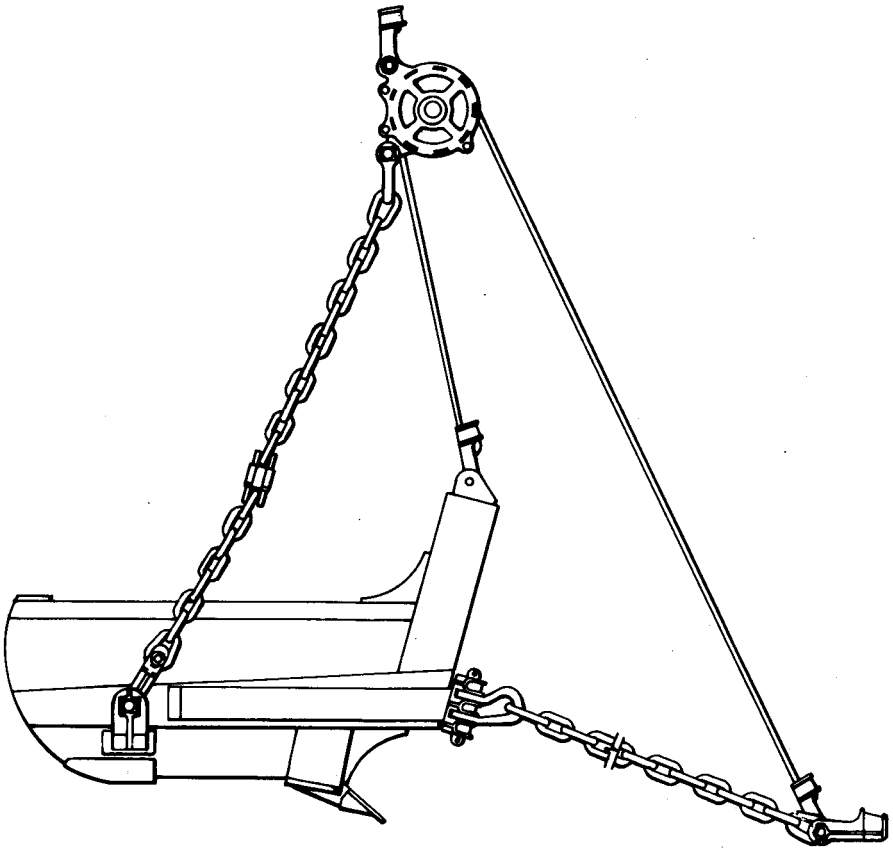
TECHNICAL MANUAL

OPERATOR, UNIT, DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)



BUCKET, DRAGLINE, TYPE II SIZE 75
3/4 CU. YD. MEDIUM PURPOSE
INTERGY MODEL DMD34
NSN 3815-01-249-1692

HEADQUARTERS, DEPARTMENT OF THE ARMY

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19 NOVEMBER 1989

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., *30 June 1993*

**OPERATOR, UNIT, DIRECT
SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND
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**BUCKET, DRAGLINE, TYPE II SIZE 75
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Current as of 2 April 1993

TM 5-3815-226-13&P, dated 19 November 1989, is changed as follows:

1. Remove old pages and insert new pages.

2. New or changed material is indicated by a vertical bar in the margin.

Remove Pages	**Insert Pages**
i and ii	*i through iii/(iv Blank)*
N-1 through Sheet 11 of 11	*N-1 through BULK-1*
None	*I-1 through I-5*

3. File this change sheet in front of the publication for reference purposes.

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04444

Distribution
To be distributed in accordance with DA Form 1225-E (Block 5103) requirements for TM5-381 5-2261 3&P.

SAFETY PRECAUTIONS

**** WARNING ****

NEVER POSITION THE BUCKET, EMPTY OR LOADED OVER ANY PERSON.

NEVER LET ANYONE RIDE IN THE BUCKET. THE BUCKET IS NOT DESIGNED TO BE AN ELEVATOR.

DO NOT THROW OR CAST THE BUCKET AS THIS IMPOSES LOADS ON THE CRANE NOT COVERED BY CAPACITY TABLES AND MAY TIP THE CRANE CAUSING INJURY OR DEATH.

DO NOT ALTER SHEAVE GUARD. PROPER GUARDING IS AROUND THE SHEAVE TO KEEP THE CABLE WITHIN THE SHEAVE GROOVE. MAINTAIN THIS GUARD SO THE CABLE WILL NOT JUMP THE SHEAVE OR BE PINCHED OR CUT, THUS REDUCING THE SAFETY FACTOR.

REPAIR THE BUCKET WHEN DAMAGED. DO NOT OPERATE WITH LOOSE OR DAMAGED PARTS.

KNOW THE WEIGHT OF THE BUCKET BEING USED AND CALCULATE THE EXPECTED LOADS TO BE PICKED UP. DO NOT OPERATE THE BUCKET OUTSIDE THE RECOMMENDED CAPACITIES OF YOUR CRANE EQUIPMENT.

BEFORE OPERATION, INSPECT THE PINS AND OTHER PARTS SUSPENDING THE BUCKET. BE SURE THEY DO NOT BECOME UNDULY WORN AND CAN NO LONGER SUSPEND THE LOAD OF THE BUCKET.

WEAR OSHA APPROVED HARD HATS, SAFETY GLASSES, SAFETY SHOES AND WORK GLOVES WHEN PREFORMING MAINTENANCE.

USE OSHA APPROVED WELDING HOODS, WELDING GLOVES AND WORK SHOES AND OTHER RECOMMENDED SAFETY ARTICLES WHEN WELDING. FAILURE TO DO SO WILL CREATE HAZARDOUS CONDITIONS FOR PERSONNEL.

SAFETY PRECAUTIONS

**** WARNING ****

DO NOT OPERATE BUCKET WITH WORN OR FRAYED WIRE ROPE. INSPECT DAILY AND REPLACE AS NECESSARY FOR SAFE OPERATION. REPLACE THE WIRE ROPE IF ANY OF THESE CONDITIONS EXIST:

A. BROKEN WIRES: SIX RANDOMLY DISTRIBUTED BROKEN WIRES IN THE LENGTH OF ONE LAY, OR PITCH, OF THE ROPE OR

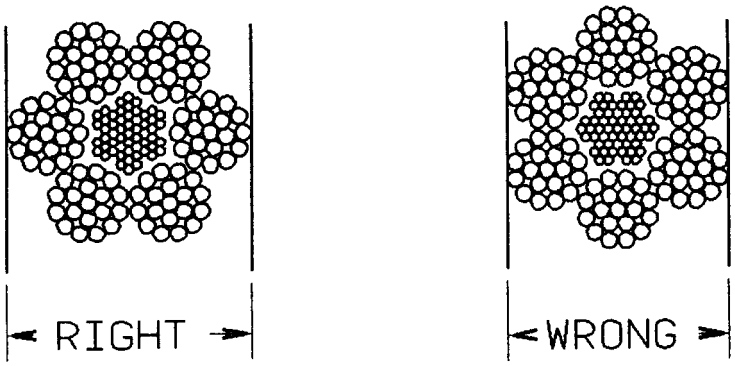
THREE BROKEN WIRES IN ONE STRAND IN THE LENGTH OF ONE LAY, OR PITCH, OF THE ROPE.

B. WORN WIRES: INDIVIDUAL OUTSIDE WIRES WORN TO TWO-THIRDS (2/3) OF ORIGINAL WIRE DIAMETER, ONE-THIRD (1/3) WORN AWAY. CHECK INDIVIDUAL WIRE AT HOIST SOCKET DEAD END. WIRE SIZE WILL VARY WITH WIRE ROPE MANUFACTURES.

C. DAMAGED WIRES: KINKED, CRUSHED OR BIRDCAGED WIRES. EVIDENCE OF HEAT DAMAGE FROM ANY CAUSE.

D. DECREASE IN WIRE ROPE DIAMETER: 1/64" FOR NOMINAL DIAMETERS TO 5/16" 1/32" FOR NOMINAL DIAMETERS OF 3/8 AND 1/2" 3/64" FOR NOMINAL DIAMETERS OF 9/16, 5/8 AND 3/4"

NOTE: MEASURE ROPE OVER STRANDS NOT ACROSS FLATS.



ROPE MEASUREMENT

ROPE MEASUREMENT

TECHNICAL MANUAL

No. 5-3815-226-13&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *19 November 1989*

OPERATOR, UNIT, INTERMEDIATE SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

BUCKET, DRAGLINE, TYPE II SIZE 75
3/4 CU. YD. MEDIUM PURPOSE
INTERGY MODEL DMD34
NSN 3815-01-249-1692

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual, direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

This technical manual is an authentication of the manufacturers commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

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GENERAL DESCRIPTION

DRAGLINE BUCKET
TYPE II MEDIUM DUTY
SIZE 75 3/4 CU.YD.
CLASS S SOLID PLATE

SHIPPING CUBE LENGTH 5'-I0 1/2", HEIGHT 4'-5" WIDTH 3'-6 1/2"

TOTAL WEIGHT 1,585 LBS.

HEIGHT 4'-5"

LENGTH 5'-10 1/2"

WIDTH OVERALL 3'-6 1/2"

SHIPPING INSTRUCTIONS

REMOVE ALL DIRT AND MUD FROM DRAGLINE BUCKET. REMOVE DRAG CABLE AND HOIST CABLE FROM DRAGLINE BUCKET. SECURE DRAG LINE SOCKET WEDGE INTO SOCKET BOWL WITH WIRE. SECURE HOIST LINE SOCKET WEDGE INTO SOCKET BOWL WITH WIRE. PLACE DRAG CHAINS AND CROWSFOOT ASSEMBLY INSIDE BUCKET PLACE DUMP BLOCK ASSEMBLY, HOIST CABLE, SPREADER BAR, AND UPPER HOIST CHAIN INSIDE BUCKET. LOWER HOIST CHAIN WILL HANG OVER FROM THE OUTSIDE TO INSIDE. DRAGLINE IS NOW READY FOR SHIPPING.

DRAGLINE STORAGE DRAGLINE STORAGE SHORT TERM 60 DAYS OR LESS. STORAGE CAN BE INSIDE OR OUTSIDE. GREASE DUMP BLOCK SHEAVE WHEN DRAGLINE IS FIRST PUT IN STORAGE. ENSURE ALL NUTS, BOLTS, COTTER PINS, AND SOCKET WEDGES ARE INSTALLED ON THE DRAGLINE.

DRAGLINE STORAGE LONG TERM 60 DAYS OR MORE. STORAGE CAN BE INSIDE OR OUTSIDE. GREASE DUMP BLOCK SHEAVE WHEN DRAGLINE IS FIRST PUT IN STORAGE. ENSURE ALL NUTS, BOLTS, COTTER PINS, AND SOCKET WEDGES ARE INSTALLED ON THE DRAGLINE. EVERY 60 DAYS ROTATE'DUMP BLOCK SHEAVE TO ENSURE FREE ROTATION.
EVERY 60 DAYS GREASE DUMP BLOCK SHEAVE.

GENERAL DESCRIPTION

READ THIS INTRODUCTION

EVEN THOUGH YOU MAY BE FAMILIAR WITH DRAGLINE BUCKET OPERATION. SAFETY PROCEDURES, HOOK-UP DIRECTIONS AND MAINTENANCE REQUIREMENTS ARE DISCUSSED. AN ILLUSTRATION OF THIS BUCKET IS ON PAGE 4 OF THIS MANUAL. PERTINENT PARTS ORDER INFORMATION SUCH AS BUCKET TYPE, SIZE, MODEL NUMBER AND SERIAL NUMBER ARE ON THE FRONT OF THIS MANUAL.. THE DRAGLINE BUCKET HAS NO CLOSING MECHANISM. IT IS

A SINGLE UNIT SHAPED IN THE FORM OF A SCOOP WHICH, UNDER DIRECT PULL, SCOOPS A LOAD. CERTAIN FACTORS DETERMINE HOW EFFICIENTLY A DRAGLINE BUCKET WILL DIG AND HOW EASILY IT WILL HANDLE A LOAD.

