

HALL INDUSTRIES, Inc.

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TB-980717 Equipment Manual

Serves the DC-9, MD-80 and 717 Aircraft

Use This Manual for

- 1. Operating Procedures**
- 2. Maintenance Procedures**
- 3. Tow Bar and Parts Ordering**

For ordering new Tow Bars or Renewable Parts

Please contact: Hall Industries Equipment Division
514 Mecklem Lane
Ellwood City, PA 16117
Phone (724) 752-2000
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“The Problem Solvers”

TB-980717 EQUIPMENT MANUAL

SECTION I Description – Dimensions and Weights

SECTION II Operating Procedures

SECTION III Maintenance Procedures

SECTION IV Renewal Parts

SECTION I DESCRIPTION – DIMENSIONS AND WEIGHTS TB-980717 TOW BAR ASSEMBLY

Weight:

Body	135#
Yoke	120#
Tow Bar, COMPLETE	255#

Length:

Body with Tow Eye	124"
Head with Adapter	33"
Total Assembly	149"

Width:

Yoke	43"
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Height:

Body	27"
Yoke	14"



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SECTION II
OPERATING PROCEDURE
TB-980717 TOW BAR ASSEMBLY

A. ATTACHING TOW BAR TO AIRCRAFT

The DC 9, MD 80 and the 717 can be towed forward or pushed aft on hard surfaces using a yoke-type Tow Bar. The Tow Bar attaches to the nose wheel axle by means of the nose pins on the yoke. When the tow bar yoke is lined up with the nose gear, the nose pins have to be manually locked in position on both sides of the nose gear by the operator.

B. ATTACHING TOW BAR TO TOW TRACTOR

Once the tow bar is securely attached to the nose gear, the tow tractor should be placed at the centerline of the Tow Bar. The operator must manually lift the tow bar to engage with the tow tractor and install the locking pin.

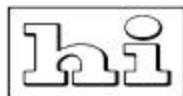
C. PUSHING THE AIRCRAFT

This must be done in accordance with the instructions in the Boeing or McDonnell Douglas Facility and Equipment Planning Manuals.

CAUTION: If at any time the shear bolt yields or breaks, carefully bring the aircraft to a stop. Before pushing or tow can be continued a new shear bolt must be inserted. Use only a Hall Industries shear bolt as follows, Part Number TB-980717-2.

D. DISCONNECTING TOW BAR FROM AIRCRAFT

Release the nose pins manually allowing the release of the yoke from the nose gear on the aircraft. Carefully move the tow bar and tow tractor clear of the aircraft.



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SECTION III
MAINTENANCE PROCEDURES
TB-980717 TOW BAR ASSEMBLY

- A. Inspect all Hardware.
- B. Check wheels and wheel carriage for bent, broken, or worn parts.
- C. Check for proper tire pressure. Correct pressure is 40 psi (maximum psi is 50).
- D. Lubricate wheels. There is a grease fitting on each wheel that requires lubrication each time you complete your scheduled maintenance, not to exceed 6 months.
- E. Lubricate the grease fittings (two sides) on the nose pin body each time you complete your scheduled maintenance, not to exceed 6 months.
- F. Check yoke assembly for operation of locking mechanism. Check the latch pin on the locking mechanism to insure it engages properly. There is an adjustable setscrew on the aluminum block locking mechanism. It is adjustable and should be checked to insure that the latch pin (when in down position) will stay locked. This setscrew is adjustable and should be adjusted as needed.
- G. When the latch pin is in the down position, it should secure the nose pin body in the appropriate position for the aircraft it is servicing. (Note: there are two separate positions}.
- H. Inspect yoke assembly for worn or damaged parts.
- I. Check tow eye on tow bar for damage and free rotation.
- J. Check tow bar main body tube for bending or cracking.
- K. Check shear pin and bushings for breakage and wear.
- L. Inspect for missing or illegible instruction plaques. Replace as required.
See Attachment #1

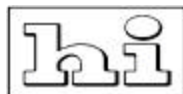


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SECTION IV
RENEWAL PARTS
TB-980717 TOW BAR ASSEMBLY
TOW BAR TO SERVICE DC-9, MD-80, & 17 AIRCRAFT

