

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number SA01625SE

This certificate, issued to

**Rosen Sunvisor Systems, LLC
86365 College View Road
Eugene, OR 97405**

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified herein meets the airworthiness requirements of Part 23 of the Federal Aviation Regulations.

Original Product—Type Certificate Number: A25SO
Make: Piper
Model: PA-46-350P, PA-46-500TP and PA-46R-350T

Description of the Type Design Change:

Cockpit Sun Visor installation in accordance with Federal Aviation Administration (FAA) approved Rosen Sunvisor Systems Drawing List 1290000-DL, Revision B, dated November 15, 2005, or later FAA approved revision.

Limitations and Conditions:

Approval of this change in type design applies to Piper Malibu Meridian Model PA-46-500TP and Piper Malibu Mirage Model PA-46-350P with serial numbers above #4636021 and Piper Malibu Matrix Model PA-46R-350T all serial numbers. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce, no adverse effect upon the airworthiness of the aircraft. A copy of this Certificate and Rosen Sunvisor Systems Drawing List 1290000-DL, Revision B, dated November 15, 2005, or later FAA approved revision must be maintained as part of the permanent records for the modified aircraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: July 5, 2004

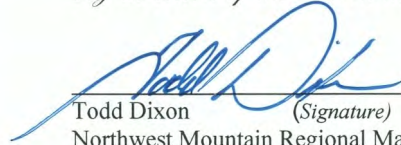
Date issued:

Date of issuance: December 15, 2005

Date amended: February 11, 2014



By direction of the Administrator


Todd Dixon (Signature)
Northwest Mountain Regional Manager
Denver Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.



Monorail Sunvisor System
for Piper Malibu

| | | |
|---------|----------|----------|
| Date | Revision | Approved |
| 2/17/22 | J | SYS |

Mirage (PA-46-350P)
Matrix (PA-46R-350T)
Meridian (PA-46-500TP)

Drawing List 1290000-DL

Doc. #9040-0129-001

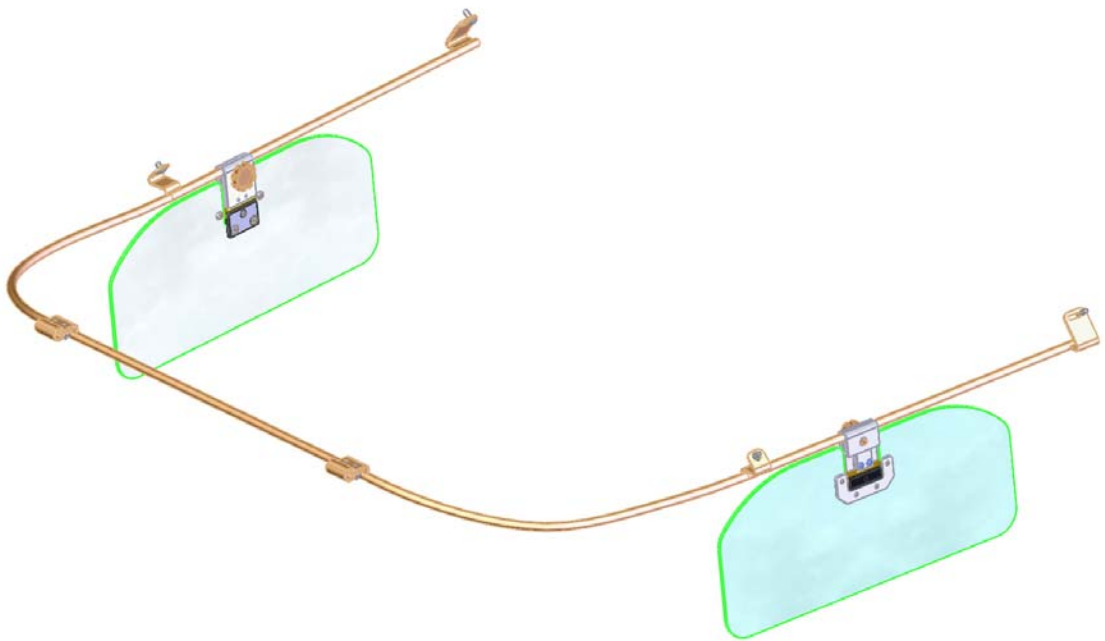
| R1291000 | R1290000 | DRAWING | REPLACES | DESCRIPTION | REV |
|----------|----------|----------------|-----------------|----------------------------------------------------------------------------------------------------|----------|
| | (1) | 1290000 | | Complete System (Mirage) | C |
| | 1 | 1290100 | | Monorail Assembly | C |
| | 1 | 1290101 | | Monorail | B |
| | 2 | 1290102 | | Front Bracket – Bottom | A |
| | 2 | 1290103 | | Front Bracket – Top | B |
| | 2 | 1290104 | | Rear Bracket | A |
| | 2 | 1290105 | | Standoff | B |
| (1) | | 1291000 | | Complete System (Mirage, Meridian, Matrix) | C |
| 2 | | 1290108 | | Bracket, Front-Bottom | C |
| 1 | | 1291100 | R1291100 | Monorail Assembly | C |
| 1 | | 1290106 | | Monorail | B |
| 2 | | 1290105 | | Stand-off | B |
| 2 | | 1290107 | | Bracket, Front-Top | B |
| 2 | | 1290109 | | Bracket, Rear | C |
| (2) | (2) | 1290500 | R1290500 | Visor Assembly | C |
| 2 | 2 | 1290501 | | Lens | B |
| 2 | 2 | 1110202 | | Swivel Nut Plate | E |
| 2 | 2 | 1120000-003 | | Complete Assembly | K |
| 2 | 2 | 1120101-001 | | Nut Plate Standard | L |
| 2 | 2 | 1120102-001 | | Clamping Block Body | L |
| 2 | 2 | 1120104 | | Thumb Knob – Standard | M |
| (2) | (2) | 1120200 | | 3 rd Axis Assembly | D |
| 2 | 2 | 1120208 | | Sleeve Leg | C |
| 2 | 2 | 1120207 | | Sleeve, Body | C |
| 2 | 2 | 1120220 | | Swivel Assembly | D |
| 1 | 1 | 9041-0129-001 | | Component Maintenance Manual/Illustrated Parts List/Instructions for Continued Airworthiness | E |

