TO: ALL HOLDERS OF CARRY-ALL COMPARTMENT TWO-LINK ARTICULATED HINGE ASSEMBLY OVERHAUL MANUAL, 25-21-05

REVISION NO. 3, DATED MAR 1/00

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / Assy	Cleaning	Insp/Chk	Repair	Assy	F / C	Test	T / Shooting	S / Tools	Storage	IPL	L / Overhaul
Changed the pin (135) part number from MS20392-2C17 to MS20392-3C17 to agree with engineering drawings							X					X	
Changed the ID specified for the bushing (165) from 0.3146-0.3156 to 0.2510-0.2520							X						
Changed the washer (130) part number from AN960PD10L to AN960PD416L												X	
Added gas springs that are optional to the 65C16855-3 gas spring assy (item 65)												X	

CARRY-ALL COMPARTMENT TWO-LINK ARTICULATED HINGE ASSEMBLY

25-21-05

BOEING P/N 65C20204-21 thru -28

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 24374	Jun 5/85
		PRR 24577	Jun 5/85
		PRR 32880	Jun 5/85
		PRR 33036	Jun 5/85

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision

F Indicates foldout pages - print one side only

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	25-21-05					
	T-1	Jun 5/85				
	T-2	BLANK				
*	LEP-1	Mar 1/00				
	LEP-2	BLANK				
	T/C-1	Jun 5/85				
	T/C-2	BLANK				
	1	Jun 1/97				
	2	BLANK				
	101	Jun 5/85				
	102	BLANK				
	301	Jun 5/85				
	302	BLANK				
	401	Jun 5/85				
	402	Jun 5/85				
	403	Jun 5/85				
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*	603	Mar 1/00				
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	1101	Jun 1/97				
	1102	Jun 1/97				
*	1103	Mar 1/00				
*	1104	Mar 1/00				
*	1105	Mar 1/00				
	1106	BLANK				

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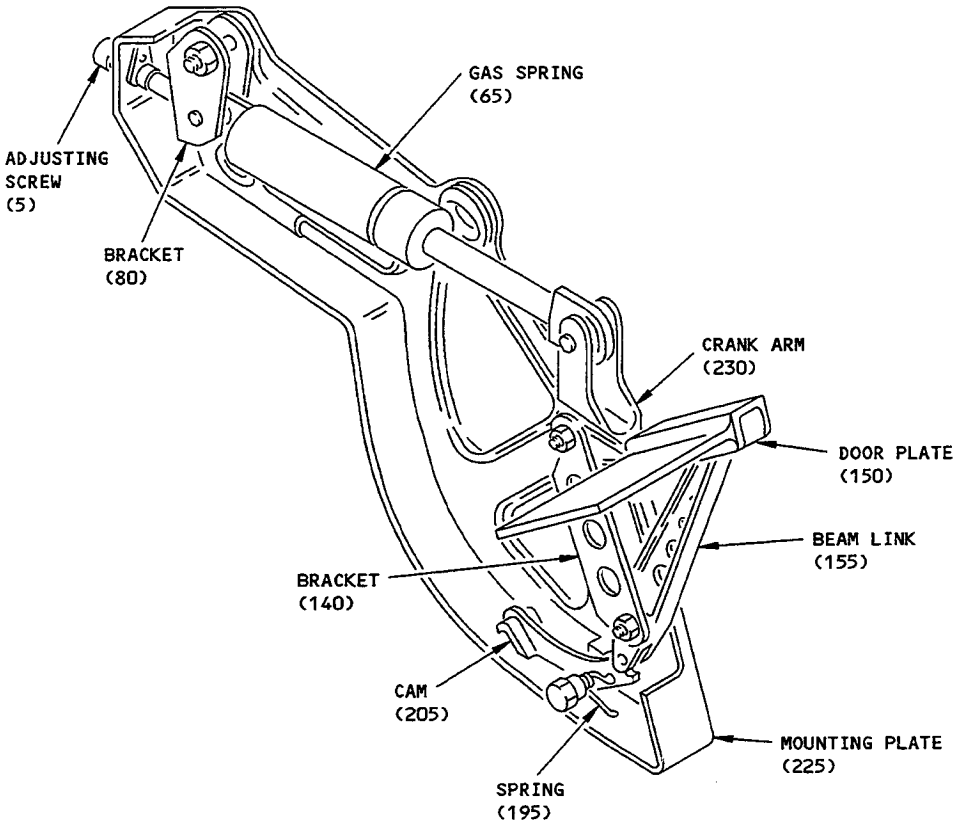
*[1] Special instructions not required. Use standard industry practices and the information contained in 20-30-01 and 20-30-03.

*[2] Special instructions not required. Use standard industry practices and the information contained in 20-44-02.

CARRY-ALL COMPARTMENT TWO-LINK ARTICULATED HINGE ASSEMBLY



Carry-All Compartment Two-Link Articulated Hinge Assembly
Figure 1

DESCRIPTION AND OPERATION

1. The carry-all compartment two-link articulated hinge assembly includes brackets, gas spring, crank arm, beam link, cam, door plate, and mounting plate, with fasteners, bushings, bearings, and springs. The hinge is a pivot for the carry-all compartment door, and the gas spring prevents sudden door motion.

2. Leading Particulars (approximate)

   Length -- 11 inches
   Width -- 1.5 inches
   Height -- 6 inches
   Weight -- 1 pound

DISASSEMBLY

1. Remove cotter pin (85), pin (100), washers (90, 92) and bushing (95). Separate gas spring (65) from crank arm (230).

2. Remove nut (25), bolt (40), washer (30) and bushing (35). Lift out gas spring (65) with attached bracket (80).

3. Remove cotter pin (60), pin (45), washer (55), bushing (50). Remove bracket (80) from gas spring (65). Do not remove bushings (70) from gas spring unless necessary for repair or replacement. Refer to appropriate vendor's instructions for overhaul of gas spring (75).

4. Remove spring pins (145) and door plate (150).

5. Remove nut (105), bolt (120), washer (110), bushing (115) and crank arm (230). Do not remove bushing (235) or bearing (240) from crank arm unless necessary for repair or replacement.

6. Remove cotter pin (125), pin (135), washer (130), bracket (140) and beam link (155). Do not remove bearing (160), bushings (165, 175) or pin (170) unless necessary for repair or replacement.

7. Remove nut (185), lock (220) (if applicable), bolt (190), washers (210, 215), spring (195), cam (205), and spacer (200).

8. Remove screw (5) and spacer (10) from mounting plate (225). Do not remove nut plate (15) unless necessary for repair or replacement.

INSPECTION/CHECK

1. Check all parts for obvious defects in accordance with standard industry practices. Refer to Fits and Clearances for design dimensions and wear limits.

2. Spring (195) -- Deflect arm 45 degrees. Load shall be 0.50-0.70 pound-inches (torque or moment load).

REPAIR

1. Materials

   A. Primer -- BMS 10-11, Type 1 (Ref 20-60-02)

   B. Lacquer -- Flat White (F-14.92) (Ref 20-41-01)

   C. Retaining Compound -- Loctite 601 (Ref 20-60-04)

2. Repair minor defects in accordance with standard industry practices. Refer to Fits and Clearances for design dimensions and wear limits. Other repair consists of restoration of original finish. Refer to Refinish for details.

3. Refinish

   NOTE: Refer to 20-30-02 for stripping of protective finishes and to 20-41-01 for explanation of F and SRF finish codes.

   A. Gas spring (65) -- Fig. 401.

   B. Bracket (80) -- Passivate (F-17.09) all over. Material: 17-7PH CRES, 150-170 ksi.

   C. Bracket (140) -- Fig. 402.

   D. Door plate (150), mounting plate (225) -- Apply Alodine 1000 (F-14.05) all over. Discoloration is allowed. Material: Al alloy.

