



L-880 and L-881 PAPI, Style B
Precision Approach Path Indicator (Current Powered)

Spare Parts

SP_1020_B, Rev. B, 2021/05/17


**ADB
SAFEGATE**

A.0 Disclaimer / Standard Warranty

CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The European directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and FAA Airfield regulations. The FAA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

All Products Guarantee

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee above, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB SAFEGATE reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB SAFEGATE further reserves the right to require the return of such goods to establish any claim.

ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer. This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

Standard Products Guarantee

Products of ADB SAFEGATE manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.



Note

See your sales order contract for a complete warranty description.

FAA Certified product installed in the United States and purchased or funded with monies through the Airport Improvement Program (AIP) installations guarantee

ADB SAFEGATE L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation, per FAA AC 150/5345-44 (applicable edition).

ADB SAFEGATE L858(L) Airfield Guidance Signs are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition).

ADB SAFEGATE LED light fixtures (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition).



Note

See your sales order contract for a complete warranty description.

Liability



WARNING

Use of the equipment in ways other than described in the catalog leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses, includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

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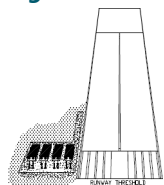
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1.0 PAPI B Overview

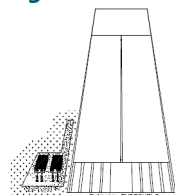
See [Figure 1](#) and [Figure 2](#) . This section describes the Style B, L-880 and L-881 Precision Approach Path Indicator (PAPI) systems used to provide visual approach path guidance to pilots of landing aircraft.

Figure 1: L-880 Four-Box PAPI System



The PAPI Style B is designed to operate from an L-828 constant current regulator (CCR) with a maximum output current of 6.6 A. When used on a 20 A series lighting circuit, a 20 A isolation transformer must be used to step the current down to 6.6 A. The CCR controls the brightness of the PAPI system. The CCR may have three or five brightness steps.

Figure 2: L-881 Two-Box PAPI System



1.1 Precision Approach Path Indicator

Compliance with Standards

ICAO:	Annex 14, Vol. 1, para. 5.3.5.23 to 5.3.5.45
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Uses

A PAPI system uses either 2-light channel or 3-light channel units, which offer the pilot information to carry out the approach procedure with the utmost accuracy and safety.

The L-880 PAPI system consists of four light units located at the side of the runway adjacent to the origin of the glide path. The nominal glide slope angle is midway between the angular settings of the central pair of the four units. If an aircraft is on the correct approach path, the pilot will see two red and two white light indicators.

If the aircraft approach is too high, an increased number of white light indicators will be seen. If the approach is too low, the pilot will note an increased number of red light indicators. The L-881 PAPI system is identical to the L-880, except only two light units (instead of four) are used. The nominal glide slope is midway between the angular settings of the two units, and when the pilot is on or close to the correct approach path, the unit nearest the runway will be seen as red and the other unit as white.

The Style A system is for use with either a 220 or 240 VAC input voltage. The Style B system is for use on 6.6 or 20 A series circuits. A tilt switch assembly is provided on each PAPI unit to de-energize the system in the case that the optical pattern of any light unit is raised between 0.5° and 1.0° or lowered between 0.25° and 0.5° with respect to the setting angle of the unit.

Electrical Supply

Style A¹	
Input Voltage: 220-240 VAC ± 10% (VA max.) ²	
L-880 (4-box) 2-lamps/optical box	1,800
L-880 (4-box) 3-lamps/optical box	2,700
L-881 (2-box) 2-lamps/optical box	1,650

L-881 (2-box) 3-lamps/optical box	1,650
Style B	
Two Lamp – 6.6 A through one 500 W isolation transformer	
L-880 (4-Box) – Total CCR Load ³	1960 VA maximum
L-881 (2-Box) – Total CCR Load ³	980 VA maximum
Three Lamp – 6.6 A through one 500 W and one 200 W isolationtransformer	
L-880 (4-Box) – Total CCR Load ³	3,160 VA maximum
L-881 (2-Box) – Total CCR Load ³	1,580 VA maximum

- Notes**
- ¹ Limit on distance from Master to fi rst light unit is 100 ft (30.5 m)
 - ² As seen at input of PAPI Master
 - ³ Includes PAPI light units and isolation transformers

2.0 PAPI B Parts

To order parts, call ADB SAFEGATE Customer Service or your local representative. Use the parts list, and the accompanying illustration, to describe and locate parts correctly.

