



## **GAR-BRO BUCKET LIFTING BAIL INSPECTION RECOMMENDATIONS – "COMBO" SERIES BUCKETS**

The following are recommendations regarding GAR-BRO bucket bail inspection and wear limits. The details which follow are for our standard upright, rectangular, vertical front "Combo" series concrete buckets. Specific lifting bail inspection recommendations for special buckets can be obtained by contacting the GAR-BRO at 1-800-643-8192.

General inspection of all GAR-BRO buckets, both daily (on the job), or in the shop (between jobs), should be made using the following guidelines as a minimum. Thorough cleaning of the bucket may be required for a proper inspection to be made.

These recommendations are intended only as a guide for the responsible person checking and inspecting the buckets. These recommendations are not intended to be all-inclusive or as a substitute for good judgment and/or experience of the inspector.

### **GENERAL**

1. Inspect all bolts for abrasion, damage, or wear, and insure that all bolts are in place and properly tightened.
2. Inspect all welds for damage, abrasion, cracks, and wear.
3. Inspect the lifting bail for cracks, distortion, abrasion, excessive wear, or any other unsafe condition, especially at lifting and pivot points.
4. If any cracks, nicks, or other imperfections exist or if there is any question regarding the integrity of the bucket lifting bail, then the bucket should immediately be removed from service and further investigative action taken. Any modification to a lifting bail on any bucket renders the modified unit unsafe and immediate removal from service is required.

“COMBO” SERIES BUCKET LIFTING BAILS

See GAR-BRO drawing 02-39 for the “Combo” series bucket parts breakdown. Lifting bails for the “Combo” series buckets are not available for installation by the customer. Factory installation of replacement lifting bails may be available, depending on the bucket condition, by returning the affected bucket to the factory, freight prepaid, for evaluation.

A. Visually inspect the bail all over for general condition. Removal of concrete, rust, or other surface material that could hide any damage may be necessary. Visual inspection should be supplemented by dye penetrant or magnetic particle methods of inspection by properly trained personnel if there is any doubt as to the condition of the bail after a thorough visual inspection. Any cracks found are grounds for complete bail replacement before the bucket is returned to service.

Normal bail wear on the “Combo” series buckets is usually confined to the upper center of the cutout hole in the plate bail, and limits for this type of wear follow. Other wear patterns may be found in unique applications. Distortion of the lifting bail caused from placing one or more crane hooks in the bail hole that are wider than the cut out in the bail is a problem. In all cases, the “Combo” series buckets have hook-on holes 4 inches wide. This limits the crane hook size to about 20 tons. Larger hooks or multiple hooks can wedge into the hole, causing extreme side forces that literally spread the bail apart in the center. Evidence of this type of abuse is grounds for bail replacement.

Additionally, side loading of the “Combo” series bucket bails causing permanent distortion of the bail to the side requires bail replacement. This type of abuse is identical to that previously described, where the crane hook attached to the bucket bail is not directly below the end of the crane boom, lifting the bucket from the side and bending the bail over sideways.

Specific instructions and wear limits for “Combo” series bucket bails are as follows:

Item 4914 - Item 4983

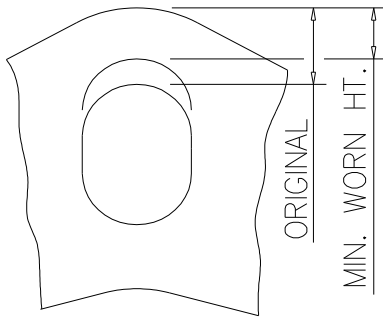
A. The standard lifting bails on "Combo" buckets are mild steel plate type bails with a oblong or “oval” hole for attachment to a lifting device. Bail replacement is required when the

<b>Bucket</b>	<b>Min. Worn ht.</b>
4911	1.875
4914	1.875
4920	1.875
4928	1.875
4940	1.875
4958	1.875
4983	1.875

height of the steel between the top edge of the oblong hole and the top of the lifting bail wears such that the minimum dimension being measured is less than that shown in the table on the left. When measuring for wear, measure at a point where maximum wear is evident by inspection. The point of maximum wear will probably (although not absolutely) be in the center of the bail and at the peak of the bail in the curved part of the plate. Use the smallest measured value as the

determining factor.

