

TECHNICAL BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 230-03-36

Date June 18, 2003

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DATE
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MODEL AFFECTED: 230

SUBJECT: TAIL ROTOR GUARD SUPPORT, IMPROVEMENT OF

HELICOPTERS AFFECTED: All Model 230 Helicopters

COMPLIANCE: At Customer's Option

DESCRIPTION:

There are two supports that are made from aluminum castings that retain the tail rotor guard installation. The forward support 222-035-168-101 is attached to the tailboom and aft support 222-035-231-105 is part of the lower vertical fin. Reports indicate that hole elongation occurs in the forward and aft supports of the tail rotor guard. This bulletin introduces a bushing in the forward and aft supports to maintain the correct tolerance for mounting hardware.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

Approximately 8.0 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIALS:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
21-008A11-7	Bushing	1
21-010A15-8	Bushing	1

Consumable Material:

The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
TT-P-1757	Zinc Chromate Primer	1	C-201
MIL-P-23377 (note 1)	Epoxy Polyamide Primer	1	C-204

NOTE 1 :

Use primer MIL-P-85582, TY1, CL2 (C-246) as an alternate for MIL-P-23377.

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-230-MM-5

PUBLICATIONS AFFECTED:

BHT-230-MM-5

ACCOMPLISHMENT INSTRUCTIONS:

Forward Support Modification:

1. Remove tail rotor guard assembly 222-035-350-105. Retain hardware for re-use. Replace any damaged hardware. Refer to BHT-230-MM-5 for instructions. Refer to Figure 1 for location.

-NOTE-

Bushing is only added to the RH lug of the forward support and to the LH lug of the aft support.

2. Inspect exposed area of fitting for corrosion and damage, visually inspect area for cracks using a 10X magnifying glass. If additional damage is found then contact Bell Helicopter Product Support.
3. Drill and ream hole in support 222-035-168-101. Reamed hole must be perpendicular to surface "A" to within 0.005 inch (0.13mm). Refer to figure 2, sheet 1 for dimensions. Do not modify existing bushing install.
4. Debur edges of hole and clean area.

-CAUTION-

Bushing will be thermal fit into support. Do not apply side loads on support while pressing in bushing.

-NOTE-

Do not ream final inside diameter of bushing 21-010A15-8 at this time.

-NOTE-

Primer TT-P-1757 is used on bushing during Installation in lieu of epoxy primer MIL-P-23377 to facilitate bushing removal during future replacement.

5. Apply primer TT-P-1757 to new bushing and reamed hole. Thermal fit new bushing 21-010A15-8 into support while primer is still wet. Ensure bushing is flush with both sides of lug. Refer to BHT-ALL-SPM, section 8-10 for bushing installation instructions. Allow primer to cure.
6. Ream inside diameter of bushing in line with opposite bushing. Refer to figure 2, sheet 1 for dimensions.
7. Prime all bare metal areas using MIL-P-23377. Re-finish as required.

Aft. Support Modification:

1. Remove tail rotor guard assembly 222-035-350-105, if installed. Retain hardware for re-use. Replace any damaged hardware. Refer to figure 1 for location.
2. Inspect exposed area of fitting for corrosion and damage, visually inspect area for cracks using a 10X magnifying glass. If additional damage is found then contact Bell Helicopter Product Support.
3. Drill and ream hole in support 222-035-231-105. Reamed hole must be perpendicular to surface "A" to within 0.005 inch (0.13mm). Refer to figure 3, sheet 1 for dimensions. Do not modify existing bushing installation.
4. Debur edges of hole and clean area.

-NOTE-

Do not ream final inside diameter of bushing 21-008A11-7 at this time.

