



Aeronautical

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INSTRUCTIONS

for

CONTINUED AIRWORTHINESS

for

AUTOMATIC DOOR OPENER KITS

407-510-103 DOOR OPENER KIT

407-510-105 (5 DOOR) DOOR OPENER KIT

STC: SH1990SO

FOR

BELL HELICOPTER TEXTRON MODEL 407 HELICOPTERS

Report Number AA-00129

Revision B

July 16, 2012

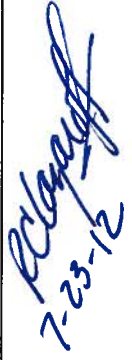
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LOG OF REVISIONS

Date	Revision	Description	Affected Pages	Approved / Date	Accepted / Date
10/12/00	NR	Original Release	All	—	—
11/21/11	A	Revised document to current standard: text, tables and figures Corrected kit numbers and part numbers as required Complete revision	All	C.Rowe 11/21/11	R.Lazaroff 12/05/11
07/16/12	B	Section 5: Corrected Table reference to include Table 8 Section 10: Corrected Table reference to include Table 8 Table 2: Added Kits (407-592-003 and 407-592-004) to Part Breakdown Table 4: Corrected description of 407-514-106 to "Crew Door Doubler Assembly" Table 6: Added AV Code for MS21209-F1-15 Table 7: Corrected P/N from "D1836-308M" to "D1836-3-08M" Added Table 8 Figure 1: Added Kit references for clarity Added P/N's (407-575-107 and 407-575-115) for 407-592-003 and 407-592-004 kits Corrected P/N's for Crew Door Doubler Assemblies (from "407-511-105 and 407-511-106" to "407-514-105 and 407-514-106") Figure 3: Corrected both Doubler Assembly descriptions	9 11 12 12 13 13 14 16 18	 18 JUL 2012	 7-23-12

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1.0 INTRODUCTION

These instructions contain the information necessary to inspect and maintain the AERONAUTICAL ACCESSORIES AUTOMATIC DOOR OPENER KITS installed on Bell Helicopter Textron (BHT) model 407 helicopters in accordance with STC SH1990SO.

1.1 DISTRIBUTION

These instructions are provided with each model 407 Automatic Door Opener Kit. Any airworthiness or flight safety revisions will be immediately made available to all affected Automatic Door Opener Kit owners.

1.2 REVISION

A Log of Revisions section is included in these instructions and will be utilized to document all changes. Change recommendations should be submitted to:

Aeronautical Accessories Bell Helicopter Piney Flats
P.O. Box 3689
Bristol, TN 37625-3689
Email: techsupport@aero-access.com

2.0 DESCRIPTION

The Aeronautical Accessories Automatic Door Openers provide automatic cockpit, cabin and baggage door opening when the door latches are released. The gas cylinders are equipped with a feature which controls the rate of opening and prevents doors from traveling past normal open positions. Automatic Door Openers provide easy entrance and exit of crew and passengers and help prevent damage to doors and airframe due to rotorwash or sudden wind gusts. The Baggage Door Opener holds the baggage door open to facilitate the loading and unloading of luggage or cargo.

3.0 MAINTENANCE INSTRUCTIONS

Once installed, the Automatic Door Openers are maintenance free and there are no periodic inspections requirements.

3.1 REPAIR

Repair actions are limited to Gas Cylinder Assembly and Ball Stud removal and replacement. (Refer to paragraph 5.0 for procedures).

4.0 TROUBLE INFORMATION

For troubleshooting information refer to Table 1.

TABLE 1. TROUBLESHOOTING		
Problem	Probable Cause	Solution
Door does not open automatically	Gas Cylinder Assembly has failed	Contact Aeronautical Accessories for replacement Gas Cylinder Assembly
Door stuck in place	Gas Cylinder Assembly has failed	Contact Aeronautical Accessories for replacement Gas Cylinder Assembly
Gas Cylinder Assembly detaches from Ball Stud	Safety Clip has failed	Contact Aeronautical Accessories for replacement Safety Clip
	Gas Cylinder Assembly Ball Socket has failed	Contact Aeronautical Accessories for replacement Gas Cylinder Assembly
	Ball Stud is worn or broken	Contact Aeronautical Accessories for replacement Ball Stud

5.0 REMOVAL AND REPLACEMENT INFORMATION

Repair actions are limited to Gas Cylinder Assembly and Ball Stud removal and replacement. (Refer to Tables 2 thru 8 and Figures 1 thru 3 for part identification.)

