

Temporary Maintenance Instruction TMI 139-537

Tail Plane Installation - Left/right rod maintenance procedures

All AW139 Helicopters

The technical content of this document is approved under the authority of DOA nr. EASA.21J.005.

The present TMI will be evaluated for its introduction in the standard set of Technical Publication.

If no further notice is received, the present document expires on: January 21st 2022.

2021-01-21

Introduction

This TMI provides the instructions and requirements to perform the removal and installation of the left and right rods that attach the tail plane to the fin structure if the horizontal stabilizer installation P/N 3G5510A00115 is installed.

All the information reported in the subsequent pages will be updated in the IETP revision 39, Data Modules as follows:

ANNEX	DATA MODULE CODE	DATA MODULE TITLE
Annex 1	39-C-55-11-02-00A-520A-A	Left rod - Remove procedure
Annex 2	39-C-55-11-02-00A-720A-A	Left rod - Install procedure
Annex 3	39-C-55-11-03-00A-520A-A	Right rod - Remove procedure
Annex 4	39-C-55-11-03-00A-720A-A	Right rod - Install procedure

Tail Plane Installation - Left/right rod maintenance procedures

Table of contents

Refer to attached annexes

List of tables

Refer to attached annexes

List of figures

Refer to attached annexes

References

Refer to attached annexes

Preliminary Requirements

Required conditions

Refer to attached annexes

Support equipment

Refer to attached annexes

Supplies

Refer to attached annexes

Spares

Refer to attached annexes

Safety condition

Refer to attached annexes

Procedure

Refer to attached annexes

Requirement after job completion

Refer to attached annexes

**Annex 1
Left rod - Remove procedure**

Table of contents

References 1

Preliminary requirements 2

Procedure 3

Requirements After Job Completion 4

List of tables

1 References 1

2 Access points 2

3 Zones 2

4 Required Conditions 2

5 Support Equipment 2

6 Supplies 2

7 Spares 3

List of figures

1 Left rod - Remove procedure 5

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-00-60-00-00A-010A-A	Critical parts - General data
39-A-53-40-00-00A-310A-A	Tail section - Tail plane fitting bushings - General visual inspection
39-A-55-11-01-00A-310A-B	Tail plane - Fitting bushings - General visual inspection
39-C-55-11-02-00A-720A-A	Left rod - Install procedure

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The access panels 360DL and 360CL must be removed	39-A-06-41-00-00A-010A-A

Support Equipment

Table 5 Support Equipment

Nomenclature
No Support Equipment

Supplies

Table 6 Supplies

Nomenclature	Identification No.	Qty
Lint-free cloth	C011	AR
Cleaning solvent	C010	AR

Spares

Table 7 Spares

Nomenclature
No Spares

Safety Conditions

WARNING

The **Cleaning solvent (C010)** is a dangerous material. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for the solvent.

CAUTION

This component is a critical part. Be careful when you do work on the component after removal from the helicopter. A damage to the component can occur if you are not careful. Refer to **39-A-00-60-00-00A-010A-A**.