   E. Beam link (180) -- Fig. 404.

   F. Spring (195) -- Cadmium plate (F-15.02). Material: Music wire, QQ-W-470.

   G. Cam (205) -- Fig. 405.

   H. Lock (220) -- No finish. Material: AlSl 301 CRES, hardened.

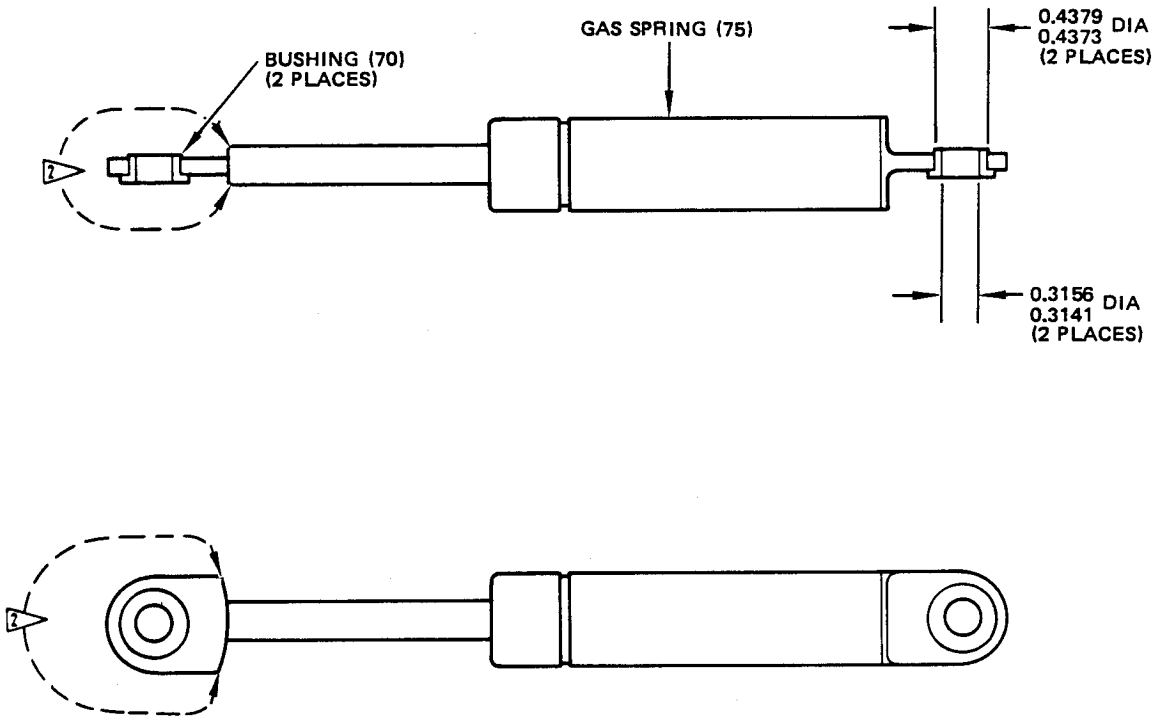
   I. Arm (245) -- Fig. 407.

4. Replacement

A. Bushings (70, 165, 235) -- Remove defective bushing. Install new bushing by press fit method per 20-50-03. Check dimensions and machine as required (Fig. 401, 406).

B. Bushing (175) -- Drive out pin (170) and remove defective bushing. Fit new bushing between link lugs and install pin (170). Check that bushing rotates freely after installation (Fig. 403).

C. Bearings (160, 240) -- Remove defective bearing. Install new bearing with Loctite 601 compound (Fig. 403, 406).



NOTE: REFER TO APPROPRIATE VENDOR'S INSTRUCTIONS FOR OVERHAUL OF GAS SPRING (75)

REFINISH

NO FINISH, EXCEPT
APPLY PRIMER AND LACQUER
AS NOTED 2

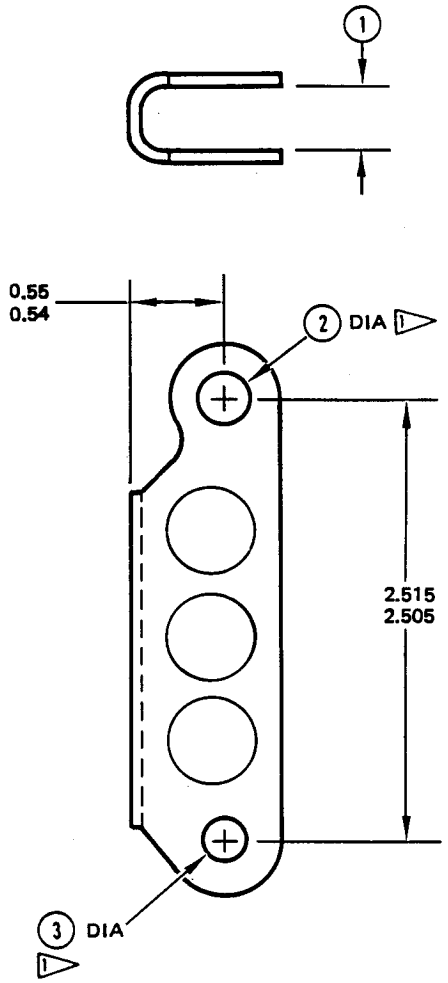
ALL DIMENSIONS ARE IN INCHES

1 INSTALL PER 20–50–03

2 APPLY PRIMER, BMS 10–11, TYPE 1 (F–20.02) AND LACQUER, FLAT WHITE (F–14.92), EXCEPT ON BUSHING

GAS SPRING (65) 65C16855–3

Gas Spring Assy Bushing Replacement and Refinish
Figure 401



	1	2	3
DESIGN DIM	0.38 0.37	0.3156 0.3141	0.2505 0.2495
REPAIR LIMIT	—	—	—

REFINISH

CHROMIC ACID ANODIZE (F-17.04)

1 PERPENDICULAR TO SURFACES WITHIN 0.001 TIR

REPAIR

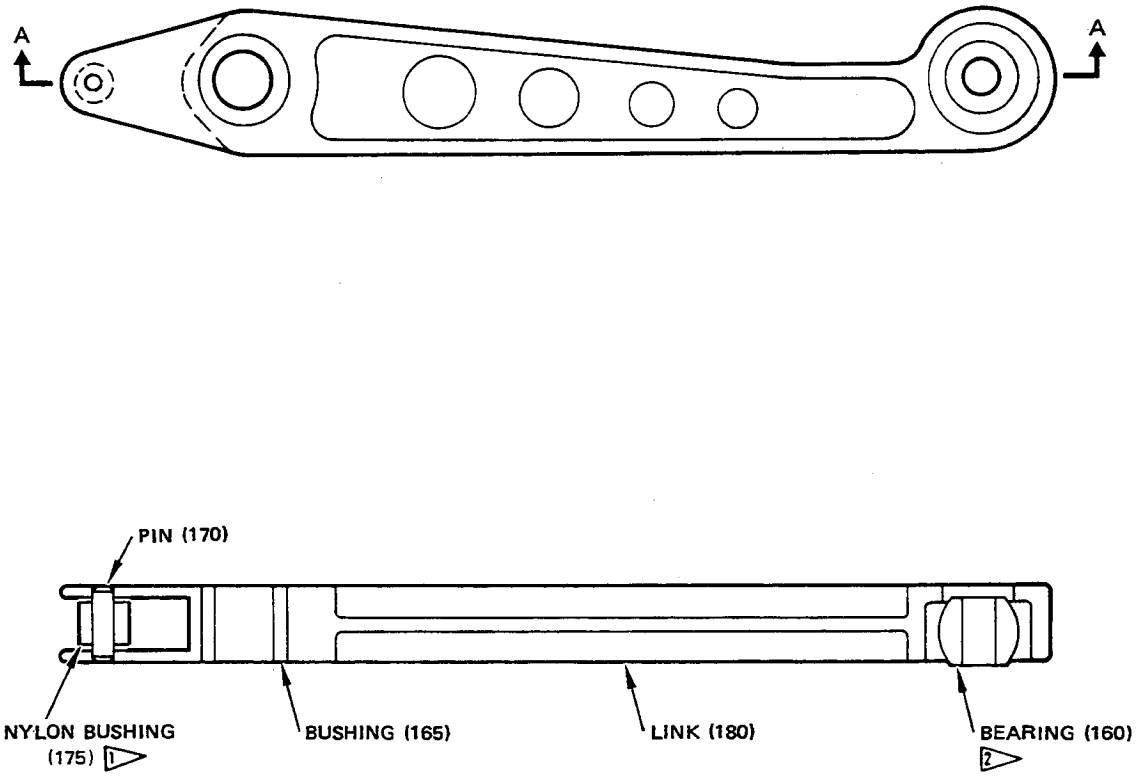
(SAME AS REFINISH)