Ordering Code PAPI Style B 4 4 A 5 8 6 0 /

Power

2 = Style B (Current Powered)

Style

1 = L-880 (4 Box)

2 = L-881 (2 Box)*

Lamp

1 = 2-Lamp Optical Box

2 = 3-Lamp Optical Box

Legs

1 = Three Legs

2 = Four Legs

Notes

- Each PAPI system requires a digital aiming device kit, which is ordered separately.
- Reference NTSB Cert Alert No. 02-08 dated Dec. 12, 2002, regarding prevention of the possibility of dew or frost forming on the light unit optics: At airports where PAPI units are activated when needed and thus are not operate continuously, change airport lighting circuitry to ensure PAPIs are preset to operate continuously on a low power setting, either 5 percent or 20 percent of full intensity as necessary for local site conditions.

Ordering Code Digital Aiming Device 44A6031

2.1 Style B L-880/L-881 PAPI Part Numbering System

Refer to [Table 9](#) for the optical box assembly part numbers for the 2-lamp and 3-lamp L-880 and L-881 Style B PAPI systems.

[Table 9](#) shows how to determine the part number for a particular L-880/L-881 PAPI system.



Note

Substitution of electrical components may be done only if substitution is the exact physical equivalent (body or case size) and equal, or better electrical characteristics with respect to tolerance, failure rate, and/or reliability.

Table 9: Style B L-880/L-881 Optical Box Assembly Part Numbers

Component	Part Number
2-lamp optical box assembly	44A5861-1 *
3-lamp optical box assembly	44A5861-2 ¹

Notes

- * For reference only. Use this to determine the number of spares. Channel specific parts will increase by one for a three channel PAPI. Do Not Order this part/assembly.