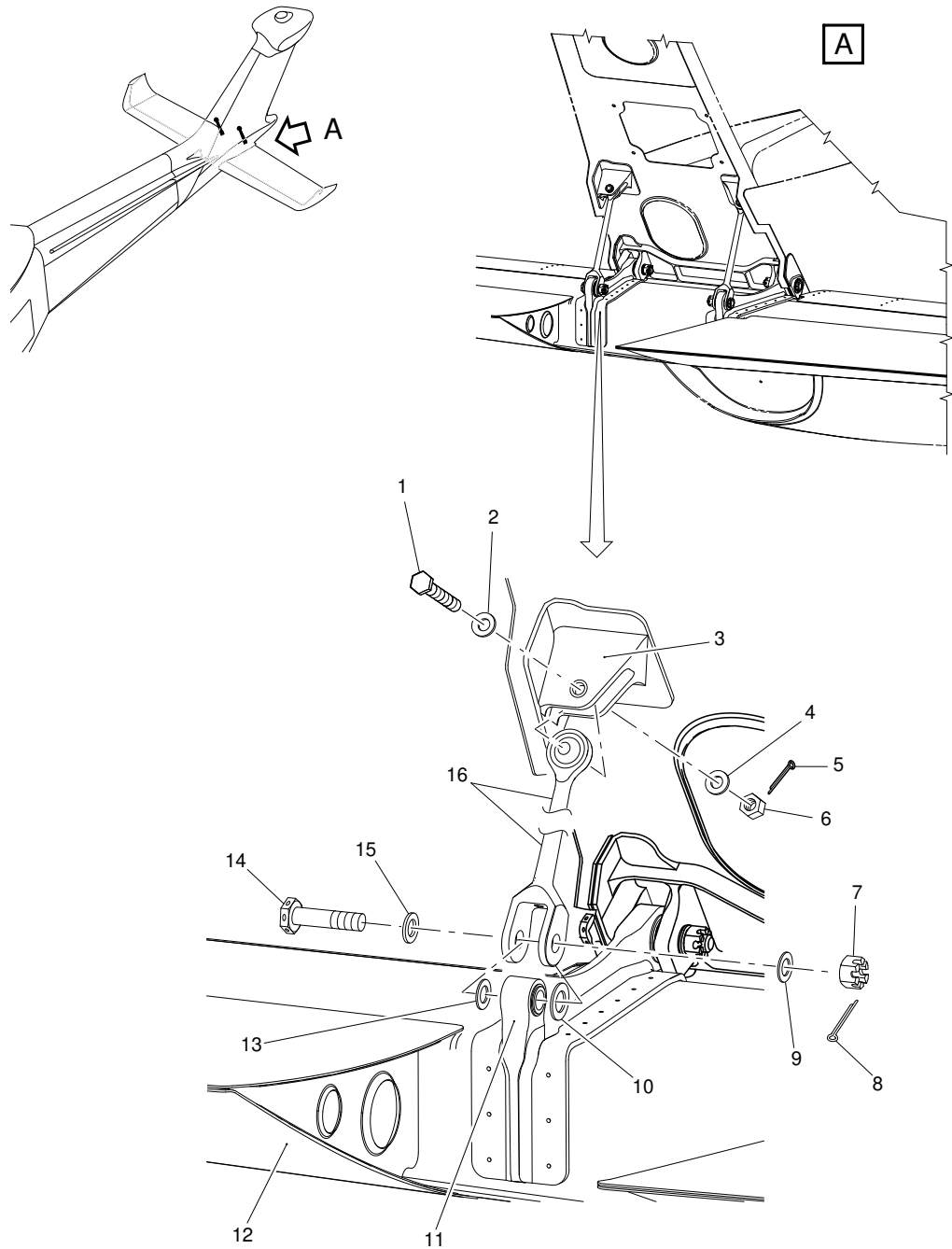
Procedure

- 1 Get access to the left rod (16, [Figure 1](#)) that attaches the tail plane (12) to the fin structure.
- 2 Remove the old corrosion inhibitor from the parts that follow with the [Lint-free cloth \(C011\)](#) and the [Cleaning solvent \(C010\)](#) :
 - The head of the bolt (1)
 - The cotter pin (5)
 - The nut (6)
 - The washer (4) (**or washers, if installed**)
 - The countersunk washer (2).
- 3 Remove the cotter pin (5) that safety the nut (6). Discard the cotter pin (5).
- 4 Remove these parts that attach the left rod (16) to the left top fitting (3):
 - The nut (6)
 - The washer (4) (**or washers, if installed**)
 - The bolt (1)
 - The countersunk washer (2).
- 5 Remove the old corrosion inhibitor from the parts that follow with the [Lint-free cloth \(C011\)](#) and the [Cleaning solvent \(C010\)](#) :
 - The head of the bolt (14)
 - The cotter pin (8)
 - The nut (7)
 - The washer (9) (**or washers**)

- The countersunk washer (15).
- 6 Remove the cotter pin (8) that safety the nut (7). Discard the cotter pin (8).
- 7 Remove these parts that attach the left rod (16) to the left tail-plane fitting (11):
- The nut (7)
 - The washer (9) (or washers)
 - The bolt (14)
 - The countersunk washer (15).
- 8 Carefully remove the left rod (16) from the left top fitting (3) and the left tail-plane fitting (11). At the same time remove the peelable washer (10) and the peelable washer (13) (or washers) from the left tail-plane fitting (11).
- 9 Discard the peelable washer (10) and the peelable washer (13) (or washers).

Requirements After Job Completion

- 1 Do a visual examination of the bushings installed in the left top fitting (3). Refer to [39-A-53-40-00-00A-310A-A](#)
- 2 Do a visual examination of the bushing installed in the left tail-plane fitting (11). Refer to [39-A-55-11-01-00A-310A-B](#)
- 3 Install the left rod. Refer to [39-C-55-11-02-00A-720A-A](#)



ICN-39-C-551102-G-00001-16792-A-003-01

Figure 1 Left rod - Remove procedure

**Annex 2
Left rod - Install procedure**

Table of contents

References 1

Preliminary requirements 2

Procedure 3

Requirements After Job Completion 5

List of tables

1 References 1

2 Access points 2

3 Zones 2

4 Required Conditions 2

5 Support Equipment 2

6 Supplies 2

7 Spares 2

List of figures

1 Left rod - Install procedure (Sheet 1 of 2) 6

1 Left rod - Install procedure (Sheet 2 of 2) 7

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-00-60-00-00A-010A-A	Critical parts - General data

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The access panels 360DL and 360CL must be removed	39-A-06-41-00-00A-010A-A

Support Equipment

Table 5 Support Equipment

Nomenclature	Identification No.	Qty
Feeler gage	ZZ-00-00	1

Supplies

Table 6 Supplies

Nomenclature	Identification No.	Qty
Corrosion inhibitor	C002	AR
Corrosion preventive compound	C075	AR
Corrosion inhibitive compound	C457	AR

Spares

Table 7 Spares

Nomenclature	Identification No.	Qty
Left rod	55-11-00-03 -015	AR

Table 7 Spares

Nomenclature	Identification No.	Qty
Cotter pin	55-11-00-03 -020	1
Cotter pin	55-11-00-03 -011	1
Washer, peelable	55-11-00-03 -013	AR
Washer, peelable	55-11-00-03 -013M	1
Washer	55-11-00-03 -008	AR
Washer	55-11-00-03 -009	AR

Safety Conditions

WARNINGS

- The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:
 - Corrosion inhibitor (C002)
 - Corrosion preventive compound (C075)
 - Corrosion inhibitive compound (C457) .
- This installation includes Vital Points (VP). During the procedure, you must obey the Local Regulations applicable to the Vital Points.

CAUTION

This component is a critical part. Examine the component for signs of structural damage before you install it on the helicopter. Refer to [39-A-00-60-00-00A-010A-A](#).

Procedure

CAUTION

The distances between the inner faces of the fork end of the left rod (16) from its centerline are not equal. Refer to the distances X and Y shown in Detail B of [Figure 1](#) to identify them.

Thus, when you put the left rod (16) in its position on the helicopter, make sure that the large distance Y is on the right side of the left tail-plane fitting (11).