| | | | | | |
|--|--|-------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------|-----------------|
| | | RCBS-300-11M 1120104-002 RCBS-300-18 PCS-1000-14- STZ R1290501 | KITS | Kit, Standard Thumb Knob Thumb Knob Spring E-Clip Lens | D M B |
|--|--|-------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------|-----------------|



Piper Malibu Monorail Sunvisor System

Rosen Kit Number R1290000, R1291000



**Component Maintenance Manual
Instructions for Continued Airworthiness
Illustrated Parts List**

**Manual Number
Rosen 9041-0129-001
Revision E**

Rosen Sunvisor Systems LLC
86365 College View Road
Eugene, Oregon 97405 USA

**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

This ICA must be followed when the R1290000 or R1291000 Sunvisor system is installed in accordance with Supplemental Type Certificate, (STC) No.

SA01625SE, dated 10/15/2005, amended 2/11/2014.

The information contained in this document supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this manual, consult the basic aircraft ICA or Maintenance Manual.

STATEMENT OF Rev E CERTIFICATION

This manual complies with Federal Aviation Association (FAA) Airworthiness Requirements Part 23.

FAA Acceptance: STC SA01625SE Date: 2/11/14

The above certification does not apply to revisions or amendments made after the date of initial certification by other Approved Organizations. Revisions or amendments made by other Approved Organizations must be separately certified and recorded on separate record sheets

**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

Record of Revisions

| Rev | Description | Date | Approved |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| A | Preliminary Release | 10/20/2005 | GH |
| B | | 11/15/2005 | GH |
| C | | 10/15/2007 | GH |
| D | Combined 9041-0129-001 and 9041-0129-002 into single CMM, revised format | 7/10/2013 | GH |
| E | Page 11; Renamed 'Continued Airworthiness Instructions' to 'Instructions for Continued Airworthiness' and incorporated AEG comments. Pages 6-8 added comments from AEG for inspection after installation. | 1/15/2014 | GH |

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**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

Introduction

1. General

- a. This Rosen Component Maintenance Manual provides use, maintenance and supplemental airworthiness instructions for the cockpit sunvisor systems used on the Piper Malibu aircraft models PA-46-350P (Mirage), PA-46-500TP (Meridian), and PA-46R-350T (Matrix).
- b. Rosen reserves the right to revise this document for changed procedures, improved parts or changes to the system or components.
- c. All technical support, spare sales, repairs or modifications are to be directed directly to Rosen Sunvisor Systems LLC. RSS must be contacted for future revision of this document as it is possible this does not contain the latest revisions.

2. Revision Service

Current revision status and revisions to this document may be obtained from Rosen Sunvisor Systems' website: www.rosenvisor.com. We recommend that you periodically check to make sure you are using the most current version.

**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

Fault Isolation

1. General

- a. This section identifies Probable Causes and Corrections for possible faults.

| Problem | Probable Cause | Corrective Action |
|------------------------------------------------|----------------------------------------|--------------------------------------------------------|
| Visor assembly does not slide easily on rail | Thumb knob too tight | Loosen knob and slide using knob |
| Lens does not rotate smoothly on vertical axis | Vertical pivot tension incorrectly set | Re-tension vertical pivot |
| Visor clamp does not hold to rail | Moisture, dust, and lubricant on rail | Wipe rail and clamp surface with non-residual cleaner. |

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

Product Description

General

- a. The Rosen Sunvisor System consists of one rail and two visor assemblies which have been designed to improve pilot comfort during standard cockpit operations. The rail assembly is fastened to the airframe on provided hard points to provide stability and support. The aft section of each rail is the stow location for the visor. The R1290000 system is designed for installation in the Mirage, however the cockpit configuration should be checked to determine compatibility. The R1291000 system rail is 3.32 inches shorter than the R1290000 system rail and can be installed in all models listed on the STC.

Installation Instructions for R1290000

This is an FAA STC'd Installation requiring a log book entry upon completion.

1. Rail installation

1. Remove both stock visors and clamping components from the mounting barrels.
2. Pull out both pilot side passenger compartment light bezels and the one on the co-pilot's side (just in front of the emergency exit door).
3. Remove the four screws retaining the lamp trim pieces on the pilot's side.
4. Slide the trim piece aft then lower it and disconnect both lamp plugs.

Note: Do not attempt to disconnect at the lamp assembly. The cable connector may be hidden in the aircraft framework.

5. Repeat for the lamp on the co-pilot side.
6. Remove forward most side carpet panel screw on each side. This location may be used for the side monorail attachment.
7. Place monorail forward clips over the original visor mounting barrels at the front. It will be necessary to lower the rear of the rail to accomplish this.
8. Install Front-Bottom Brackets (1290102) and Nylon Washers (90295A110) with #6-32 Acorn Nuts (or AN526C832R5 #8-32 x 5/16 SS Truss Head Screws) and tighten to just snug.



Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

9. Raise the rear of the monorail until the slot in the rear mounting bracket aligns with the carpet panel screw location. (Removed in step 6.)