2.2 Optical Box Final Assembly Parts List

Figure 4: Optical Box Parts and Details

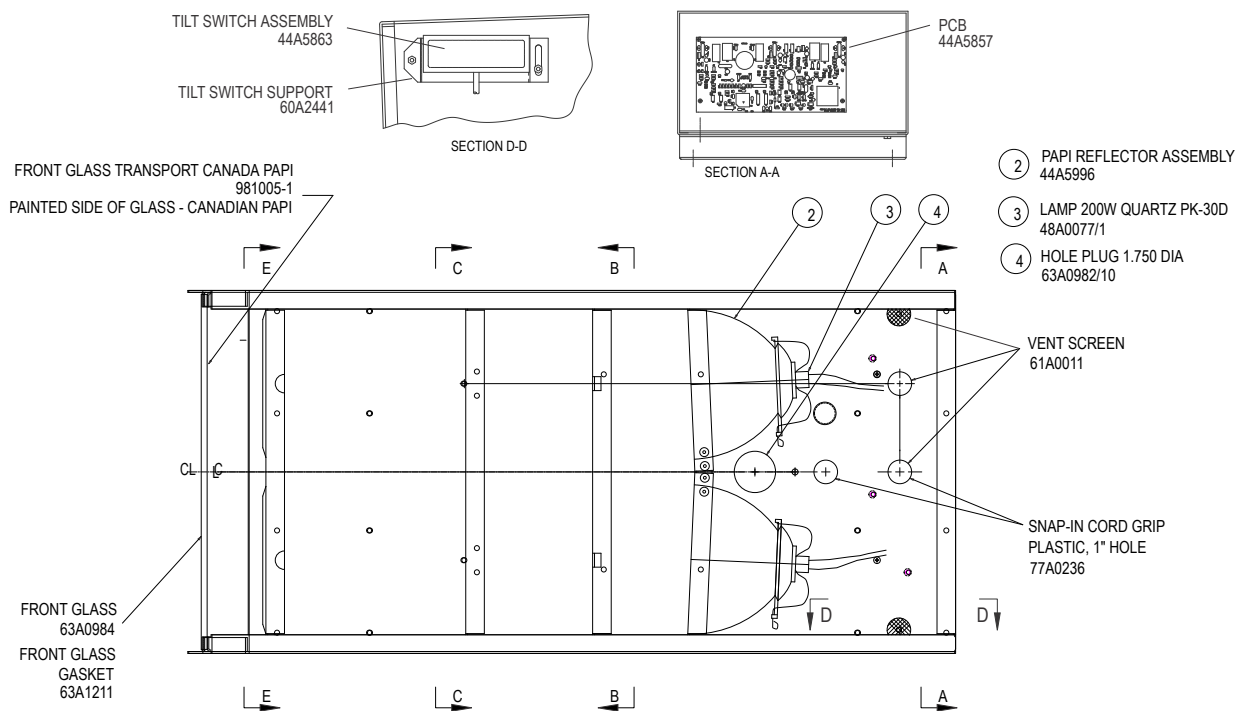


Figure 5: Optical Box Part Detail B-B

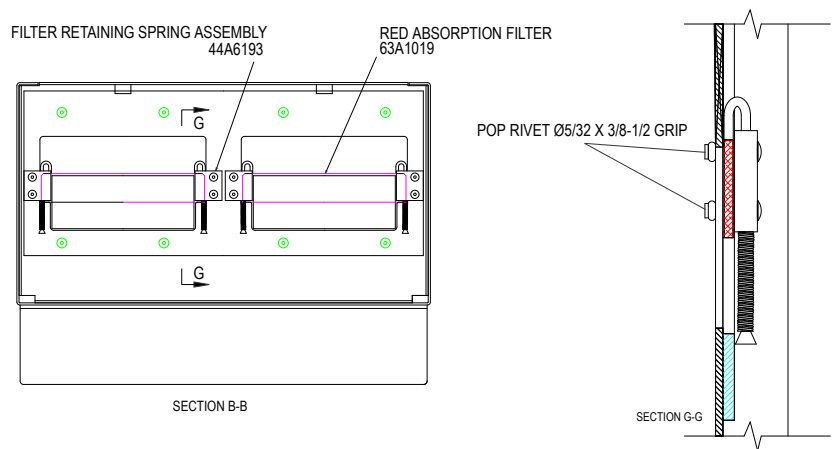
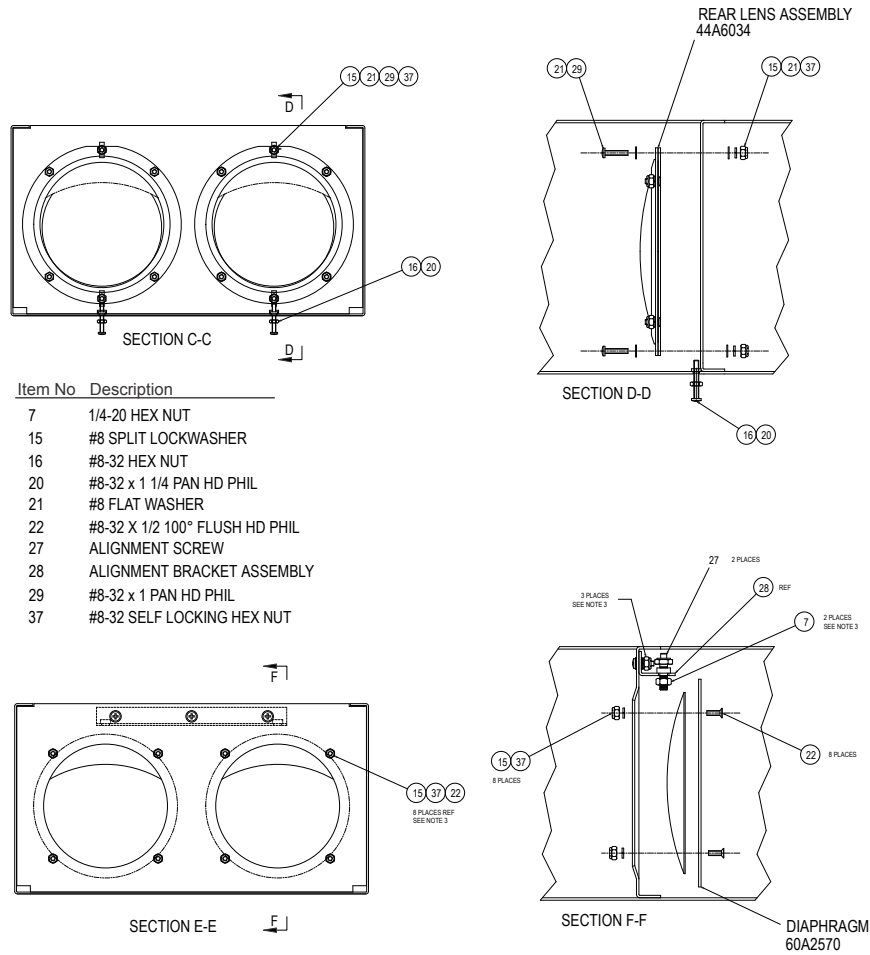