BALANCE

THE FORCES THAT CAUSE A DRAGLINE TO DIG (DRAG CHAIN PULL AND BUCKET WEIGHT) ACT THROUGH THE CENTER OF GRAVITY OF THE BUCKET. IN COMBINATON, THESE FORCES MUST OVERCOME THE RESISTANCE SUPPLIED AGAINST THE DIGGING EDGE AND LEAD THE BUCKET DOWN AND INTO THE MATERIAL. WELL DESIGNED DRAGLINE BUCKETS ACHIEVE THE PROPER RELATIONSHIP OF DIGGING FORCES SO THE BUCKET IS IN PERFECT BALANCE; DIGGING DEEPLY AT EVERY BITE, NOT RIDING UP OR SKIPPING OVER MATERIAL.

DESIGN

A DRAGLINE BUCKET IS DESIGNED TO USE ITS WEIGHT AND BALANCE. PITCH OF TEETH, SLOPE, SHARPNESS, SHAPE OF THE CUTTING EDGE AND POSITION OF THE HITCH POINTS ALL HELP TO DRAW THE BUCKET DOWNWARD AND FORWARD INTO THE MATERIALS SMOOTHLY WITH NO WASTED EFFORT. DIRECTION OF PULL IN RELATION TO THE CENTER OF GRAVITY CHANGES WITH THE DEPTH OF DIGGING. A DRAGLINE BUCKET HAS SUFFICIENT HITCH POINTS TO PROVIDE COMPLETE ADJUSTABILITY.

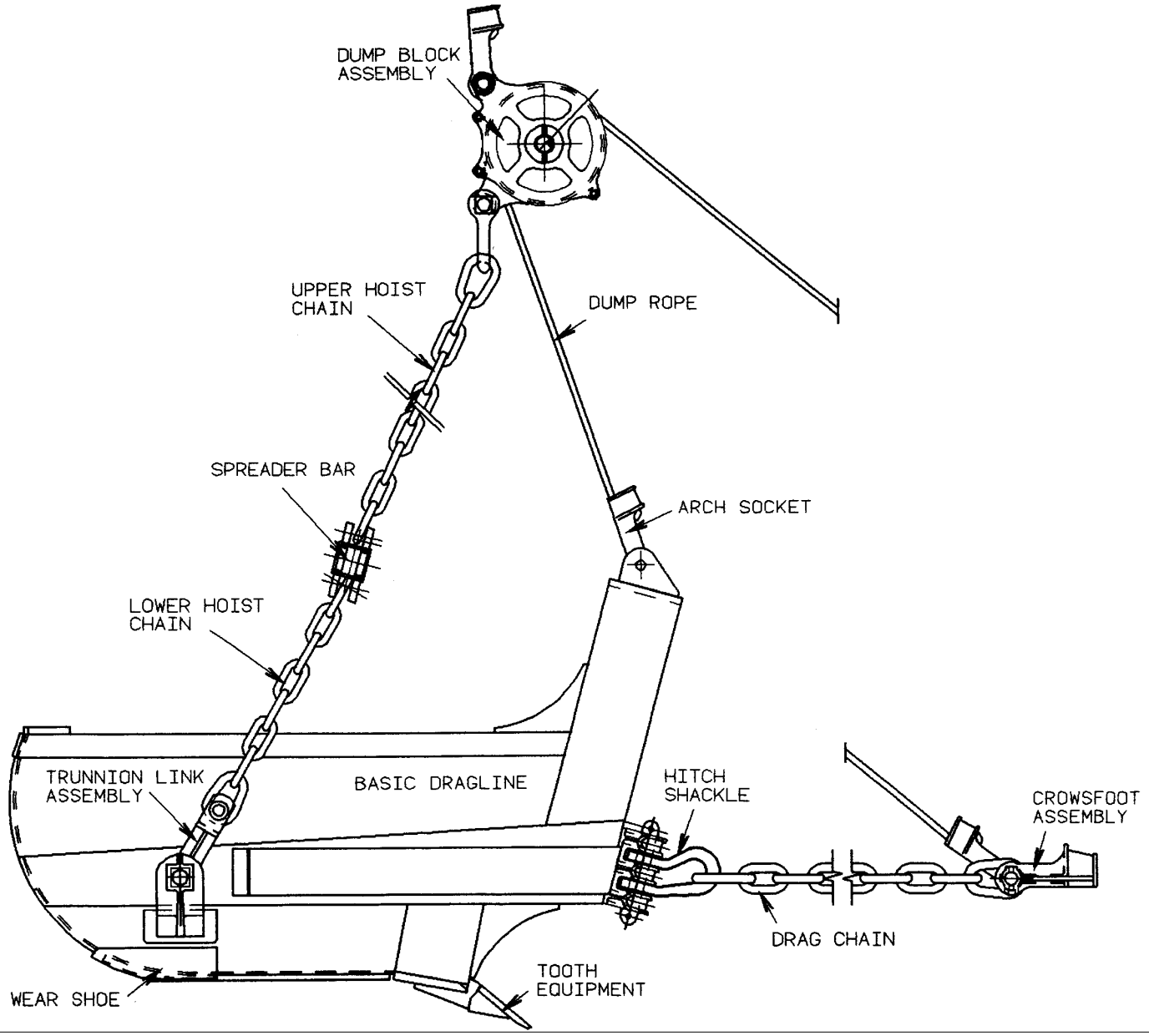
OPERATION

FOR TOP PRODUCTION, A DRAGLINE BUCKET SHOULD BE DE SIGNED TO SUIT MANY DEGREES OF OPERATING SKILL. THE BUCKET SHOULD BE CAPABLE OF DIGGING IN, WHETHER LAND ED ON ARCH, TOOTH POINTS OR FLAT ON ITS BOTTOM.

MATCH THE DRAGLINE BUCKET THE CAPACITY OF YOUR CRANE FOR MAXIMUM EFFICIENCY. OPERATING EFFICIENCY IS ALSO DETERMINED BY THE WORKING RADIUS, BOOM LENGTH, TYPE OF CRANE MOUNTING AND ENGINE CAPACITY.

A PROPERLY DESIGNED DRAGLINE BUCKET LOADS TO HEAPED CAPACITY WHEN PULLED ABOUT TWO BUCKET LENGTHS. IT DUMPS FAST, SMOOTH, AND CLEAN TO ASSURE A FAST DIGGING CYCLE. AN OVERSIZED BUCKET WILL OVERLOAD THE CRANE THUS RE DUCING SWING SPEED. IT MAY ALSO MAKE THE CRANE DIFFICULT TO HANDLE AND CAUSE UNDUE OPERATOR FATIGUE. UNDERSIZED BUCKETS REDUCE MATERIAL HANDLING CAPACITY.

DRAGLINE NOMENCLATURE



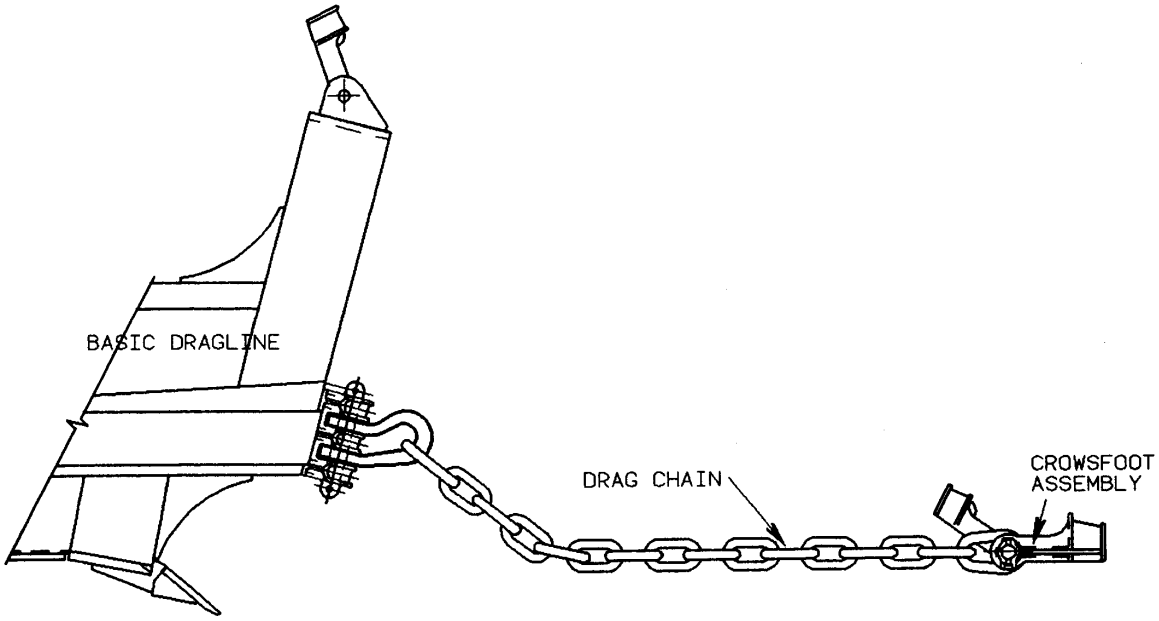
INSTALLATION INSTRUCTIONS

******WARNING******

WEAR OSHA APPROVED HARD HATS, SAFETY GLASSES, SAFETY SHOES AND WORK GLOVES WHEN PERFORMING MAINTENANCE WORK.

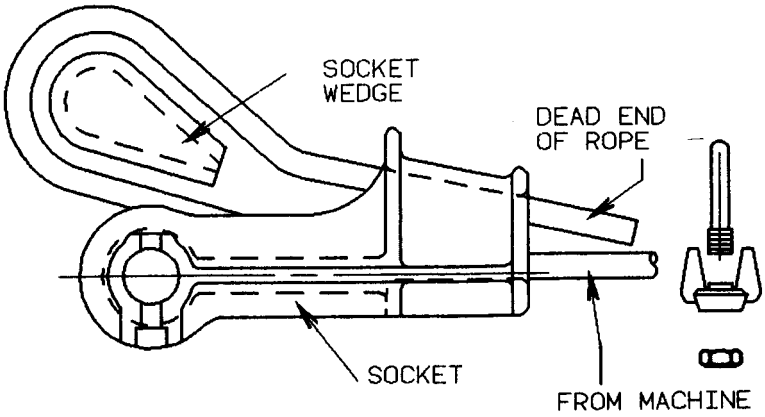
1. REMOVE DRAG CHAINS AND CROWSFOOT ASSEMBLY FROM INSIDE OF DRAGLINE.

2. STRETCH DRAG CHAINS AND CROWSFOOT ASSEMBLY OUT FULL LENGTH IN FRONT OF BUCKET TOWARDS MACHINE.



3. LOCATE AND REMOVE CROWSFOOT SOCKET WEDGE.

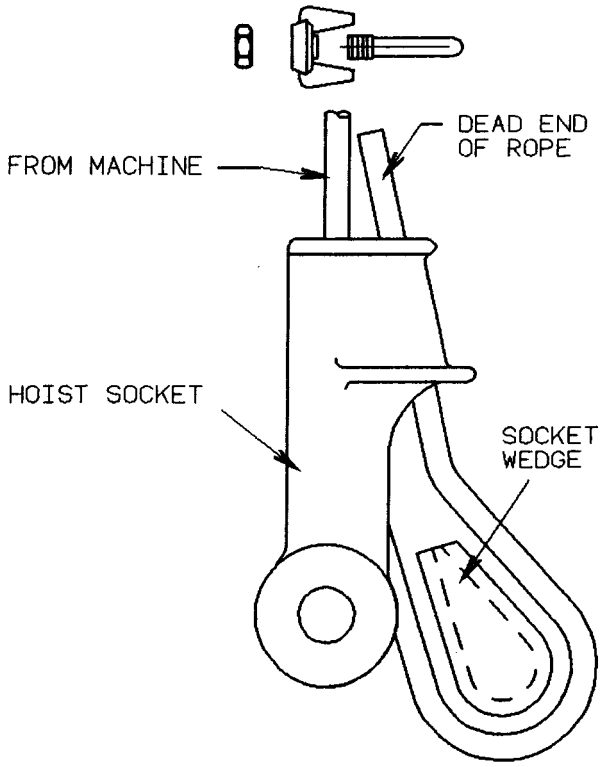
4. INSERT DRAG ROPE FROM MACHINE INTO SOCKET AND SECURE WITH SOCKET WEDGE. EXTEND DEAD END OF WIRE ROPE 12 INCHES THROUGH SOCKET SECURE WITH CLAMPS SEE TABLE



5. REMOVE DUMP BLOCK ASSEMBLY, HOIST CHAINS AND SPREADER BAR FROM INSIDE BUCKET.

6. LOCATE HOIST ROPE SOCKET AND REMOVE WEDGE.

7. INSERT HOIST ROPE FROM MACHINE INTO HOIST SOCKET AND SECURE WITH SOCKET WEDGE. EXTEND DEAD END OF WIRE ROPE 12 INCHES THROUGH SOCKET SECURE WITH CLAMPS SEE TABLE I PAGE 7.