5.1 REMOVAL - GAS CYLINDER ASSEMBLY

1. Remove Gas Cylinder Assemblies by removing Safety Clips, then pull cylinder off of Ball Studs.

5.2 INSTALLATION - GAS CYLINDER ASSEMBLY

1. Install the Gas Cylinder Assemblies by snapping cylinder sockets onto Ball Studs and installing Safety Clips.

5.3 REMOVAL – BALL STUD, CREW AND PASSENGER DOOR

1. Remove Gas Cylinder Assembly by removing Safety Clips, then pull cylinder off of Ball Studs.
2. Loosen and remove Ball Stud by turning counter-clockwise.

5.4 INSTALLATION – BALL STUD, CREW AND PASSENGER DOOR

1. Install Ball Stud by turning clockwise. Torque Ball Stud to 15 in-lbs.
2. Reinstall the Gas Cylinder Assembly by snapping cylinder sockets onto ball studs and installing Safety Clips.

5.5 REMOVAL – BALL STUD, BAGGAGE DOOR**NOTE**

Removal of a Baggage Door Opener Ball Stud is not recommended unless Ball Stud is damaged. The Baggage Door Opener Ball Stud is welded to its respective Doubler Assembly.

1. Remove Gas Cylinder Assemblies by removing Safety Clips, then pull cylinder off of Ball Studs.
1. For Door Doubler Assembly: Remove and retain the four (4) Screws and Washers securing the Door Doubler Assembly to the Baggage Door.
2. For Bulkhead Doubler Assembly: Remove and retain the three (3) Screws and Washers securing the Bulkhead Doubler Assembly to the compartment wall.

5.6 INSTALLATION – BALL STUD, BAGGAGE DOOR**NOTE**

Obtain a new Doubler Assembly with a Door Opener Ball Stud welded to it.

1. Install the removed Doubler Assembly using the associated retained attachment hardware. Reinstall the Gas Cylinder Assembly by snapping cylinder sockets onto ball studs and installing Safety Clips.

6.0 SPECIAL TOOLS NEEDED

None

7.0 RECOMMENDED OVERHAUL PERIODS

No component overhaul required for this type design change.

8.0 AIRWORTHINESS LIMITATIONS

No airworthiness limitations associated with this type design change.

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved.

9.0 WEIGHT AND BALANCE

<u>Kit</u>	<u>Weight</u>	<u>Station</u>	<u>Lateral Arm</u>
Crew Door Openers (both doors)	2.8 lbs (1.3 kg)	43.6 in (1107 mm)	0.0 in (0 mm)
Passenger Door Openers (both doors)	2.8 lbs (1.3 kg)	103.9 in (2639 mm)	0.0 in (0 mm)
Baggage Door Opener	0.9 lbs (0.4 kg)	155.0 in (3937 mm)	-21.75 in (-552 mm)

10.0 PART BREAKDOWN

Tables 2 thru 8 contain Part Breakdown data for the model 407 Automatic Door Opener Kits.

The column Availability Code (AV Code) specifies the procurement status for each part. The codes to identify if a part is procurable, procedure details to get an assembly or local manufacture code are as follows:

AV Code	Details
0	Nonprocurable part
1	Procurable part
2	Procure as detail parts only
3	Procurable as Next Higher Assembly
4	Local manufacture. Contact AA Product Support Engineering (PSE)
5	Part replacement requires a fixture or special equipment. Contact PSE
6	Non-stock procurable part

TABLE 2. PART BREAKDOWN
407-510-103 / 407-510-105 / 407-510-203 / 407-510-205
DOOR OPENER KIT

Qty -103	Qty -105	Qty -203	Qty -205	Part Number	Description	AV Code
1	1			407-511-103	Crew Door Opener Kit (2 door)	1
1	1	1	1	407-512-103	Passenger Door Opener Kit (2 door)	1
	1		1	206-510-214	Baggage Door Opener Kit	1
		1	1	407-592-003	Door Opener Kit, L/H	1
		1	1	407-592-004	Door Opener Kit, R/H	1

TABLE 3. PART BREAKDOWN
407-511-103 CREW DOOR OPENER KIT

Qty	Part Number	Description	AV Code
1	407-511-101	Crew Door Opener Kit (L/H)	1
1	407-511-102	Crew Door Opener Kit (R/H)	1