125 MACHINE FINISH

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

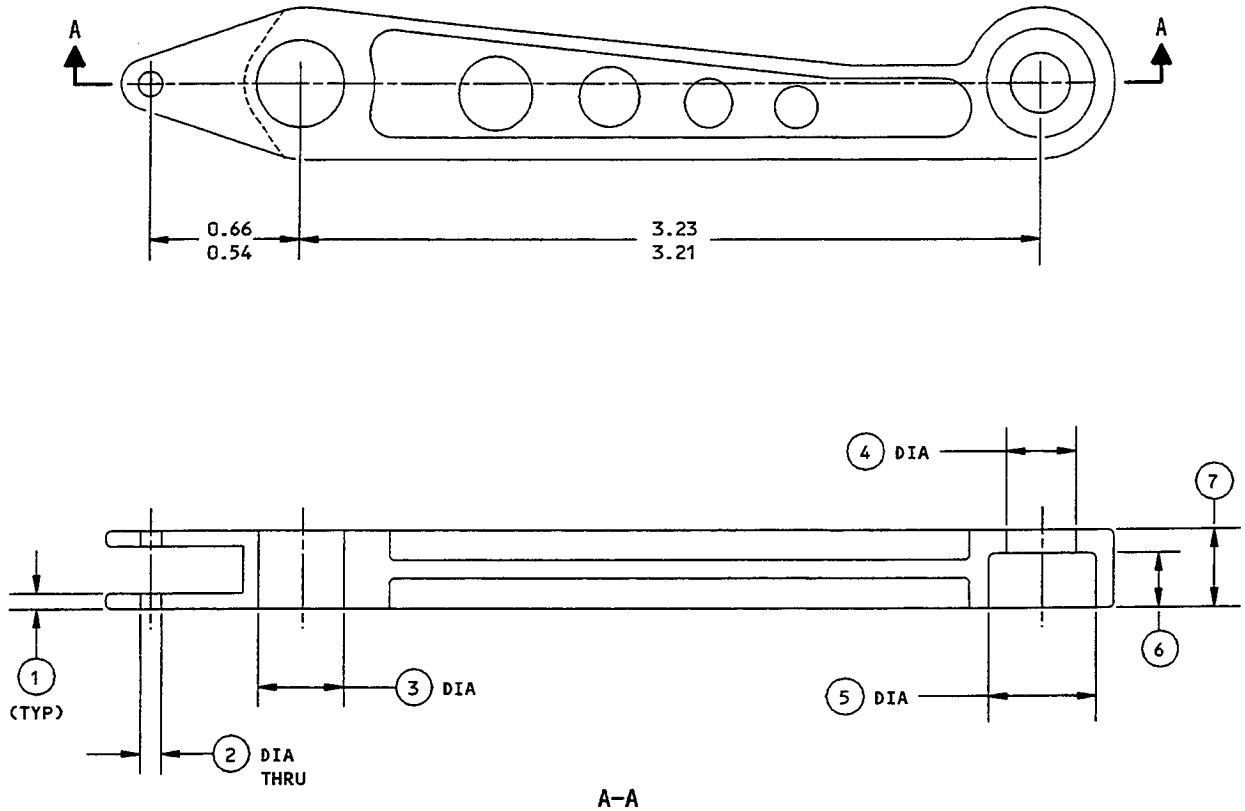
BRACKET (140) 65C16891-60



1 BUSHING MUST ROTATE FREELY AFTER INSTALLATION

2 INSTALL WITH LOCTITE 601.

BEAM LINK (155) 65C20204–13



A-A

	1	2	3	4	5	6	7
DESIGN DIM	0.06 0.05	0.088 0.087	0.3754 0.3748	0.31 0.29	0.4702 0.4687	0.27 0.26	0.34 0.33
REPAIR LIMIT	-	-	-	-	-	-	-

REFINISH

CHEMICAL TREAT (F-14.05).
DISCOLORATION IS PERMITTED

REPAIR

(SAME AS REFINISH)

125 MACHINE FINISH

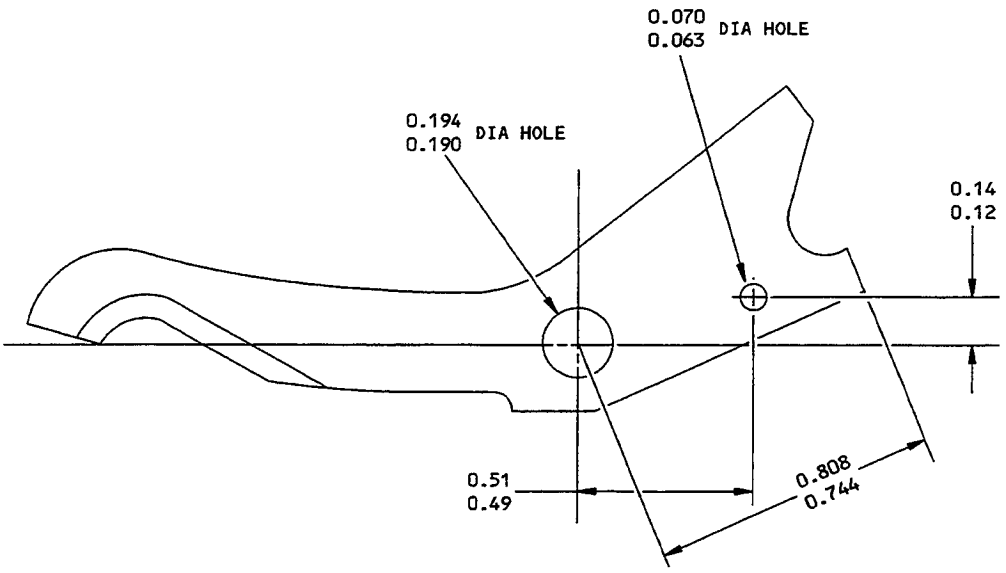
MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

LINK (180) 65C19933-1

Link Details
Figure 404

G5D674



REFINISH

CHEMICAL TREAT (F-2.21 OR F-14.05). DISCOLORATION IS PERMITTED

REPAIR

(SAME AS REFINISH)

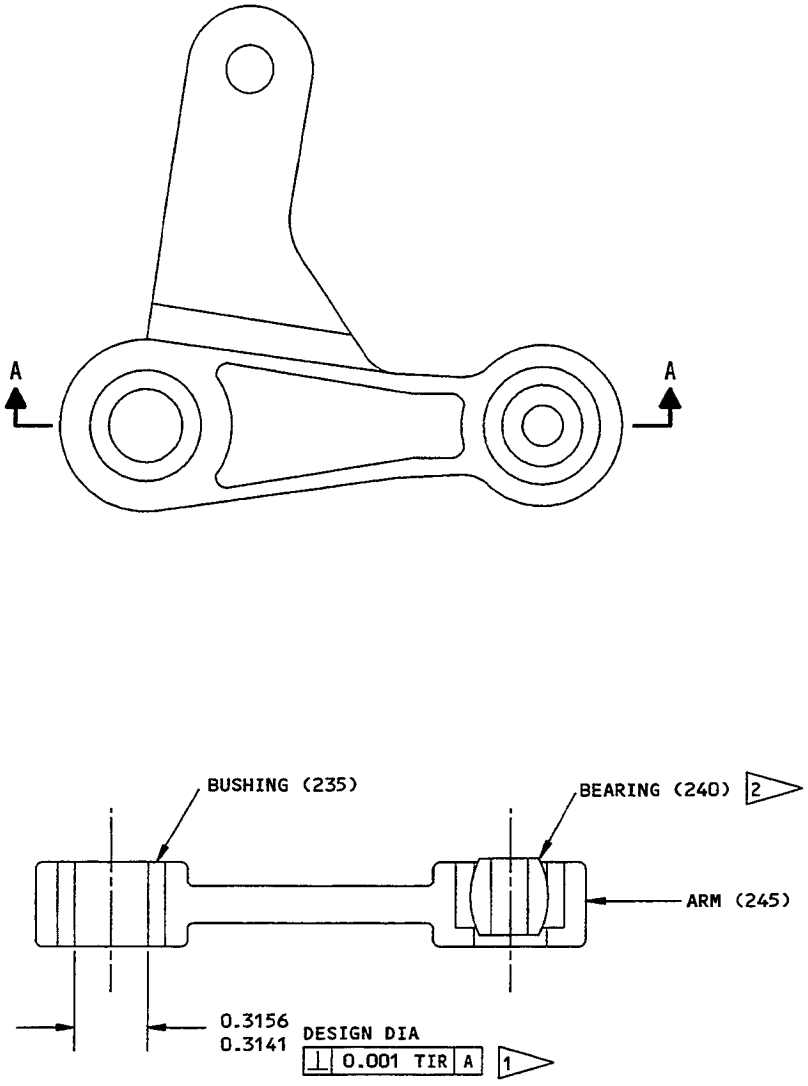
MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