5. Locally machine new bushing 21-008A11-7 to length and chamfered as shown in figure 3, sheet 2.

-CAUTION-

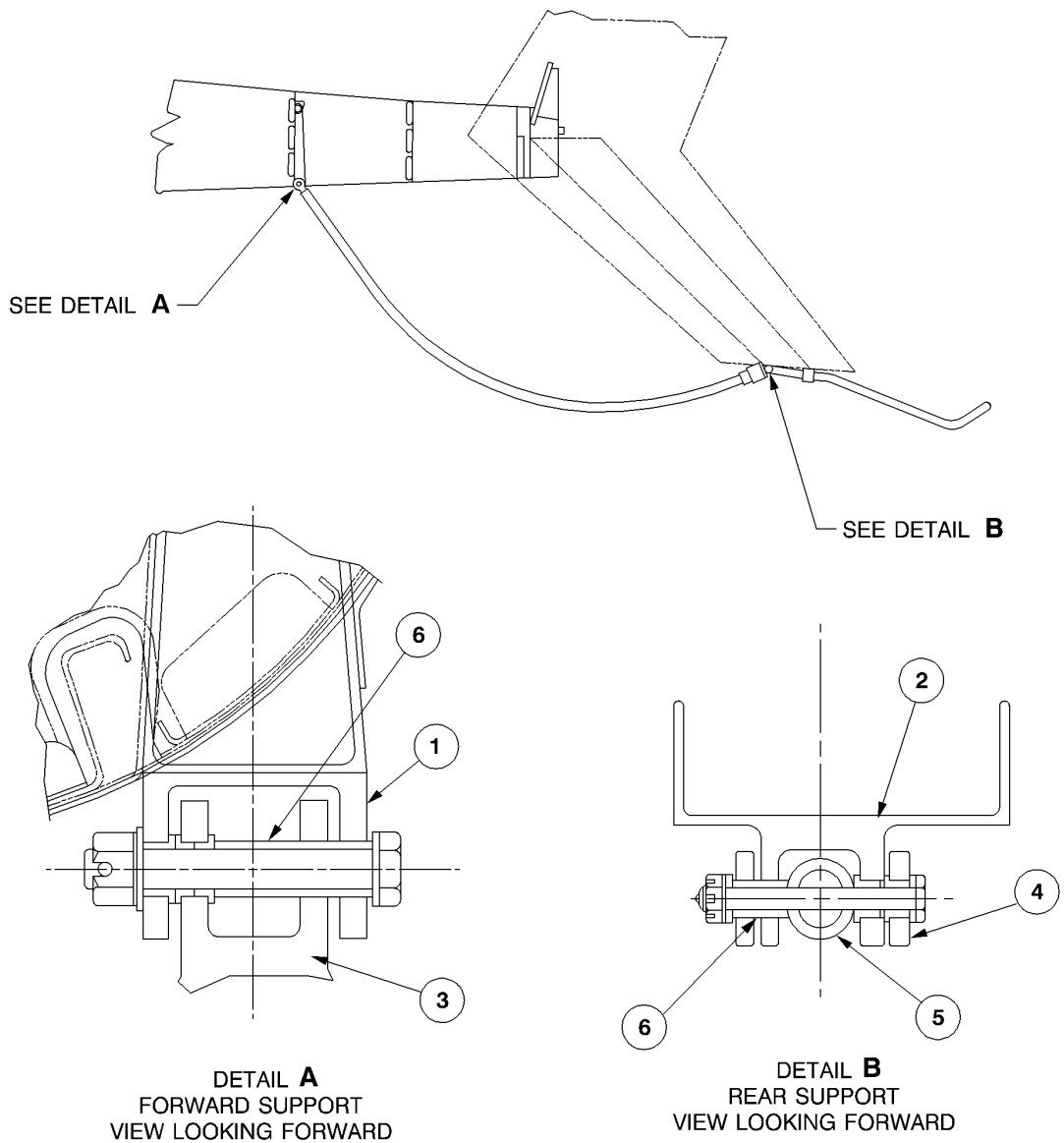
Bushing will be thermal fit into support. Do not apply side loads on support while pressing in bushing.

-NOTE-

Primer TT-P-1757 is used on bushing during Installation in lieu of epoxy primer MIL-P-23377, to facilitate bushing removal during future replacement.