TABLE 4. PART BREAKDOWN
407-511-101 (L/H) / 407-511-102 (R/H) CREW DOOR OPENER KIT

Qty -101	Qty -102	Part Number	Description	AV Code
1		407-514-101	Sill Doubler Assembly	1
	1	407-514-102	Sill Doubler Assembly	1
1		407-514-105	Crew Door Doubler Assembly	1
	1	407-514-106	Crew Door Doubler Assembly	1
1	1	407-517-126	Sill Doubler Spacer	1
1	1	407-517-130	Template	1
4	4	206-513-203	Safety Clip	1
1	1	407-515-108	Gas Cylinder Assembly (Alt: 407-515-106)	1
2	2	206-514-005	Ball Stud	1
6	6	NAS1149F0532P	Washer	1
6	6	NAS1149F0563P	Washer	1
26	26	CR3523-4-2	Rivet (Alt: M7885/4-4-2)	1
4	4	CR3523-4-4	Rivet (Alt: M7885/4-4-4)	1
3	3	CR3523-4-5	Rivet (Alt: M7885/4-4-5)	1
8	8	CR3523-4-6	Rivet (Alt: M7885/4-4-6)	1
7	7	CR3523-4-7	Rivet (Alt: M7885/4-4-7)	1

**TABLE 5. PART BREAKDOWN
407-512-103 PASSENGER DOOR OPENER KIT**

Qty	Part Number	Description	AV Code
1	407-512-101	Passenger Door Opener Kit (L/H)	1
1	407-512-102	Passenger Door Opener Kit (R/H)	1

**TABLE 6. PART BREAKDOWN
407-512-101 (L/H) / 407-512-102 (R/H) PASSENGER DOOR OPENER KIT**

Qty -101	Qty -102	Part Number	Description	AV Code
1		407-515-121	Litter Door Bracket Assembly	1
	1	407-515-107	Sill Bracket Assembly	1
1		407-515-113	Door Doubler Assembly	1
	1	407-515-104	Door Doubler Assembly	1
4	4	206-513-203	Safety Clip	1
1	1	407-515-108	Gas Cylinder Assembly (Alt: 407-515-106)	1
	1	407-518-144	Template	1
2	2	206-514-005	Ball Stud	1
3		MS27039C1-06	Screw	1
1		MS27039C1-09	Screw	1
2	2	MS27039C1-27	Screw	1
2	2	NAS1149C0332R	Washer	1
2	2	NAS1149C1165R	Washer	1
6	6	NAS1149F0532P	Washer	1
6	6	NAS1149F0563P	Washer	1
3		MS21209-F1-15	Helicoil (Alt: 3591-3CN-0285)	1
	19	CR3523-4-2	Rivet (Alt: M7885/4-4-2)	1
21		CR3523-4-3	Rivet (Alt: M7885/4-4-3)	1
	4	CR3523-4-4	Rivet (Alt: M7885/4-4-4)	1

**TABLE 7. PART BREAKDOWN
206-510-214 BAGGAGE DOOR OPENER KIT**

Qty	Part Number	Description	AV Code
1	206-517-101	Doubler Assembly	1
1	206-517-102	Doubler Assembly	1
4	206-513-203	Safety Clip	1
1	206-513-211	Gas Cylinder Assembly	1
4	D1836-3-08M	Insert (Alt: NAS1836-3-08M)	1
3	80-004-2-6	Insert	1
3	MS27039-1-06	Screw	1
7	AN960-10	Washer (Alt: NAS1149F0363P)	1
1	099-050-121	Adhesive, Magnobond 6398 A & B	1
4	MS27039-1-05	Screw	1