CAM (205) 65C19935-3

Cam Details
Figure 405

G50676

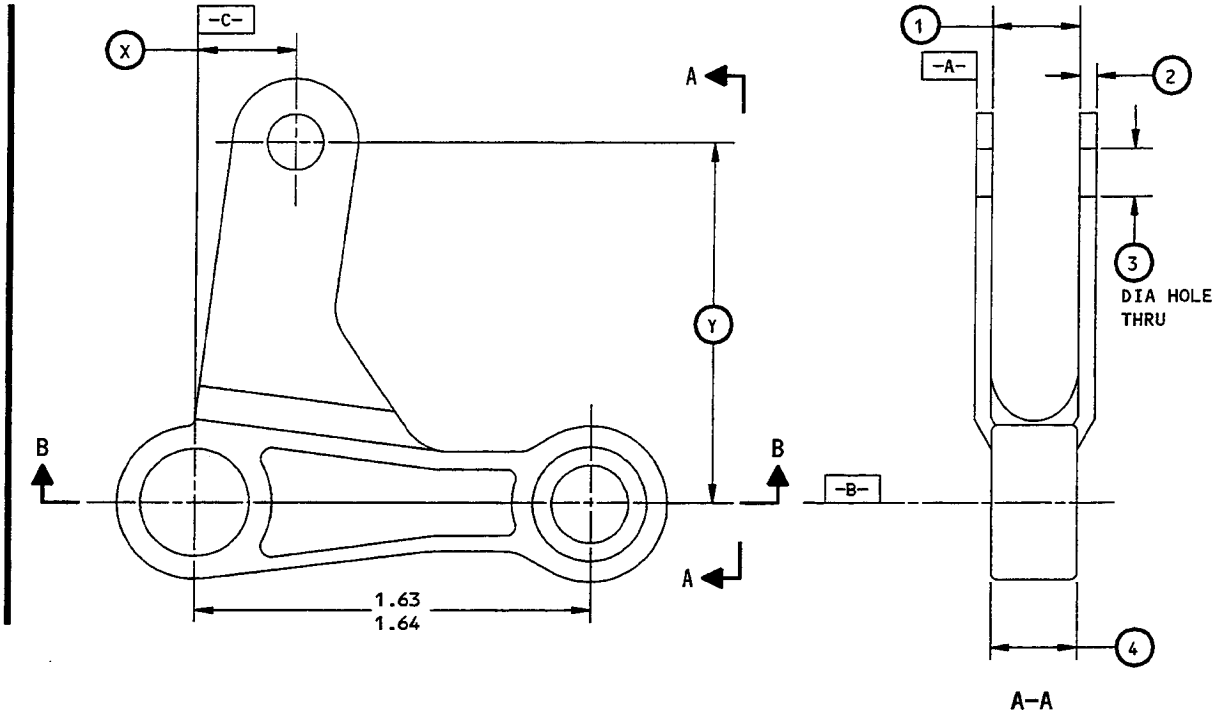


CRANK ARM (230) 65C20204-9 THRU -12

1 FOR DATUM -A-, SEE FIG. 407
2 INSTALL WITH LOCTITE 601

Crank Arm Parts Replacement
Figure 406

G46484



	X	Y
65C19937-1	0.40 0.38	1.46 1.44
65C19937-2	0.34 0.32	1.23 1.21
65C19937-3	0.27 0.25	0.99 0.97
65C19937-4	0.24 0.22	0.88 0.86

	1	2	3	4	5	6	7	8
DESIGN DIM	0.38 0.37	0.08 0.06	0.194 0.190	0.34 0.33	0.4379 0.4373	0.4702 0.4687	0.316 0.313	0.27 0.26
REPAIR LIMIT	-	-	-	-	-	-	-	-

REFINISH

CHEMICAL TREAT (F-14.05).
DISCOLORATION IS PERMITTED

REPAIR

(SAME AS REFINISH)

125 MACHINE FINISH

MATERIAL: AL ALLOY

ALL DIMENSIONS ARE IN INCHES

ARM (245) 65C19937-1 THRU 4

Arm Details
Figure 407

G47906

ASSEMBLY

NOTE: Refer to Fig. 501 for details of parts placement.

1. Install cam (205) and spring (195) in mounting plate (225) with spacer (200), washers (215, 210), bolt (190), lock (220) (if applicable), nut (185). Hook arm of spring into hole provided in cam as parts are installed.

2. Install crank arm (230) and bracket (140) in mounting plate (225) with bushing (115), bolt (120), washer (110) and nut (105).

3. Install lower ends of bracket (140) and beam link (155) in mounting plate (225) with pin (135), washer (130) and cotter pin (125).

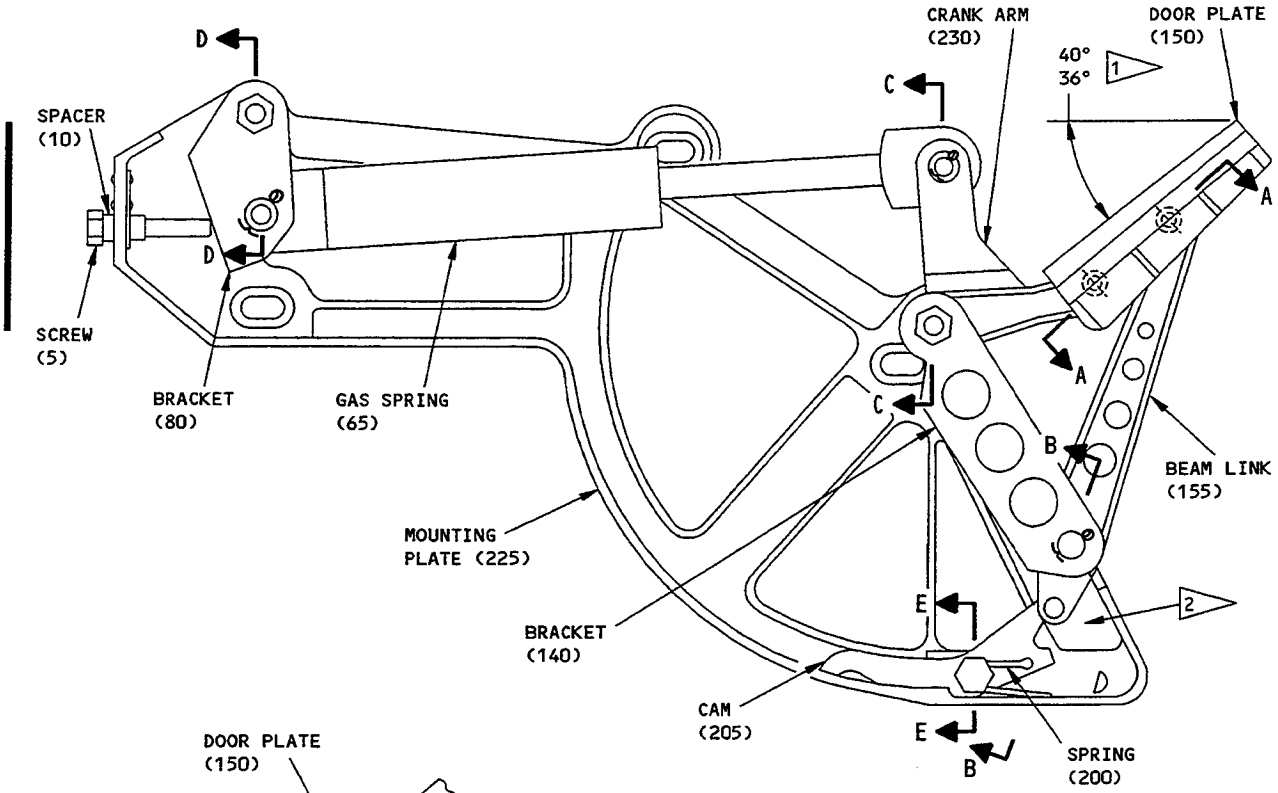
4. Swing beam link upwards and connect with crank arm (230) using door plate (150) and spring pins (145).

