



OPERATION & SERVICE MANUAL

Model: 08-0102-4010 Engine Sling

10/2023 – Rev. 06

REVISION	DATE	TEXT AFFECTED
03	10/2004	Modified PT6A-65B information in chart, Modified Parts List
04	04/2007	Added PT6A-67D to Engine Type
05	02/2022	Major revision
06	10/2023	Modified 4.0 Operation, Modified Parts List



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This product can not be modified without the written approval of Tronair, Inc. Any modifications done without written approval voids all warranties and releases Tronair, Inc., its suppliers, distributors, employees, or financial institutions from any liability from consequences that may occur. Only Tronair OEM replacement parts shall be used.

1.0 PRODUCT INFORMATION

Engine sling

1.1 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.2 MANUFACTURER

TRONAIR, Inc.
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

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

Fax: (419) 867-0634

E-mail: sales@tronair.com

Website: www.tronair.com

2.0 SAFETY INFORMATION**2.1 USAGE AND SAFETY INFORMATION**

To insure safe operations please read the following statements and understand their meaning. Also refer to your equipment manufacturer's manual for other important safety information. This manual contains safety precautions which are explained below. Please read carefully.

**WARNING!**

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!**

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.

Safety instructions specifically pertaining to this unit appear throughout this manual highlighted by the signal words **WARNING** and **CAUTION** which identify different levels of hazard.

**WARNINGS!**

Denote practices which if not carefully followed, could result in **SERIOUS personal injury or death, and/or minor personal injury or damage to this equipment.**

- **NEVER** exceed rated load or lift a load not intended for this sling.
- **NEVER** use sling if any damage or excessive wear is found.
- **NEVER** lift suspended loads over personnel.
- **NEVER** make any alterations or modifications to sling.
- **ALWAYS** stay clear of suspended loads.

**CAUTIONS!**

Ensure engine is balanced on sling. If engine is unbalanced, check that the orientation of sling is correct. In the event of an unbalanced condition, loss of control and/or damage may occur to the engine along with injury to operator.

- **NEVER** use sling to lift personnel.
- **NEVER** leave suspended loads unattended.
- **NEVER** remove or obscure warning labels.
- **DO NOT** use sling until you have read and understood this manual.
- **NEVER** lift loads higher than necessary.

3.0 TRAINING**3.1 TRAINING REQUIREMENTS**

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

3.2 TRAINING PROGRAM

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

3.3 OPERATOR TRAINING

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

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

4.0 OPERATION

Reference Parts List Illustrations.

1. See chart below to select appropriate connectors. Attach to sling using provided hardware. Attach sling clevis (Item #8) to sling at appropriate location (lift point).
2. Attach connectors to engine per engine manufacturers requirements.

NOTES:

1. **Engine lift point and connection points may vary due to addition or removal of equipment, wet or dry engine, etc.**
2. **Use extra holes provided to obtain best lifting condition.**

Engine Type	Lift Point	Engine Handling Attachments				
		Hole	Location	Item Number	Tronair Part Number	Quantity Required
TFE-731	K	4	Front	10	Z-0067	2
		5	Mid-Engine	9	Z-0066	1
PT6-41	H	2	Front	12	Z-0069-02	1
		6	Rear	13	Z-0069-01	1
PT6-B36	L	8	Front	14	Z-3223-01	1
		9	Mid-Engine	15	Z-3223-02	1
		6	Rear	16	Z-3223-03	1
PT6A - 65B PT6A – 67D	H	10	Front	17	Z-5915	1
		6	Rear	13	Z-0069-01	1
CATALYST1300-CS1A	G	1 & 7	Front & Rear	18	K-5257 (optional)	2



5.0 MAINTENANCE

5.1 INSPECTION

SERVICE	INTERVAL	
Normal	Yearly	Inspect equipment at site of use. Operation with various weights within the rated load limit, or uniform loads less than 65 percent of rated load.
Heavy	Semi-Annual	Inspect equipment at site of use unless external conditions indicate that disassembly should be done to permit detailed inspection. Operation within the rated load limit that exceeds normal service.
Severe	Quarterly	Inspect equipment at site of use unless external conditions indicate that disassembly should be done to permit detailed inspection. Operation at normal or heavy service under abnormal operating conditions.
Special/ Infrequent	As recommended by a qualified person before the first such use and as directed by the qualified person for any subsequent uses	

This sling needs to be inspected per the following:

5.2 EVERY LIFT INSPECTION (performed visually by operator)

- a. Missing parts (pins, fasteners, labels, etc).
- b. Operation of all ball-lok pins & shackles.
- c. Inspect sling components for any signs of material deformation, cracks, or excessive wear.