TABLE 8. PART BREAKDOWN
407-592-003 (L/H) / (407-592-004 (R/H) CREW DOOR OPENER KIT

Qty -003	Qty -004	Part Number	Description	AV Code
1	1	407-592-121	Shim (2024-T3, .063 THK, AMS-QQ-A-250/4)	1
1	1	407-575-107	Door Doubler Assembly	1
1	1	407-575-115	Gas Cylinder Assembly	1
1	1	407-575-128	Sill Bracket	1
1	1	407-575-131	Ball Stud Spacer	1
4	4	NAS1149F0563P	Washer	1
1	1	206-514-007	Ball Stud	1
1	1	206-514-141	Ball Stud	1
1	1	MS27039-5-11	Screw	1
12	12	CR3522-4-2	Rivet (Alt: M7885/5-4-2)	1
10	10	CR3523-4-3	Rivet (Alt: M7885/4-4-3)	1
4	4	CR3523-4-4	Rivet (Alt: M7885/4-4-4)	1
2	2	CR3523-4-5	Rivet (Alt: M7885/4-4-5)	1
12	12	CR3523-4-6	Rivet (Alt: M7885/4-4-6)	1
6	6	CR3523-4-7	Rivet (Alt: M7885/4-4-7)	1
1		407-514-101	Sill Doubler Assembly	1
	1	407-514-102	Sill Doubler Assembly	1
4	4	206-513-203	Safety Clip	1
1	1	407-517-126	Spacer, Sill Doubler	1
1	1	099-050-177	Adhesive, Threadlocker (Loctite 26205 (.02 oz))	1
1	1	099-050-121	Adhesive (Magnobond 6398 A&B (8 oz))	1
1	1	AA-11047	Installation Instructions	1

11.0 REFERENCE INSTALLATION DRAWINGS

Figures 1 thru 3 ARE NOT TO SCALE and are provided as reference parts installation location and identification information for the model 407 Automatic Door Opener Kits.

Contact:

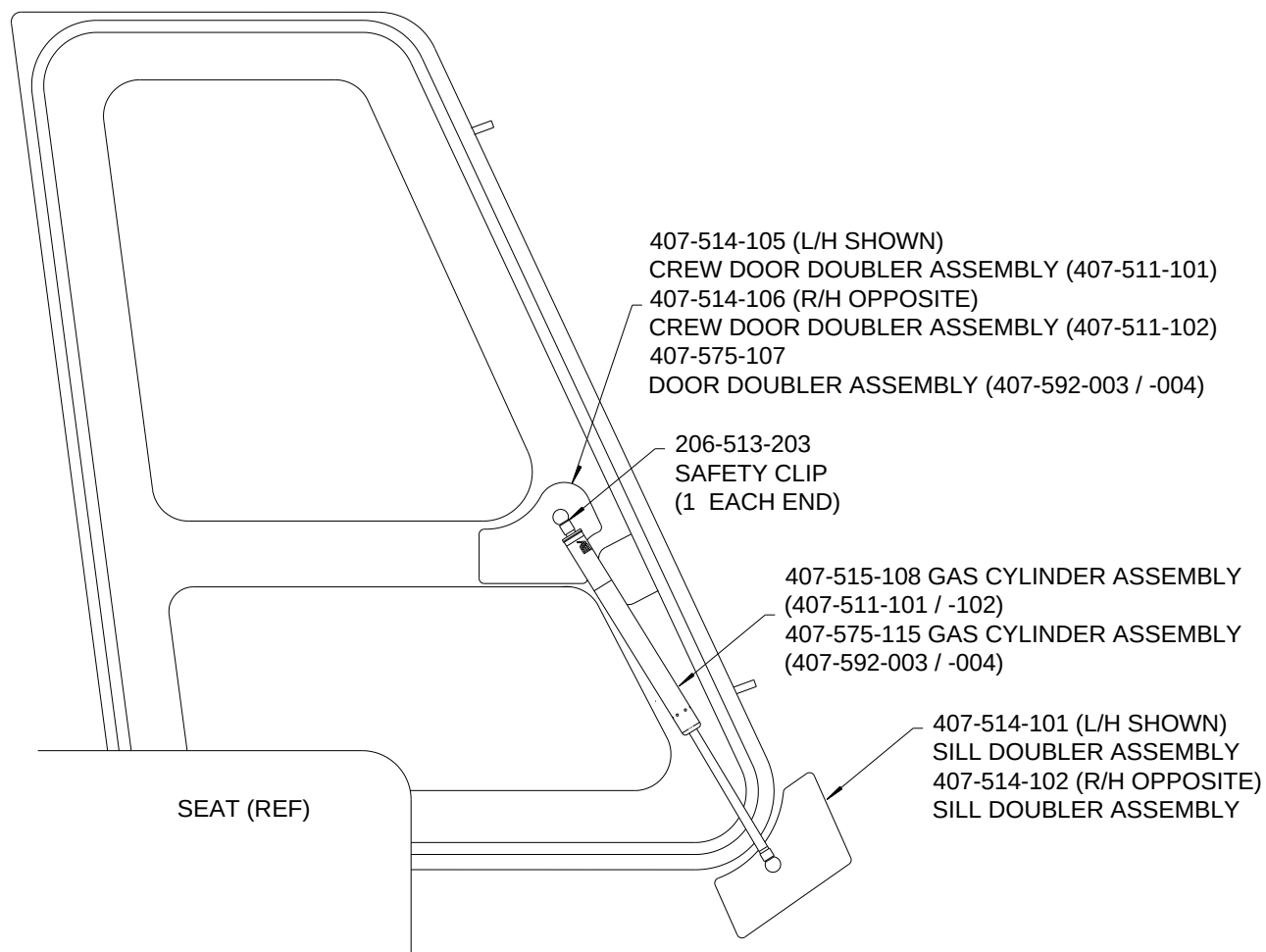
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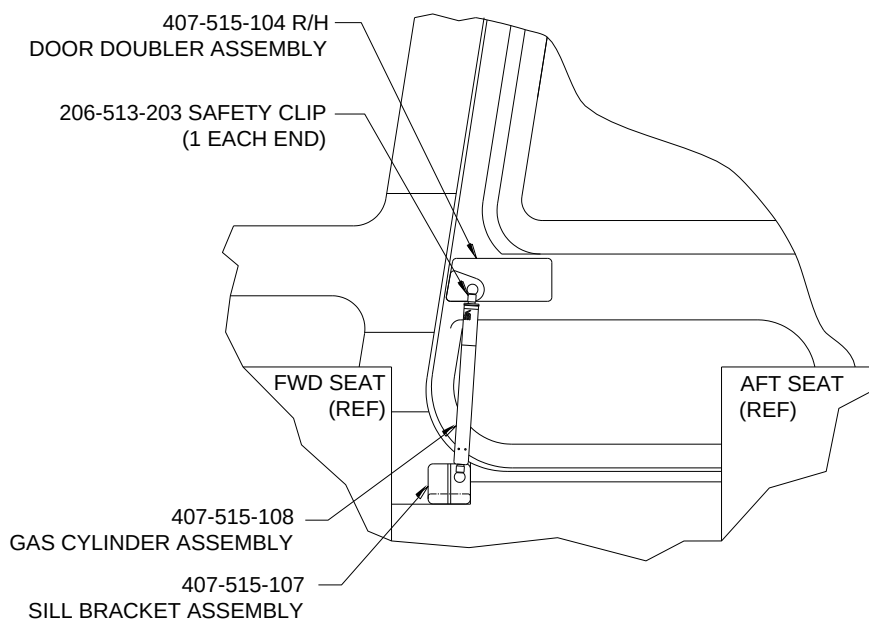
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P.O. Box 3689