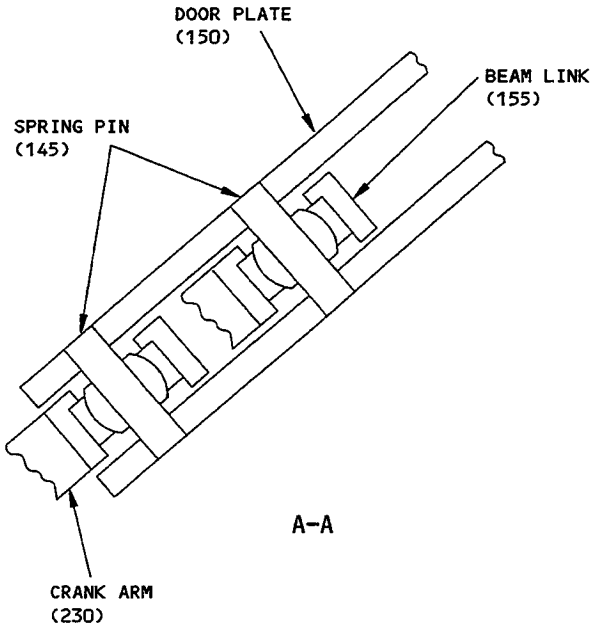
5. Install bracket (80) on body end of gas spring (65) with bushing (50), pin (45), washer (55) and cotter pin (60). Then install upper end of bracket (80) in mounting plate (225) with bushing (35), bolt (40), washer (30) and nut (25).

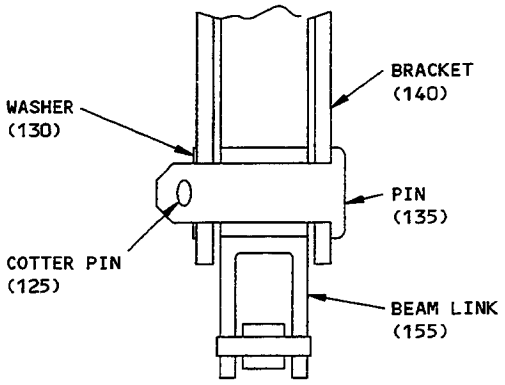
6. Install blade end of gas spring (65) on crank arm (230) with bushing (95), washers (92, 90) as applicable, pin (100) and cotter pin (85).

7. Slip spacer (10) onto shank of screw (5), then thread screw (5) into nutplate (15) in end of mounting plate. Adjust screw (5) to preset door plate to angle shown.

8. Release cam (205) and cycle linkage by rotating clockwise, then return to original position. Motion shall be free of binding or interference.





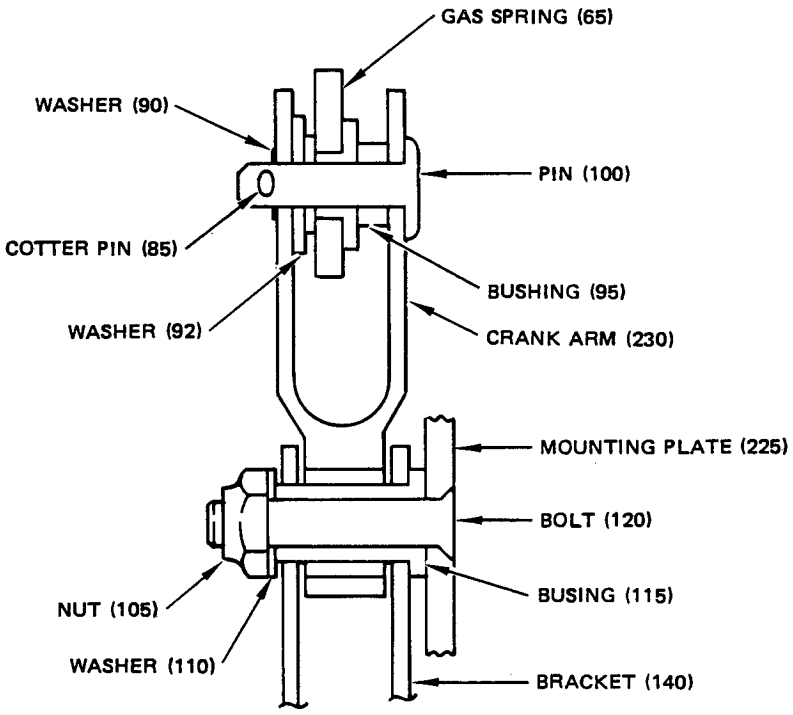


1 PRESET HINGE TO THIS POSITION BY ADJUSTING SCREW (5)

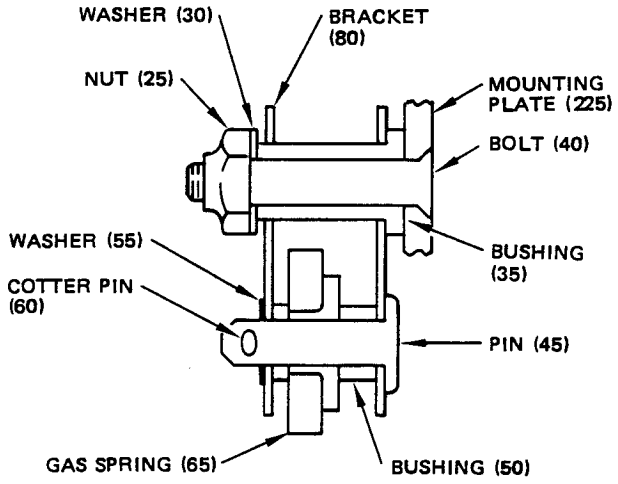
2 RELEASE CAM (205) AND CYCLE LINKAGE BY ROTATING CLOCKWISE THEN RETURNING TO POSITION SHOWN. MOTION SHALL BE FREE OF INTERFERENCE.