6. Apply primer TT-P-1757 to new bushing and reamed hole. Thermal fit new bushing 21-008A11-7 into support while primer is still wet. Ensure bushing is flush with both sides of lug. Refer to BHT-ALL-SPM, section 8-10 for bushing installation instructions. Allow primer to cure.
7. Ream inside diameter of bushing in line with opposite bushing. Refer to figure 3, sheet 1 for dimensions.
8. Re-assemble tail rotor guard installation as indicated in BHT-230-MM-5 and figure 2, sheet 2, figure 3 sheet 3 of this bulletin.

9. Prime all bare metal areas using MIL-P-23377. Re-finish as required.
10. Annotate aircraft records to reflect compliance with this bulletin.

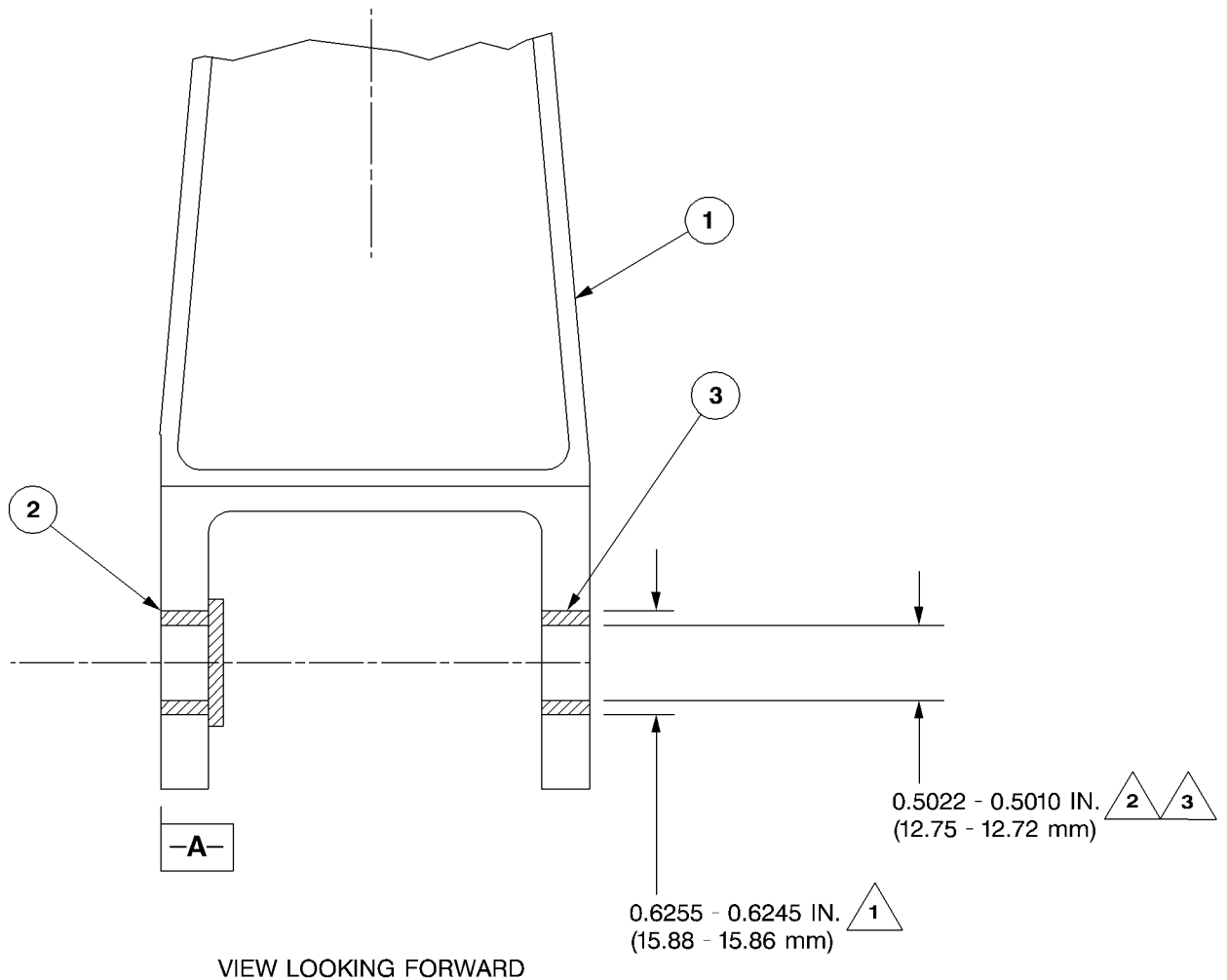


LEGEND:

- 1. Forward support 222-035-168-101