8. CHECK BUCKET BEFORE HOISTING, ALL PINS, PINLOCKS MUST BE IN PLACE AND TIGHT. ALL SOCKET WEDGES MUST BE IN SOCKETS AND TIGHT.

9. PRIOR TO DIGGING OPERATION MAKE 4 OR 5 PASSES WITH BUCKET. RECHECK ALL WEDGES TO INSURE WIRE ROPE IS PROPERLY SEATED.

******WARNING******

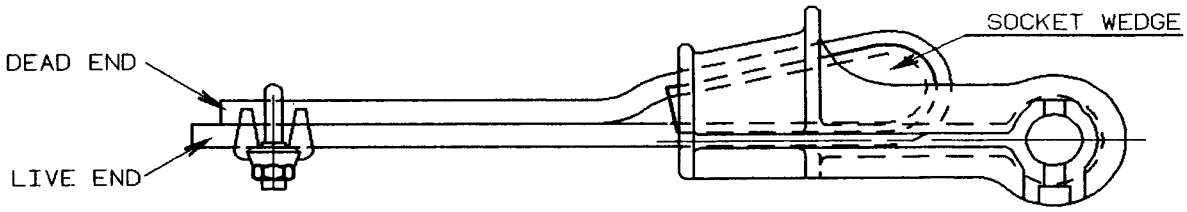
USE CORRECT CABLE. THE SHEAVE, WEDGES, AND SOCKETS OF THIS BUCKET ARE DESIGNED TO USE A PARTICULAR SIZE OF WIRE ROPE CABLE. OTHER SIZE CABLES MAY NOT SEAT PROPERLY AND BECOME LOOSE. AS AN EXTRA PRECAUTION, INSTALL CABLE CLAMPS ON LOOSE ENDS OF THE CABLE AFTER IT EMERGES FROM THE SOCKET (SEE TABLE I) PAGE 7. FAILURE TO DO SO MAY BE HAZARDOUS TO PERSONNEL AND EQUIPMENT.

INSTALLATION INSTRUCTIONS

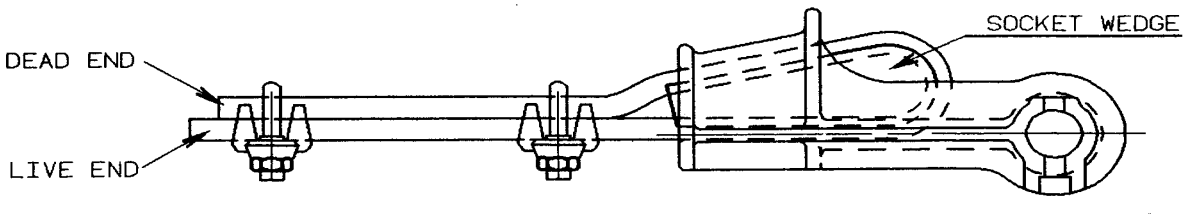
TABLE I

DIAMETER OF ROPE (INCHES)	NUMBER OF CLIPS	CENTER-TO-CENTER SPACE BETWEEN CLIPS (INCHES)	LENGTH OF WIRE ROPE TURNED BACK EXCLUSIVE OF EYE (INCHES)
5/8	3	3 ¾	12

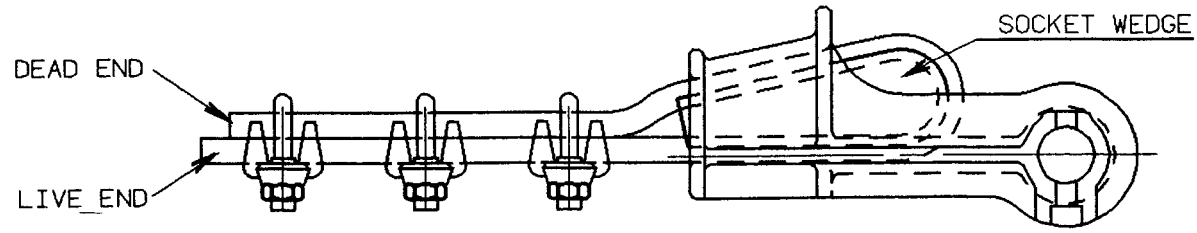
TO GET THE MAXIMUM STRENGTH FROM A CONNECTION. CLAMPS WILL BE INSTALLED BY THE METHOD ILLUSTRATED.



STEP I. APPLY FIRST CLAMP-ONE SADDLE WIDTH FROM DEAD END OF WIRE ROPE U-BOLT OVER DEAD END-LIVE END RESTS IN CLIP SADDLE. TIGHTEN NUTS EVENLY.

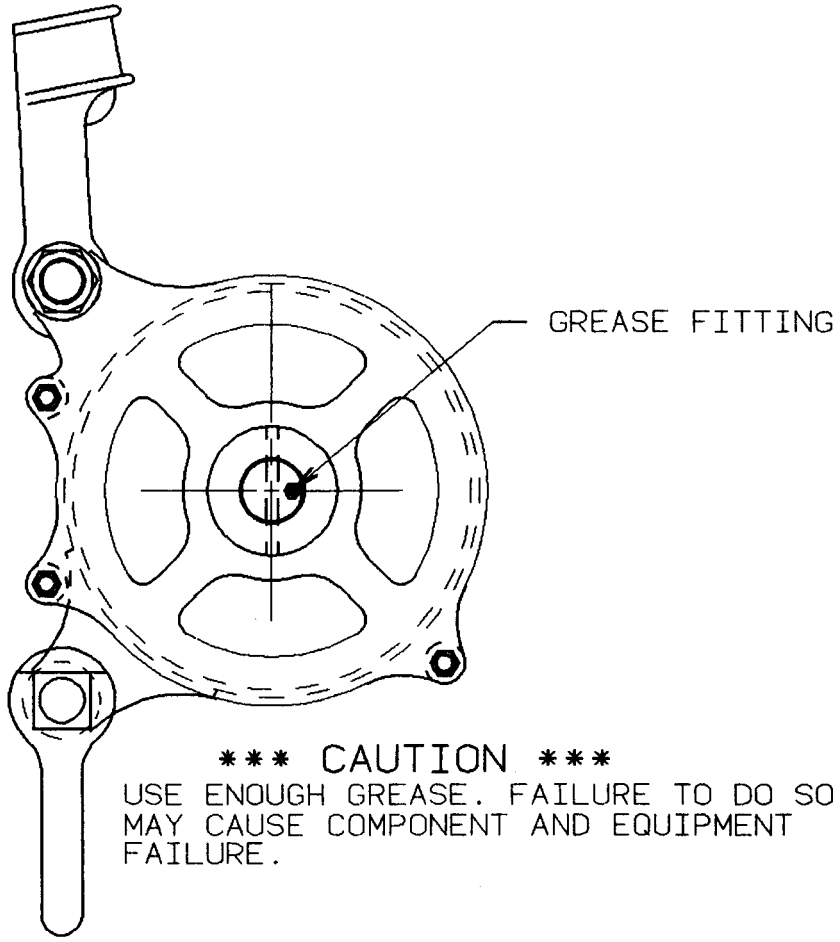


STEP 2. APPLY SECOND CLAMP-NEAREST SOCKET AS POSSIBLE U-BOLT OVER DEAD END-TURN ON NUTS FIRM BUT DO NOT TIGHTEN



STEP 3. ALLOTHER CLAMPS-SPACE EQUALLY BETWEEN FIRST TWO-THIS WILL BE NO MORE THAN ONE CLAMP SADDLE APART TURN ON NUTS-TAKE UP ROPE SLACK TIGHTEN ALL NUTS EVENLY ON ALL CLAMPS TO RECOMMENDED TORQUE. (TORQUE I09 FT LB)

1. LUBRICATE DUMP BLOCK SHEAVE BEARING BEFORE OPERATION. THIS IS THE ONLY LUBRICATION THE DRAGLINE NEEDS. USE GAA GREASE, ARTILLERY, AUTOMOTIVE.



USE ENOUGH NEW GREASE TO COMPLETELY DISPLACE ALL THE OLD GREASE AND EMBEDDED ABRASIVES. IF THE PIN WILL NOT ACCEPT GREASE, REMOVE AND CLEAN THE FITTING IN SOLVENT UNTIL GREASE FLOWS FREELY THROUGH IT. IF IT WILL STILL NOT ACCEPT GREASE, REMOVE THE PIN AND THOROUGHLY CLEAN GREASE PASSAGE AND THE BEARING.(IN SOLVENT) AN ALEMITE GREASE FITTING HAS BEEN PROVIDED IN THE PIN TO EASE MAIN TENANCE. REPLACE A BROKEN FITTING IMMEDIATELY AND REGREASE. DREDGING OPERATIONS WHERE THE GREASE IS CONTINUALLY BEING WASHED OUT BY WATER WILL REQUIRE MORE FREQUENT LUBRICATION. LUBRICATE THE BEARING EVERY FOUR HOURS OF OPERATION IN DREDGING.

2. REMOVE ANY DIRT, MUD PACKED INSIDE OF THE BUCKET. MATERIAL PACKED IN THE BUCKET ADDS UNNECESSARY WEIGHT AND REDUCES THE PREFORMANCE OF THE DRAGLINE.

3. INSPECT THE WIRE ROPE, CHAINS AND BUCKET BEFORE OPERATING. PARTICULAR ATTENTION SHOULD BE PAID TO THE CONDITION OF THE WIRE ROPE (SEE "SAFETY PRE CAUTION S" FOR UNSAFE WIRE ROPE CONDITIONS), PINS, SOCKETS, AND OTHER PARTS SUSPENDING THE BUCKET. INSPECT ALL PIVOT POINTS TO DETECT "SLOP" AND EXCESSIVE WEAR IN THE CONNECTION. INSPECT EVERY 8 HOURS IN CONTINUOUS OPERATION.

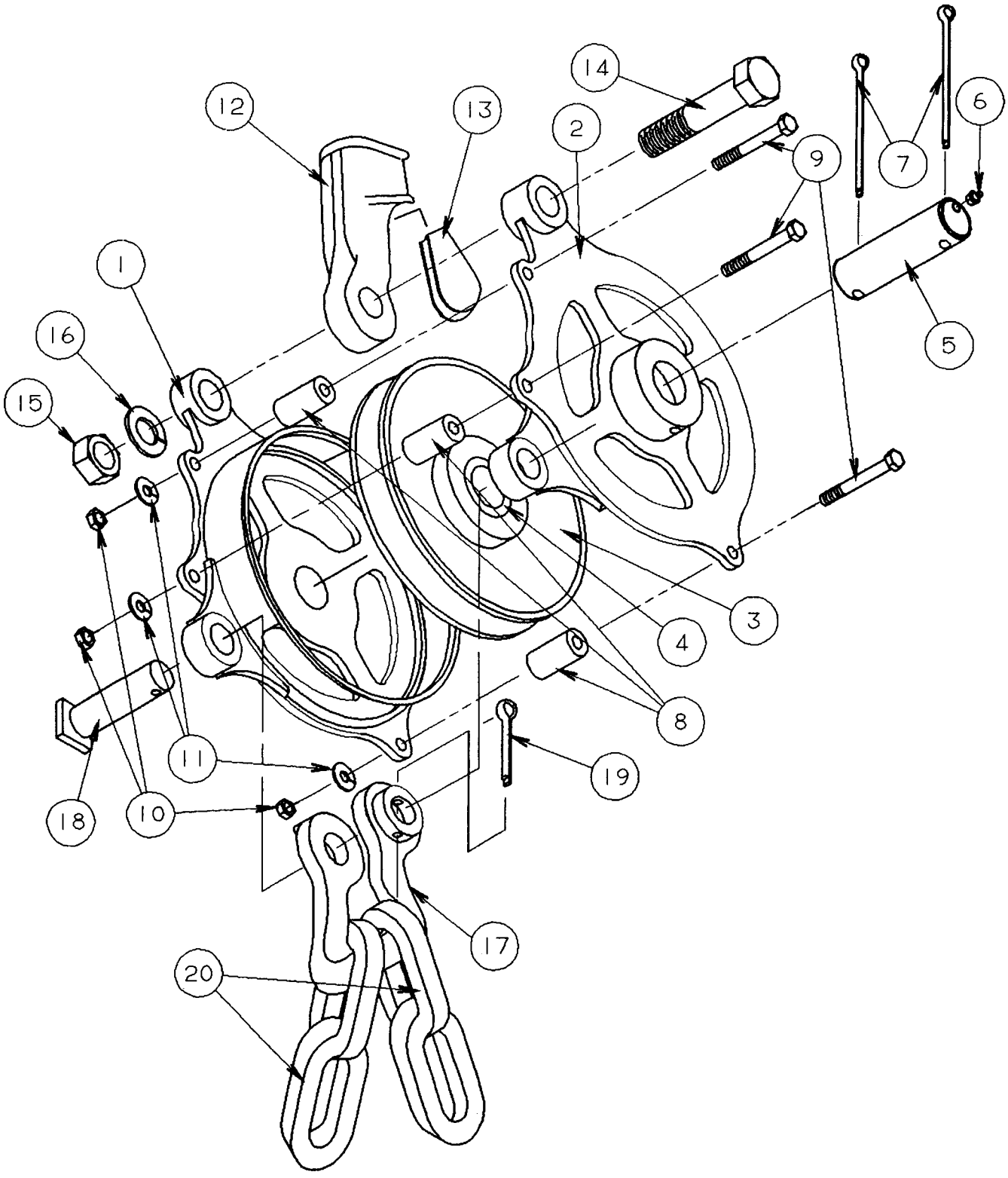
******WARNING******

OPERATING THE BUCKET WITH LOOSE PIVOT CONNECTIONS PLACES UNDUE STRESS ON THE PIVOT PINS, CAUSING UNEVEN WEAR AND EVENTUAL FAILURE OF THE PIN, AND POSSIBLY RESULTING IN PERSONAL INJURY OR EQUIP MENT DAMAGE.