Assembly Details
Figure 501 (Sheet 1)

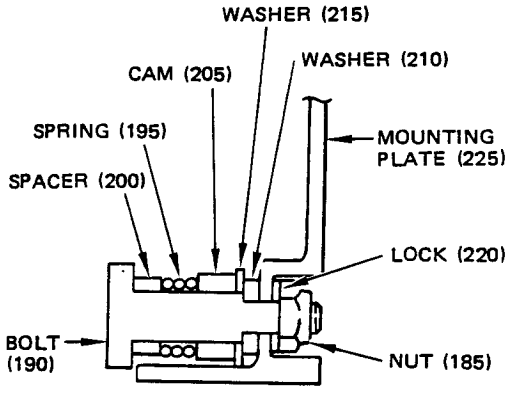
G48738


GAS SPRING (65)
WASHER (90)
PIN (100)
COTTER PIN (85)
BUSHING (95)
WASHER (92)
CRANK ARM (230)
MOUNTING PLATE (225)
BOLT (120)
NUT (105)
BUSING (115)
WASHER (110)
BRACKET (140)

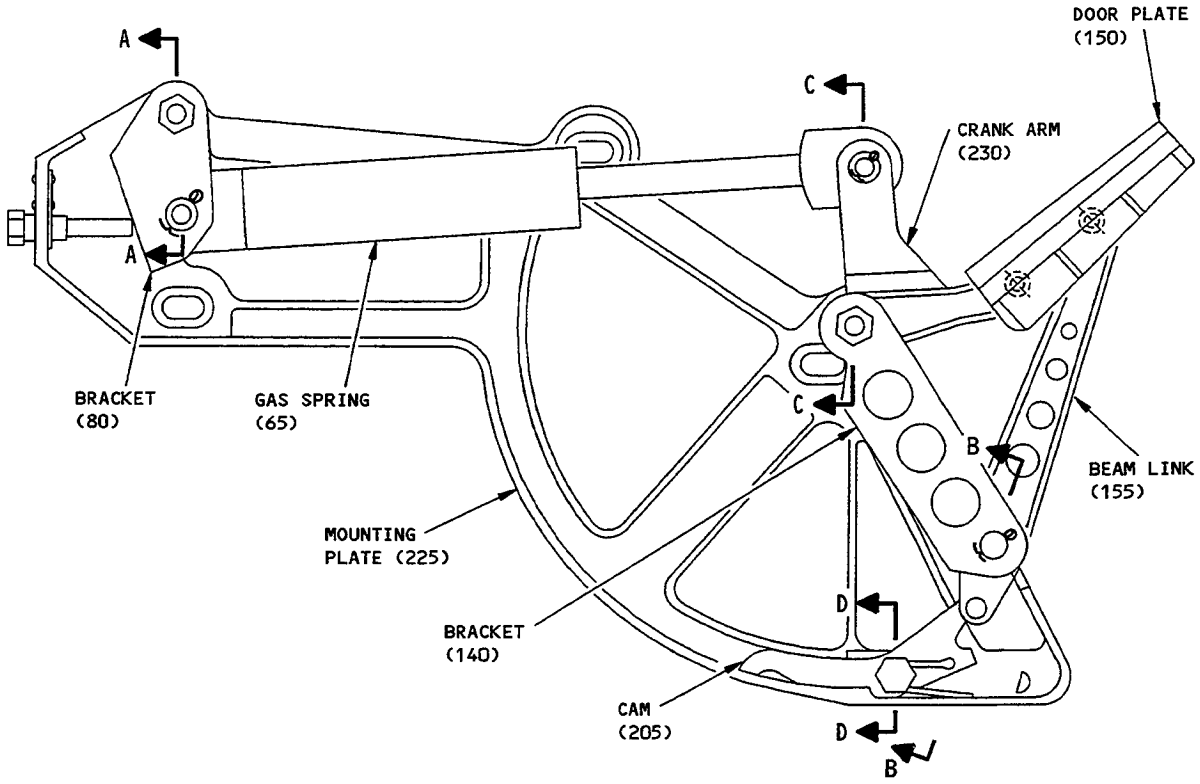
C–C

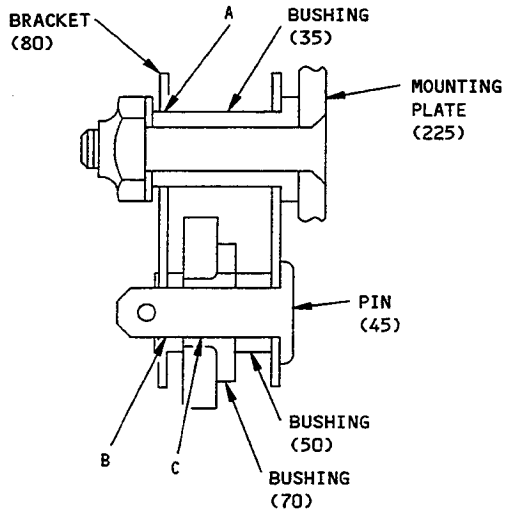

WASHER (30)
BRACKET (80)
NUT (25)
MOUNTING PLATE (225)
BOLT (40)
WASHER (55)
BUSHING (35)
COTTER PIN (60)
PIN (45)
GAS SPRING (65)
BUSHING (50)

D–D


WASHER (215)
WASHER (210)
CAM (205)
SPRING (195)
MOUNTING PLATE (225)
SPACER (200)
LOCK (220)
BOLT (190)
NUT (185)

E–E





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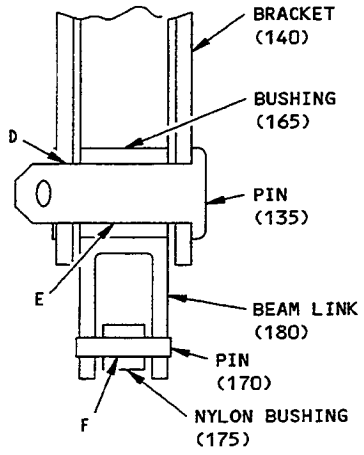
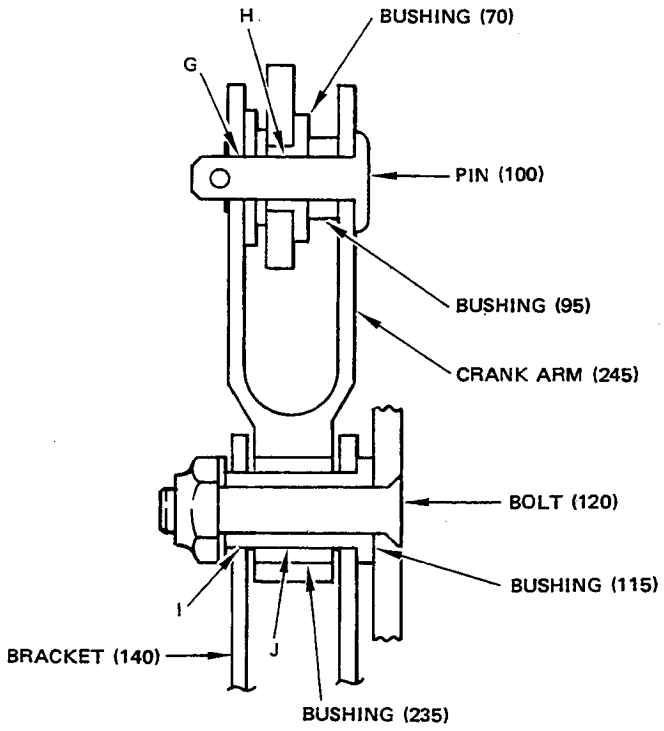


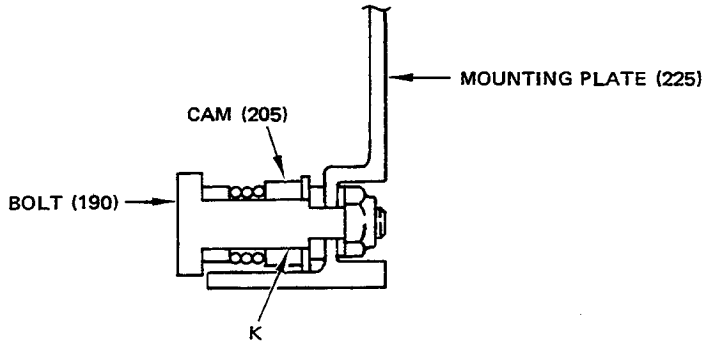
B-B

Fits and Clearances
Figure 601 (Sheet 1)

G48751


H
BUSHING (70)
G
PIN (100)
BUSHING (95)
CRANK ARM (245)
BOLT (120)
BUSHING (115)
I
J
BRACKET (140)
BUSHING (235)