10. Assure rail is properly centered and aligned in cockpit.

Note: At this point the side rail brackets should be inboard of the overhead trim and in approximately the same position on each side.

11. Using a soft lead pencil carefully mark the location of the mid rail mount on the overhead trim piece on both sides. Consider that the inside bend in the bracket will be the edge of the trim piece.

12. Pull the overhead trim out enough to place a 'drill-stop' material behind the trim and drill a ¼ inch diameter hole through the trim material only. Clean the hole and remove the drill stop.

Note: The overhead trim is held in place with a Velcro type attachment. A thin prying tool makes it possible to lift the trim piece. After the completion of the installation press the overhead back in to position to reattach.

13. Raise the monorail and position the mid brackets behind the headliner trim piece and attach using the two #8-32 Nylon Washered screws.

14. Position the rear mounts and attach using the #8 self-tapping screws at the rear. If possible, use the same location as the side carpet attachment screws. If not, carefully drill a small starter hole located by the bracket slot. **Be careful to drill only through the thin mounting plate and be aware of any materials behind the plate.**



15. Tighten front fasteners.

Note: The rear mounting screws go through the brackets then through the carpeted side trim into the mounting plate.

16. Replace compartment lamp trim pieces.

Note: Be sure to reconnect lamp wiring and carefully stow the wires upon reassembly.

17. Re-affix all remaining fasteners and install lamp bezels.

18. Visor installation

- Loosen knob until visor clamp is open enough to slip over rail.
- Tighten screw knob to closure and install e-clip into groove on end of knob screw.

19. Upon completion inspect:

- All rail mounting fasteners are installed and secure.
- Verify that rail is secure against any movement.
- Verify that visors can be positioned and secured in all allowable positions.

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

NOTE: This system is not intended to be used as a hand hold. Do not use as a hand hold.

Installation Instructions for R1291000

This is an FAA STC'd Installation requiring a log book entry upon completion.

1. Rail installation

2. Remove both stock visors and clamping components from the mounting barrels.
3. Place monorail forward clips over the original visor mounting barrels at the front. It will be necessary to lower the rear of the rail to accomplish this.
4. Install Front-Bottom Brackets (1290108) and Nylon Washers (90295A110) with #6-32 Acorn Nuts and tighten to just snug.
5. Raise the rear of the monorail until the inside of the bend in the brackets aligns with the bottom of the overhead liner.
6. Assure rail is properly centered and aligned in cockpit.

Note: At this point the four side rail brackets should be inboard of the overhead trim and in approximately the same position on each side.

7. Using a soft lead pencil carefully mark the location of each rail mount on the overhead trim piece on both sides. Consider that the inside bend in the bracket will be the edge of the trim piece.

Note: It will probably be necessary to have help holding the rail in place.

8. Pull the overhead trim out enough to place a 'drill-stop' material behind the trim and drill a ¼ inch diameter hole through the trim material only. Clean the hole and remove the drill stop.

Note: The overhead trim is held in place with a Velcro type attachment. A thin prying tool makes it possible to lift the trim piece. After the completion of the installation press the overhead back in to position to reattach.

Raise the monorail and position the mid brackets behind the headliner trim piece and attach using the four #8-32 Nylon Washered screws.

9. Visor installation

- a. Loosen knob until visor clamp is open enough to slip over rail.
- b. Tighten screw knob to closure and install e-clip into groove on end of knob screw.

10. Upon completion inspect:

- a. All rail mounting fasteners are installed and secure.
- b. Verify that rail is secure against any movement.
- c. Verify that visors can be positioned and secured in all allowable positions.



**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

NOTE: This system is not intended to be used as a hand hold. Do not use as a hand hold.

System Use

- To move: Loosen the clamp block slightly and slide the visor along the rail by pushing sideways on the knob. Re-tighten in new location.
- To stow: Move the visor to the stow position and tension to prevent movement on the rail. Some pilots may prefer to stow overhead by tightening the clamp to the point that the visor can be rotated overhead without dropping.

Removal

1. Visor Assembly

- a. Remove and retain e-clip from back of clamp block.
- b. Loosen the clamp screw until the clamp opens enough to remove from rail.
- c. Pull down to detach from the rail
- d. Reverse procedure to re-attach.

2. Rail Disassembly

- a. Remove Visor Assemblies from the Rail. (See above)
- b. Remove 4 screws.

Weight and Balance

This weight and balance information is provided to update the aircraft Weight and Balance Record in the maintenance manual and Basic Empty Weight.

The R1290000 system adds 3.0 lbs. at station 143 to the aircraft with visors at the stow position.