- 1 Put the left rod (16, [Figure 1](#)) in its correct position between the left top fitting (3) and the left tail-plane fitting (11). **Align the holes of the left rod (16) to the hole of the left top fitting (3) and to the hole of the left tail-plane fitting (11).**
- 2 Apply the [Corrosion preventive compound \(C075\)](#) or [Corrosion inhibitive compound \(C457\)](#) only to the shank of the bolt (1). (VP)

- 3 Temporary install the bolt (1) complete with its countersunk washer (2) in the left top fitting (3) and the bearing rod end of the left rod (16). Make sure that the countersunk side of the washer (2) is against the bolt head. (VP)
- 4 Put the fork end of the left rod (16) in its position on the left tail-plane fitting (11). Align the fork end holes of the left rod (16) with the hole in the left tail-plane fitting (11).
- 5 Put the new **Washer, peelable (55-11-00-03 -013M)** (10) between the inner side (wide distance Y side) of the left rod (16) and the outer side of the left tail-plane fitting (11).
- 6 Apply the **Corrosion preventive compound (C075)** or **Corrosion inhibitive compound (C457)** only to the shank of the bolt (14). (VP)
- 7 Temporary install the bolt (14) complete with its countersunk washer (15) in the left rod (16) and the left tail-plane fitting (11). Make sure that the countersunk side of the washer (15) is against the bolt head. (VP)
- 8 **Measure the distance between the left inner face of the rod end fork and the left outer face of the left tail-plane fitting (11). Use an applicable Feeler gage (ZZ-00-00) to get this distance.**

Note

You can install **a maximum of** two peelable washers (13) between the inner side (short distance X side) of the left rod (16) and the outer side of the left tail-plane fitting (11).

- 9 Prepare the correct quantity of the new **Washer, peelable (55-11-00-03 -013)** (13) to install. Get the correct thickness of the peelable washer (13) (**or washers**) to prevent gap between the left rod (16) and the left tail-plane fitting (11). Refer also to the Section D-D in the Sheet 2 of **Figure 1**.

Note

You can install a maximum of two **Washer (55-11-00-03 -009)** (4) under the nut (6) to get the correct grip length of the bolt (1). (VP)

- 10 Install the remaining parts that attach the left rod (16) to the left top fitting (3):
- The washer (4) (**or washers, if necessary**) (VP)
 - The nut (6). (VP)
- 11 Torque the nut (6) to 3.5 thru 10.0 N m (31 thru 88 lbf in). (VP)
- 12 Safety the nut (6) to the bolt (1) with the new **Cotter pin (55-11-00-03 -020)** (5). (VP)
- 13 Remove the bolt (14) and the countersunk washer (15) from the left rod (16) and the left tail-plane fitting (11). Do not remove the countersunk washer (15) from the bolt (14). (VP)
- 14 Correctly align the fork end holes of the left rod (16) with the hole in the left tail-plane fitting (11) **and the hole of the peelable washer (10)** . At the same time put the prepared peelable washer (13) (**or washers**) in its position between the left rod (16) and the left tail-plane fitting (11). Refer to the Section D-D in the Sheet 2 of **Figure 1**.