C–C

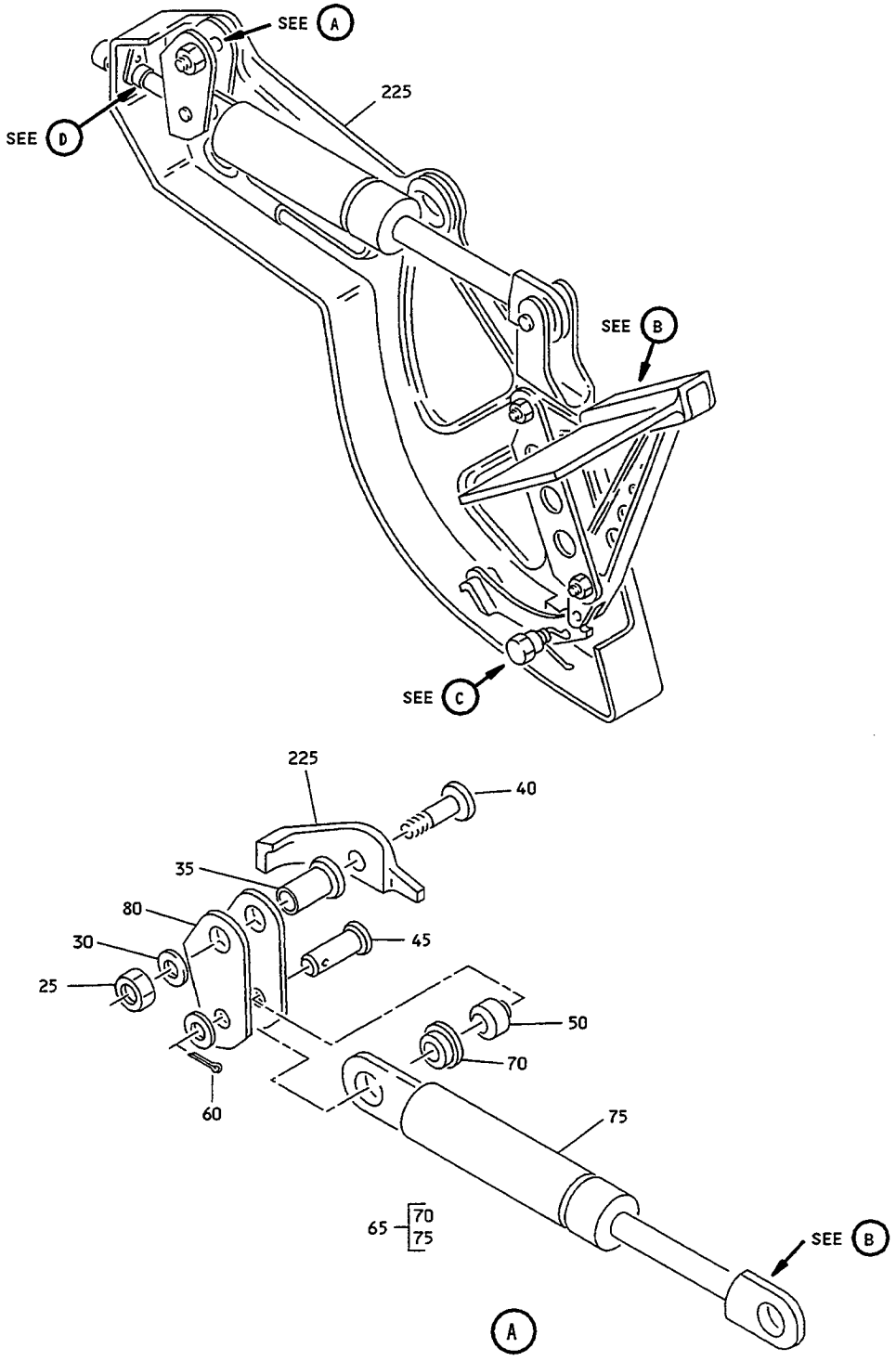

MOUNTING PLATE (225)
CAM (205)
BOLT (190)
K

D–D

Ref Letter Fig. 601	Mating Item No. Fig. 1101	Design Dimensions				Service Wear Limits		
		Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inch)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
A	ID 80	0.3270	0.3310	0.0134	0.0179			
	OD 35	0.3131	0.3136					
B	ID 80	0.190	0.194	0.004	0.010			
	OD 45	0.184	0.186					
C	ID 70	0.3141	0.3156	0.0005	0.0025			
	OD 45	0.3131	0.3136					
D	ID 140	0.2495	0.2505	0.0015	0.0045			
	OD 135	0.2460	0.2480					
E	ID 165	0.2510	0.2520	0.0030	0.0060			
	OD 135	0.2460	0.2480					
F	ID 175	N.A.	N.A.					
	OD 170	0.089	0.090					
G	ID 245	0.190	0.194	0.004	0.010			
	OD 100	0.184	0.186					
H	ID 70	0.3141	0.3156	0.1281	0.1316			
	OD 100	0.1840	0.1860					
I	ID 140	0.3141	0.3156	0.0005	0.0025			
	OD 115	0.3131	0.3136					
J	ID 235	0.3141	0.3156	0.0005	0.0025			
	OD 115	0.3131	0.3136					
K	ID 205	0.1900	0.1940	0.0015	0.0061			
	OD 190*[1]	0.1879	0.1885					
K	ID 205	0.1900	0.1940	0.0005	0.0050			
	OD 190*[2]	0.1890	0.1895					

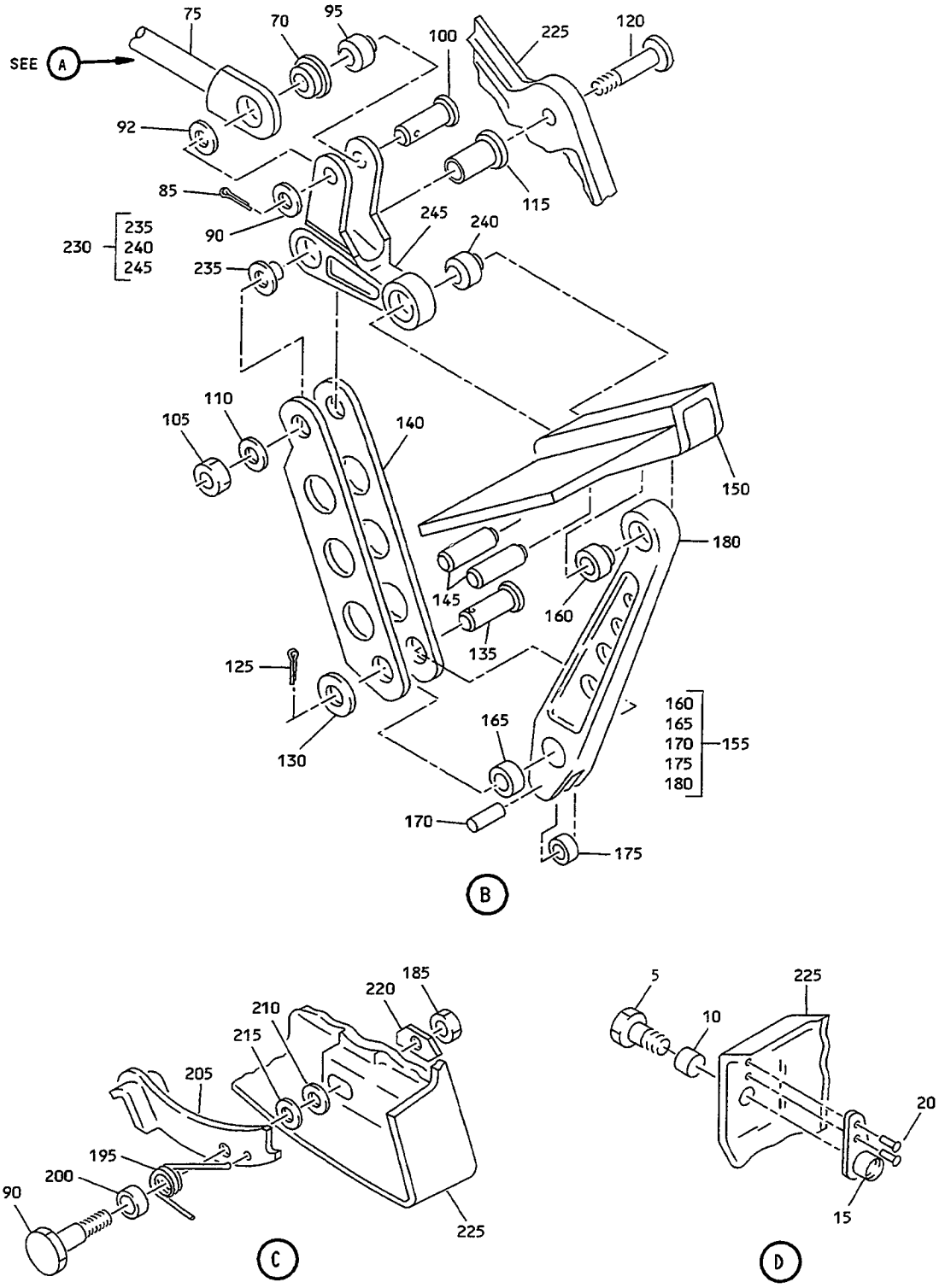
*[1] BACB30PF3-7 or BACB30PW3-7 bolts (190)
*[2] BACB30PU3-7 bolts (190)