DWG TB-980717-11- YOKE ASSEMBLY

MK #	QTY / UNIT	DESCRIPTION	PART NUMBER
-	1	TB-980717 YOKE ASSEMBLY, COMPLETE	TB-980717-11
1R	1	RIGHT SIDE LATCH KIT	TB-7999-1-R
1L	1	LEFT SIDE LATCH KIT	TB-7999-1-L
1B	2	BUSHING, STRAIGHT	TB-9205-1B
2C	4	FLAT WASHER	TB-9205-2C
3	4	LOCK WASHER	ATR-302F
4	4	MICARTA BOLTS	1L04C0104ZPBG00
5	4	HEX NUT	HN04C0000ZPBG00
6	2	GREASE FITTING	TB-8649-2
7	1	WARNING TAG STEERING with RIVETS	TB-7999-TAG-A
8	1	WARNING PIN REMOVAL TAG with RIVETS	TB-7999-TAG-B
9	2	TWO POSITION PIN TAG with RIVETS	TB-7999-TAG-C
10	1	CAUTION WHEEL TAG with RIVETS	TB-7999-TAG-D
11A	1	YOKE ASSEMBLY W/ BUSHINGS (LESS ATTACHING Parts)	TB-980717-11A
12	2	INSERT, AXLE PIN	TB-9205-8
13	2	ROLL PIN	P443200445S0000
14	2	ROLL PIN HANDLE	P443601125S0000
15	2	NOSE PIN ASSEMBLY COMPLETE (INCL. 12,13,14,15-MKA)	TB-980717-15
15-MKA	2	NOSE PIN BODY	TB-980717-15-MKA
16	2	MICARTA SKID PADS	TB-980717-16
17	2	PLAQUE; LATCH PIN TAG with RIVETS	TB-980717-TAG



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TOW BAR TO SERVICE DC-9, MD-80, &17 AIRCRAFT

MK #	QTY / UNIT	DESCRIPTION	PART NUMBER
12	1	TB-980717 TOW BAR BODY ASSEMBLY, COMPLETE	TB-980717-12
1	1	PIVOT BOLT	TB-980717-1
1A	2	BUSHING, FLANGED	TB-980717-1A
1A2	2	BUSHING, FLANGED	TB-9205-1A
1D	1	NYLOCK, HALF NUT	TB-980717-1D
2	1	SHEAR BOLT	TB-980717-2
1D2	1	STOVER LOCK NUT	TB-9205-1D
3	1	CAPTURE BOLT	TB-9205-3
3B	1	LOCKNUT	TB-9205-3B
4	1	SWIVEL EYE BUSHING	TB-980717-12K
5	1	TOW EYE RETAINER	TB-980717-12L
6	4	BOLT, SWIVEL EYE BUSHING	H508C0032ZP0000
7	4	NORD LOCK WASHER, SWIVEL EYE BUSHING	TB-8898-17-LW
8	1	HOSE HANDLE	TB-980717-12M
9	1	OVER TORQUE TAG with RIVETS	TB-8312-BA-TAG
10	1	TOW EYE	TB-980717-12H
12A	1	TOW BAR BODY W/ BUSHINGS (LESS ATTACHING PARTS)	TB-980717-12A
13	1	WHEEL CARRIAGE ASSEMBLY (INCL. 13A,13E,14,15,16,17,18)	TB-980717-13
13A	1	WHEEL CARRIAGE WELDMENT	TB-980717-13A
13E	2	U-BOLT	TB-980717-13E
14	4	LOCK NUT	TB-8898-6
15	4	NORD LOCK WASHER	TB-8649-4
16	2	PNEUMATIC WHEEL	TB-8714-40
17	4	FLAT WASHER	TB-8714-35
18	2	COTTER PIN	TB-8714-28