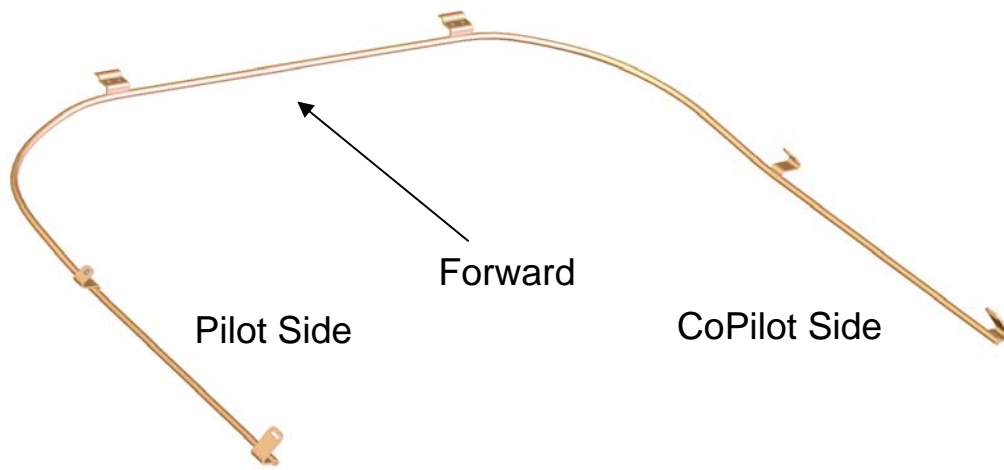
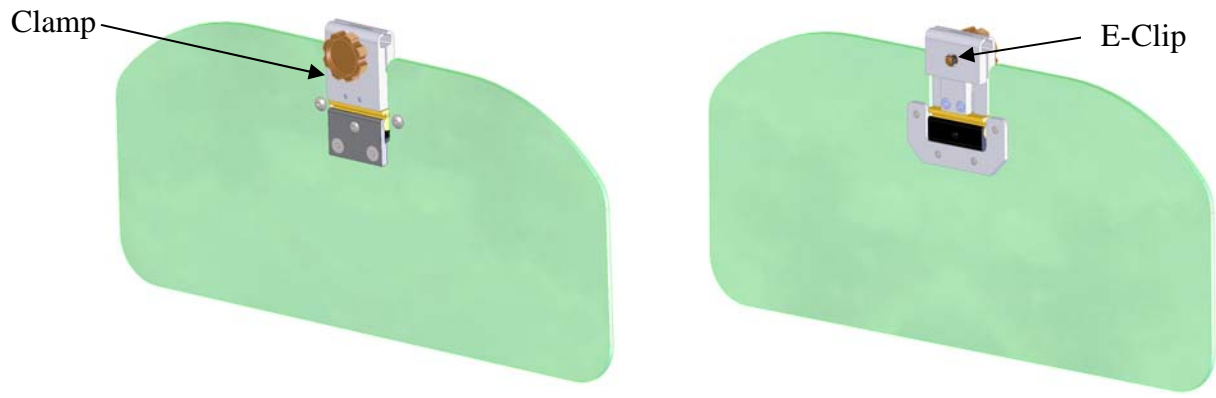
The R1291000 system adds 2.9 lbs. at station 143 to the aircraft with visors at the stow position.

Repair

General

- a. All components that do not meet the requirements for continued use must be replaced.

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)



**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

Instructions for Continued Airworthiness

- **(On the ground only)**
 - As required, or at least annually, clean the lenses with a soft cloth, mild soap and water or Rosen Cleaner, Polisher and Protectant. Do not use abrasives on the lens.
 - As required, or at least annually, adjust the pivot tensions on the visor assemblies.
 - As required, or at least annually, clean rail with a no residue alcohol based cleaner and inspect for wear and damage.

Airworthiness Limitations

1. The Airworthiness Limitations Section is FAA approved and specifies maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.
 - 1.1. There are no airworthiness limitations associated with this installation.