Fits and Clearances
Figure 601 (Sheet 3)



Carry-All Compartment Two-Link Articulated Hinge Assembly
Figure 1101 (Sheet 1)

G49286



Carry-All Compartment Two-Link Articulated Hinge Assembly
Figure 1101 (Sheet 2)

G49928

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101					
1	65C20204-21		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	A	RF
1	65C20204-22		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	B	RF
1	65C20204-23		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	C	RF
1	65C20204-24		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	D	RF
1	65C20204-25		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	E	RF
1	65C20204-26		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	F	RF
1	65C20204-27		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	G	RF
1	65C20204-28		HINGE ASSY, CARRYALL COMPARTMENT TWO-LINK ARTICULATED	H	RF
5	BACS12CB3-16		. SCREW		1
10	NAS43DD3-6		. SPACER		1
15	BACN10JP3B		. NUT PLATE		1
15	BACN10JP3A		. NUT PLATE (OPT)		1
20	BACR15BB3D		. RIVET		2
25	BACN10JC3		. NUT		1
30	BACW10P353S		. WASHER		1
35	BACB28X3C052		. BUSHING		1
40	BACB30FN6-10		. BOLT		1
45	MS20392-2C17		. PIN		1
50	BACB28Y3C037		. BUSHING		1
55	AN960PD10L		. WASHER		1
60	MS24665-132		. PIN, COTTER		1
65	65C16855-3		. SPRING ASSY, GAS *[2]		1
70	BACB28W5B016		. . BUSHING		2
75	F0058		. . SPRING, V55787		1
80	65C16891-59		. BRACKET		1
85	MS24665-132		. PIN, COTTER		1
90	AN960PD10L		. WASHER		1
92	AN960PD516		. WASHER	E-H	1
95	BACB28Y3C037		. BUSHING		1
100	MS20392-2C17		. PIN		1
105	BACN10JC3		. NUT		1
110	BACW10P353S		. WASHER		1
115	BACB28X3C052		. BUSHING		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101					
120	BACB30FN6-10		. BOLT		1
125	MS24665-132		. PIN, COTTER		1
130	AN960PD416L		. WASHER (REPLD BY NAS1149D0416J)		1
130	NAS1149D0416J		. WASHER (REPLS AN960PD416L)		1
135	MS20392-3C17		. PIN		1
140	65C16891-60		. BRACKET		1
145	MS16562-41		. PIN, SPRING		2
150	65C19936-1		. PLATE, DOOR	ACEG	1
150	65C19936-2		. PLATE, DOOR	BDFH	1
155	65C20204-13		. LINK ASSY, BEAM		1
160	ABG2		. . BEARING, SPHERICAL, V50294		1
160	ABG2CR		. . BEARING, SPHERICAL, V73134 (OPT)		1
160	ABG2SS		. . BEARING, SPHERICAL, V73134 (OPT)		1
160	LHA2		. . BEARING, SPHERICAL, V50294 (OPT)		1
160	LHSS2		. . BEARING, SPHERICAL, V50294 (OPT)		1
160	LSS2		. . BEARING, SPHERICAL, V50294 (OPT)		1
165	AA307-1		. . BUSHING, SELF-LUBRICATING, V70417		1
170	MS20253P2-035		. . PIN, HINGE		1
175	N5042		. . BUSHING, NYLON, V08863 (OPT)		1
175	13P003		. . BUSHING, NYLON, V13764 (OPT)		1
180	65C19933-1		. . LINK		1
185	BACN10JC06		. NUT		1
190	BACB30PF3-7		. BOLT		1
190	BACB30PU3-7		. BOLT (OPT TO BACB30PF3-7)		1
190	BACB30PW3-7		. BOLT (OPT TO BACB30PU3-7)		1
195	65C16897-5		. SPRING	ACEG	1
195	65C16897-6		. SPRING	BDFH	1
200	NAS43DD3-8		. SPACER		1
205	65C19935-3		. CAM		1
210	BACW10P118S		. WASHER		1
215	NAS1515M3L		. WASHER		1
220	65C16851-24		. LOCK (USED WITH 65C19932-1,-2)		1
225	65C19932-1		. PLATE, MOUNTING *[1]	ACEG	1
225	65C19932-2		. PLATE, MOUNTING *[1]	BDFH	1
225	65C19932-5		. PLATE, MOUNTING *[1]	ACEG	1
225	65C19932-6		. PLATE, MOUNTING *[1]	BDFH	1
230	65C20204-9		. ARM ASSY, CRANK	AB	1
230	65C20204-10		. ARM ASSY, CRANK	CD	1
230	65C20204-11		. ARM ASSY, CRANK	EF	1
230	65C20204-12		. ARM ASSY, CRANK	GH	1
235	AA401-25		. . BUSHING, SELF LUBRICATING, V70417		1
240	ABG2		. . BEARING, SPHERICAL, V50294		1
240	ABG2CR		. . BEARING, SPHERICAL, V73134 (OPT)		1
240	ABG2SS		. . BEARING, SPHERICAL, V73134 (OPT)		1
240	LHA2		. . BEARING, SPHERICAL, V50294 (OPT)		1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101					
240	LHSS2		. . BEARING, SPHERICAL, V50294 (OPT)		1
240	LSS2		. . BEARING, SPHERICAL, V50294 (OPT)		1
245	65C19937-1		. . ARM (USED ON 65C20204-9)		1
245	65C19937-2		. . ARM (USED ON 65C20204-10)		1
245	65C19937-3		. . ARM (USED ON 65C20204-11)		1
245	65C19937-4		. . ARM (USED ON 65C20204-12)		1

*[1] 65C19932-1 (OR -2 OPPOSITE) PLUS 65C16851-24 OPTIONAL TO 65C19932-5 (OR -6 OPPOSITE).

*[2] SP-8252 (V24403), 646865 (V55787), C16-07672 (V5V313) OR P472 (V52861) ARE OPTIONAL TO 65C16855-3.

VENDORS

V08863 NYLOMATIC, 10 HEADLEY PLACE, FALLSINGTON, PENNSYLVANIA 19054-1401

V13764 MICRO PLASTICS, INC., HIGHWAY 178 N., FLIPPIN, ARKANSAS 72634

V24403 ENIDINE, INC., 7 CENTRE DR., ORCHARD PARK, NEW YORK 14127-2281

V50294 NEW HAMPSHIRE BALL BEARINGS, INC., 9730 INDEPENDENCE AVE., P.O. BOX 2515, CHATSWORTH, CALIFORNIA 91311-4323

V52861 AVM, HIGHWAY 76 E., P.O. BOX 729, MARION, SOUTH CAROLINA 29571

V55787 GAS SPRING CORP., 92 COUNTY LINE RD., COLMAR, PENNSYLVANIA 18915-9606

V5V313 SUSPA, INC., 3970 ROGER B. CHAFFEE BLVD., GRAND RAPIDS, MICHIGAN 49508-3440

V70417 CHRYSLER CORP., AMPLEX DIV., 6565 E. EIGHT-MILE RD., WARREN, MICHIGAN 48091-2949

V73134 HEIM, INC., INCOM INTERNATIONAL, INC., 60 ROUND RD., P.O. BOX 430, FAIRFIELD, CONNECTICUT 06430-5114