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Attachment # 1

PART NUMBER TB-7999-TAG A

WARNING

STEERING VALVE MUST BE OPEN
PRIOR TO TOWING AIRCRAFT

PART NUMBER TB-7999-TAG B

WARNING- BEFORE LOCKPIN REMOVAL

CLEAR NOSEWHEEL AREA OF
PERSONNEL AND TOWBAR

PART NUMBER TB-7999-TAG C

CAUTION

TWO POSITION PINS

1 YELLOW BAND - WITHOUT SPRAY DEFLECTOR
2 YELLOW BANDS - WITH SPRAY DEFLECTOR

PART NUMBER TB-7999-TAG D

CAUTION

AVOID WHEEL DAMAGE
RETRACT PINS FULLY
WHEN REMOVING TOWBAR

PART NUMBER TB-980717-TAG

**WARNING: BEFORE TOWING
THE LATCH PIN HANDLE NEEDS
TO BE IN THE DOWN POSITION**

PART NUMBER TB-8312-BA-TAG

**DO NOT OVER TORQUE
BOLTS SHOULD ROTATE
FREELY WITH WRENCH**



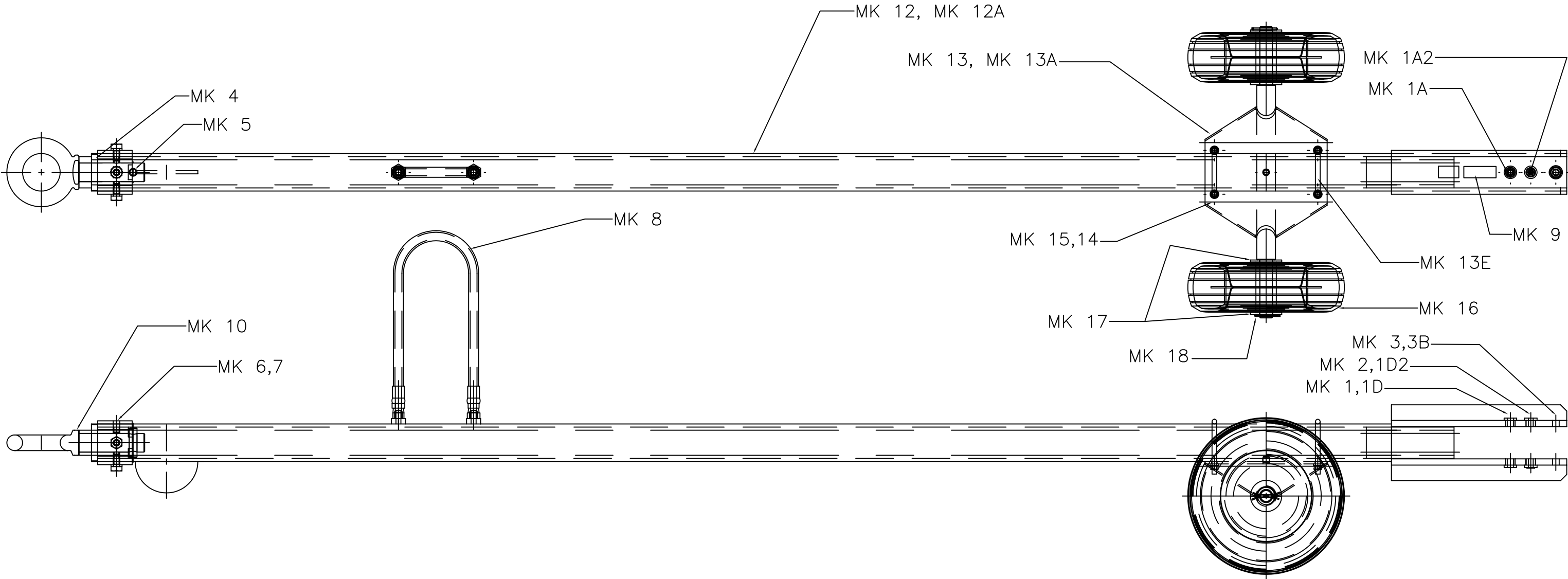
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MK	QTY	DESCRIPTION	PART NUMBER
6	4	BOLT, SWIVEL EYE BUSHING	H508C0032ZP0000
7	4	NORDLOCK WASHER, SWIVEL EYE BUSHING	TB-8898-17-LW
8	1	HOSE HANDLE	TB-980717-12M
9	1	TAG OVER TORQUE W/ RIVETS	TB-8312-BA-TAG
10	1	TOW EYE	TB-980717-12H
12A	1	TOW BAR BODY WITH BUSHINGS (LESS ATTACHING PARTS)	TB-980717-12A
13	1	WHEEL CARRIAGE ASSEMBLY (INCL. 13A,13E,14,15,16,17,18)	TB-980717-13
13A	1	WHEEL CARRIAGE WELDMENT	TB-980717-13A
13E	2	U-BOLTS	TB-980717-13E
14	4	LOCK NUT	TB-8898-6
15	4	NORDLOCK WASHER	TB-8649-4
16	2	PNEUMATIC WHEEL	TB-8714-40
17	4	FLAT WASHER	TB-8714-35
18	2	COTTER PIN	TB-8714-28