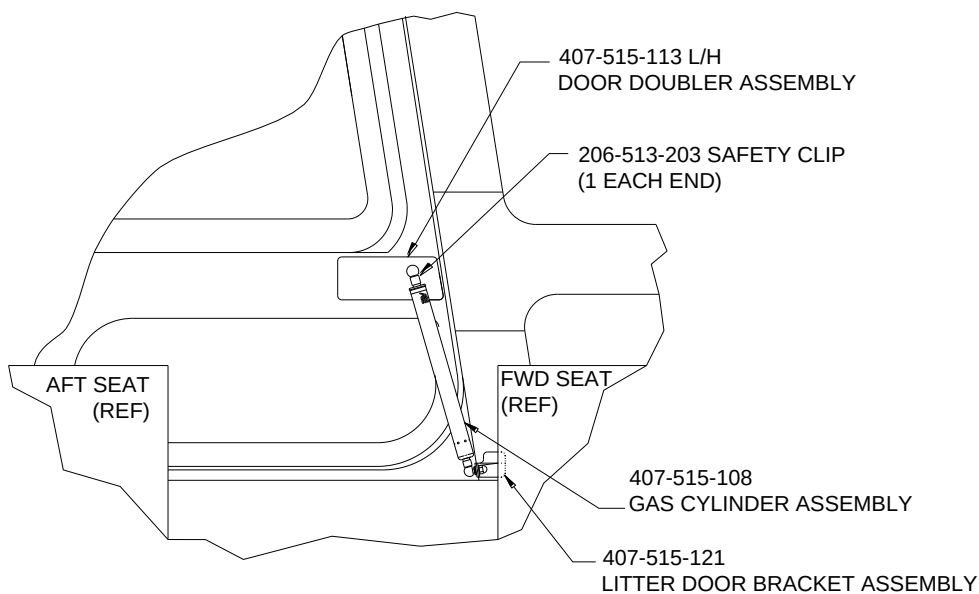
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Email: techsupport@aero-access.com
for applicable engineering drawing information