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

Illustrations and IPC

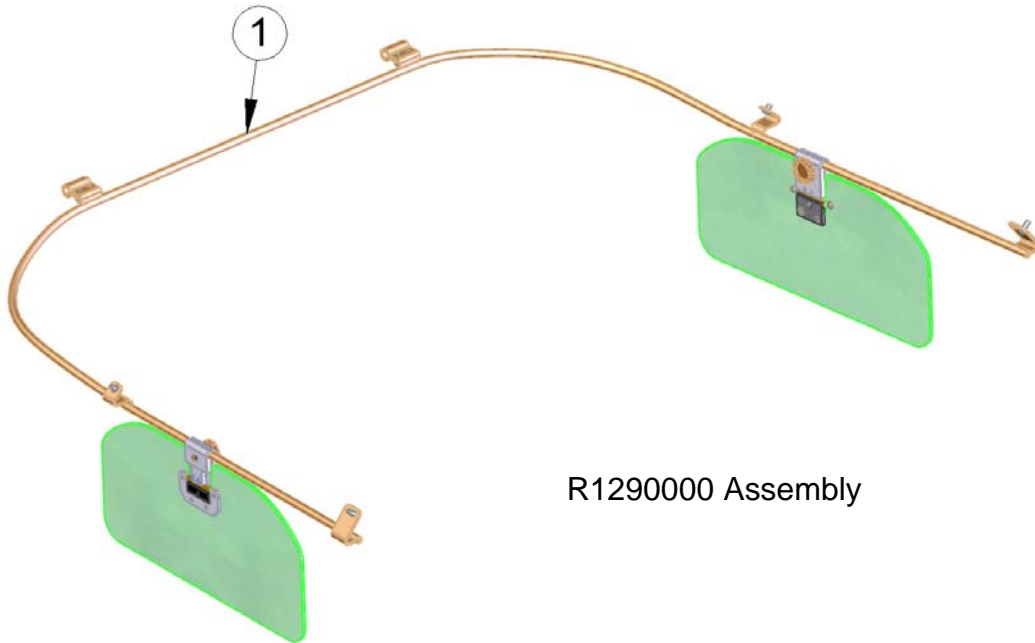


Fig 1

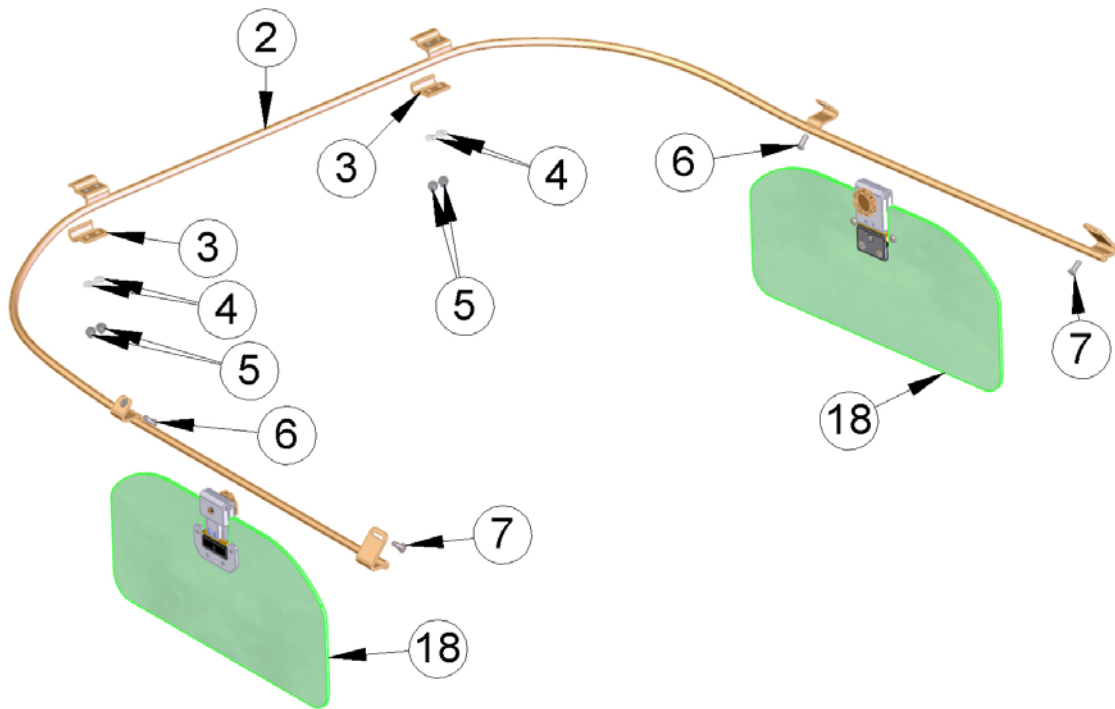


