with an incorrect size eyebolt or pintle pin. A correct size eyebolt will make contact with the pintle pin. A gap between the eyebolt outside diameter and the coupler face plate should be easily seen. An eyebolt which is too large will cause the eyebolt to make contact with the face plate of the coupler. When the eyebolt is too large for the coupler, a gap between the inside diameter of the eyebolt and the coupler face plate will be seen. *Reference Figure 5.*

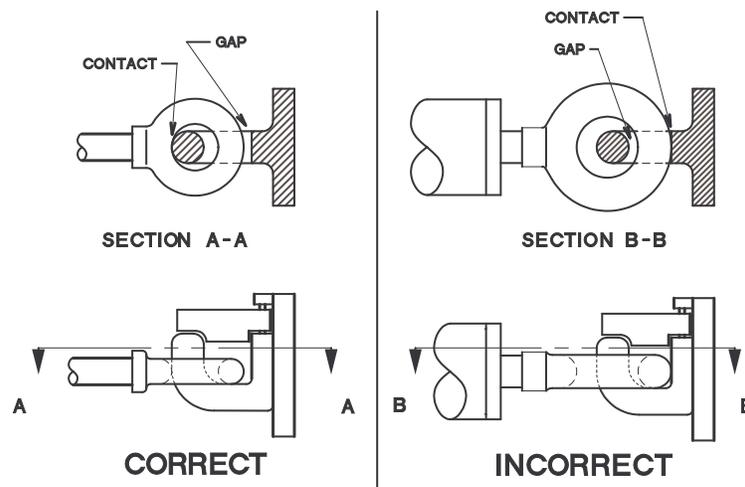


FIGURE 5

To ensure proper towing and pushing, check to make sure the pintle pin diameter is not too long for the eyebolt's inside diameter. An approximate one-half inch (1/2") gap between the pin diameter and the eyebolt should be seen. If any of these conditions are not met, please contact Tronair for information to obtain a new coupler.

3.2 Usage Procedure continued on following page.

**Model: 01A1185-0006
Portable Towbar
Sikorsky S-61 & S-70**

3.2 USAGE PROCEDURE

3.2.4 **Towing Operation:**

Damage to the towbar or aircraft can result from pushing an aircraft while maintaining too sharp of an angle between the tug and the aircraft. Contact between the towbar weldment and the tug must be avoided. It is recommended that the angle between the tug and towbar not exceed 90 degrees. *Reference Figure 6.*

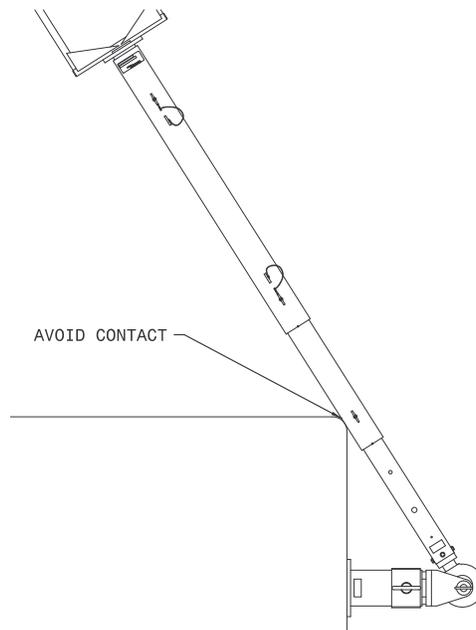


FIGURE 6

4.0 TRAINING

4.1 TRAINING REQUIREMENTS

The employer of the operator is responsible for providing a training program sufficient for the safe operation of the towbar.

4.2 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the towbar in and around the aircraft at the servicing location.

4.3 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the towbar.

NOTE: *Maintenance and Trouble Shooting are to be performed by the skilled and trained technician.*

5.0 PROVISION OF SPARES

5.1 SPARE PARTS CAN BE OBTAINED FROM THE MANUFACTURER

TRONAIR, INC.
1740 Eber Road
Holland, Ohio 43528-9794 USA
Telephone: 419-866-6301
Fax: 419-867-0634
E-mail Address: mail@tronair.com

5.2 PARTS LIST & ILLUSTRATIONS

Reference Pages 7 to 8 for part and assembly replacements.