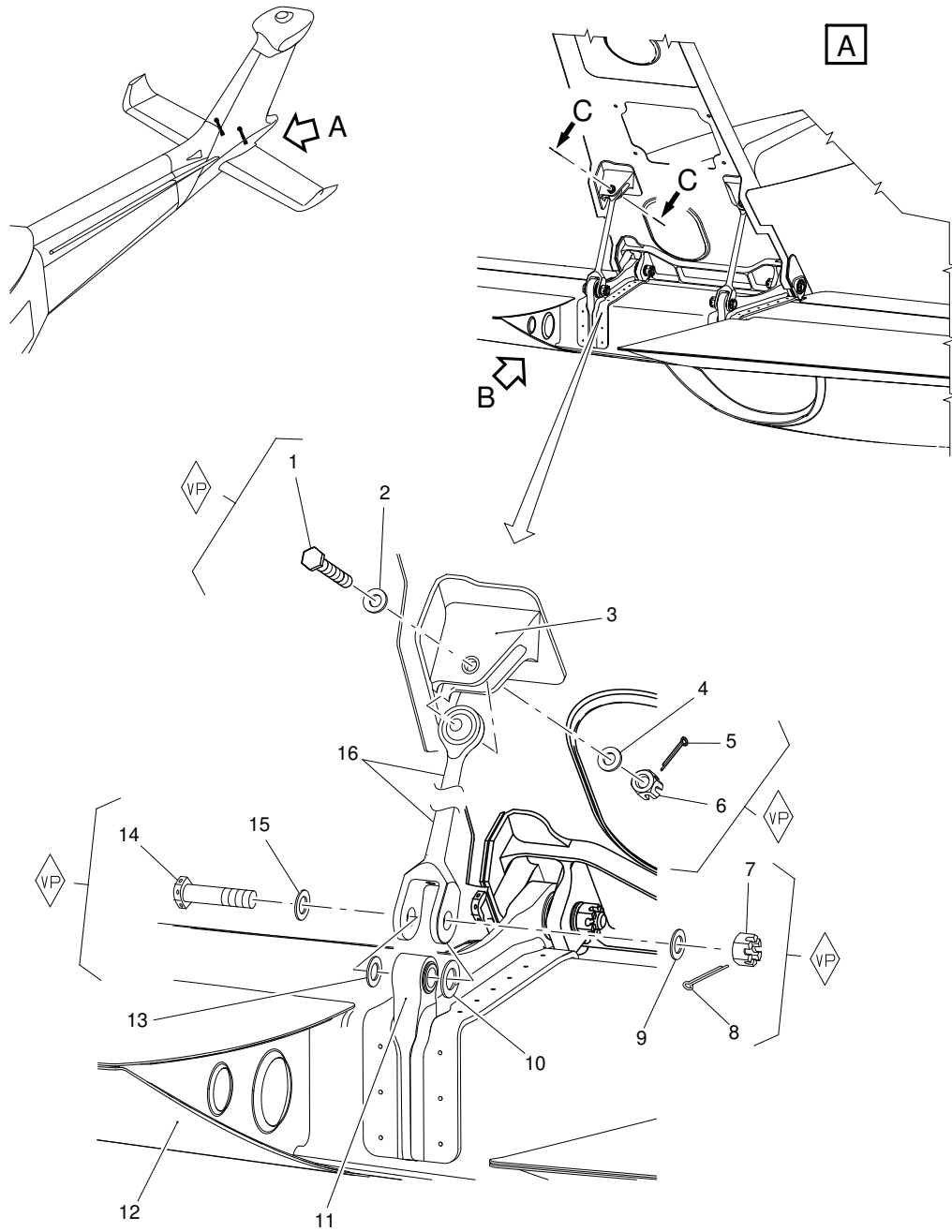
Note

You can install a maximum of two **Washer (55-11-00-03 -008)** (9) under the nut (7) to get the correct grip length of the bolt (14). (VP)

- 15 Install these parts that attach the left rod (16) to the left tail-plane fitting (11):
- The bolt (14) **complete with** the countersunk washer (15) (VP)
 - The washer (9) (or washers) (VP)
 - The nut (7). (VP)
- 16 Torque the nut (7) to 5.0 thru 20.0 N m (44.3 thru 177.0 lbf in). (VP)
- 17 Safety the nut (7) to the bolt (14) with the new **Cotter pin (55-11-00-03 -011)** (8). (VP)
- 18 Apply the **Corrosion inhibitor (C002)** to the parts that follow:
- The head of the bolt (1) (VP)
 - The visible surface of the countersunk washer (2)
 - The visible surface of the washer (4) (if installed)
 - The nut (6) and the cotter pin (5) (VP)
 - The head of the bolt (14)
 - The visible surface of the countersunk washer (15)
 - The visible surface of the washer (9) (or washers)
 - The nut (7) and the cotter pin (8). (VP)

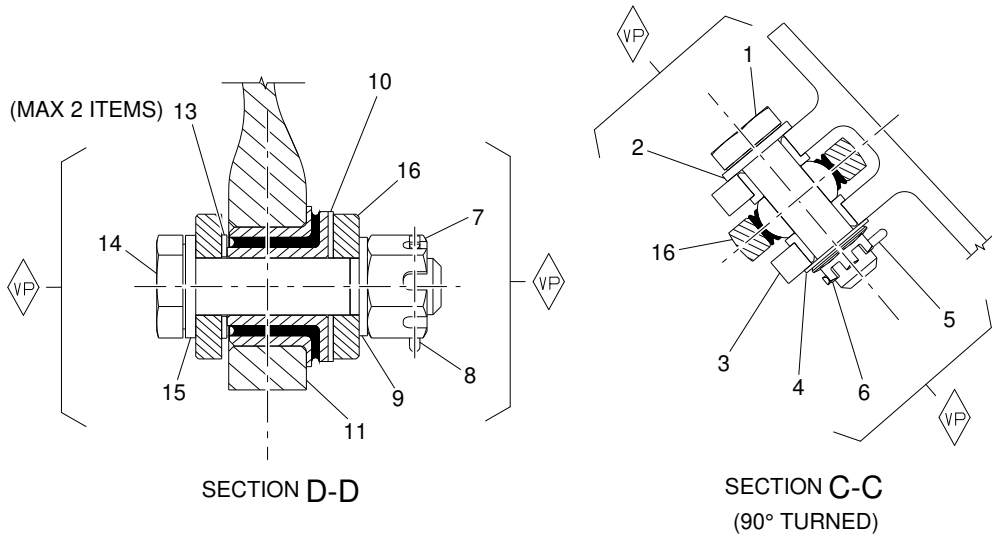
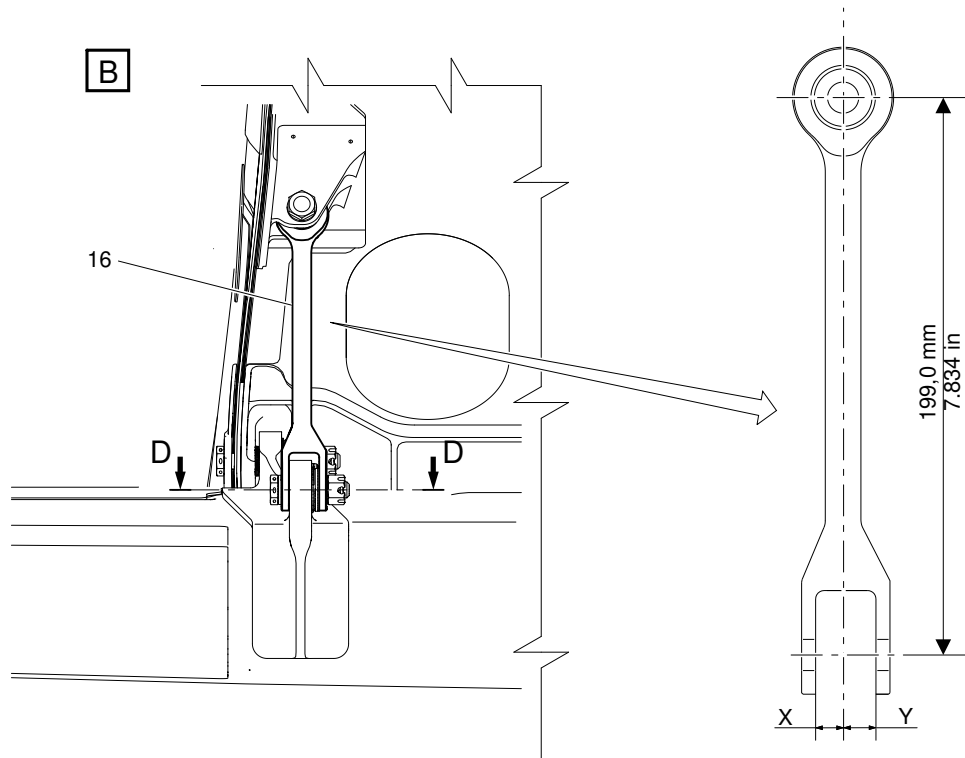
Requirements After Job Completion