4. REPLACE WORN OR BROKEN PARTS IMMEDIATELY. REPAIR CRACKS OR METAL FATIGUE BY A TRAINED WELDER.

5. INSPECT AND REPLACE MISSING OR BROKEN ADAPTERS OR TEETH.

DUMP BLOCK ASSEMBLY



DUMP BLOCK DISASSEMBLY & REASSEMBLY

NOTE; REMOVE COMPONENTS IN SEQUENCE FOR COMPLETE DISASSEMBLY.

HOIST SOCKET (ITEM 12) DISASSEMBLY

1.) SUPPORT DUMP BLOCK ASSEMBLY ON SOLID SURFACE.

2.) ALLOW SLACK IN HOIST CABLE FROM MACHINE.

3.) DRIVE SOCKET WEDGE (ITEM 13) TOWARD BOLT (ITEM 14) USING HAMMER AND BACKING OUT PUNCH.

4.) REMOVE WEDGE FROM ROPE.

5.) PULL ROPE THROUGH SOCKET BOWL.

6.) SECURE HEAD OF BOLT (ITEM 14) WITH 1-7/8 INCH WRENCH AND REMOVE NUT (ITEM 15) WITH 1-7/8 INCH WRENCH OR SOCKET..

7.) REMOVE LOCKWASHER (ITEM 16).

8.) RELIEVE WEIGHT OF HOIST SOCKET (ITEM 12) ON BOLT (ITEM 14) AND REMOVE BOLT BY USING HAMMER AND BACKING OUT PUNCH.

9.) REMOVE HOIST SOCKET.

HOIST SHACKLE (ITEM 17) DISASSEMBLY

1.) REMOVE COTTER PIN (ITEM 19) FROM HOIST SHACKLE PIN (ITEM 18) USING I/4" DRIFT AND HAMMER.

2.) RELIEVE WEIGHT OF HOIST SHACKLE AND ATTACHED CHAIN (ITEM 20) BEFORE REMOVING HOIST SHACKLE PIN (ITEM 18) WITH HAMMER AND BACKING OUT PUNCH.

3.) REMOVE HOIST SHACKLE. (ITEM 17)

DUMP BLOCK AND SHEAVE (ITEM 3) DISASSEMBLY

1.) LAY DUMP BLOCK ASSEMBLY ON RIGHT SIDE (ITEM 2).

2.) REMOVE THREE (3) NUTS (ITEM 10) WITH 3/4 INCH WRENCH AND SOCKET.

3.) REMOVE THREE (3) LOCKWASHERS (ITEM II).

4.) REMOVE ONF (I) COTTER PIN (ITEM 7) FROM L..H. DUMP BLOCK SIDE (ITEM I) USING HAMMER AND 1/4" DRIFT.

5.) LIFT L.H. DUMP BLOCK SIDE (ITEM I) FROM ASSEMBLY

6.) LIFT SHEAVE (ITEM 3) FROM SHEAVE PIN (ITEM 5).

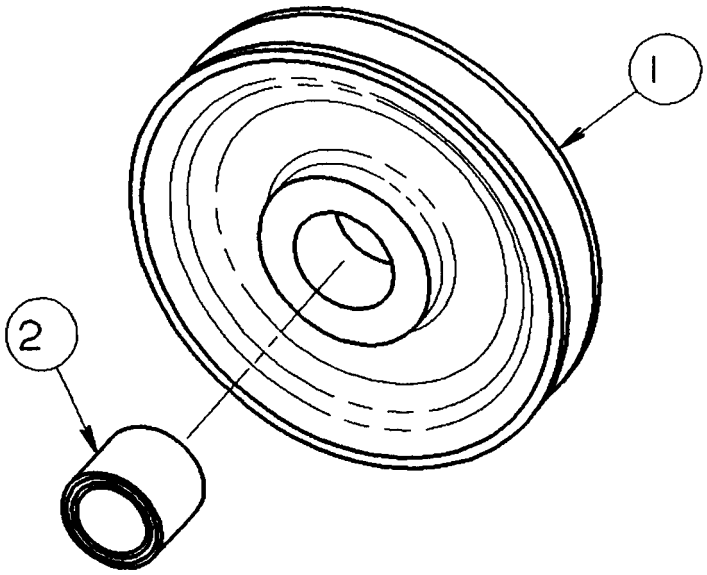
7.) TURN R.H. DUMP BLOCK SIDE (ITEM 2) WITH ATTACHED PIN AND REMOVE COTTER PIN (ITEM 7),

8.) SEPARATE SHEAVE PIN (ITEM 5) FROM R.H. DUMP BLOCK SIDE (ITEM 2).

9.) REMOVE GREASE FITTING (ITEM 6) FROM END OF SHEAVE PIN (ITEM 5) USING 7/16 INCH SOCKET.

ASSEMBLE IN REVERSE ORDER.

SHEAVE BEARING ASSEMBLY



SHEAVE BEARING DISASSEMBLY / ASSEMBLY

DISASSEMBLY :

1.) SUPPORT RIM OF SHEAVE (ITEM I) ON 2 BLOCKS OF WOOD OF EQUAL HEIGHT.

2.) DRIVE SHEAVE BEARING (ITEM 2) THROUGH SHEAVE WITH HAMMER AND 2 15/16" DIAMETER BEARING DRIVER.

ASSEMBLY :

1.) LUBRICATE BEARING BORE WITH LIGHT OIL.

2.) LAY SHEAVE ON CLEAN, FLAT SURFACE.

3) CENTER SHEAVE BEARING (ITEM 2) IN BEARING BORE AND TAP GENTLY AROUND OUTER EDGE TO SEAT.

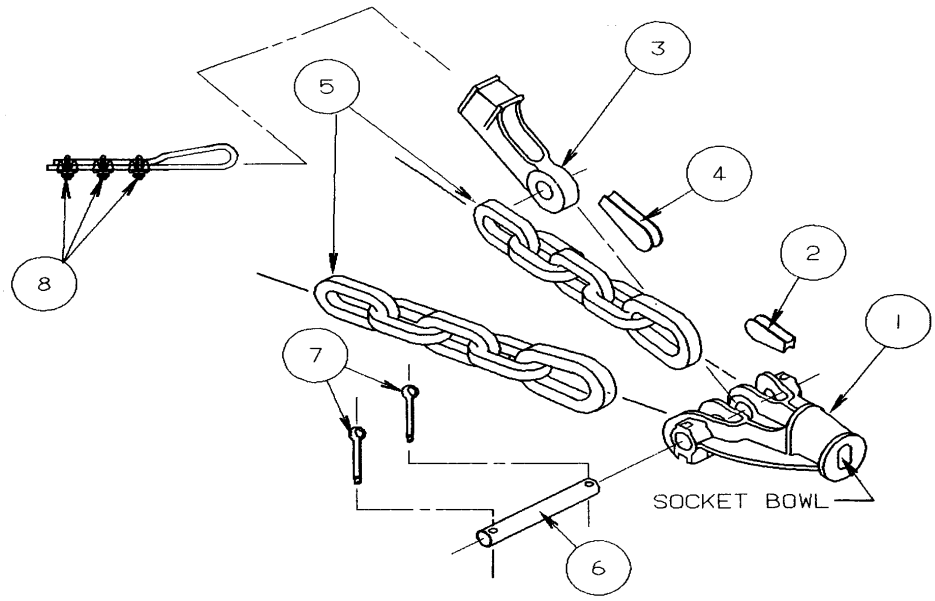
4.) CENTER A 2 15/16 DIAMETER BEARING DRIVER OVER SHEAVE BEARING AND DRIVE WITH HAMMER UNTIL BEARING IS RECESSED 1/4 INCH.

5.) INSPECT BOTH SIDES OF SHEAVE HUB TO INSURE BEARING IS NOT COCKED.

6.) STRAIGHTEN CROOKED BEARING BY TAPPING ON HIGH SIDE WITH HAMMER AND BRASS BAR.

NOTE: AN ARBOR PRESS MAY BE USED TO PERFORM DISASSEMBLY STEP 2 AND ASSEMBLY STEP 4.

CROWSFOOT ASSEMBLY



CROWSFOOT DISASSEMBLY & REASSEMBLY

DISASSEMBLY

1.) SUPPORT CROWSFOOT ASSEMBLY ON SUITABLE WORK SURFACE.

2.) REMOVE CABLE CLAMPS TITEM 8).

3.) HOLD CROWSFOOT SOCKET (ITEM I) STATIONARY.

4.) DRIVE CROWSFOOT WEDGE (ITEM 2) TOWARD CROWSFOOT PIN (ITEM 6) USING HAMMER AND BACKING OUT PUNCH.

5.) SEPARATE CROWSFOOT WEDGE FROM ROPE.

6.) PULL ROPE THROUGH CROWSFOOT SOCKET BOWL.

7.) DRIVE DUMP SOCKET WEDGE (ITEM 4) TOWARD CROWSFOOT PIN (ITEM 6) WITH HAMMER AND BACKING OUT PUNCH.

8.) SEPARATE DUMP SOCKET WEDGE FROM ROPE.

9.) PULL ROPE THROUGH DUMP SOCKET BOWL.

10.) REMOVE CROWSFOOT COTTER PINS (ITEM 7) USING 1/4" DRIFT AND HAMMER.

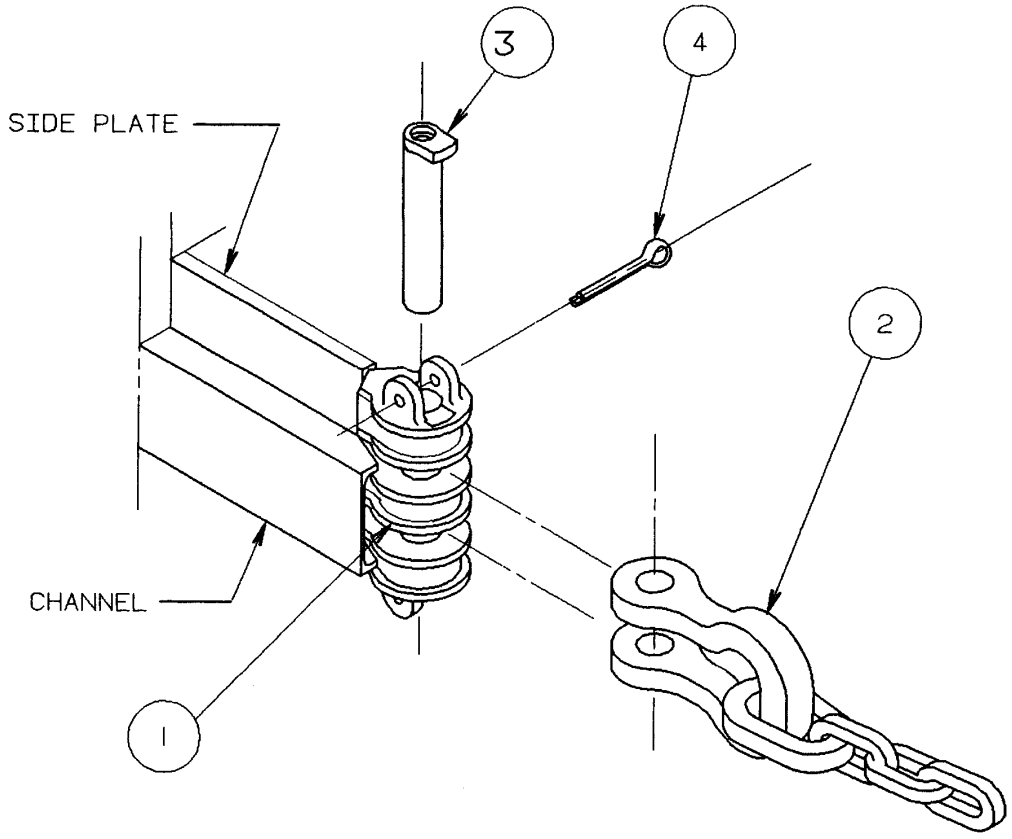
11.) DRIVE CROWSFOOT PIN (ITEM 6) THROUGH CROWSFOOT SOCKET (ITEM I) USING HAMMER AND BACKING OUT PUNCH.