6.0 IN-SERVICE SUPPORT

Contact Tronair for technical services and information.

7.0 GUARANTEES

Tronair products are warranted to be free of manufacturing or material defects for a period of one year after shipment to the original customer. This warranty does not cover the following items:

- a. Parts required for normal maintenance.
- b. Parts covered by a component manufacturer's warranty.

If you have a problem that may require service, contact Tronair immediately. Do not attempt to repair or disassemble a product without first contacting Tronair since any action may effect warranty coverage. When you contact Tronair, be prepared to provide the following information:

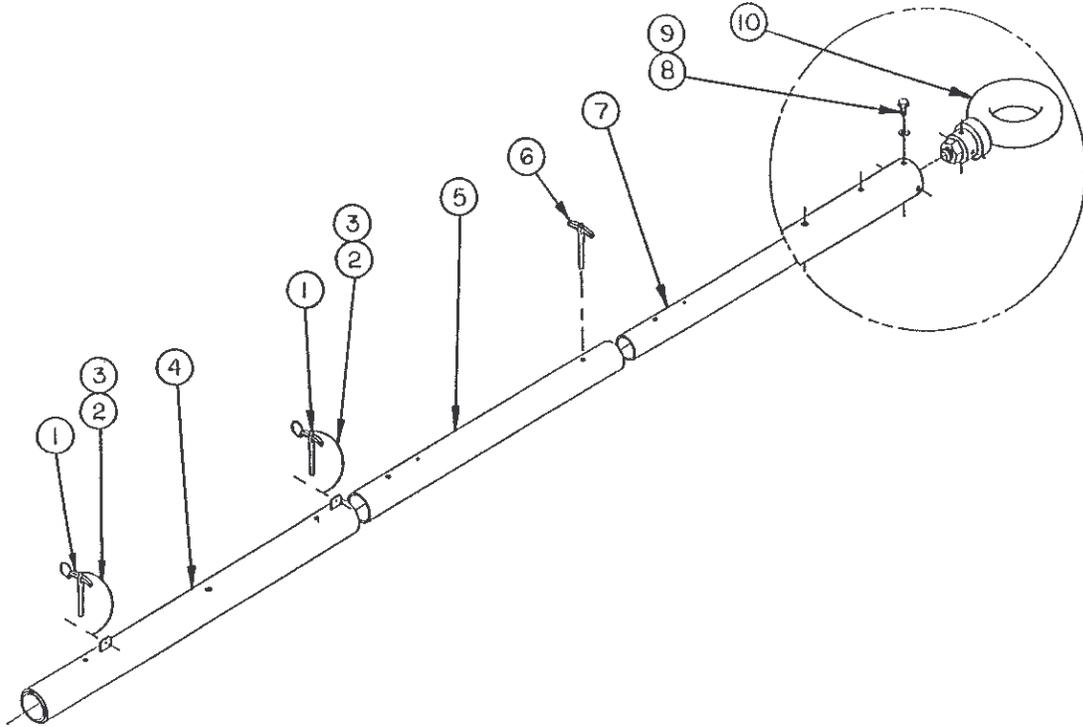
- a. Product Model Number
- b. Product Serial Number
- c. Description of the problem

If warranty coverage is approved, either replacement parts will be sent or the product will have to be returned to Tronair for repairs. If the product is to be returned, a Return Material Authorization (RMA) number will be issued for reference purposes on any shipping documents. A decision on the extent of warranty coverage on returned products is reserved pending inspection at Tronair. Any shipments to Tronair must be shipped freight prepaid. Freight costs on shipments to customers will be paid by Tronair on any warranty claims.

Model: 01A1185-0006
 Portable Towbar
 Sikorsky S-61 & S-70

Parts List

When ordering Replacement Parts/Assemblies, please specify Model & Serial Number of your product.