- 1 Remove all the tools and the other items from the work area. Make sure that the work area is clean
- 2 Install the access panels 360DL and 360CL. Refer to [39-A-06-41-00-00A-010A-A](#)



ICN-39-C-551102-G-00001-31087-A-002-01

Figure 1 (Sheet 1 of 2) Left rod - Install procedure



ICN-39-C-551102-G-00001-31088-A-001-01

Figure 1 (Sheet 2 of 2) Left rod - Install procedure

**Annex 3
Right rod - Remove procedure**

Table of contents

References	1
Preliminary requirements	2
Procedure	3
Requirements After Job Completion	4

List of tables

1 References	1
2 Access points	2
3 Zones	2
4 Required Conditions	2
5 Support Equipment	2
6 Supplies	2
7 Spares	3

List of figures

1 Right rod - Remove procedure	5
--------------------------------------	---

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-00-60-00-00A-010A-A	Critical parts - General data
39-A-53-40-00-00A-310A-A	Tail section - Tail plane fitting bushings - General visual inspection
39-A-55-11-01-00A-310A-B	Tail plane - Fitting bushings - General visual inspection
39-C-55-11-03-00A-720A-A	Right rod - Install procedure

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The access panels 360DL and 360CL must be removed	39-A-06-41-00-00A-010A-A

Support Equipment

Table 5 Support Equipment

Nomenclature
No Support Equipment

Supplies

Table 6 Supplies

Nomenclature	Identification No.	Qty
Lint-free cloth	C011	AR
Cleaning solvent	C010	AR

Spares

Table 7 Spares

Nomenclature
No Spares

Safety Conditions

WARNING

The **Cleaning solvent (C010)** is a dangerous material. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for the solvent.

CAUTION

This component is a critical part. Be careful when you do work on the component after removal from the helicopter. A damage to the component can occur if you are not careful. Refer to **39-A-00-60-00-00A-010A-A**.