**FIGURE 1. CREW DOOR DOOR OPENER INSTALLATION**



R/H PASSENGER DOOR KIT



L/H PASSENGER DOOR KIT

FIGURE 2. PASSENGER DOOR DOOR OPENER INSTALLATION

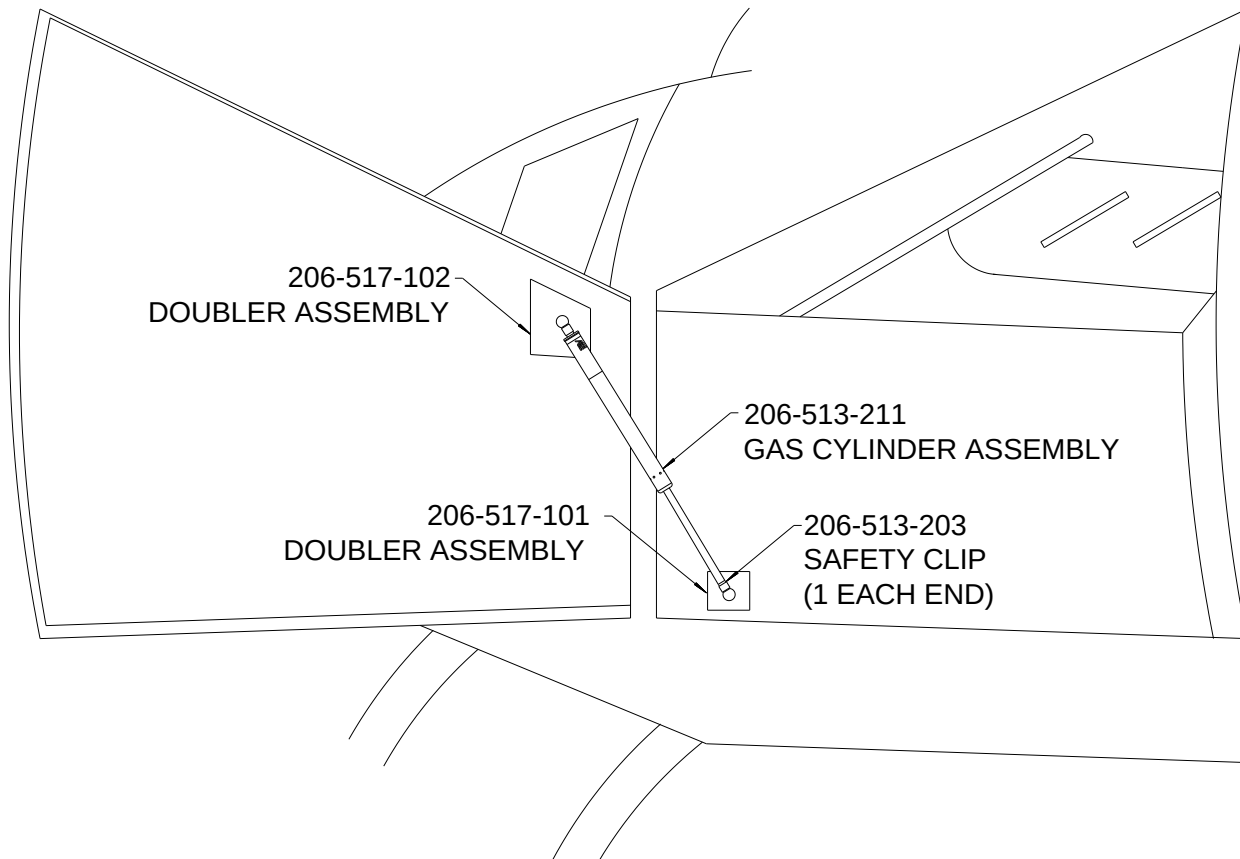


FIGURE 3. BAGGAGE DOOR DOOR OPENER INSTALLATION