January 22, 2014

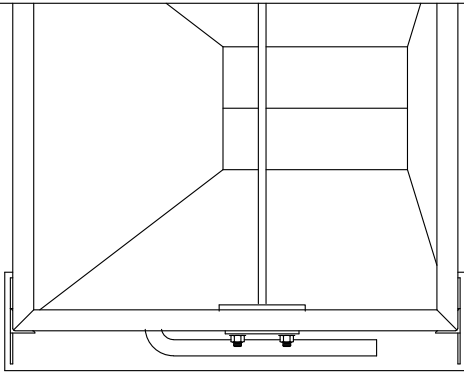


For example, the GAR-BRO Item 4928, 1 cubic yard bucket has a plate type lifting bail. When the distance from the top, inside edge of the bail hole is worn such that any minimum measured dimension is less than 1 7/8", then the bucket should immediately be removed from service.

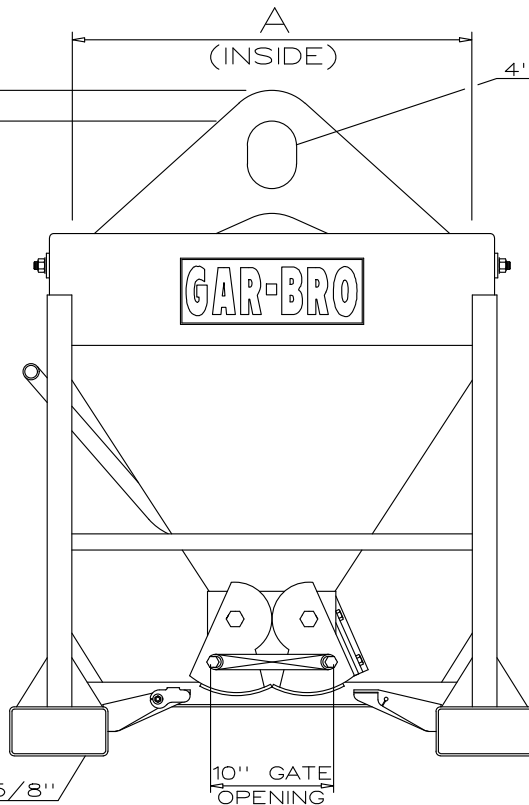
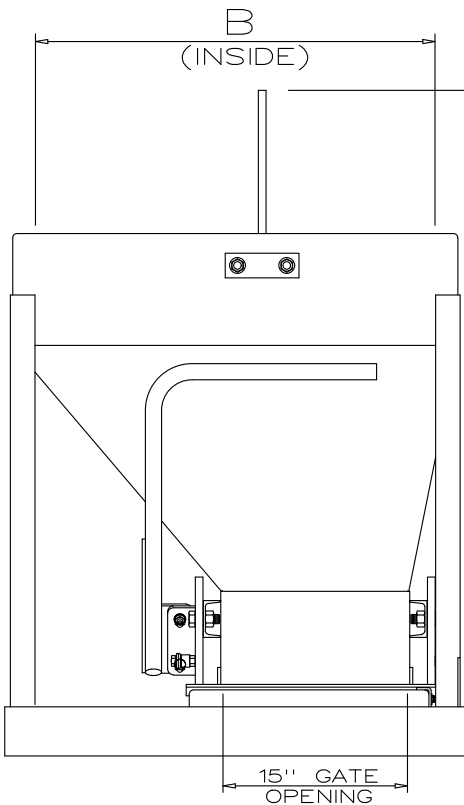
If you have any questions regarding these recommendations for bail inspection on GAR-BRO equipment please feel free to call us at 1-800-643-8192. We look forward to hearing from you.