Fig 2

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

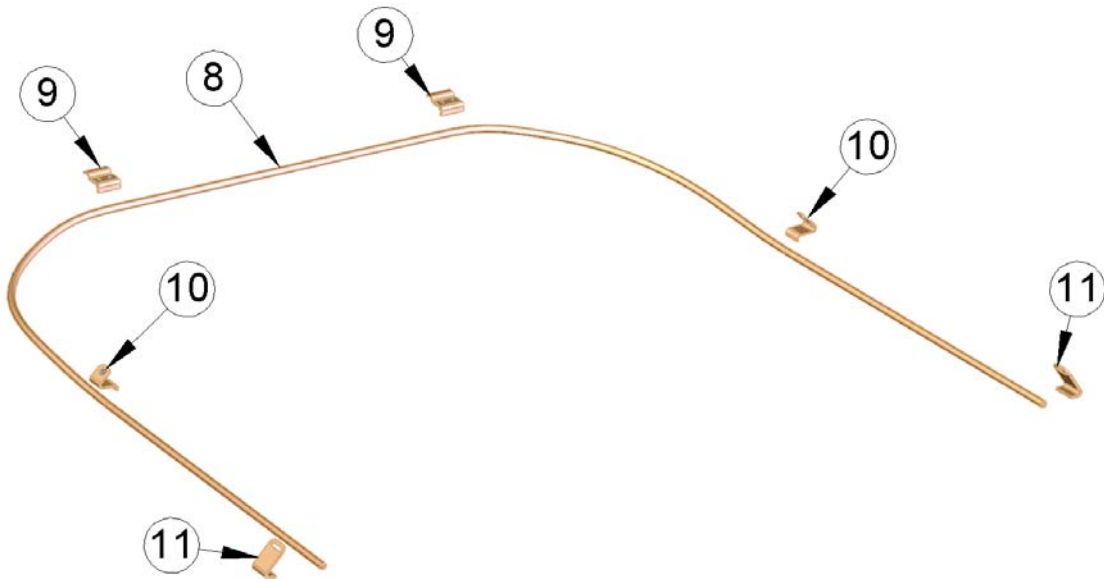
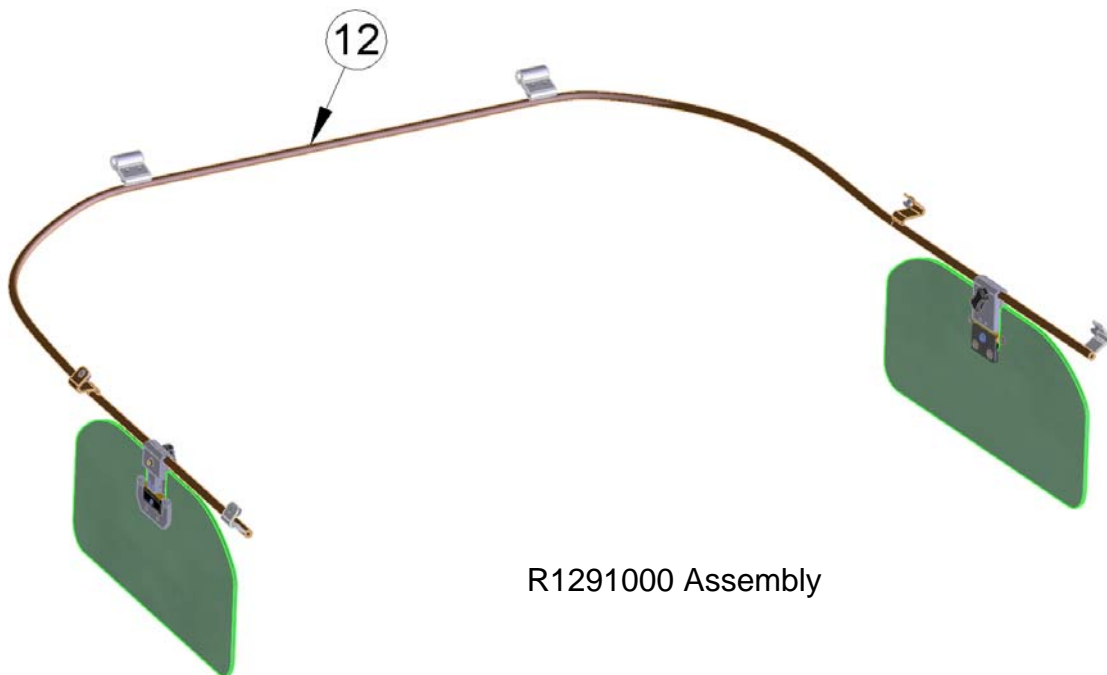