12.) REMOVE DUMP SOCKET (ITEM 3)

13.) REMOVE DRAG CHAIN (ITEM 5).

REASSEMBLE IN REVERSE ORDER.

HITCH BRACKET ASSEMBLY



HITCH BRACKET DISASSEMBLY & REASSEMBLY

DISASSEMBLY

1.) REMOVE COTTER PIN (ITEM 4) FROM HITCH BRACKET (ITEM I) USING HAMMER AND DRIFT.

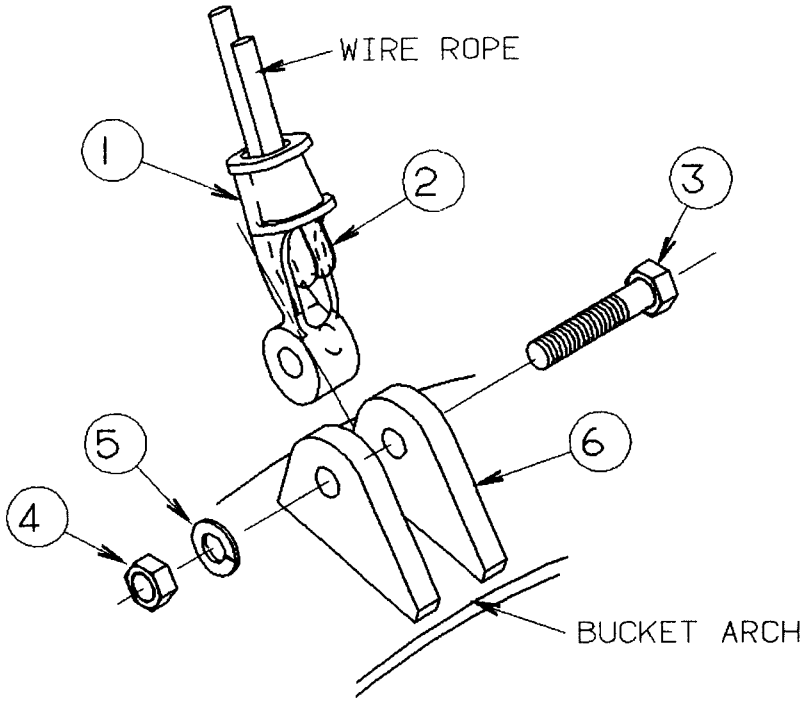
2.) DRIVE HITCH PIN (ITEM 3) UPWARD THROUGH HITCH BRACKET (ITEM I) USING HAMMER AND BACKING OUT PUNCH.

3.) REMOVE HITCH PIN (ITEM 3).

4.) REMOVE HITCH SHACKLE (ITEM 2).

REASSEMBLE IN REVERSE ORDER.

ARCH SOCKET ASSEMBLY



ARCH SOCKET AND WEDGE DISASSEMBLY & REASSEMBLY

DISASSEMBLY

1.) ROTATE ARCH SOCKET (ITEM I) TO REST ON ARCH.

2.) DRIVE SOCKET WEDGE (ITEM 2) TOWARD BOLT (ITEM 3) USING HAMMER AND BACKING OUT PUNCH.

3.) REMOVE WEDGE (ITEM 2) FROM ROPE.

4.) PULL ROPE THROUGH SOCKET BOWL (ITEM I).

5.) SECURE HEAD OF BOLT (ITEM 3) WITH 1-1/2 INCH WRENCH.

6.) LOOSEN AND REMOVE NUT (ITEM 4) WITH 1-1/2 INCH SOCKET OR WRENCH.

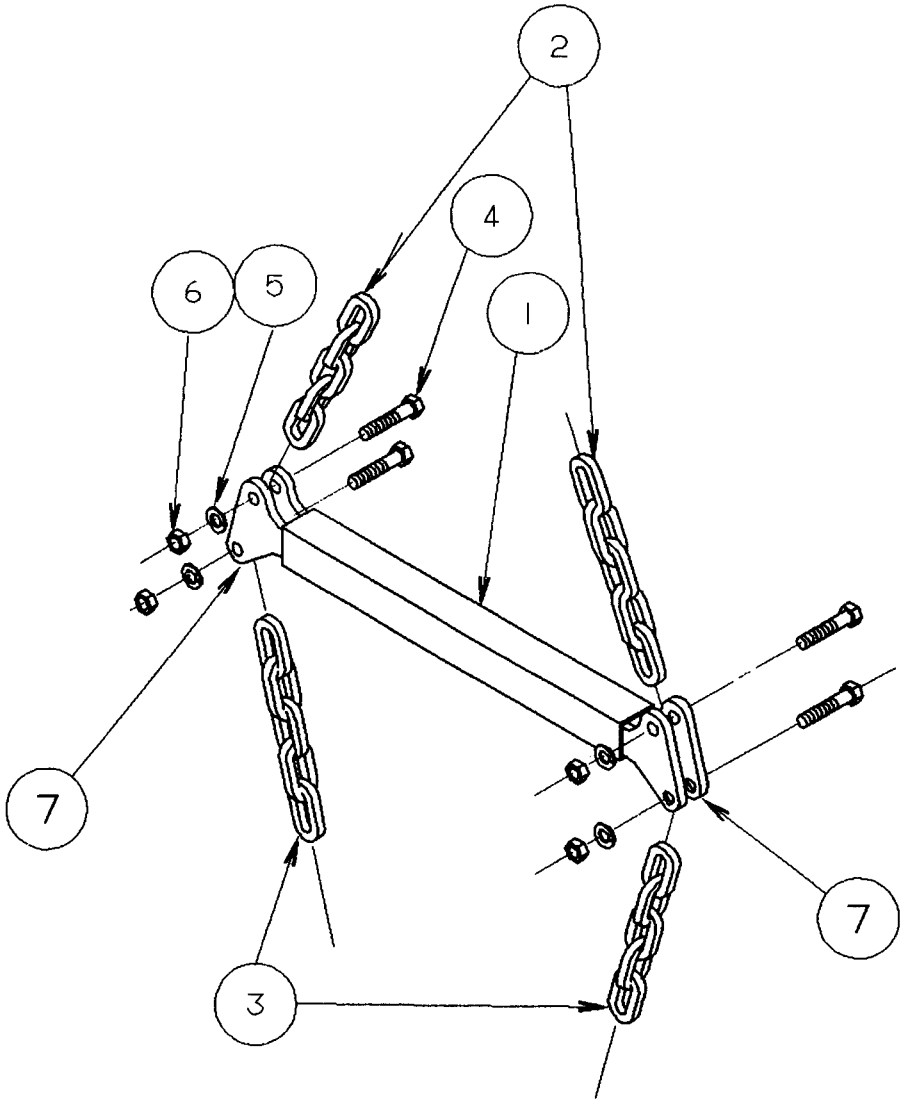
7.) REMOVE LOCKWASHER (ITEM 5).

8.) REMOVE BOLT (ITEM 3) FROM SUPPORT (ITEM 6) USING HAMMER AND BACKING OUT PUNCH.

9.) REMOVE SOCKET (ITEM I).

REASSEMBLE IN REVERSE ORDER.

ARCH SOCKET ASSEMBLY



SPREADER BAR DISASSEMBLY & REASSEMBLY

1.) POSITION SPREADER BAR (ITEM I) ON SOLID WORK SURFACE.

2.) SECURE HEAD OF BOLT (ITEM 4) WITH 1-1/2 INCH

3.) LOOSEN AND REMOVE NUT (ITEM 6) USING I-1/2 INCH SOCKET OR WRENCH.

4.) REMOVE LOCKWASHER (ITEM 5).

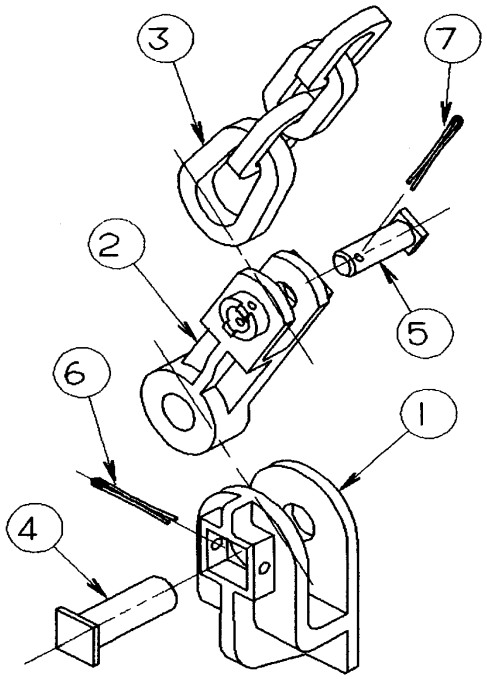
5.) DRIVE BOLT (ITEM 4) THROUGH SPREADER BAR EARS (ITEM 7) USING HAMMER AND BACKING OUT PUNCH.

6.) REPEAT STEPS 2, 3, 4 & 5 FOR EACH OR THE THREE (3) REMAINING BOLTS.

7) REMOVE UPPER AND LOWER HOIST CHAINS (ITEMS 2 & 3).

REASSEMBLE IN REVERSE ORDER.

TRUNNION BRACKET AND TRUNNION LINK ASSEMBLY



TRUNNION BRACKET AND LINK DISASSEMBLY & REASSEMBLY

DISASSEMBLY

1.) LOWER DUMP BLOCK ASSEMBLY TO ALLOW SPREADER BAR TO REST ON BUCKET. (REF. ILL. PG. 4)

2.) REMOVE COTTER PIN (ITEM 6) FROM TRUNNION BRACKET (ITEM I) USING HAMMER AND DRIFT.

3.) DRIVE LOWER TRUNNION PIN (ITEM 4) THROUGH TRUNNION BRACKET (ITEM I) FROM INSIDE OF BUCKET USING HAMMER AND DRIFT.

4.) REMOVE TRUNNION LINK (ITEM 2) WITH LOWER HOIST CHAIN (ITEM 3) ATTACHED TO TRUNNION BRACKET.(ITEM I)

5.) PLACE TRUNNION LINK (ITEM 2) AND LOWER HOIST CHAIN (ITEM 3) ON SOLID SURFACE.

