

# MAKO™ 50 mm LIP PROFILE AND BOSS WELD FILLET GAUGING PROCEDURE

SHARK™ GROUND ENGAGING TOOLS

## 1.0. INTRODUCTION

The purpose of this gauging procedure is to demonstrate the correct use of the following gauges:

- BU00031482: MAKO™ 50 mm Lip Profile Gauge
- BU00036755: MAKO™ 50 mm Boss Weld Fillet Gauge

Images of BU00031482 and BU00036755 are shown in Figure 1. This gauging procedure demonstrates the steps required to gauge Lip profile and weld fillet around MAKO™ 50 mm Boss. The inspection requirement using this procedure shall be 100% for each MAKO™ bucket lip and MAKO™ Boss weld fillets onto the lip.

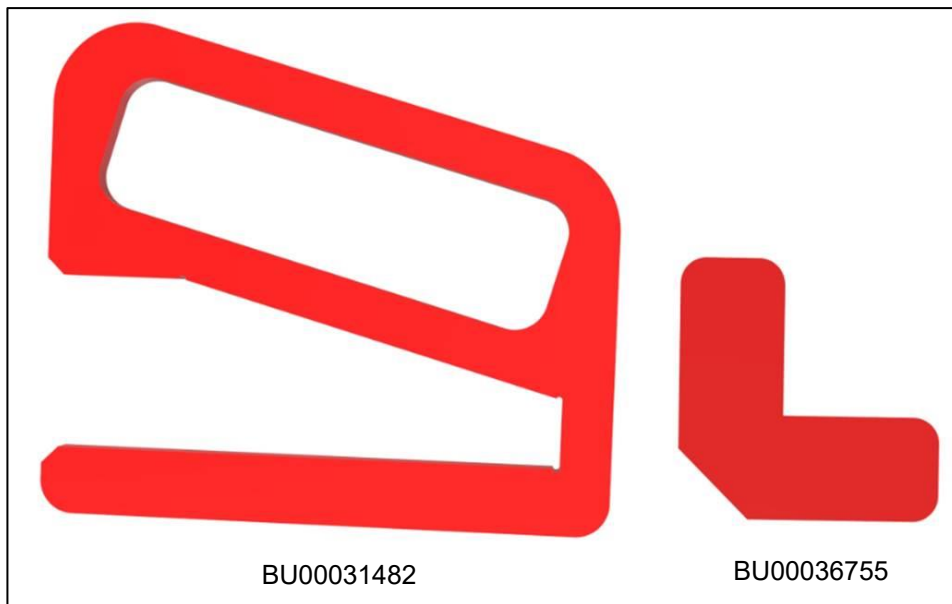


Figure 1 Gauges

An image of the MAKO™ 50mm Boss (SM50-B) welded position on the Lip plate is shown in Figure 2.

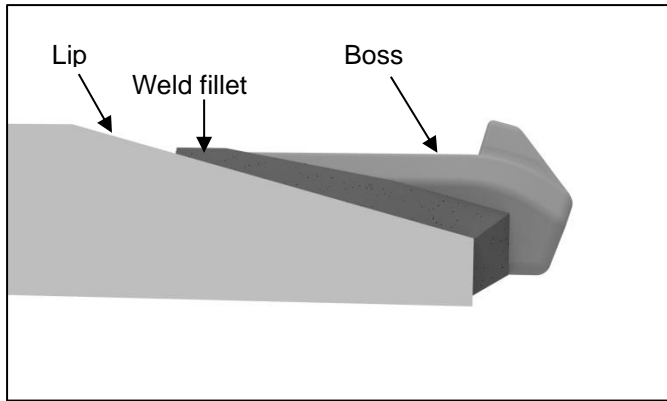


Figure 2 Boss welded on to Lip

### 2.0. INSPECTION PROCESS USING LIP PROFILE GAUGE

To inspect the Bucket Lip beveled profile, insert Lip Profile Gauge onto the lip until the gauge contacts the lip leading edge as shown in Figure 3. The gauge should slide freely on the lip without any interference.