- 2. Rear support 222-035-231-105
- 3. Forward tail rotor guard fitting 222-035-351-105
- 4. Rear tail rotor guard fitting 222-035-352-105
- 5. Tail skid 222-035-233-103
- 6. Existing bushing

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Figure 1 Tail Rotor Guard Installation (Before Modification)



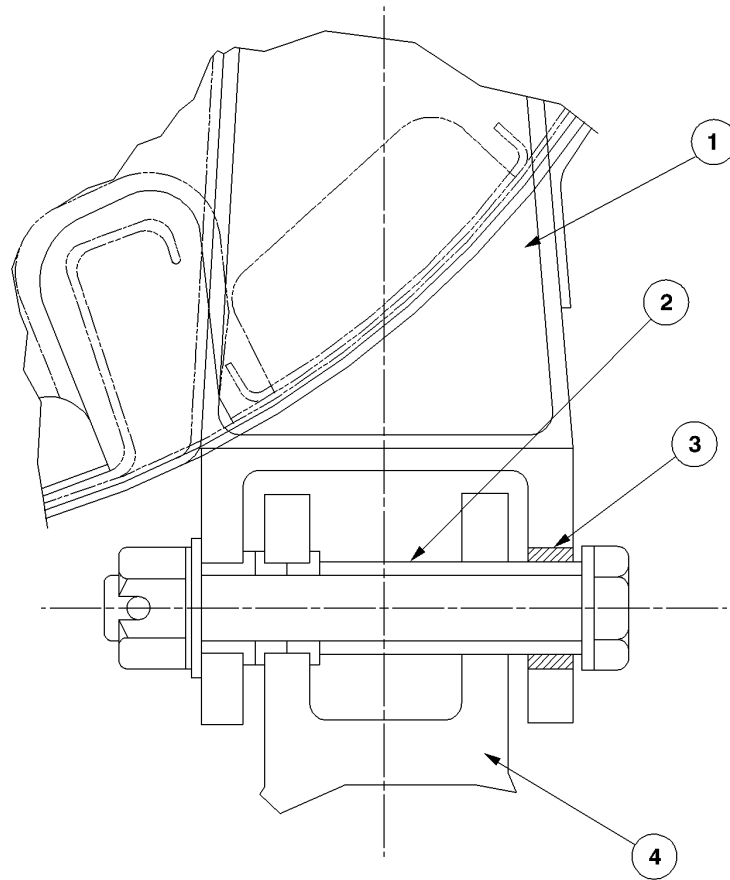
LEGEND:

- 1. Forward support 222-035-168-101
- 2. Existing bushing
- 3. Added bushing 21-010A15-8

NOTES:

- $\triangle 1$ Hole in casting must be perpendicular to surface -A- to within 0.005 inch (0.13 mm).
- $\triangle 2$ Install bushing 21-010A15-8 with wet zinc chromate primer TT-P-1757.
- $\triangle 3$ Ream I.D. of bushing inline with opposite existing bushing.