ITEM	PART NUMBER	DESCRIPTION	QTY
1	G-1310-0845	Pin, Ball Lok-T, 1/2" diameter x 4.5" Grip	1
2	G-1351-04	Rivet, 1/8 Open-End Steel	1
3	H-1026*07.0	Assembly, Lanyard	1
4	Z-1536-01	Assembly, Outer Tube	1
5	TR-1148-01	Tube, Middle	1
6	G-1310-0835	Pin, Ball Lok-T, 1/2" diameter x 4.5" Grip	1
7	TR-1389-01	Tube, Inner	1
8	G-1420-106006	Bolt, Hex Head, Grade 8, 5/16-18 x 3/4" long	4
9	G-1251-1060R	Lockwasher, 5/16 Regular	4
10	Z-2902	Weldment, Eyebolt	1
		Ball Lok-T Pin Assembly; consists of:	
1	G-1310-0845	Pin, Ball Lok-T, 1/2" diameter x 4.5" Grip	1
2	G-1351-04	Rivet, 1/8 Open-End Steel	1
3	H-1026*07.0	Assembly, Lanyard	1
		Bolt/Washer Assembly; consists of:	
8	G-1420-106006	Bolt, Hex Head, Grade 8, 5/16-18 x 3/4" long	4
9	G-1251-1060R	Lockwasher, 5/16 Regular	4
		Eyebolt Assembly; consists of:	
8	G-1420-106006	Bolt, Hex Head, Grade 8, 5/16-18 x 3/4" long	4
9	G-1251-1060R	Lockwasher, 5/16 Regular	4
10	Z-2902	Weldment, Eyebolt	1

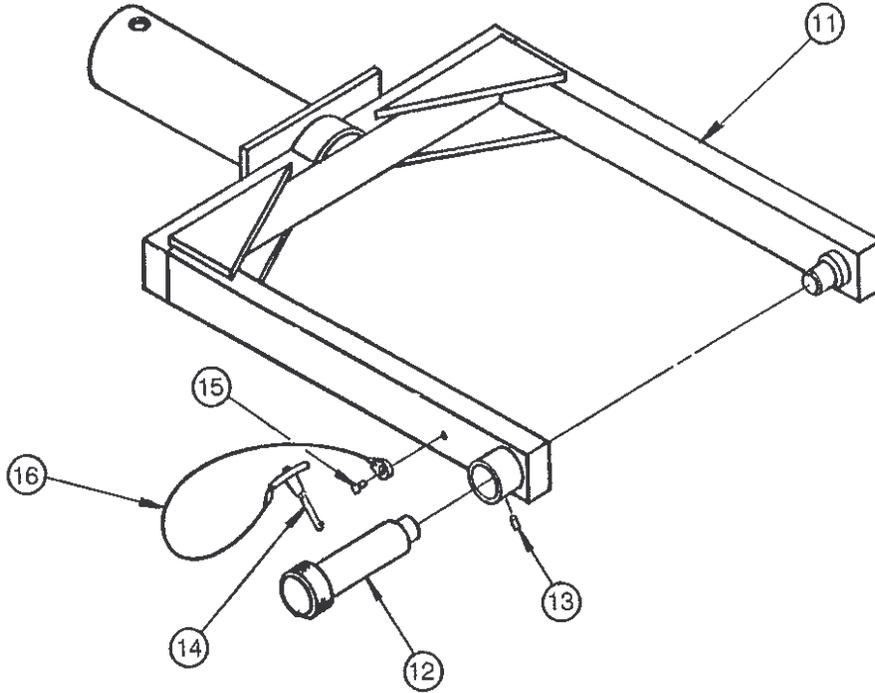
TRONAIR

10/2002 – AA – Rev. OR

Model: 01A1185-0006
 Portable Towbar
 Sikorsky S-61 & S-70

Parts List

When ordering Replacement Parts/Assemblies, please specify Model & Serial Number of your product.



ITEM	PART NUMBER	DESCRIPTION	QTY
		Sliding Pin Assembly; consists of:	
12	B-108	Pin, Sliding	1
13	G-1300-19040	Pin, Roll, 3/16" diameter x 1/2" long	1
		Head Assembly; consists of:	
11	X-1019	Assembly, Head (Includes Items 12 to 16)	1
12	B-108	Pin, Sliding	1
13	G-1300-19040	Pin, Roll, 3/16" diameter x 1/2" long	1
14	G-1310-0415	Pin, Ball Lok-T Pin, 1/4" diameter x 1.5" Grip	1
15	G-1351-04	Rivet, 1/8 Open-End Steel	1
16	H-1026*07.0	Assembly, Lanyard	1
Not Shown	V-1003	Label, Serial Number	1

TRONAIR

10/2002 – AA – Rev. OR