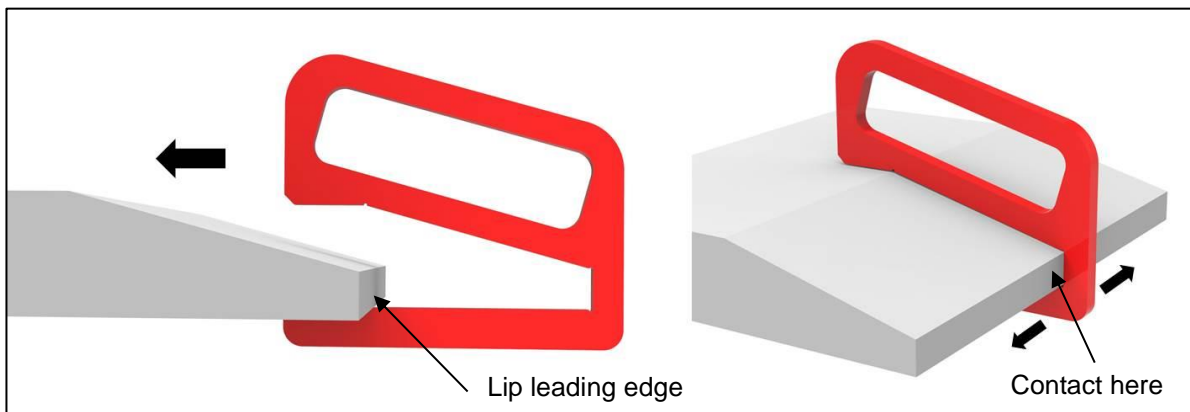


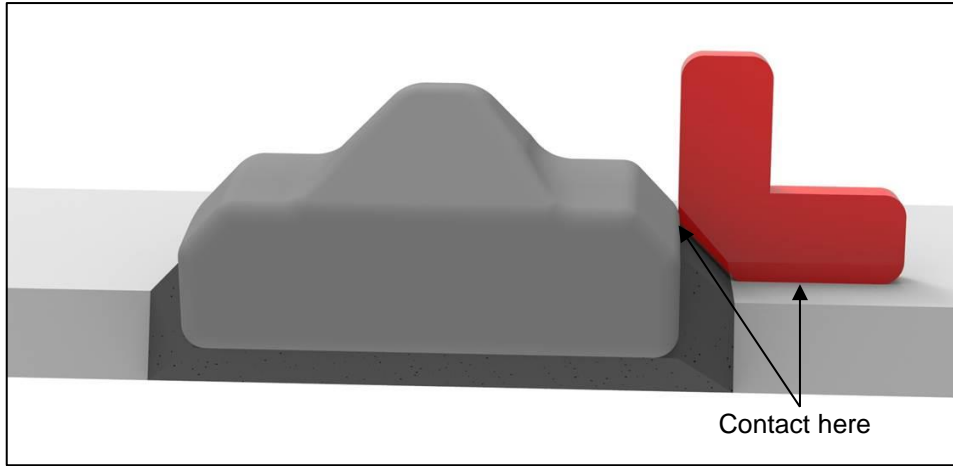
Figure 3 Lip Profile Gauge

#### Note:

- If the Gauge does not pass over freely on the Lip as shown in Figure 3, re-work Lip in areas of interference.
- If the interference is due to paint thickness, remove the paint from top and bottom surfaces of the Lip as required.

### 3.0. INSPECTION PROCESS USING BOSS WELD FILLET GAUGE

To inspect the weld fillet at right side of the Boss, slide the Weld Fillet Gauge by contacting both Boss side surface and Lip top surface as shown in Figure 4. Any clearance between weld fillet and gauge should be less than 2 mm. Similarly, complete weld fillet inspection on the Left side of the Boss.



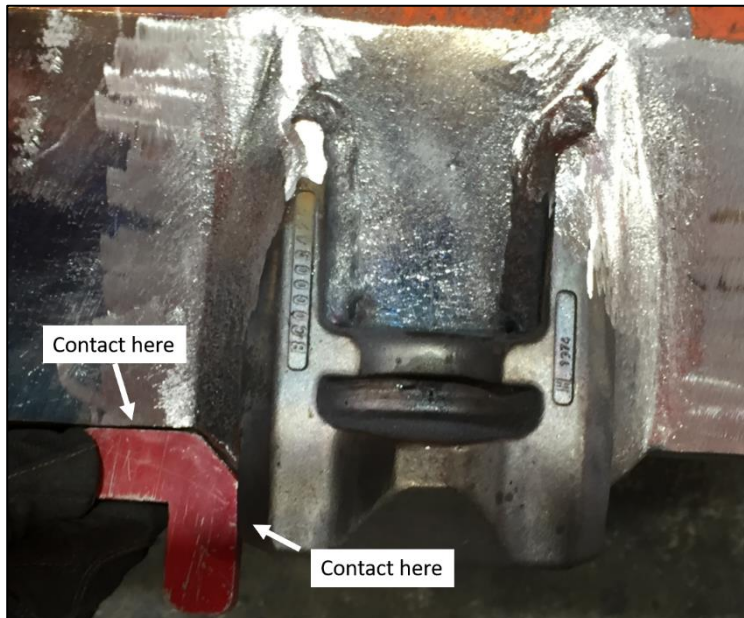
**Figure 4 Weld Fillet Gauge**

**Note:**

If the Gauge does not contact with both Boss leg surface and Lip top surface,

- Due to excessive weld fillet, then grind back the excess weld accordingly.
- Due to interfering paint thickness, then remove paint from top and bottom surface of the Lip assembly as required.
- If the clearance between gauge and weld fillet is more than 2mm due to under-weld, re-do complete weld on Boss prior to weld fillet re-inspection.

To inspect the weld fillet on the Lip leading edge, slide the Weld Fillet Gauge on Boss right side surface and Lip leading edge surface as shown in Figure 5. Any clearance between weld fillet and gauge should be less than 2 mm. Repeat this step on the left side of the gauge.