Figure 6: Optical Box Parts Detail C-C, E-E



2.3 Optical Assembly Parts List

Table 10: Lamp Reflector Assembly Parts

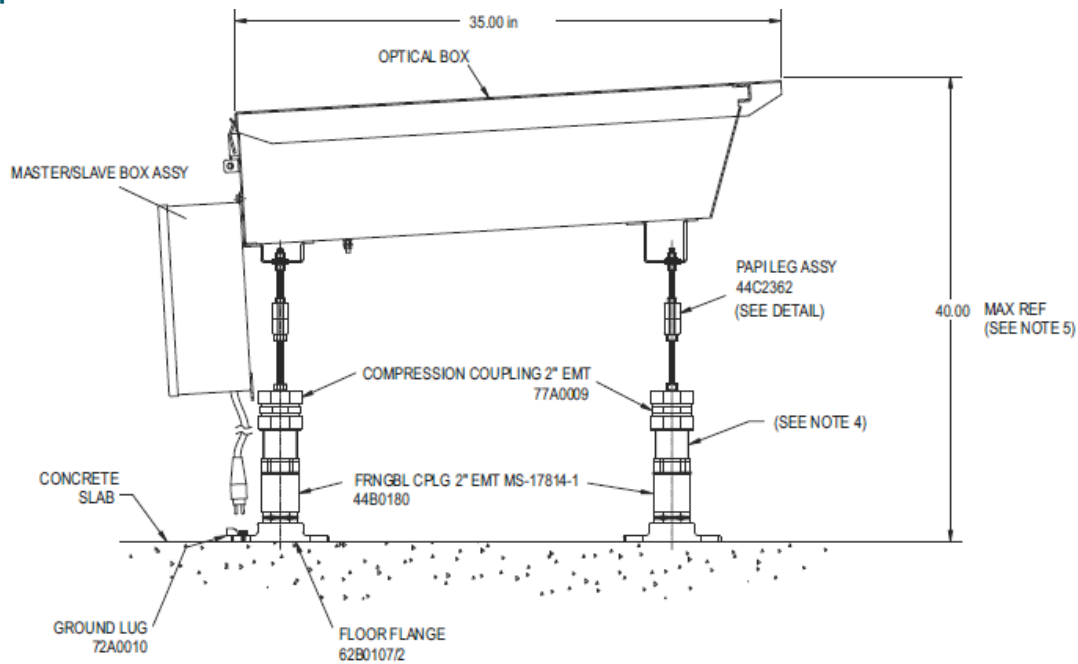
Description	Part Number	Quantity	Note
Protective glass	63A0984	1	
Gasket for outer protective glass	63A1211	1	
Two-lamp lens	44A6034	2	A
Three-lamp lens		3	
Two-lamp filter	1438.12.220 Canada 63A1019 FAA	2	A
Three-lamp filter		3	
Two-lamp reflector	44A5996	2	A
Three-lamp reflector		3	

Notes

Table 10: Lamp Reflector Assembly Parts (Continued)

Description	Part Number	Quantity	Note
^A Trained Qualified Personnel installation only.			

Figure 7: Optical Box Side View



NOTES: from 44A4743:

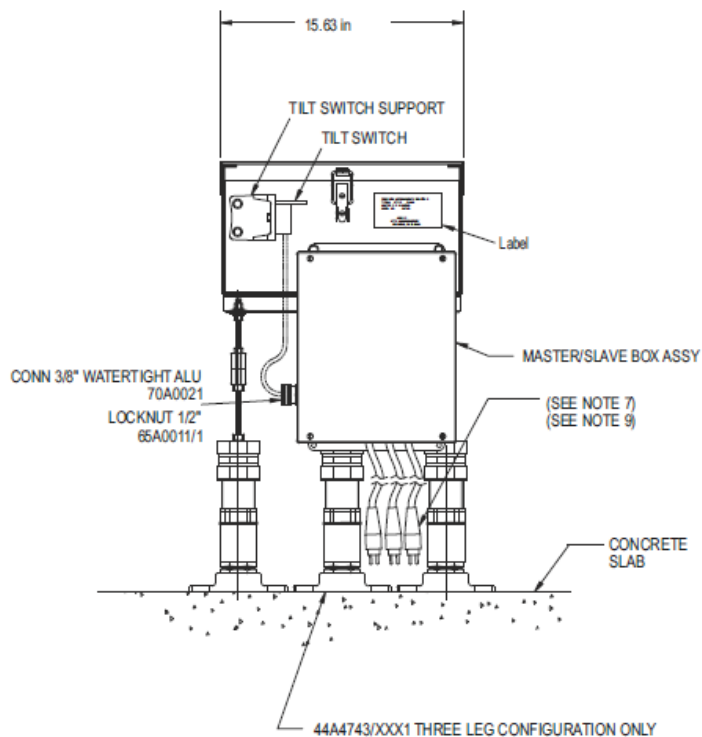
#4: 2 inch EMT diameter (2 3/16 O.D.) Tube to be supplied and installed by contractor. Length to be determined at installation to adjust for uneven terrain and to mount light box at the correct elevation above runway. 2" EMT tube to extend 3 1/4 inches into item M1 and 1 1/2 inches into item M5 to insure straight installation. Tube must be painted int. orange FED. STD. 595A, Color# 12197 to reduce corrosion.

#5: See AC 150/5345-28 for exceptions

#7: Contractor to supply flexible conduit and couplings for cord sets to power supply and master/slave.

#8: See 43B1649 and 43B1650/2 for slave/master wiring.

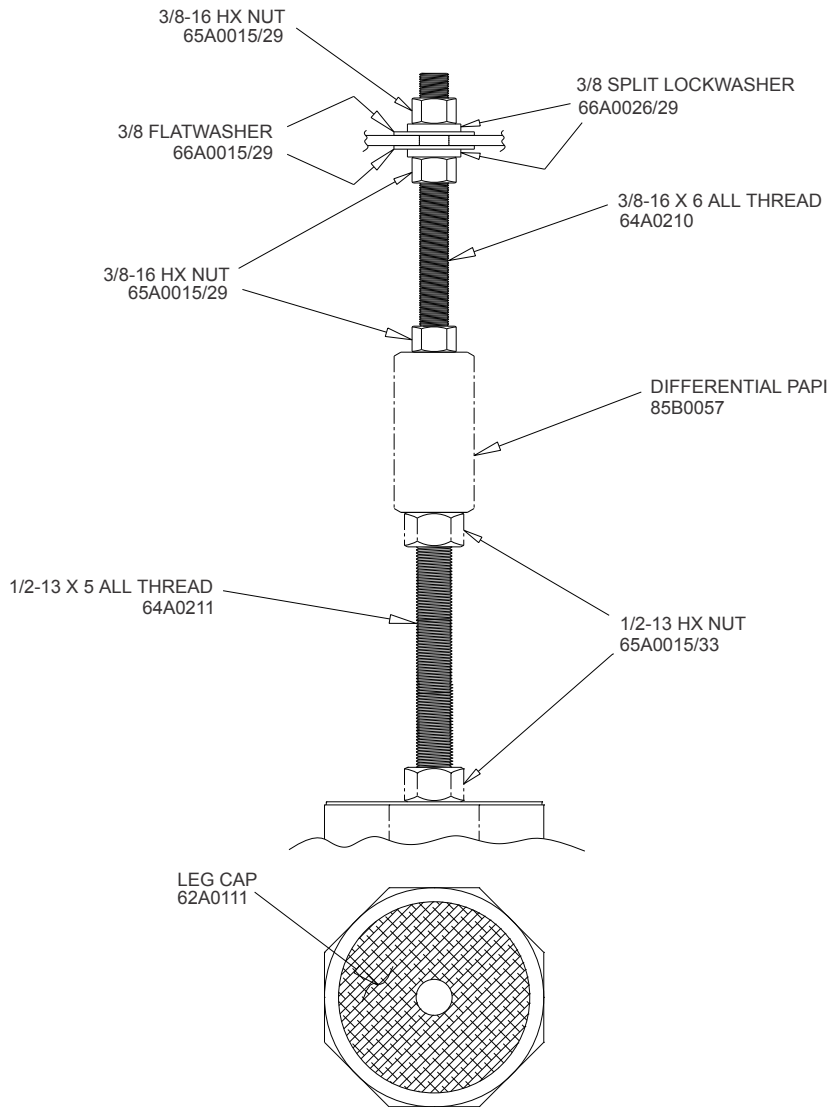
#9: The nominal cord set length is 72 in. Since the length required for installation depends on the height of the PAPI unit and distance of the bottom of the unit from the wire entry point in the can or conduit, the customer should check the length required. If a longer or shorter cord set is required, the wires may be spliced (in accordance with local codes)