Fig 3



R1291000 Assembly

Fig 4

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

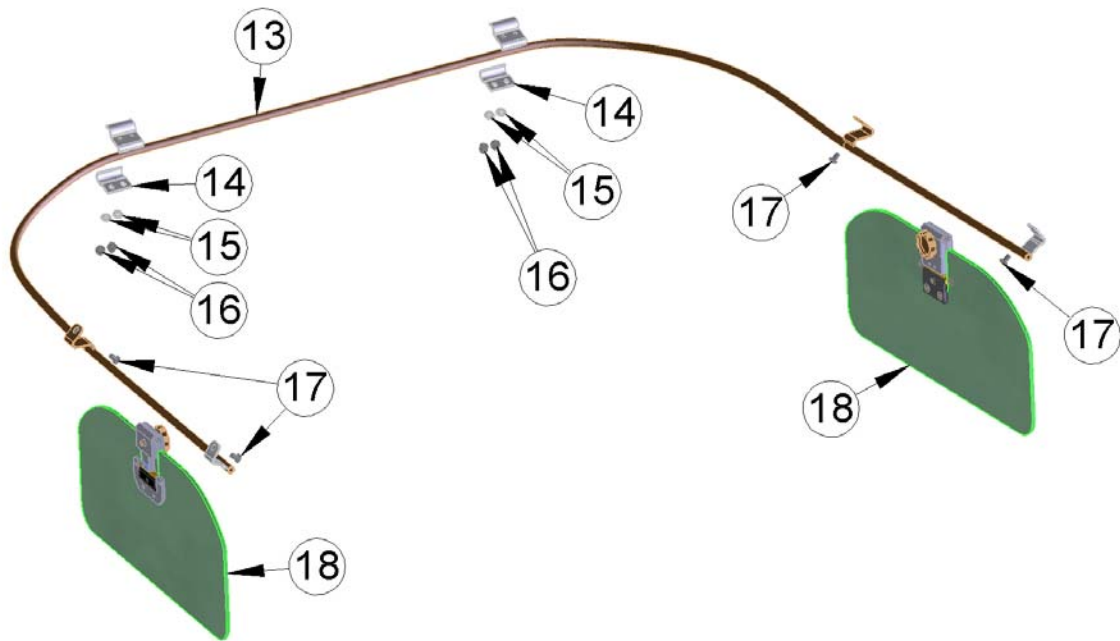


Fig 5

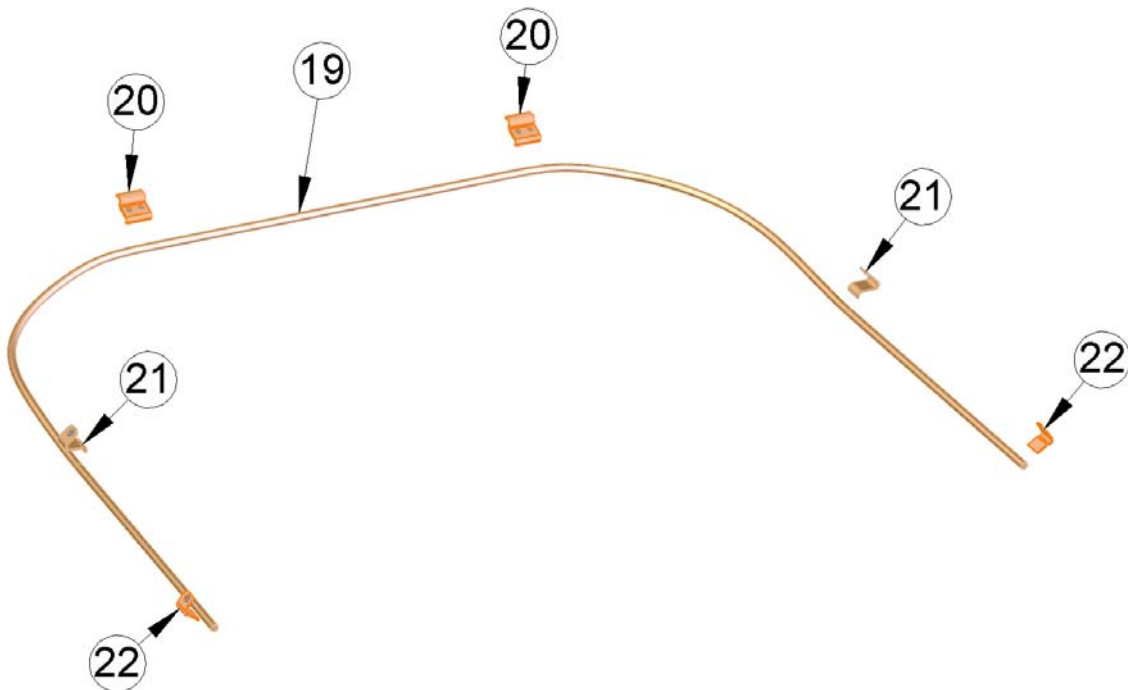


Fig 6

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

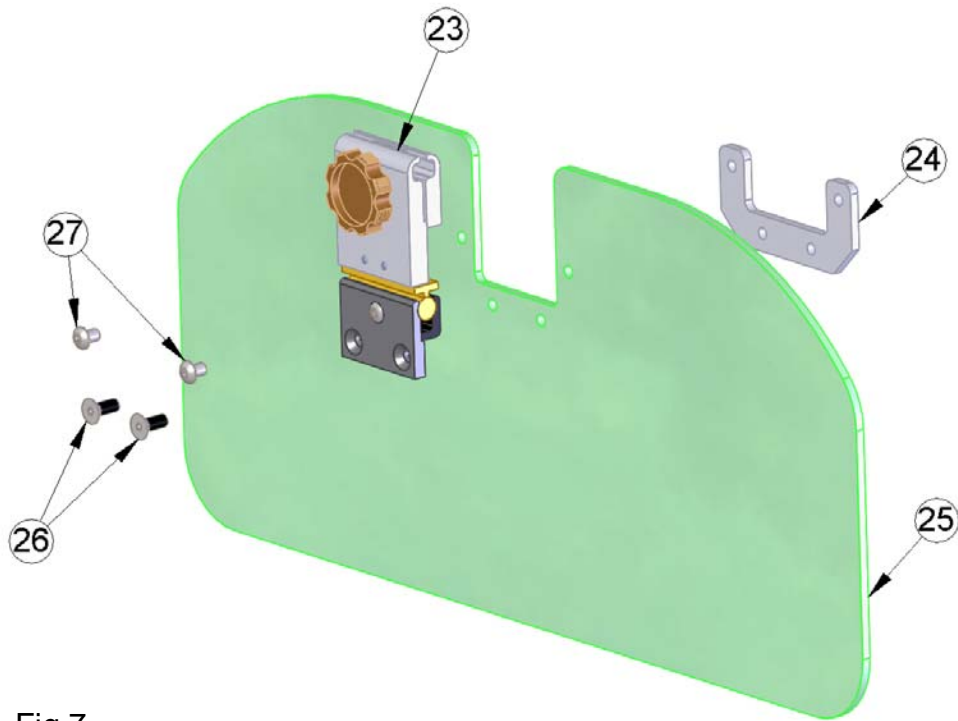


Fig 7

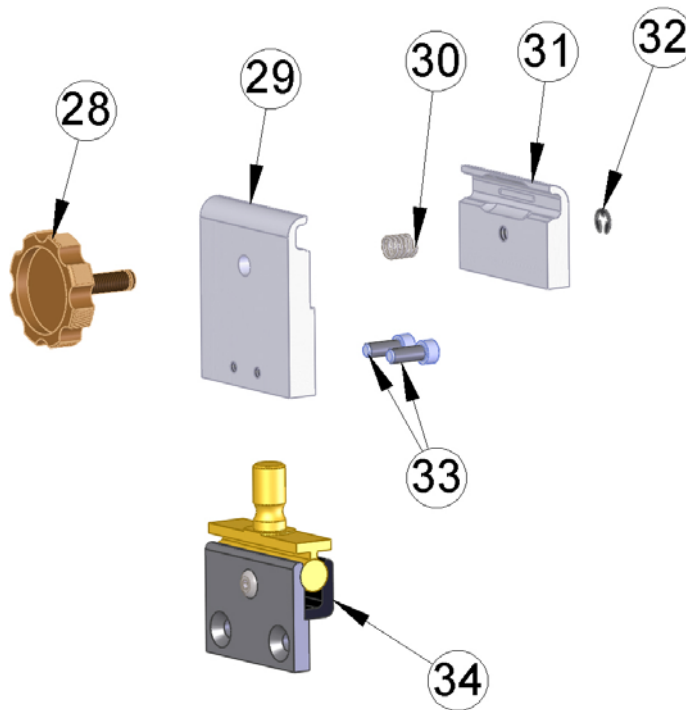


Fig 8

Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n R1290000, R1291000)