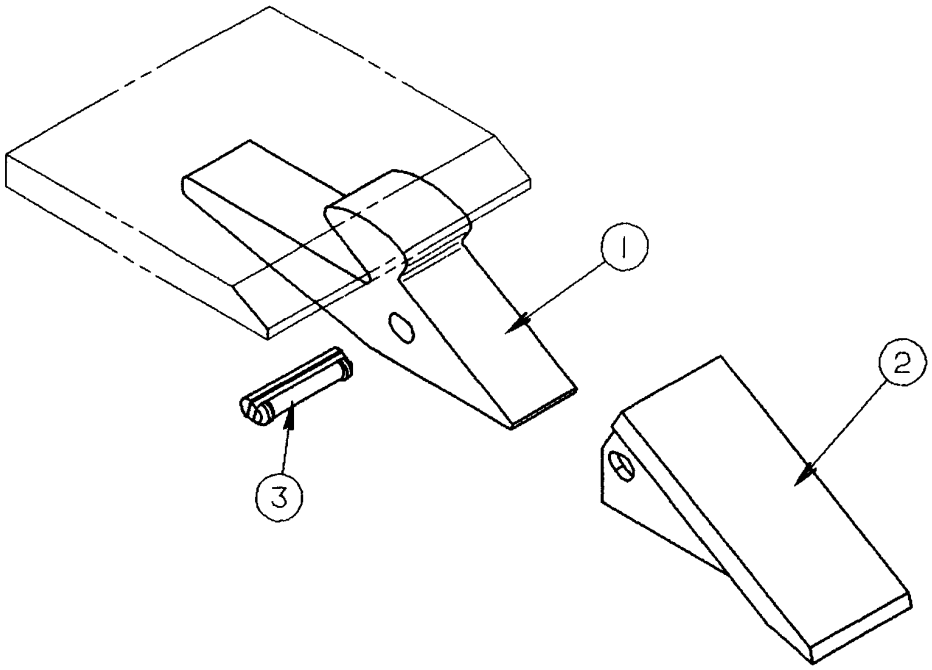
6.) REMOVE COTTER PIN (ITEM 7) FROM TRUNNION LINK (ITEM 2) AND TRUNNION LINK PIN (ITEM 5).

7.) DRIVE UPPER TRUNNION PIN (ITEM 5) THROUGH TRUNNION LINK (ITEM 2) USING HAMMER AND DRIFT.

8.) REMOVE LOWER HOIST CHAIN (ITEM 3).

REASSEMBLE THE REVERSE ORDER.

TOOTH EQUIPMENT DISASSEMBLY



DISASSEMBLY

1.) REST BOTTOM OF DRAGLINE BUCKET ON SOLID SURFACE.

2.) LIFT ARCH UNTIL TEETH ARE ELEVATED AND SUPPORT BOWL AT BACK OF LIP.

3.) STARTING WITH AN OUTSIDE TOOTH, DRIVE KEEPER (ITEM 3) THROUGH TOOTH POINT (ITEM 2) AND ADAPTER (ITEM I) USING 1/4" DRIFT AND HAMMER.

4.) REPEAT STEP 3 AS REQUIRED TO REMOVE NECESSARY TOOTH POINTS.

5.) DISCARD ALL USED KEEPERS.

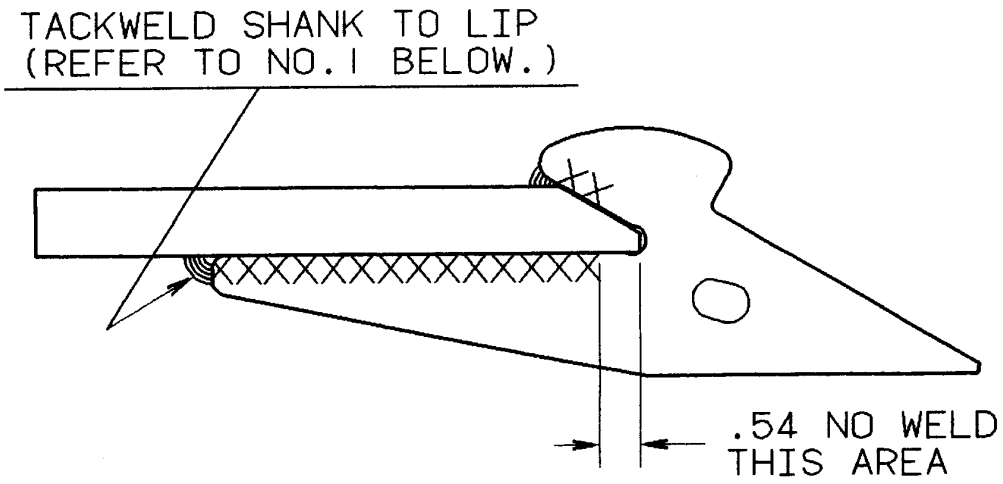
REASSEMBLY

1.) SLIDE NEW TOOTH POINT (ITEM 2) WITH FLAT SIDE UP ON ADAPTER (ITEM I) UNTIL KEEPER HOLES ARE ALIGNED.

2.) INSERT KEEPER (ITEM 3) IN HOLE AND DRIVE THROUGH POINT AND INTO ADAPTER WITH HAMMER UNTIL KEEPER IS FLUSH.

3.) REPEAT STEPS I AND 2 AS REQUIRED.

TOOTH ADAPTER REPLACEMENT



******WARNING******

USE OSHA APPROVED WELDING HOODS, WELDING GLOVES AND WORK SHOES AND OTHER SAFETY ARTICLES WHEN WELDING. FAILURE TO DO SO WILL CREATE HAZARDOUS CONDITIONS FOR PERSONNEL.

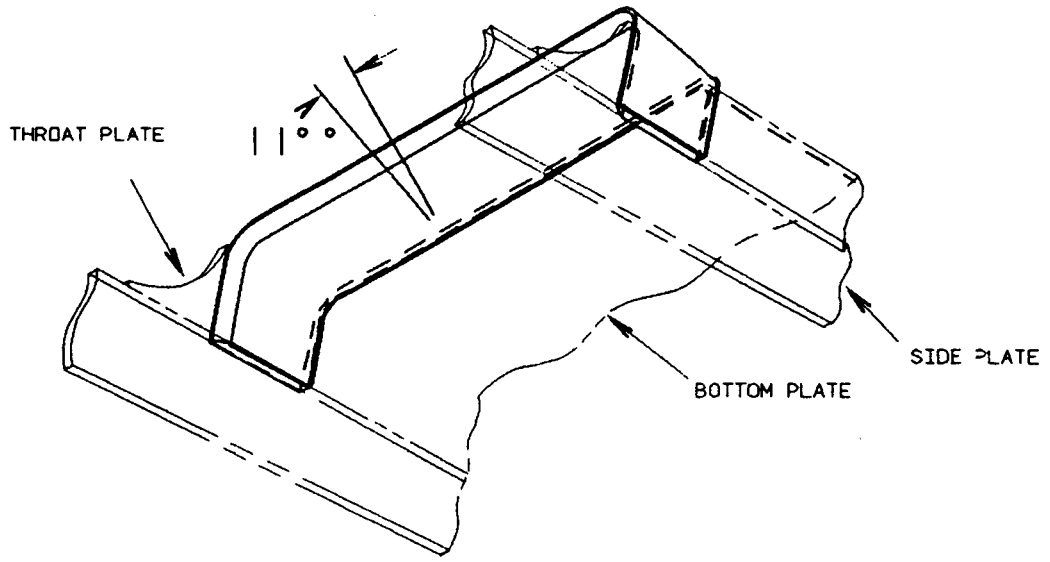
WELDING INSTRUCTIONS
BEFORE PROCEEDING WITH WELDING;
ADAPTERS MUST BE STORED AT ROOM
TEMPERATURE (75° F) FOR A MINIMUM
OF EIGHT (8) HOURS.

WELDING SEQUENCE:

1. LOCATE ADAPTERS ON BUCKET LIP AND TACKWELD AT REAR OF EACH ADAPTER.
2. PREHEAT THE ADAPTER AND LIP TO 400 TO 600°F.
3. START AT REAR OF ADAPTER, WELD FORWARD, ALTERNATE FROM SIDE TO SIDE AND PEEN AFTER EACH PASS, UNTILL 3/8 FILLET IS DEPOSITED.
4. COOL AT ROOM TEMPERATURE (75" F) FOR 2 HOURS.
5. USE 7016 OR 7018 WELDING ROD.

LIP REPLACEMENT

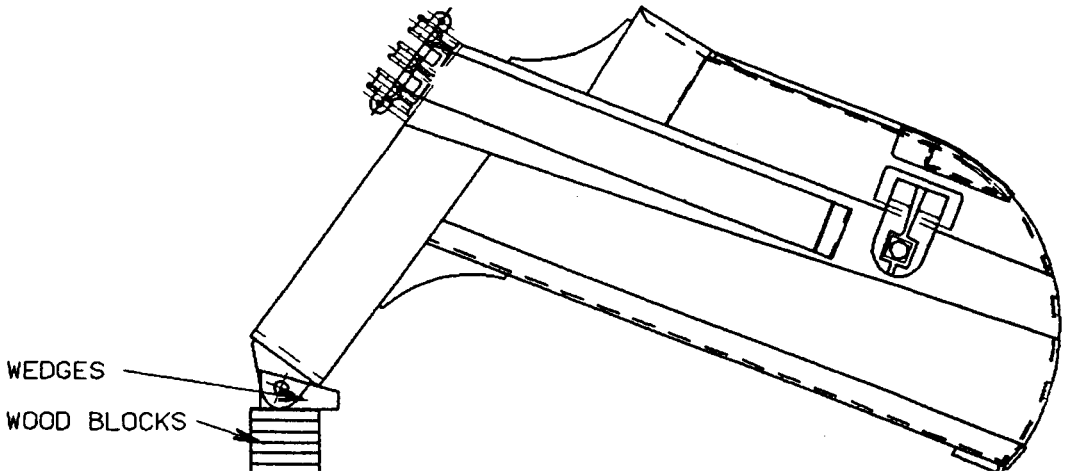
**** WARNING ****



KEEP HANDS, FEET AND BODY FROM UNDER LIP / BUCKET WHEN PERFORMING THESE PROCEDURES.

REMOVAL

1.) REMOVE ALL CHAIN AND ROPE ASSEMBLIES AT FASTENING POINT ON DRAGLINE BUCKET.
2.) POSITION BUCKET UPSIDE DOWN, RESTING ON ARCH AND BACK OF BOWL.
3.) SUPPORT ARCH WITH WOOD BLOCKS AND WEDGES TO RESTRICT TURNING.



LIP REPLACEMENT

*****NOTE******

AVOID EXCESSIVE LOCAL OVERHEATING WHEN PERFORMING THESE PROCEDURES.

4.) GOUGE OUT WELD AROUND LIP JOINT AT BOTTOM,SIDE AND THROAT PLATES USING AIR ARC OR OXYACETYLENE TORCH.

5.) DISCARD OLD LIP.

6.) REMOVE SLAG BY CHIPPING OR GRINDING.

REPLACEMENT:

1.) WARM REPLACEMENT LIP TO 75'F.

2.) ASSEMBLE LIP TO BUCKET AND TACK WELD AT CENTER ONLY.

3.) CHECK FIT AND ADJUST AS REQUIRED TO MAINTAIN SQUARENESS AND I1' DOWNWARD LIP ANGLE.

4.) TACK WELD LIP TO BOTTOM PLATE AT 9 INCH INTERVALS AND ON TOP CORNERS TO SIDE AND THROAT PLATES.

5.) APPLY 1/4 INCH FILLET WELD OF E-7018 LOW HY[ROGEN OR EQUIVALENT ROD TO BOTTOM OF LIP FROM CENTER OUTWARD.

6.) POSITION BUCKET ON SIDES TO WELD OUTSIDE OF LIP TO SIDE AND THROAT PLATES. 1/4 INCH FILLET REQUIRED.

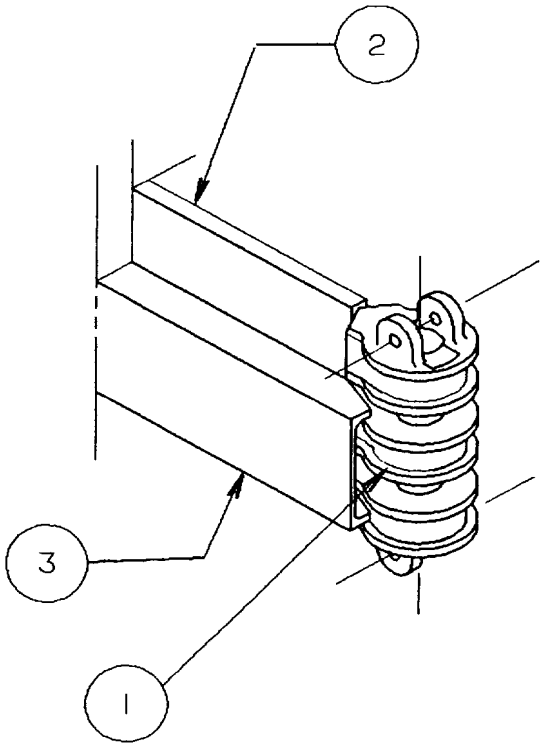
7.) POSITION BUCKET ON BOTTOM PLATE. START AT CENTER AND FLUSH WELD INSIDE OF LIP TO BOTTOM PLATE.