2.4 Adjustable Leg Parts List

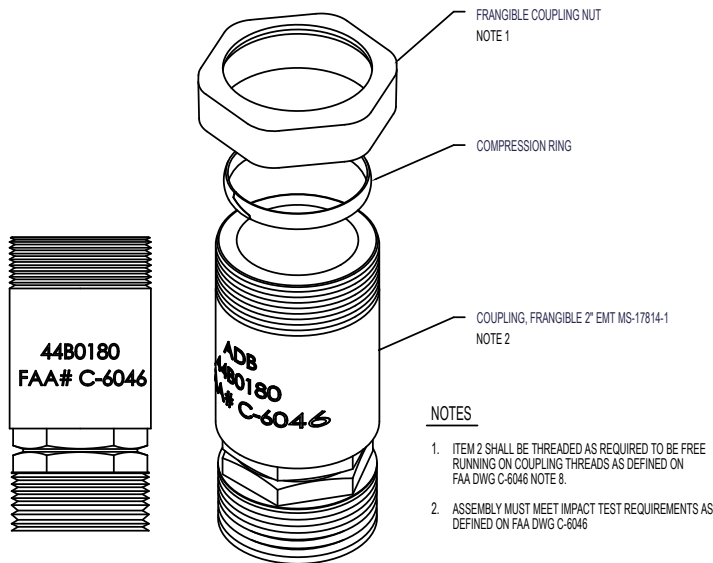
See Figure 8 . Leg assembly part number is 44C2362.

Figure 8: Adjustable Leg 43C2362



44C2362 A

Figure 9: Frangible Coupling 44B0180



2.5 Field Splice Kit Parts List

See [Figure 10](#) for the Style B L-880/L-881 PAPI field splice kit. Field splice kits are provided as required. Wiring harnesses are shown in [Figure 46](#) thru [Figure 7](#) in the *Wiring Schematics* section.

Table 11: Splice Kit Parts

Item	Description	Part Number	Quantity Per Kit 94A0255-1	Quantity Per Kit 94A0255-2	Note
1	Frangible coupling	62A0711	1	1	
2	Cable clamp, 961-X	63A0563	1	1	
	Wiring harness				
3	Wiring harness, Style B, 2-lamp	44A5913-1	1		
	Wiring harness, Style B, 3-lamp	44A5913-2		1	
NS	Butt splice	71A0054	2	2	
NS	Heat shrink tube	71A0072	1	1	