GAR-BRO MANUFACTURING COMPANY

Attachments:  
Dwg 89-11 Sheet AB  
Dwg 02-39 Sheet A



Item No.	Rated Capacity Cu.Yd	Weight (Pounds)	Top Opening A (in)	Top Opening B (in)	Loading Height C (in)	Suspended Height D (in)	Overall Height E (in)	CL to CL Forkpockets (Inches)
4911	1/3	380	33	33	38	48	50	35
4914	1/2	390	33	33	43	52	54	35
4920	3/4	430	33	33	51	61	63	35
4928	1	500	38	38	56	66	68	35
4940	1 1/2	830	53	53	62	71	73	53
4958	2	945	53	53	67	76	78	53
4983	3	1120	53	53	80	90	92	53



4"X5 1/2" HOOK OPENING

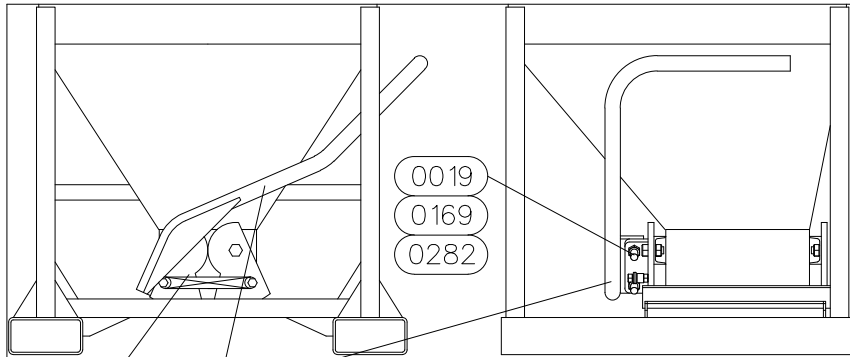
3 5/8" X 7 5/8" INSIDE POCKETS

GAR-BRO MANUFACTURING CO.  
 104 BOLTON SULLIVAN DRIVE P.O. DRAWER 1077  
 HEBER SPRINGS, ARKANSAS - 72543-1077

"COMBO" BUCKETS  
 with  
 10"X15" DOUBLE  
 CLAMSHELL GATE

SCALE	NONE
DATE	2-4-93
REVISED	6-20-11
MADE BY	BLC
CHANGED TO/FROM	
SUPERSEDES	

SHOP NO.	SALES
DRAWING NO.	
89-11	
SHEET	AB OF



WHEN ORDERING PARTS, SPECIFY:

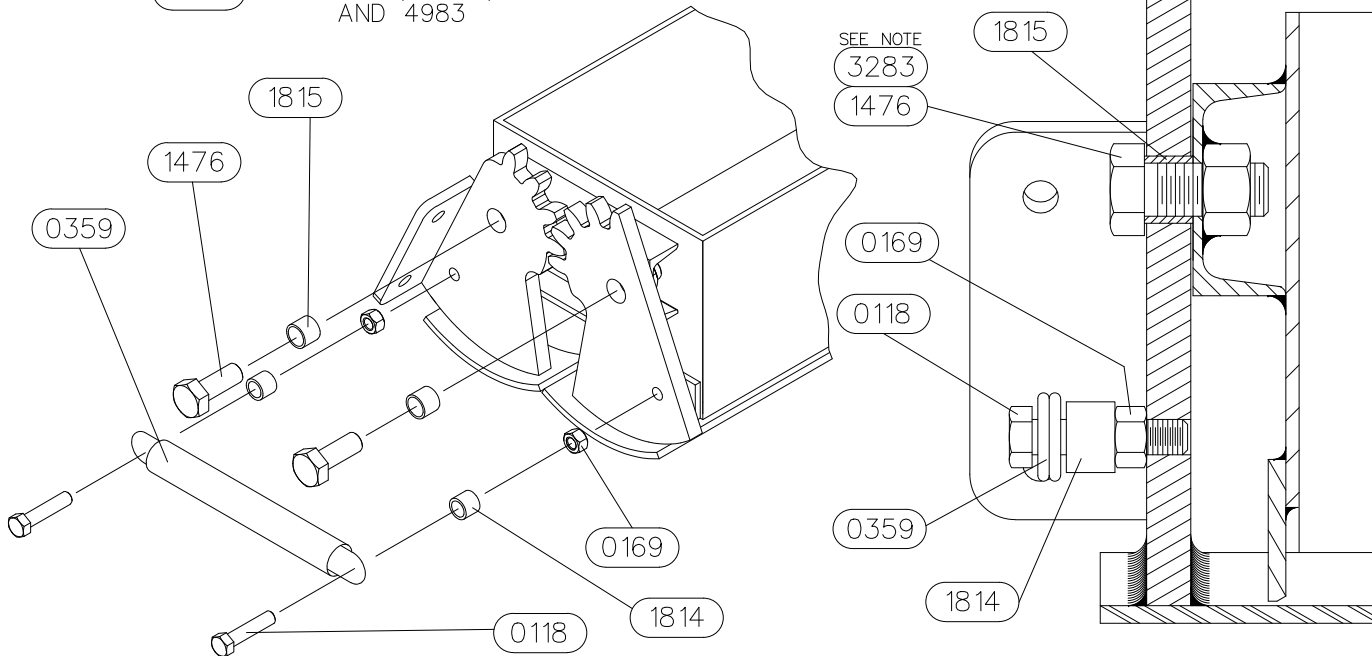
1. PART NUMBER
2. QUANTITY
3. DESCRIPTION
4. THIS DRAWING NUMBER: 02-39 SHEET A

△ INCLUDED IN PN 3307 REPAIR KIT

NOTE: CLEAN PIVOT BOLT O.D. & HINGE BAR I.D. WITH LOCTITE ODC-FREE CLEANER & DEGREASER OR CRC HEAVY DUTY DEGREASER, APPLY LOCTITE 277 (GAR-BRO PART # 3283) THREAD LOCKER TO I.D. OF EACH TAPPED HOLE IN HINGE BAR, 2 PLACES-180 DEGREES APART

TORQUE PIVOT BOLT TO 90 FT-LBS ± 5 FT-LBS 4 PLACES

- 3213
- 3214 ITEMS 4911, 4914, AND 4920  
OR  
3215 ITEM 4928  
OR  
3232 ITEMS 4940, 4958, AND 4983



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3307	COMBO GATE REPAIR KIT
△ 3285	GATE PLT/RADIUS ARM ASSY WITH HANDLE BRACKET
△ 3283	THREAD LOCKING COMPOUND
3232	HANDLE ASSEMBLY, ITEMS 4940, 4958, AND 4983
3215	HANDLE ASSEMBLY, ITEM 4928
3214	HANDLE ASSEMBLY, ITEMS 4911, 4914, AND 4920
3213	GATE COMPLETE, 10X15, MANUAL
△ 3212	GATE PLT/RADIUS ARM ASSY WITHOUT HANDLE BRACKET
△ 1815	BUSHING, RADIUS ARM
△ 1814	SPACER, SPRING
△ 1476	CAPSCREW, 3/4-16 X 2
△ 0359	GATE SPRING
△ 0282	CAPSCREW, 1/2-13 X 1 1/2
△ 0169	HEX NUT, 1/2-13
△ 0118	CAPSCREW, 1/2-13 X 2 1/4
△ 0019	LOCKWASHER
PART NUMBER	DESCRIPTION
GAR-BRO MANUFACTURING CO. 104 BOLTON SULLIVAN DRIVE P.O. DRAWER 1077 HEBER SPRINGS, ARKANSAS - 72543-1077	
PARTS LIST FOR ITEMS 4911 THRU 4983 COMBO BUCKETS WITH 10 INCH X 15 INCH MANUAL GATE	
SCALE	NONE
DATE	5-23-02
REVISED	8-23-11
MADE BY	JPA
CHANGED TO/FROM	
SUPERSEDES	
SHOP NO.	PARTS
SHIPPING CUBICS	
DRAWING NO.	02-39
SHEET	A OF