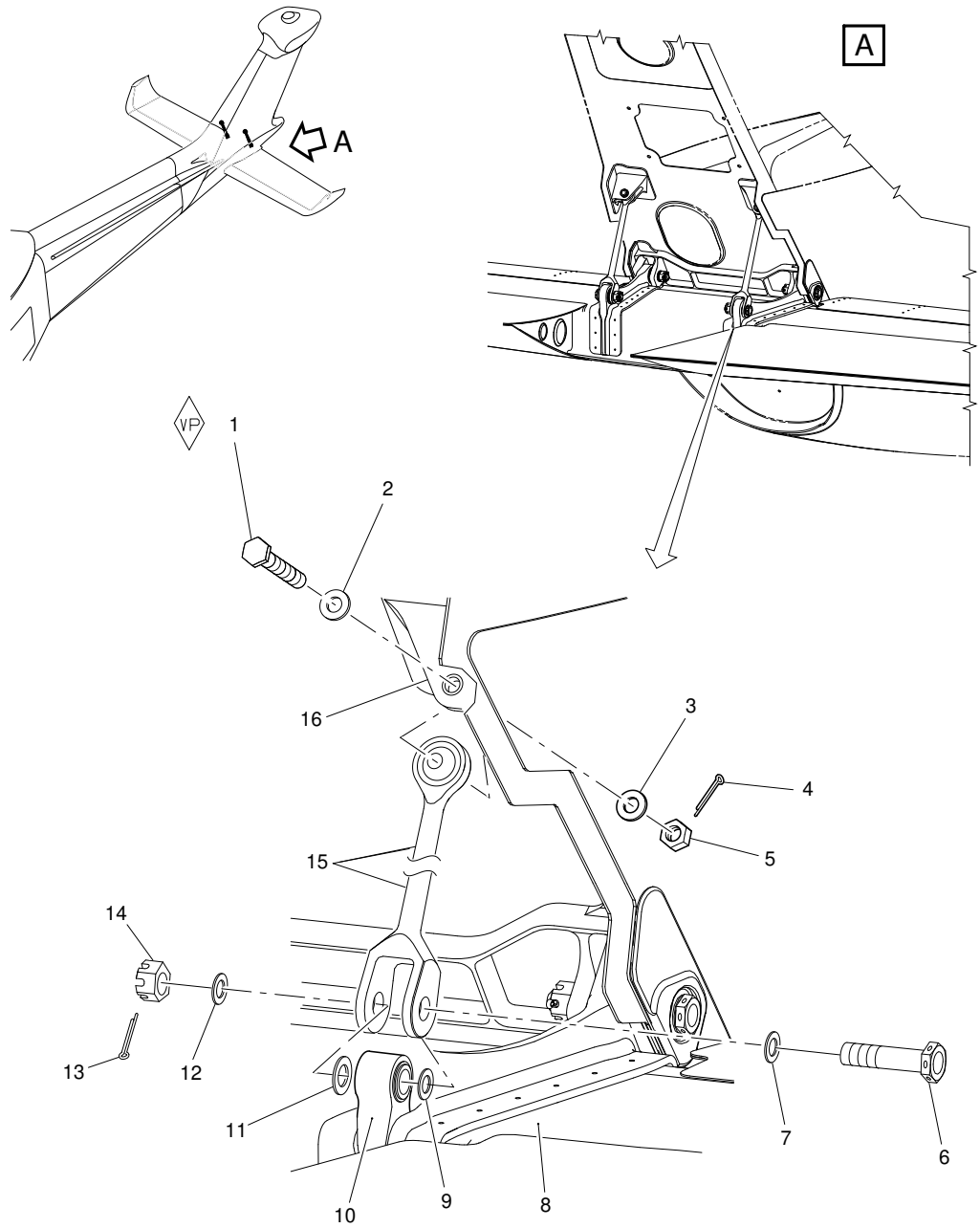
Procedure

- 1 Get access to the right rod (15, [Figure 1](#)) that attaches the tail plane (8) to the fin structure.
- 2 Remove the old corrosion inhibitor from the parts that follow with the [Lint-free cloth \(C011\)](#) and the [Cleaning solvent \(C010\)](#) :
 - The head of the bolt (1)
 - The cotter pin (4)
 - The nut (5)
 - The washer (3) (**or washers, if installed**)
 - The countersunk washer (2).
- 3 Remove the cotter pin (4) that safety the nut (5). Discard the cotter pin (4).
- 4 Remove these parts that attach the right rod (15) to the right top fitting (16):
 - The nut (5)
 - The washer (3) (**or washers, if installed**)
 - The bolt (1)
 - The countersunk washer (2).
- 5 Remove the old corrosion inhibitor from the parts that follow with the [Lint-free cloth \(C011\)](#) and the [Cleaning solvent \(C010\)](#) :
 - The head of the bolt (6)
 - The cotter pin (13)
 - The nut (14)
 - The washer (12) (**or washers**)

- The countersunk washer (7).
- 6 Remove the cotter pin (13) that safety the nut (14). Discard the cotter pin (13).
- 7 Remove these parts that attach the right rod (15) to the right tail-plane fitting (10):
- The nut (14)
 - The washer (12) (or washers)
 - The bolt (6)
 - The countersunk washer (7).
- 8 Carefully remove the right rod (15) from the right top fitting (16) and the right tail-plane fitting (10). At the same time remove the peelable washer (11) and the peelable washer (9) (or washers) from the right tail-plane fitting (10).
- 9 Discard the peelable washer (11) and the peelable washer (9) (or washers).

Requirements After Job Completion

- 1 Do a visual examination of the bushings installed in the right top fitting (16). Refer to [39-A-53-40-00-00A-310A-A](#)
- 2 Do a visual examination of the bushing installed in the right tail-plane fitting (10). Refer to [39-A-55-11-01-00A-310A-B](#)
- 3 Install the right rod. Refer to [39-C-55-11-03-00A-720A-A](#)



ICN-39-C-551103-G-00001-16793-A-003-01

Figure 1 Right rod - Remove procedure

**Annex 4
Right rod - Install procedure**

Table of contents

References 1

Preliminary requirements 2

Procedure 3

Requirements After Job Completion 5

List of tables

1 References 1

2 Access points 2

3 Zones 2

4 Required Conditions 2

5 Support Equipment 2

6 Supplies 2

7 Spares 2

List of figures

1 Right rod - Install procedure (Sheet 1 of 2) 6

1 Right rod - Install procedure (Sheet 2 of 2) 7

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-00-60-00-00A-010A-A	Critical parts - General data

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The access panels 360DL and 360CL must be removed	39-A-06-41-00-00A-010A-A

Support Equipment

Table 5 Support Equipment

Nomenclature	Identification No.	Qty
Feeler gage	ZZ-00-00	1

Supplies

Table 6 Supplies

Nomenclature	Identification No.	Qty
Corrosion inhibitor	C002	AR
Corrosion preventive compound	C075	AR
Corrosion inhibitive compound	C457	AR

Spares

Table 7 Spares

Nomenclature	Identification No.	Qty
Right rod	55-11-00-03 -021	AR

Table 7 Spares

Nomenclature	Identification No.	Qty
Cotter pin	55-11-00-03 -026	1
Cotter pin	55-11-00-03 -011	1
Washer, peelable	55-11-00-03 -013	AR
Washer, peelable	55-11-00-03 -013M	1
Washer	55-11-00-03 -008	AR
Washer	55-11-00-03 -009	AR

Safety Conditions

WARNINGS

- The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:
 - Corrosion inhibitor (C002)
 - Corrosion preventive compound (C075)
 - Corrosion inhibitive compound (C457) .
- This installation includes Vital Points (VP). During the procedure, you must obey the Local Regulations applicable to the Vital Points.

CAUTION

This component is a critical part. Examine the component for signs of structural damage before you install it on the helicopter. Refer to [39-A-00-60-00-00A-010A-A](#).

Procedure

CAUTION

The distances between the inner faces of the fork end of the right rod (15) from its centerline are not equal. Refer to the distances X and Y shown in Detail B of [Figure 1](#) to identify them.

Thus, when you put the right rod (15) in its position on the helicopter, make sure that the large distance Y is on the left side of the right tail-plane fitting (10).

- 1 Put the right rod (15, [Figure 1](#)) in its correct position between the right top fitting (16) and the right tail-plane fitting (10). **Align the holes of the right rod (15) to the hole of the right top fitting (16) and to the hole of the right tail-plane fitting (10).**
- 2 Apply the [Corrosion preventive compound \(C075\)](#) or [Corrosion inhibitive compound \(C457\)](#) only to the shank of the bolt (1). (VP)

- 3 Temporary install the bolt (1) complete with its countersunk washer (2) in the right top fitting (16) and the bearing rod end of the right rod (15). Make sure that the countersunk side of the washer (2) is against the bolt head. (VP)
- 4 Put the fork end of the right rod (15) in its position on the right tail-plane fitting (10). Align the fork end holes of the right rod (15) with the hole in the right tail-plane fitting (10).
- 5 Put the new **Washer, peelable (55-11-00-03 -013M)** (11) between the inner side (wide distance Y side) of the right rod (15) and the outer side of the right tail-plane fitting (10).
- 6 Apply the **Corrosion preventive compound (C075)** or **Corrosion inhibitive compound (C457)** only to the shank of the bolt (6). (VP)
- 7 Temporary install the bolt (6) complete with its countersunk washer (7) in the right rod (15) and the right tail-plane fitting (10). Make sure that the countersunk side of the washer (7) is against the bolt head. (VP)
- 8 **Measure the distance between the right inner face of the rod end fork and the right outer face of the right tail-plane fitting (10). Use an applicable Feeler gage (ZZ-00-00) to get this distance.**

Note

You can install **a maximum of** two peelable washers (9) between the inner side (short distance X side) of the right rod (15) and the outer side of the right tail-plane fitting (10).