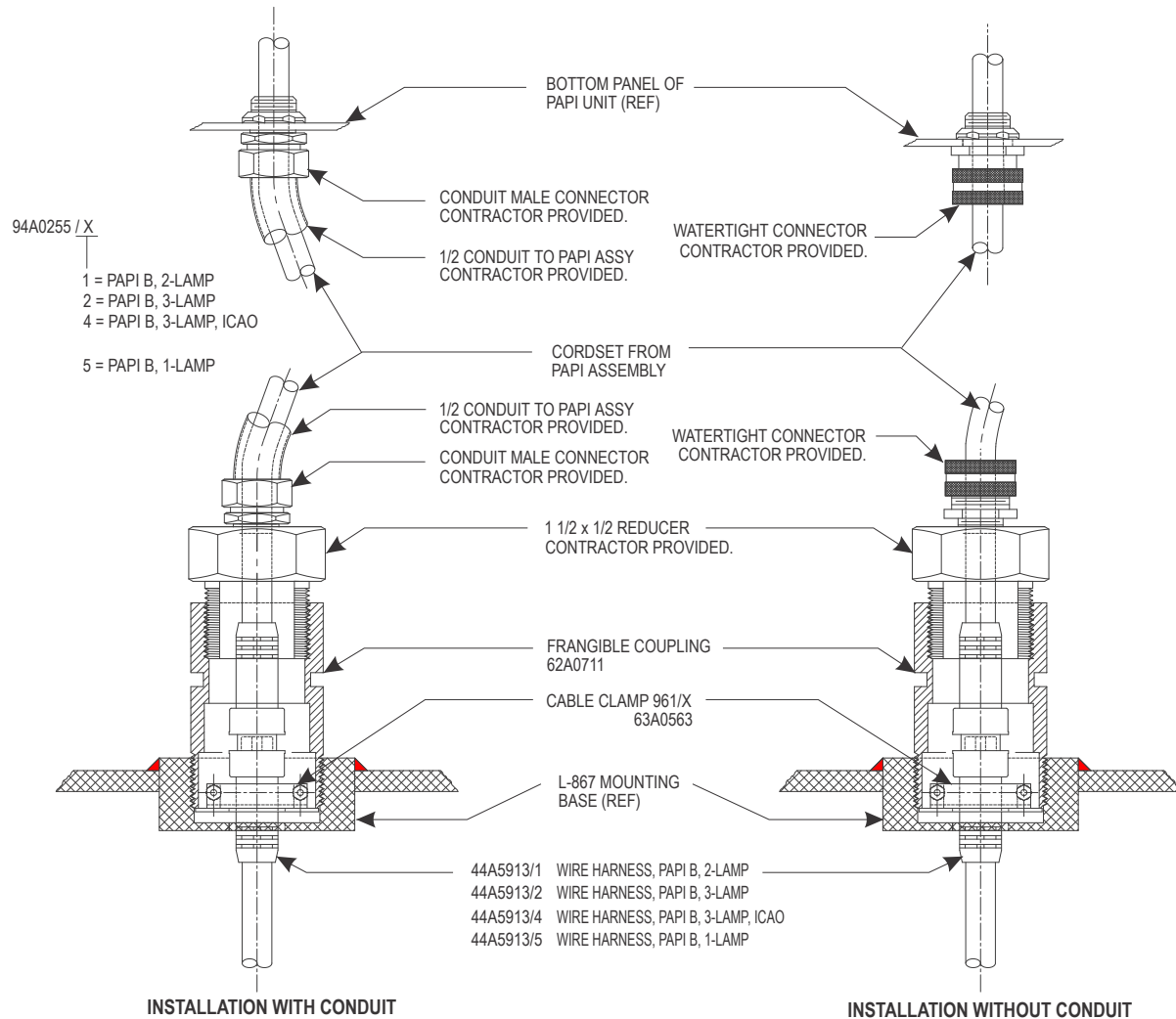
Table 11: Splice Kit Parts (Continued)

Item	Description	Part Number	Quantity Per Kit 94A0255-1	Quantity Per Kit 94A0255-2	Note
NS	Aluminum adapter, 2-6 poles	70A0518	1	1	A

NOTE A: The aluminum adapter is used only if the frangible coupling is not used.

NS: Not Shown

Figure 10: Field Splice Kit 94A0255/X



Refer below for aiming device kit parts list.

Table 12: Aiming Device Kit Parts List

Item	Description	Part Number	Quantity	Note
NS	Aiming Device Kit, digital-level style	44A6031	1	

NS: Not Shown

2.6 PAPI B Spare Parts

Table 13: PAPI-B Spare Parts

Description	Part Number	Quantity	Note
Optical box			
Optical box, 2-lamp	60A2443	1	
Optical box, 3-lamp	60A2442	1	
Lamp, 200 W, 6.6 A		See note.	
Lamp (for two-lamp optical box)	48A0077-1	2	A
Lamp (for three-lamp optical box)		3	
Gasket, 5/8 X 1/8 CC neoprene, black	RM0488	2	
Heat shield		1	
Heat shield, two-lamp	60A2614-1		
Heat shield, three-lamp	60A2614-2		
Vent screen, 1-inch	61A0011	See note.	B
PCB (2-lamp and 3-lamp)	44A5857	1	
Choke, custom, 19T, 33uH nominal, PAPI-B	33A0144	1	NS
Standoff, hex M-F, #6–32 X ¾	66A0129	4	
Isolated triac	28A0026	1	
Filter sieve	61A0311-02	1	
Grommet, 1-inch	63A0247	1	
Tilt switch assembly	44A5863	1	
Adjustable leg assembly		See note.	
Three-leg assembly	44C2362	3	C
Four-leg assembly		4	
Frangible coupling assembly		See note.	
Three-leg coupling assembly	44B0180	3	C
Four-leg coupling assembly		4	
Base flange		See note.	
Three-leg flange	62B0107-2	3	C
Four-leg flange		4	

NOTE A: Two required for two-lamp assembly; three required for three-lamp assembly. Refer to *Replacing Lamp in Maintenance Procedures* in Section 5, *Maintenance*.