8.) POSITION BUCKET ON SIDES TO FLUSH WELD INSIDE OF LIP TO SIDE AND THROAT PLATES.

9.) CHIP WELD TO REMOVE SCALE.

NOTE: INTERPASS TEMPERATURE NOT TO EXCEED 400°F.

HITCH BRACKET REPLACEMENT



HITCH BRACKET REPLACEMENT

DO THIS PROCEDURE IN A REPAIR FACILITY.

REMOVAL :

1.) REMOVE DRAG CHAIN, ARCH SOCKET AND LOWER HOIST CHAINS AT BUCKET ATTACHING POINTS.

2.) POSITION BUCKET ON SIDE OPPOSITE OF HITCH BRACKET TO BE REPAIRED.

3.) GOUGE WELD BETWEEN HITCH BRACKET (ITEM 1) AND SIDE PLATE (ITEM 2) AND SIDE CHANNEL (ITEM 3) USING AIR ARC OR OXY-ACETYLENE TORCH.

4.) REMOVE ANY REMAINING WELD FROM EDGE OF SIDE PLATE. CHIP OR GRIND SLAG.

5.) TURN BUCKET ON OPPOSITE SIDE AND PERFORM REMOVAL STEPS 3 AND 4.

HITCH BRACKET REPLACEMENT

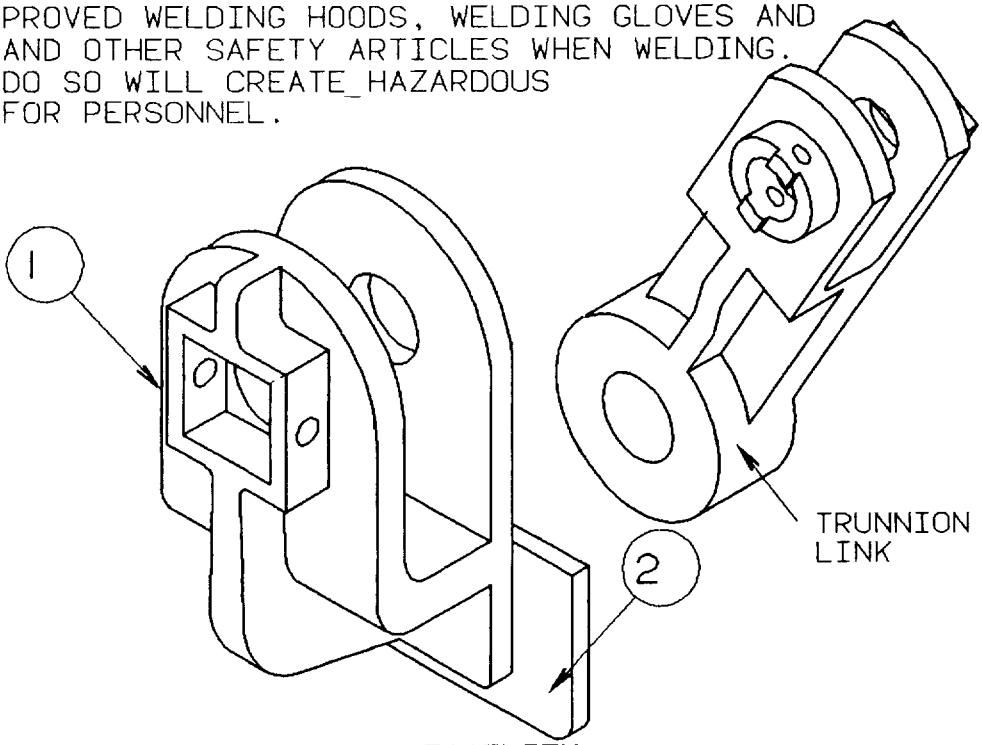
REPLACEMENT

1.) POSITION NEW HITCH BRACKET WITH ANGLED SIDE AGAINST ANGLED EDGE OF SIDE CHANNEL. THE BOTTOM BRACKET EDGE SHOULD BE EVEN WITH THE LOWER SIDE PLATE EDGE AND THE INSIDE BRACKET SURFACE PARALLEL WITH THE INSIDE EDGE OF THE SIDE PLATE.
2.) TACK WELD HITCH BRACKET TO SIDE PLATE AT TOP, BOTTOM AND INSIDE CENTER.
3.) TACK WELD HITCH BRACKET TO SIDE CHANNEL AT CHANNEL CORNERS.
4.) TURN BUCKET AND PERFORM STEPS I THRU 4 FOR OTHER BRACKET.
5.) APPLY 1/4 INCH WELD USING E-7018 OR EQUIVALENT LOW HYDROGEN ROD TO ALL HORIZONTAL JOINTS. ALTERNATE SIDES AND TURN BUCKET TO MINIMIZE HEAT. CHIP SCALE.
6.) BUILD 3/8 BEVEL WELD ON BOTH SIDES OF JOINT BETWEEN BRACKET AND SIDE USING STRINGER METHOD. CHIP WELD SCALE BETWEEN AND AFTER FINAL PASS.
7.) TIE WELDS ACROSS TOP AND BOTTOM OF BRACKET TO SIDE PLATE.

TRUNNION REPLACEMENT

**** WARNING ****

USE OSHA APPROVED WELDING HOODS, WELDING GLOVES AND WORK SHOES AND OTHER SAFETY ARTICLES WHEN WELDING. FAILURE TO DO SO WILL CREATE HAZARDOUS CONDITIONS FOR PERSONNEL.



DO THIS PROCEDURE IN A REPAIR FACILITY.

REMOVAL:

1.) REMOVE TRUNNION LINK AND HOIST CHAIN ASSEMBLY FROM TRUNNION BRACKET ON BOTH SIDES OF BUCKET.
2.) PLACE DRAGLINE BUCKET ON SIDE.
3.) GOUGE WELD ATTACHING TRUNNION BRACKET (ITEM 1) TO TRUNNION PLATE (ITEM 2) USING AIR ARC OR OXY-ACETYLENE TORCH, AVOID EXCESSIVE LOCALIZED HEAT.
4.) DISCARD TRUNNION BRACKET.
5.) REMOVE ANY RESIDUAL WELD AND SLAG FROM TRUNNION PLATE BY GOUGING, SCALING OR GRINDING.

REPLACEMENT:

1.) POSITION NEW TRUNNION BRACKET ON TRUNNION PLATE AND ALIGN HOLES WITH LOWER TRUNNION PIN.
2.) ALIGN BOTTOM OF TRUNNION BRACKET PARALLEL TO LOWER EDGE TO TRUNNION PLATE.(ITEM 2)
3.) TACK WELD TRUNNION BRACKET TO TRUNNION PLATE AT CENTER OF TOP AND BOTTOM EDGES AND AT CORNERS.
4.) APPLY 1/4 INCH FILLET WELD USING E-7018 OR EQUIVALENT LOW HYDROGEN ROD ALTERNATING SIDES. CHIP WELD TO REMOVE SCALE.
5.) REPAIR ANY REMAINING GOUGES.
6.) TURN BUCKET ON REPAIRED SIDE AND PERFORM REMOVAL STEPS 3 THRUOGH 5 AND REPLACEMENT STEPS 1 THRU 5.

WEAR SHOE REPLACEMENT

****** WARNING ******

USE OSHA APPROVED WELDING HOODS, WELDING GLOVES AND WORK SHOES AND OTHER SAFETY ARTICLES WHEN WELDING. FAILURE TO DO SO WILL CREATE HAZARDOUS CONDITIONS FOR PERSONNEL.

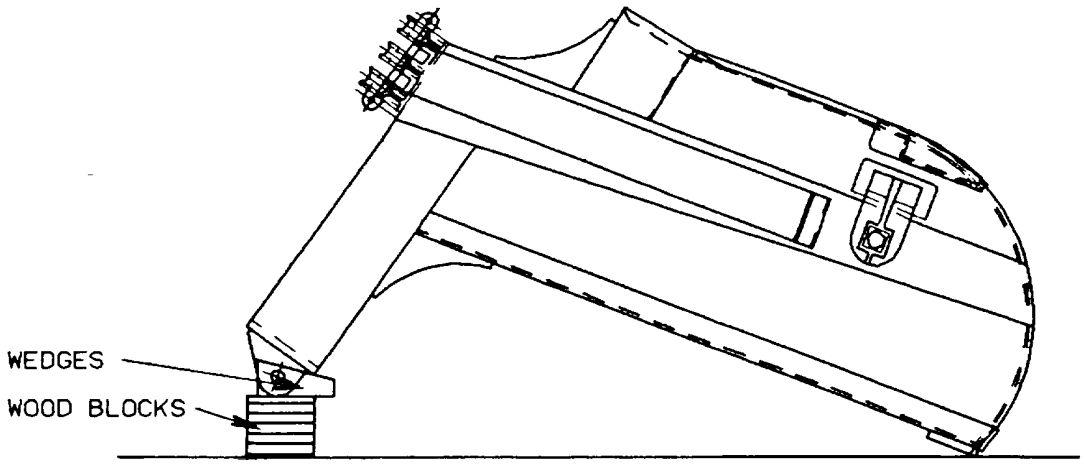
DO THIS PROCEDURE IN A REPAIR FACILITY.

****** WARNING ******

KEEP HANDS, FEET AND BODY FROM UNDER BUCKET WHEN PERFORMING THESE PROCEDURES.

REMOVAL:

1.) REMOVE ALL CHAIN AND ROPE ASSEMBLIES AT FASTENING POINT ON DRAGLINE BUCKET.
2.) POSITION BUCKET UPSIDE DOWN, RESTING ON ARCH AND BACK OF BOWL.
3.) SUPPORT ARCH WITH WOOD BLOCKS AND WEDGES TO RESTRICT TURNING.

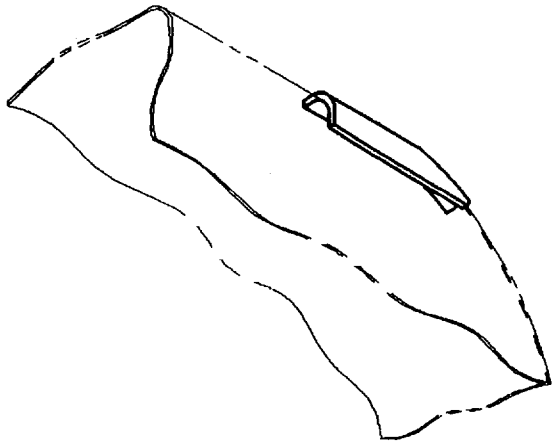


***** NOTE *****

AVOID EXCESSIVE LOCAL OVERHEATING WHEN PREFORMING THESE PROCEDURES.

4.) GOUGE OUT WELD AROUND OUTER EDGE OF BOTH WEAR SHOES USING AIR ARC OR OXY-ACETYLENE TORCH.
5.) GOUGE OUT WELD AROUND INSIDE EDGE OF BOTH WEAR SHOES USING AIR ARC OR OXY-ACETYLENE TORCH. DISCARD OLD WEAR SHOES.
6.) REMOVE SLAG BY CHIPPING OR GRINDING.

WEARING SHOE REPLACEMENT



REPLACEMENT:

1.) ASSEMBLE WEAR SHOE TO EACH SIDE ALLOWING APPROXIMATELY 3/8 BETWEEN WEAR SHOE AND BOTTOM RUNNER
2.) TACK WELD ALL SIDES IN CENTER AND THEN CORNERS. HAMMER TO INSURE CONTACT.
3.) STARTING AT CENTER OF EACH SHOE APPLY 1/4 FILLET OF E-7018 LOW HYDROGEN ROD OR EQUAL OUTWARD ON ALL HORIZONTAL JOINTS. CHIP WELD TO REMOVE SCALE.
4.) TURN DRAGLINE ON SIDE AND SUPPORT.
5.) WELD ALL HORIZONTAL JOINTS ON BOTH WEAR SHOES AS IN STEP 3.
6.) ROTATE BUCKET TO OPPOSITE SIDE AND COMPLETE WELDS AS IN STEP 3.
7.) WELD AND GRIND GOUGES AS REQUIRED.