Figure 2 Forward Support Modification - (sheet 1 of 2)



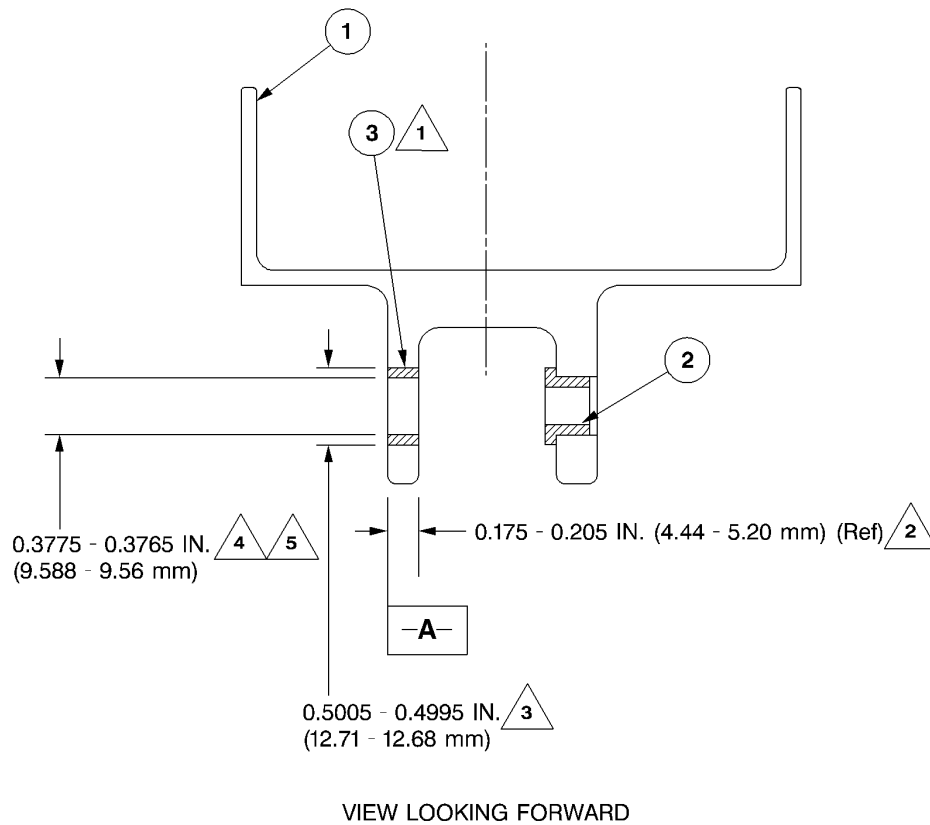
VIEW LOOKING FORWARD

LEGEND:

1. Forward support 222-035-168-101
2. Existing bushing
3. Added bushing 21-010A15-8
4. Forward tail rotor guard fitting 222-035-351-105 (Ref)

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Figure 2 Forward Support – After Modification - (sheet 2 of 2)



LEGEND:

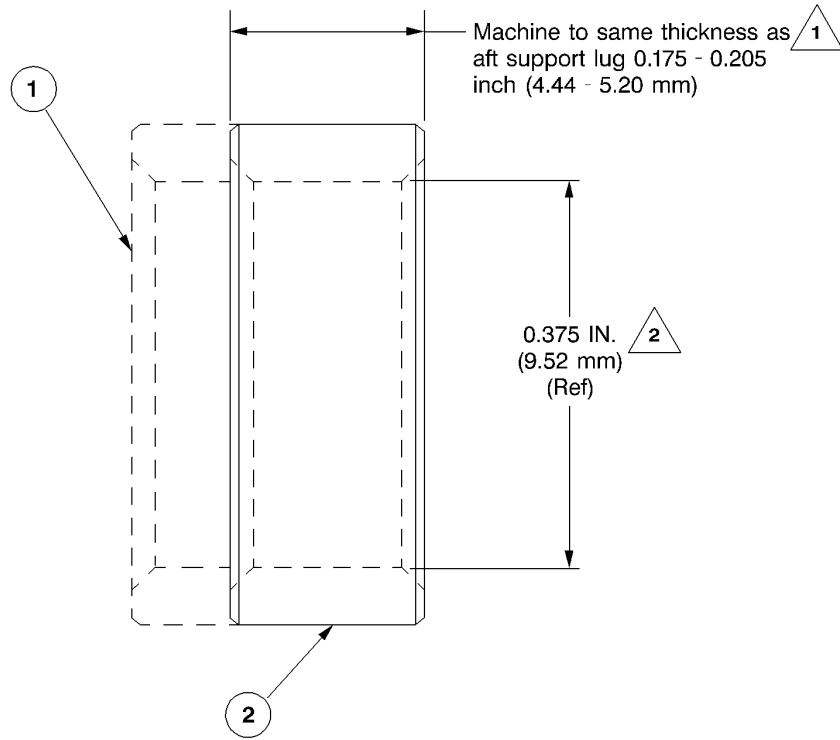
- 1. Rear support 222-035-231-105
- 2. Existing bushing
- 3. New bushing 21-008A11-7FM (Ref)