NOTE B: Quantity of 1 for two-lamp; quantity of 2 for three-lamp.

NOTE C: Three required for three-leg assembly; four required for four-leg assembly.

NS: not shown

Appendix A: SUPPORT

Our experienced engineers are available for support and service at all times, 24 hour/7 days a week. They are part of a dynamic organization making sure the entire ADB SAFEGATE is committed to minimal disturbance for airport operations.

ADB SAFEGATE Support

Live Technical Support - Americas

If at any time you have a question or concern about your product, just contact ADB SAFEGATE's technical service department. Trained in all areas of system issues, troubleshooting, quality control and technical assistance, our highly experienced Technical support specialists are available 24 hours a day, seven days a week to provide assistance over the phone.

ADB SAFEGATE Americas Technical Service & Support (US & Canada): +1-800-545-4157

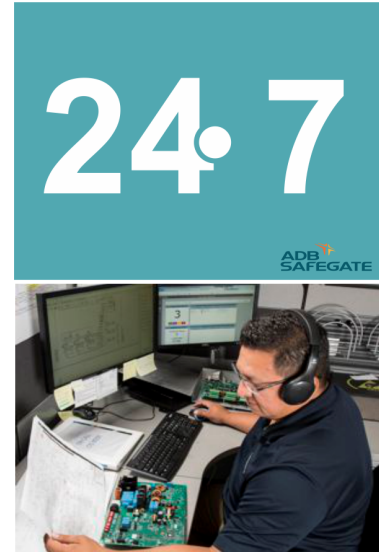
ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304

During regular business hours, you can also Chat with a Service Technician. We look forward to working with you!

Before You Call

When you have an airfield lighting or system control system problem it is our goal to support airfield maintenance staff as quickly as possible. To support this effort we ask that you have the following information ready before calling.

- The *airport code*
- If not with an airport, then company name (prefer customer id number)
- Contact phone number and email address
- Product with part number preferable or product number
- Have you reviewed the product's manual and troubleshooting guide
- Do you have a *True RMS* meter available (and any other necessary tools)
- Be located with the product ready to troubleshoot



Note

For more information, see www.adbsafegate.com, or contact ADB SAFEGATE Support via email at support@adbsafegate.com or

Brussels: +32 2 722 17 11

Rest of Europe: +46 (0) 40 699 17 40

Americas: +1 614 861 1304. Press 3 for technical service or press 4 for sales support.

China: +86 (10) 8476 0106

A.1 ADB SAFEGATE Website

The ADB SAFEGATE website, www.adbsafegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

A.2 Recycling

A.2.1 Local Authority Recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

A.2.2 ADB SAFEGATE Recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the EU.

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labeled as follows:

- For *ROHS/WEEE* Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for *EU directives* as and when *EU member states* implement new *regulations* and or *amendments*. It is our aim to maintain our *compliance plan* and assist our customers.

Company Addresses

ADB SAFEGATE	ADB SAFEGATE, Belgium: Leuvensesteenweg 585, B-1930 Zaventem Belgium
Contact: Tel.: +32 2 722 17 11, Fax: +32 2 722 17 64	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
Americas LLC	ADB SAFEGATE, Americas: 977 Gahanna Parkway, Columbus, OH 43230 USA
Contact: Tel.: +1 (614) 861 1304, Fax: +1 (614) 864 2069	Email: sales.us@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Sweden AB	ADB SAFEGATE, Sweden: Djurhagegatan 19 SE-213 76 Malmö Sweden
Contact: Tel.: +46 (0)40 699 17 00, Fax: +46 (0)40 699 17 30	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Airfield Technologies Ltd. China	ADB SAFEGATE, China: Unit 603, D Block, CAMIC International Convention Center, No 3, Hua Jia Di East road, ChaoYang district, Beijing 100102 P.R. China
Contact: Tel.: +86 (10) 8476 0106, Fax: +86 (10) 8476 0090	Email: china@safegate.com Internet: www.adbsafegate.com
ADB SAFEGATE Germany GmbH	ADB SAFEGATE Germany GmbH, Mannheim: Konrad-Zuse-Ring 6, D-68163 Mannheim Germany
Contact: Tel.: +49 (621) 87 55 76-0, Fax: +49 (621) 87 55 76-55	Email: marketing@adbsafegate.com Internet: www.adbsafegate.com



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