- 9 Prepare the correct quantity of the new **Washer, peelable (55-11-00-03 -013)** (9) to install. Get the correct thickness of the peelable washers (9) **(or washers)** to prevent gap between the right rod (15) and the right tail-plane fitting (10). Refer also to the Section D-D in the Sheet 2 of **Figure 1**.

Note

You can install a maximum of two **Washer (55-11-00-03 -009)** (3) under the nut (5) to get the correct grip length of the bolt (1). (VP)

- 10 Install the remaining parts that attach the right rod (15) to the right top fitting (16):
- The washer (3) **(or washers, if necessary)** (VP)
 - The nut (5). (VP)
- 11 Torque the nut (5) to 3.5 thru 10.0 N m (31 thru 88 lbf in). (VP)
- 12 Safety the nut (5) to the bolt (1) with the new **Cotter pin (55-11-00-03 -026)** (4). (VP)
- 13 Remove the bolt (6) and the countersunk washer (7) from the right rod (15) and the right tail-plane fitting (10). Do not remove the countersunk washer (7) from the bolt (6). (VP)
- 14 Correctly align the fork end holes of the right rod (15) with the hole in the right tail-plane fitting (10) **and the hole of the peelable washer (11)**. At the same time put the prepared peelable washer (9) **(or washers)** in its position between the right rod (15) and the right tail-plane fitting (10). Refer to the Section D-D in the Sheet 2 of **Figure 1**.

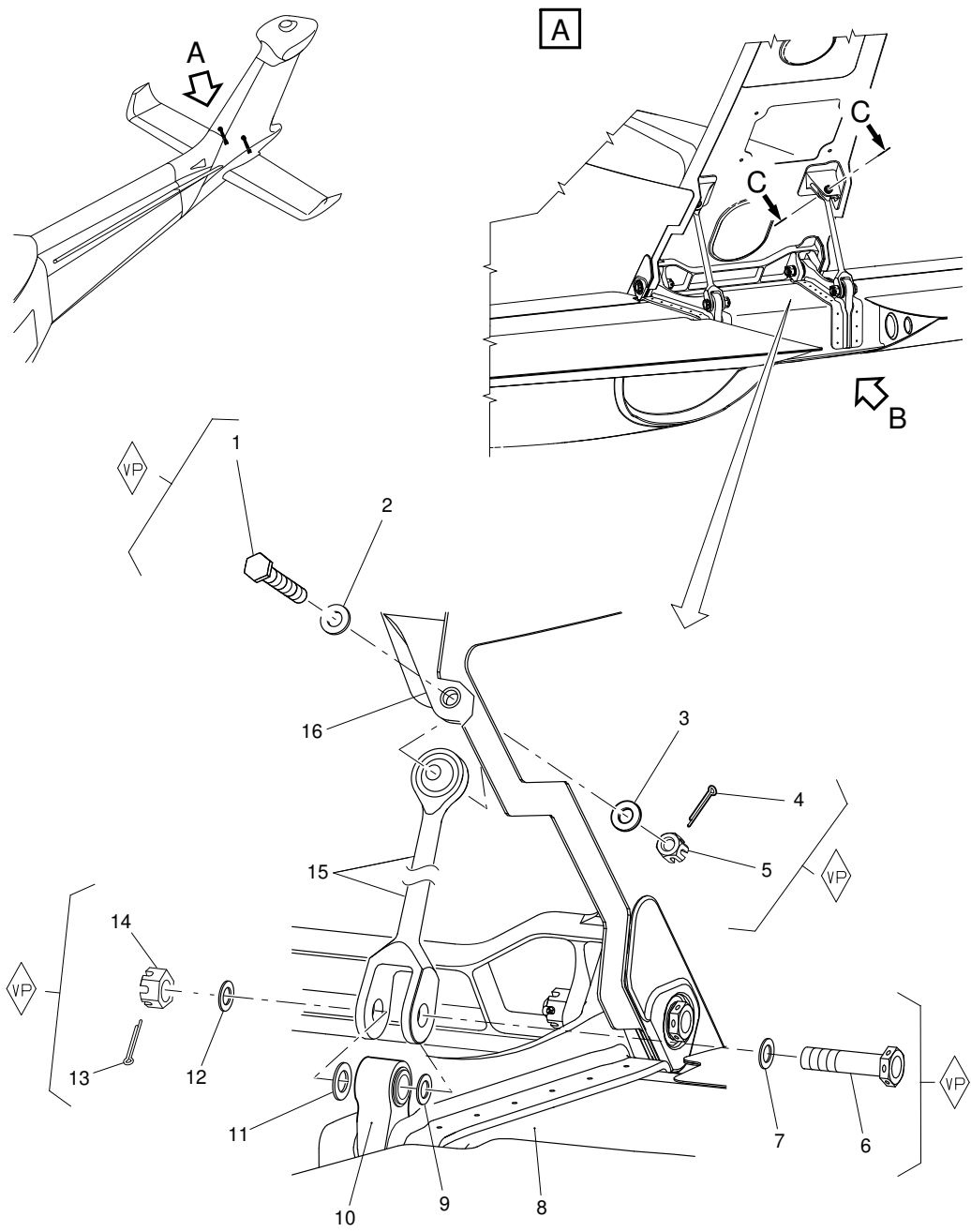
Note

You can install a maximum of two **Washer (55-11-00-03 -008)** (12) under the nut (14) to get the correct grip length of the bolt (6). (VP)