5.3 FREQUENT & PERIODIC INSPECTIONS (performed by designated personnel)

- a. Visual (performed monthly): same as 3.1 Every Lift Inspection
- b. Record (Semi-Annually):
 1. Loose bolts and fasteners
 2. Cracked or excessively worn straps, bars, plates & shackles.
 3. Excessive wear at hoist points and load support clevis & bolts.

5.4 LOAD TEST

This sling was proof tested. Test certification is included with documentation. The sling should be load tested annually. Use a fixed fixture and load cell (due to sling arms not being centered on sling bar which may result in an unbalanced load condition). Load test to at least 125% of rated capacity unless otherwise recommended by the manufacturer. Test weights shall be accurate to within -5 percent, +0 percent of stipulated values.

Rated load at engine sling lift hole: 1100 lbs.

5.4.1 Test Procedure

1. Load test sling to 125% of rated load
2. Hold for one (1) minute
3. Remove the sling from the test weight and inspect the entire sling for broken welds, elongated holes, or any other signs of failure)



6.0 PROVISION OF SPARES

6.1 SOURCE OF SPARE PARTS

Spare parts may be obtained from the manufacturer:

TRONAIR, Inc.	Telephone: (419) 866-6301 or 800-426-6301
1 Air Cargo Pkwy East	Fax: (419) 867-0634
Swanton, Ohio 43558 USA	E-mail: sales@tronair.com
	Website: www.tronair.com



For Spare Parts, Operations & Service Manuals or Service Needs:
Scan the QR code or visit Tronair.com/aftermarket

6.2 RECOMMENDED SPARE PARTS LISTS

Reference the following page(s) for Replacement Parts and Kits available.

7.0 GUARANTEES/LIMITATION OF LIABILITY

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 is solely limited to the repair or replacement of defective components. This warranty does not cover the following items:

- a) Parts required for normal maintenance
- b) Parts covered by a component manufacturers warranty
- c) Replacement parts have a 90-day warranty from date of shipment

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, any action may affect warranty coverage. When you contact Tronair be prepared to provide the following information:

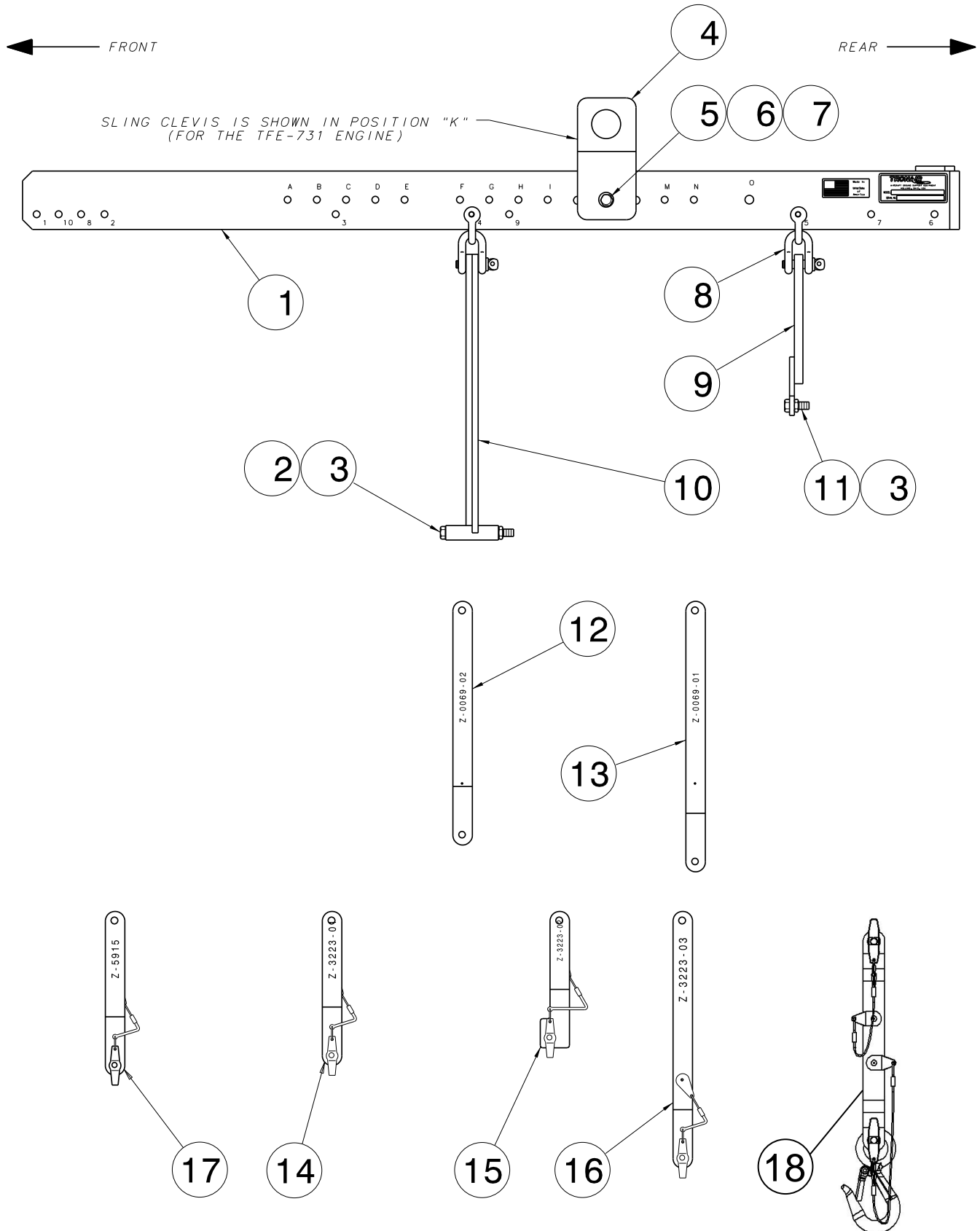
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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. Failure to obtain a RMA in advance of returning an item will result in a service fee. 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 only. Any unauthorized modification of the Tronair products or use of the Tronair products in violation of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately void any warranty, express or implied.