BILL OF MATERIALS			
MK	QTY	DESCRIPTION	PART NUMBER
12	1	TB-980717 TOW BAR BODY ASSEMBLY, COMPLETE	TB-980717-12
1	1	PIVOT BOLT	TB-980717-1
1A	2	BUSHING, FLANGED	TB-980717-1A
1D	1	NYLOCK HALF NUT	TB-980717-1D
2	1	SHEAR BOLT	TB-980717-2
1A2	2	BUSHING, FLANGED	TB-9205-1A
1D2	1	STOVER LOCK NUT	TB-9205-1D
3	1	CAPTURE BOLT	TB-9205-3
3B	1	LOCK NUT	TB-9205-3B
4	1	SWIVEL EYE BUSHING	TB-980717-12K
5	1	TOW EYE RETAINER	TB-980717-12L



DO NOT SCALE

SIZE	B	SCALE	1 : 8
TOLERANCES			UNLESS SPEC. OTHERWISE
FRACTIONAL	DECIMAL	ANGULAR	
X<12 ±1/32	X ±.050	± 0°-30'	
X>12 ±1/16	XX ±.010		
	XXX ±.005		

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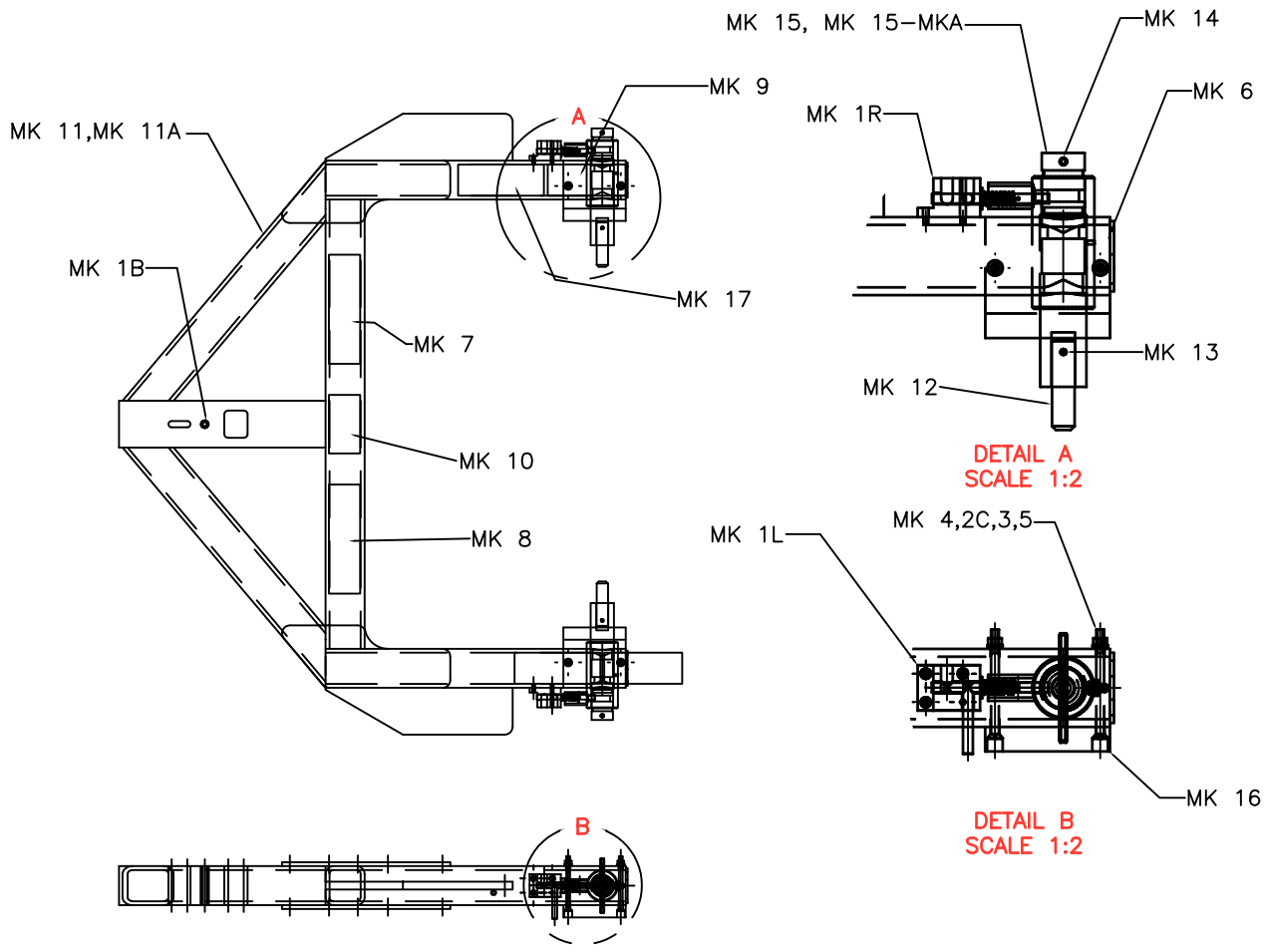
PROJECT/CUSTOMER	TB-980717	DRAWN	DALLOS
SUBJECT	TOW BAR BODY ASSEMBLY	REV	2