- 15 Install these parts that attach the right rod (15) to the right tail-plane fitting (10):
- The bolt (6) **complete with** the countersunk washer (7) (VP)
 - The washer (or washers) (12) (VP)
 - The nut (14). (VP)
- 16 Torque the nut (14) to 5.0 thru 20.0 N m (44.3 thru 177.0 lbf in). (VP)
- 17 Safety the nut (14) to the bolt (6) with the new **Cotter pin (55-11-00-03 -011)** (13). (VP)
- 18 Apply the **Corrosion inhibitor (C002)** to the parts that follow:
- The head of the bolt (1) (VP)
 - The visible surface of the countersunk washer (2)
 - The visible surface of the washer (3) (if installed)
 - The nut (5) and the cotter pin (4) (VP)
 - The head of the bolt (6)
 - The visible surface of the countersunk washer (7)
 - The visible surface of the washer (12) (or washers)
 - The nut (14) and the cotter pin (13). (VP)

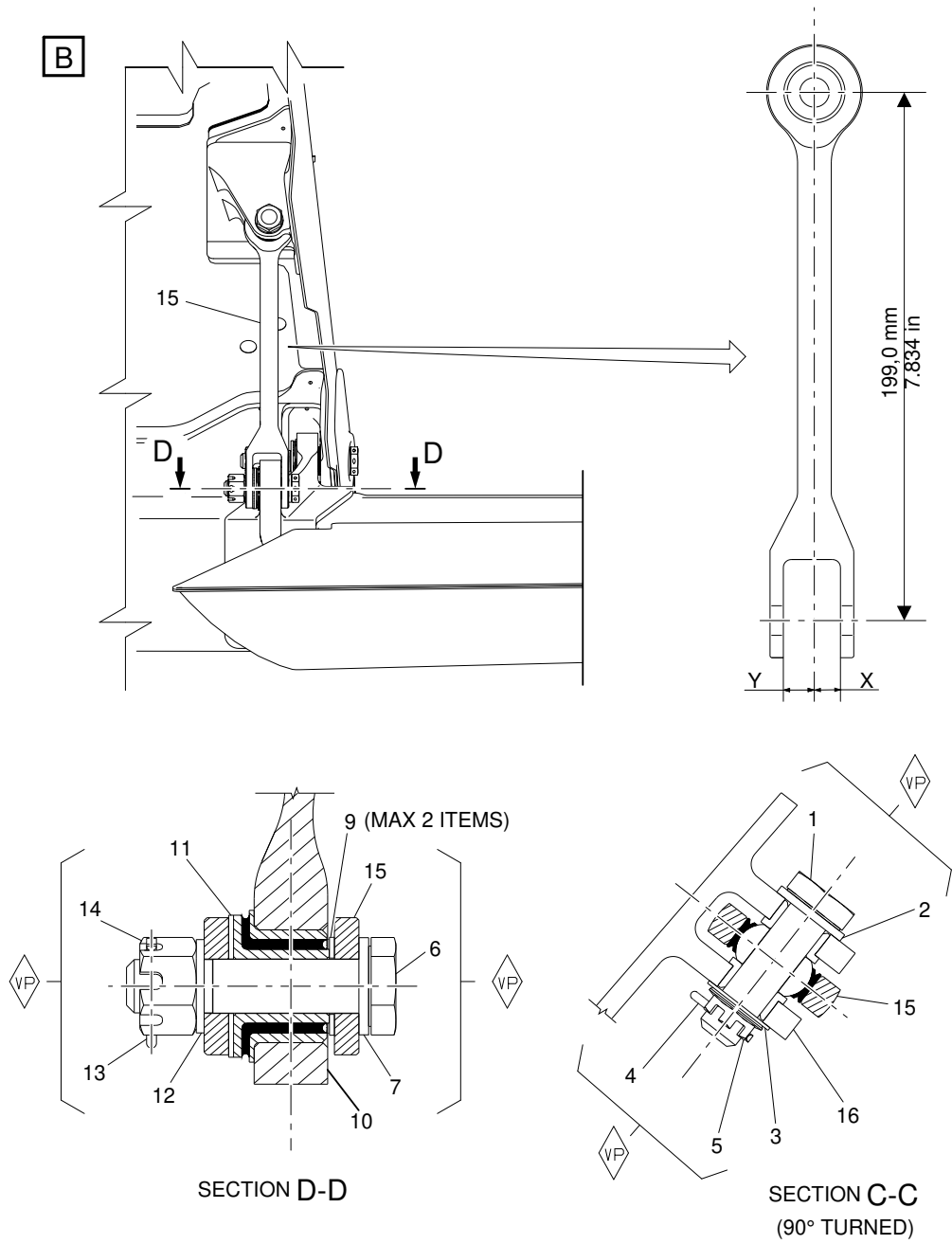
Requirements After Job Completion

- 1 Remove all the tools and the other items from the work area. Make sure that the work area is clean
- 2 Install the access panels 360DL and 360 CL. Refer to [39-A-06-41-00-00A-010A-A](#)



ICN-39-C-551103-G-00001-31089-A-002-01

Figure 1 (Sheet 1 of 2) Right rod - Install procedure



ICN-39-C-551103-G-00001-31090-A-001-01

Figure 1 (Sheet 2 of 2) Right rod - Install procedure