The obligations of Tronair expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the Tronair products or use of the Tronair products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately void any warranty, express or implied and Tronair disclaims any and all liability for injury (WITHOUT LIMITATION and including DEATH), loss or damage arising from or relating to such misuse.**

Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.

Item	Part Number	Description	Qty
1	Z-3245	Weldment, Sling	1
4	Z-0081	Clevis, Sling	1
5	G-1100-107516	Bolt, Hex Head, Grade 5, 3/8-24 x 1-3/4"long	1
6	G-1250-1070N	Flatwasher, 3/8 Narrow	1
7	G-1202-1075	Stopnut, 3/8-24 Elastic	1
17	Z-5915	Assembly, Engine Strap	1
	K-1819	Kit, Front Engine Connector, TFE-731; consists of:	
2		Bolt, Hex Head, Grade 5, 3/8-24 x 3-1/2" long	2
3		Hexnut, 3/8-24	2
8		Shackle	2
10	Z-0067	Connector, Front Engine	2
	K-1820	Kit, Engine Connector, TFE-731; consists of:	
3		Hexnut, 3/8-24	1
8		Shackle	2
9	Z-0066	Connector, Engine	1
11		Bolt, Hex Head, Grade 5, 3/8-24 x 1" long	1
	K-1821	Kit, Front Engine Connector, PT6-41; consists of:	
3		Hexnut, 3/8-24	1
8		Shackle	2
11		Bolt, Hex Head, Grade 5, 3/8-24 x 1" long	1
12	Z-0069-02	Connector, Front Engine	1
	K-1822	Kit, Rear Engine Connector, PT6-41; consists of:	
3		Hexnut, 3/8-24	1
8		Shackle	2
11		Bolt, Hex Head, Grade 5, 3/8-24 x 1" long	1
13	Z-0069-01	Connector, Rear Engine	1
	K-2527	Kit, PT6-B36 Straps; consists of:	
14	Z-3223-01	Assembly, Front Strap	1
15	Z-3223-02	Assembly, Mid Engine Strap	1
16	Z-3223-03	Assembly, Rear Strap	1
18	K-5257	Kit, Denali Beechcraft Engine Strap, Catalyst 1300 – CS1A; consists of:	
		Hook, Lifting	2
		Rivet, 1/8 Open End STL	4
		Assembly, Lanyard	4
		Pin, 3/8 x 1.5 Ball Lok-T	4
		Weldment, Strap	2