hi HALL INDUSTRIES, Inc. 201 EAST CARSON ST. PITTSBURGH, PENN. 15219			
COMPUTER CODE TB-980717-12			
DATE	04/10/01	CHECK	WS
DWC.NO.		TB-980717-12	

REFERENCE DRAWING NO.'S		
TB-980717	TB-980717-12K	
TB-980717-12A	TB-980717-12L	
TB-980717-12H	TB-980717-13	

PROTOTYPE MADE BY	CHECKED BY
RELEASED FOR PRODUCTION	
NOTES	
WARNING !!! DRAWING IS VOID IF BLOCK ABOVE IS NOT COMPLETED !!!	

SYM	DATE	DESCRIPTION	BY	CHK
△	04/27/01	ADDED TAGS, UPDATED BOM	BD	
△	07/20/01	UPDATED BOM	BD	



BILL OF MATERIALS			
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-	1	TB-980717 YOKE ASSEMBLY, COMPLETE	TB-980717-11
1R	1	RIGHT SIDE LATCH KIT	TB-7999-1-R
1L	1	LEFT SIDE LATCH KIT	TB-7999-1-L
1B	2	BUSHING, STRAIGHT	TB-9205-1B
2C	4	FLAT WASHER	TB-9205-2C
3	4	LOCK WASHER	ATR-302F
4	4	MICARTA BOLTS	1L04C0104ZP0000
5	4	HEX NUT	HN04C0000ZPB600
6	2	GREASE FITTING	TB-8649-2
7	1	WARNING TAG STEERING W/RIVETS	TB-7999-TAG-A
8	1	WARNING PIN REMOVAL W/RIVETS	TB-7999-TAG-B
9	2	TWO POSITION PIN W/RIVETS	TB-7999-TAG-C
10	1	CAUTION WHEEL W/RIVETS	TB-7999-TAG-D
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12	2	INSERT, AXLE PIN	TB-9205-8
13	2	ROLL PIN	P443200445S0000
14	2	ROLL PIN HANDLE	P443601125S0000
15	2	NOSE PINE ASSEMBLY COMPLETE (INCL. 12,13,14,15-MKA)	TB-980717-15
15-MKA	2	NOSE PIN BODY	TB-980717-15-MKA
16	2	MICARTA SKID PADS	TB-980717-16
17	2	PLAQUE; LATCH PIN W/RIVETS	TB-980717-TAG

DO NOT SCALE

UNIT	B	SCALE	1 : 8
TOLERANCES		UNLESS SPEC. OTHERWISE	
FRACTIONAL	DECIMAL	ANGULAR	
X<12 ±1/32	X ±.050	± 0°-30'	
X>12 ±1/16	XX ±.010		
	XXX ±.005		

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PROJECT/CUSTOMER	TB-980717	DALLOS
SUBJECT	YOKE ASSEMBLY	REV 2

REFERENCE DRAWING NO.'S			PROTOTYPE MADE BY		CHECKED BY		REVISIONS		BY	CHK	HALL INDUSTRIES, Inc.	
TB-980717-11A			RELEASED FOR PRODUCTION				Δ	04/26/01	ADDED TAGS, UPDATED BOM	BD	201 EAST CARSON ST. PITTSBURGH, PENN. 15219	
TB-980717-15			NOTES				Δ	07/20/01	UPDATED BOM	BD	COMPUTER GENERATED TB-980717-11	
TB-980717-16			WARNING IN DRAWING IS VOID IF BLOCK ABOVE IS NOT COMPLETED IN								DATE 04/10/01	CHECK WS