NOTES:

- 1 Machine new bushing 21-008A11-7 to existing lug thickness.
- 2 The lug on the aft casting may vary in thickness from 0.175 inch (4.44 mm) - 0.205 inch (5.20 mm).
- 3 Hole in casting must be perpendicular to surface -A- to within 0.005 inch (0.13 mm).
- 4 Install bushing 21-008A11-7FM with wet zinc chromate primer TT-P-1757.
- 5 Ream I.D. of bushing 21-008A11-7FM inline with opposite existing bushing.

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Figure 3 Aft Support Modification - (sheet 1 of 3)



LEGEND:

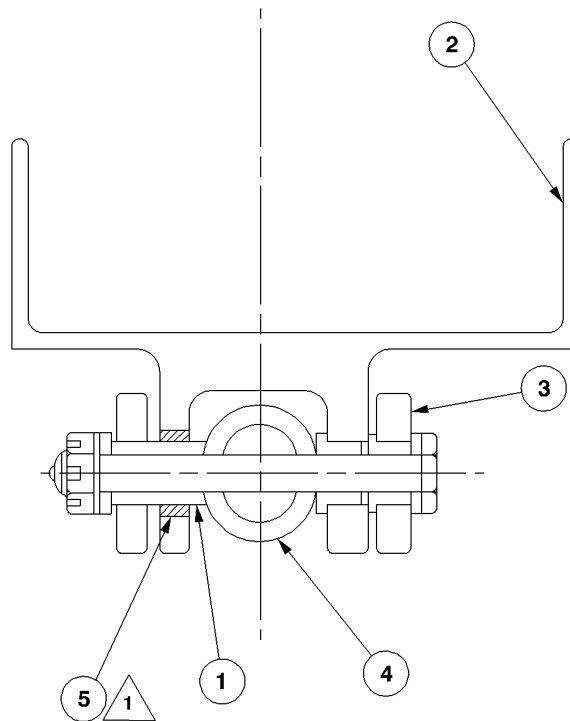
1. Bushing 21-008A11-7 (before machining)
2. Bushing 21-008A11-7FM (after machining). (FM) indicates field modified part.

NOTES:

- 1 Chamfer outer diameters to 0.005 inch (0.13 mm) - 0.015 inch (0.38 mm) x 40° - 50°, typical.
- 2 Chamfer inner diameters to 0.025 inch (0.63 mm) - 0.035 inch (0.88 mm) x 40° - 50°, typical.

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Figure 3 Aft Support Bushing (sheet 2 of 3)




VIEW LOOKING FORWARD

LEGEND:

1. Existing bushing
2. Rear support 222-035-231-105
3. Rear tail rotor guard fitting 222-035-352-105
4. Tail skid 222-035-233-103
5. Added bushing 21-008A11-7FM (Ref)

NOTE:

-  1 Install bushing 21-008A11-7FM with wet zinc chromate primer TT-P-1757.

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Figure 3 Aft Support – After Modification (sheet 3 of 3)