**Figure 5 Weld fillet Gauge at leading edge**

#### 4.0. INSPECTION PROCESS USING RULER

To inspect the weld fillet height at Lip top surface, use a 30 cm ruler, slide over the lip top flat surface as shown in Figure 6. The ruler should slide freely on lip without causing any interference with weld fillet and Boss leg. Any clearance between weld fillet and gauge should be less than 2 mm.

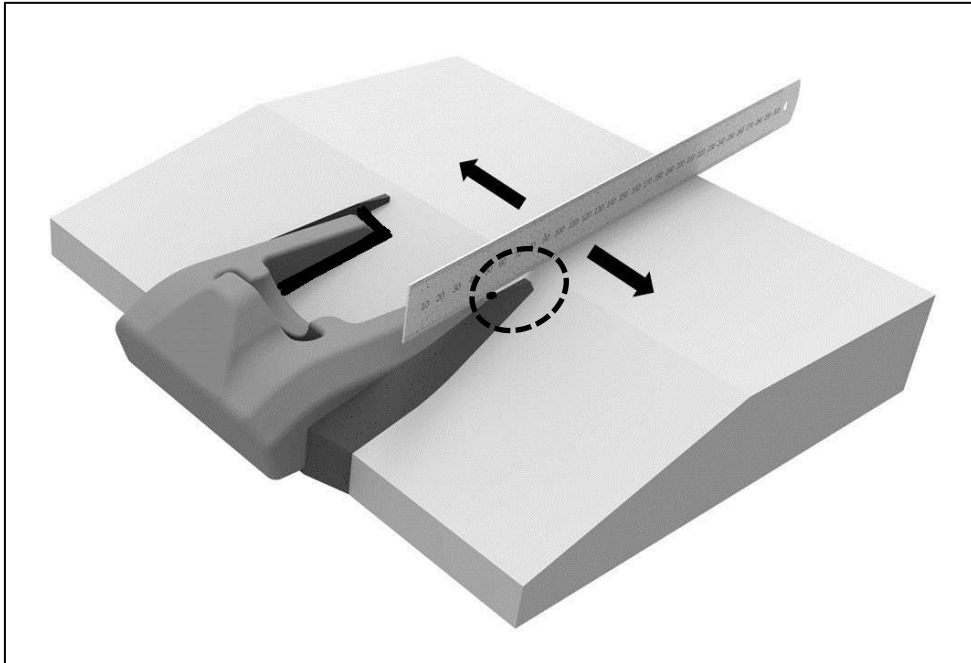
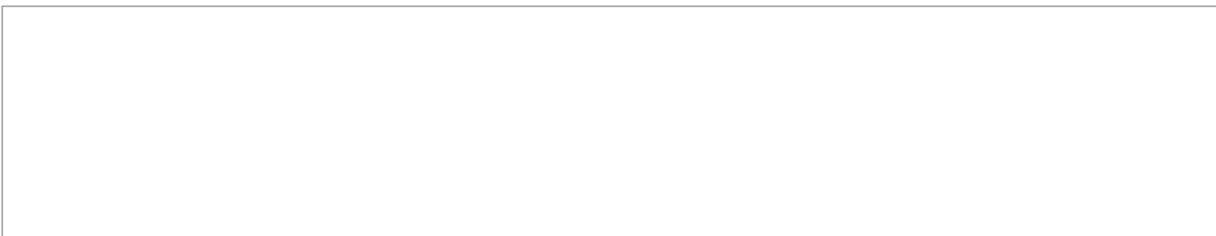


Figure 6 Weld Inspection with Ruler

#### Note:

If the Gauge does not slide freely on Lip top flat surface,

- Due to excessive weld fillet, then grind back the excess weld accordingly.
- If the clearance between ruler and weld fillet is more than 2mm due to under-weld, re-do complete weld on Boss prior to weld fillet re-inspection.
- Due to interfering boss leg, check the boss positioning on beveled surface of the Lip plate. Boss should sit on beveled lip surface without any gaps between Lip and Boss contact surfaces. If there is more than 2mm gap between Boss and Lip surface, remove the boss and re-do weld.



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## 5.0. REVISION NOTES

Rev #	Notes	Prepared By	Checked By	Approved By	Date
0	Initial Release	J. Jose	B. Darlington, C. K. Soon, R. Bayal	B. Dallard	18/10/16
1	Procedure images revised. Step 1.3 removed. Interim release only for Testing.	J. Jose	B. Dallard	R. Schmitz	28/07/17
2	Procedure updated to have revised Gauge design images.	J. Jose	B. Dallard, D. Köhler	R. Schmitz	24/01/18
3	SHARK™ & MAKO™ Trademarks added to the procedure	J. Jose	D. Köhler	R. Schmitz	15/03/18
4	Figures# 5&6 revised to reflect inside welds to Boss	J. Jose	-	-	23/06/21