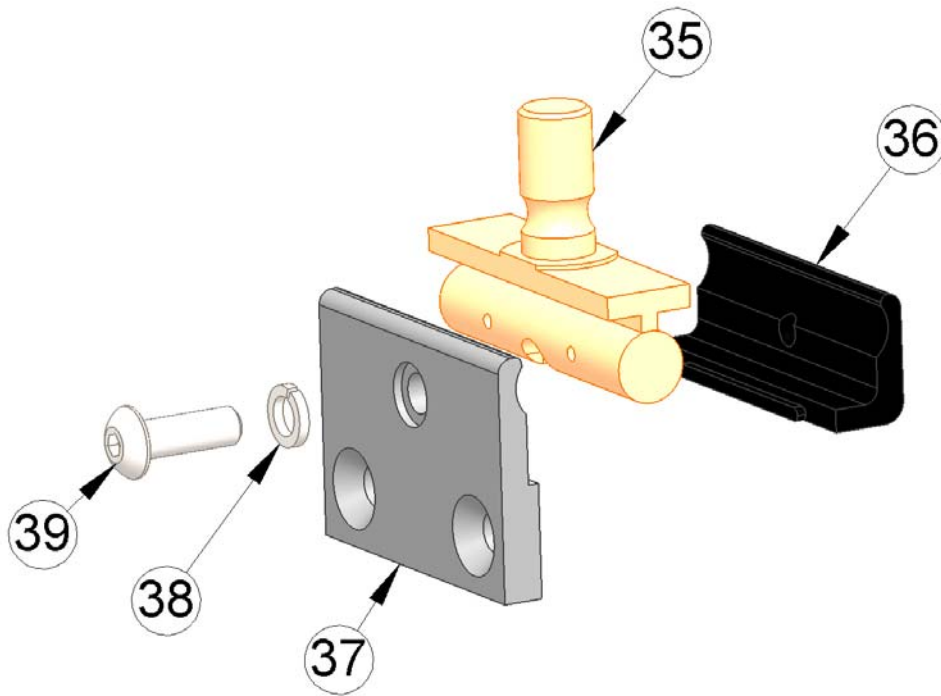


Fig 9

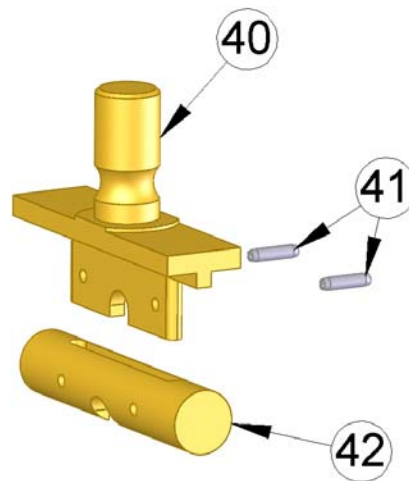


Fig 10

**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

Part List

| Fig. No | Fig. Item | Part Number | Description | Reference | Eff | QTY |
|----------------|------------------|----------------------------------|-------------------------------------------------------------|------------------|------------|---------------|
| 1 | 1 | R1290000 | Monorail System w/ 2 Visors; Complete System | | | System |
| 2 | 2 | 1290100 | Rail Assembly | | | 1 |
| 2 | 3 | 1290102 | Front Bracket Bottom | | | 2 |
| 2 | 4 | 90295A110 | Nylon Washer .06 X .405 OD - .175 ID | | | 4 |
| 2 | 5 | ALCNUT 0.1380-32-N (632NLINS) | #6-32 Acorn Nut | | | 4 |
| 2 | 6 | PS8C5CPG02NA | #8-32 X .3125 Nylon Washed PH SS Screw | | | 4 |
| 2 | 7 | MS51861-35C | #8-32 X .50 Phillips PH Self Tapping Screw | | | 4 |
| 3 | 8 | 1290101 | Rail | | | 1 |
| 3 | 9 | 1290103 | Front Bracket Top | | | 2 |
| 3 | 10 | 1290105 | Standoff | | | 2 |
| 3 | 11 | 1290104 | Rear Bracket | | | 2 |
| 4 | 12 | R1291000 | Monorail System w/ 2 Visors; Complete System | | | System |
| 5 | 13 | 1291100 | Rail Assembly | | | 1 |
| 5 | 14 | 1290108 | Bracket Front Bottom | | | 2 |
| 5 | 15 | 90295A110 | Nylon Washer .06 X .405 OD - .175 ID | | | 4 |
| 5 | 16 | ALCNUT 0.1380-32-N (632NLINS) | #6-32 Acorn Nut | | | 4 |
| 5 | 17 | PS8C5CPG02NA | #8-32 X .312 Nylon Washed PH SS Screw | | | 4 |
| 2&5 | 18 | 1290500 | Visor Assembly | | | 2 |
| 6 | 19 | 1290106 | Rail | | | 1 |
| 6 | 20 | 1290107 | Bracket Front Top | | | 2 |
| 6 | 21 | 1290105 | Standoff | | | 2 |
| 6 | 22 | 1290109 | Rear Bracket | | | 2 |
| 7 | 23 | 1120000-003 | Clamping Block Assembly, 3 RD Axis | | | 2 |
| 7 | 24 | R1110202 | Swivel Nut Plate | | | 2 |
| 7 | 25 | 1290501 | Lens | | | 2 |
| 7 | 26 | 832X716FSHCSSBP | SCR #8-32 X .437 FLH HX SH 82 SST BLK P | | | 4 |
| 7 | 27 | 832X14BSHCSSBP | SCR #8-32 X .25 HEX BHSCS SST BLK P | | | 4 |

**Rosen Sunvisor Systems CMM/ICA/IPC for Sunvisor Assembly (p/n
R1290000, R1291000)**

| | | | | | |
|----|----|------------------|----------------------------------|--|---|
| 8 | 28 | 1120104-002 | Original Thumb Knob | | 2 |
| 8 | 29 | 1120102-001 | Clamping Block Body | | 2 |
| 8 | 30 | RCBS-300-18 | Clamping Block Spring | | 2 |
| 8 | 31 | 1120101-001 | Nut Plate Standard | | 2 |
| 8 | 32 | PCS-1000-14-STZO | Clamping Block E-Clip | | 2 |
| 8 | 33 | MS16995-17B | SCR #6-32 X .375 SHCS SST BLK | | 4 |
| 8 | 34 | 1120200 | Lower Pivot Assembly | | 2 |
| 9 | 35 | 1120220 | Swivel Assembly | | 2 |
| 9 | 36 | 1120208 | Sleeve Leg | | 2 |
| 9 | 37 | 1120207 | Sleeve, Body | | 2 |
| 9 | 38 | 8HCLW | Washer #8, Lock High Collar | | 2 |
| 9 | 39 | 832X12BHSCSB | Screw, #8-32X1/2 BSHC SS BLK | | 2 |
| 10 | 40 | 1120205 | Swivel, Body | | 2 |
| 10 | 41 | MS16562-190 | Roll Pin (1/16 X ¼ SS) | | 4 |
| 10 | 42 | 1120206 | Swivel, Barrel | | 2 |