TOOL LIST

ONE EACH OF THE FOLLOWING:

1.) HAMMER, BLACKSMITH, 32 OZ. HEAD MINIMUM.
2.) PIN PUNCH, 1/4 INCH, 3-1/2 INCH PIN LENGTH.
3.) BACKING OUT PUNCH, 3/4 INCH PUNCH DIAMETER.
4.) ADJUSTABLE WRENCH, CRESCENT TYPE, 18 INCH.(OPTIONAL)
5.) REVERSIBLE RATCHET, 3/4 INCH SQUARE DRIVE.
6.) 7/16 INCH SOCKET, 6 POINT, 1/2 INCH SQUARE DRIVE.
7.) 3/4 INCH SOCKET, 12 POINT, 3/4 INCH SQUARE DRIVE.
8.) 1-1/2 INCH SOCKET, 12 POINT, 3/4 INCH DRIVE.
9 .) 1-7/8 INCH SOCKET, 12 POINT, 3/4 INCH SQUARE DRIVE.
10.) 3/4 INCH COMBINATION WRENCH.
11.) 1-1/2 INCH COMBINATION WRENCH.
12.) 1-7/8 INCH COMBINATION WRENCH.
13.) BEARING DRIVER, 2 15/16" DIAMETER BY 3.00 INCH LONG.

	TROUBLESHOOTING GUIDE	
MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
1 SHEAVE WON'T TURN	DEBRIS BETWEEN SHEAVE AND PIN	REMOVE SHEAVE, PIN CLEAN AND REGREASE
	NO GREASE IN ASSEMBLY	REMOVE SHEAVE, PIN CLEAN AND REGREASE
	CABLE WEDGED BETWEEN SHEAVE AND DUMP BLOCK SIDE	REMOVE CABLE FROM BETWEEN SHEAVE AND DUMP BLOCK SIDE
2 BUCKET WON'T DIG	HITCH SHACKLE WRONG POSITION	CHANGE HITCH SHACKLE POSITION
	DUMP ROPE TOO LONG	SHORTEN ROPE

WARRANTY

DAAE07-87-C-0153
INTERGY, INC.

I. INTERGY WARRANTS THE CLAMSHELL AND DRAGLINE BUCKETS TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF EIGHT (8) MONTHS FROM THE DATE OF GOVERNMENT ACCEPTANCE OF EACH BUCKET (AS EVIDENCED IN THE ACCEPTANCE BLOCK OF THE DD FORM 250).

2. IN THE EVENT THAT A DEFECT OR FAILURE IN MATERIAL OR WORKMANSHIP OCCURS WITHIN THE WARRANTY PERIOD, INTERGY WILL PROVIDE, AT ONE OF ITS FACILITIES OR AT ANOTHER FACILITY APPROVED IN ADVANCE IN WRITING BY INTERGY, THE FOLLOWING:
   A.) COMPLETE REPAIR OF THE DEFECTIVE PRODUCT, OR IF INTERGY DEEMS REPAIR TO BE IMPRACTICAL OR NOT FEASIBLE, A NEW ATTACHMENT OR PART.
   B.) REASONABLE AND CUSTOMARY LABOR CHARGES (DURING NORMAL WORKING HOURS) NEEDED TO EFFECT REPAIR OR REPLACEMENT OF THE DEFECTIVE ITEM.
   C.) SHIPPING CHARGES FOR SHIPMENT, BY MEANS AND METHODS SELECTED BY INTERGY, TO THE USER'S LOCATION FOR REPLACEMENT PARTS AND PRODUCTS.

3. THE GOVERNMENT SHALL BE RESPONSIBLE FOR ALL THINGS NOT LISTED IN THIS ITEM 3 INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
   A.) FREIGHT COSTS AND ANY OTHER EXPENSES FOR RETURN TO INTERGY OF ANY DEFECTIVE BUCKET OR PART REQUIRING REPAIR- OR REPLACEMENT.
   B.) ANY LOSS OF OR DAMAGE TO ANY BUCKET OR PART IN TRANSIT WHILE BEING SHIPPED TO AND FROM INTERGY, INCLUDING THE FILING AND PROCESSING OF ANY CLAIM AGAINST ANY CARRIER.
   C.) FREIGHT COSTS AND ANY OTHER EXPENSES FOR SHIPMENT FROM INTERGY'S FACILITIES TO THE USER'S LOCATION IN THE EVENT ANY ATTACHMENT OR PART IS RETURNED TO INTERGY WITHOUT ITS PRIOR WRITTEN AUTHORIZATION.
   D.) TO PROMPTLY NOTIFY INTERGY UPON DISCOVERY OF ANY CLAIMED DEFECT OR FAILURE, BY MEANS OF DD FORM 2407.
   E.) TO FURNISH EVIDENCE ACCEPTABLE TO INTERGY THAT AN ITEM ALLEGED TO BE DEFECTIVE IS WITHIN THE APPLICABLE WARRANTY PERIOD.

WARRANTY

F.) THE EXPENSE OF ANY SERVICE CALL FOUND TO BE UNNECESSARY BY INTERGY.

G.) ANY CHARGES FOR TIME AND LABOR BEYOND RATES SPECIFIED AND APPROVED BY INTERGY AND ANY CHARGES IN EXCESS OF THOSE APPLICABLE TO THE FOLLOWING STANDARD REPAIR TIME:

1.) CUT OUT-OLD AND INSTALL NEW CUTTING EDGE -- 4.0 HOURS.

2.) REMOVE AND REPLACE ANY BOLT-ON EDGE -- 1.5 HOURS.

NO CHARGES OUTSIDE OR BEYOND THE LIMITATIONS STATED IN THIS ITEM 3 WILL BE ACCEPTED UNLESS WRITTEN AUTHORIZATION HAS BEEN ISSUED BY INTERGY PRIOR TO THE PERFORMANCE OF ANY WORK.

4. INTERGY SHALL NOT BE RESPONSIBLE FOR:

A.) ANY FAILURE CAUSED BY OR RESULTING FROM THE IMPROPER USE OR NORMAL WEAR AND TEAR ON AN ATTACHMENT. IF UNSURE AS TO COVERED USES, CONTACT INTERGY AT 1-800-321-8175.

B.) ANY FAILURE RESULTING FROM IMPROPER INSTALLATION PROCEDURES.

C.) ANY FAILURE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THE BUCKETS. NO MODIFICATIONS MAY BE MADE WITHOUT PRIOR WRITTEN AUTHORIZATION BY INTERGY.

D.) ANY OVERTIME CHARGES OR COSTS FOR REPAIR OF ANY DEFECTIVE OR FAILED ITEM.

5. THE GOVERNMENT WILL NOTIFY INTERGY OF ANY WARRANTY DEFECTS VIA A DD FORM 2407. THE MAILING ADDRESS FOR ANY WARRANTY CLAIM:

INTERGY, INC.
ANVIL ATTACHMENTS
10100 BRECKSVILLE RD.
P.O. BOX 418051
BRECKSVILLE, OH 44141-3206

6. WARRANTY REIMBURSEMENT CHECKS SHALL BE SUBMITTED TO TACOM, ATTN: AMSTA-EFD, WARREN, MI, 48347-5000, IDENTIFIED BY CLAIM NUMBER, UNIT IDENTIFICATION CODE (UIC) OF EACH CLAIM, TOTAL DOLLARS INVOLVED AND CONTRACT NUMBER. CHECKS SHALL BE PAYABLE TO "FINANCE AND ACCOUNTING OFFICER, USA TACOM.

WARRANTY

7. THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. INTERGY SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL LOSSES OR DAMAGES, DELAYS OR ANY OTHER COST OR EXPENSE ARISING FROM THE USE OF PRODUCTS AND THE REMEDY AND RECOVERY OF GOVERNMENT ON ANY CLAIM WHETHER BASED ON THE CONTRACT, THIS WARRANTY OR ANY ALLEGED NEGLIGENCE OF INTERGY SHALL BE AS STATED AND LIMITED HEREIN AND SHALL BE EXCLUSIVE.

SUPPLEMENTAL OPERATING, MAINTENANCE AND REPAIR PARTS INSTRUCTIONS FOR BUCKET, DRAGLINE, MODEL DMD34, 3/4 CU. YD.

TABLE OF CONTENTS

TABLE OF CONTENTS
APPENDIX -

SAFETY PRECAUTIONS

*****WARNING*****

USE CORRECT CABLE. The sheaves, wedges, and sockets are designed to use a particular size of wire rope cable (see illustration table No. 1 for proper wire rope size). Other size may not seat properly and become loose. As an extra precaution, install cable clamps on the loose ends of the cable after it emerges from the rope socket (see table no. 1).

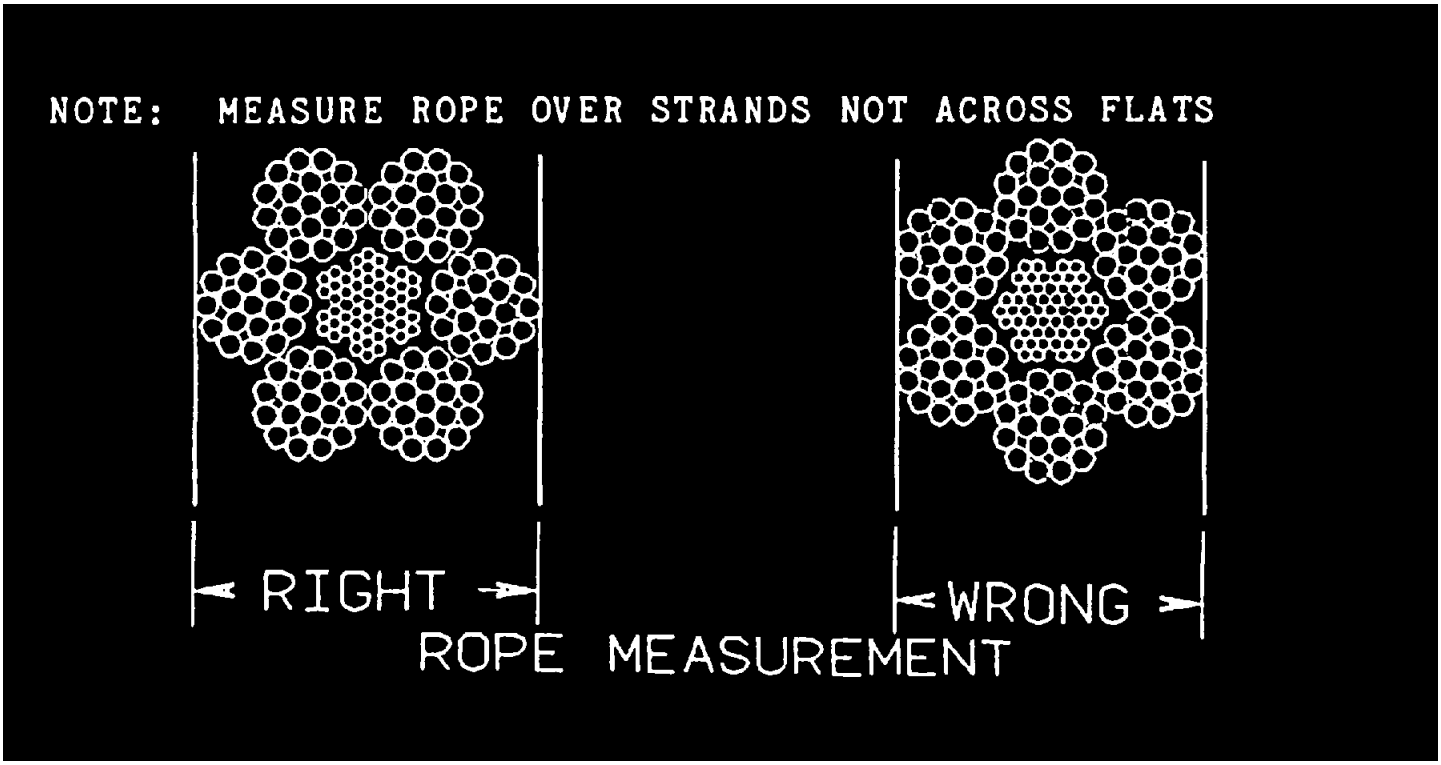
*****WARNING*****

Wear OSHA approved hard hats, safety glasses, safety shoes, and work gloves when performing maintenance work. Use OSHA approved welding hoods, welding gloves, and safety shoes and other approved welding apparel when welding, Failure to do so will create hazardous conditions for personnel.

*****WARNING*****

Do not operate bucket with worn or frayed wire rope. Inspect daily and replace as necessary for safe operation. Replace the wire rope if any of the following conditions exist:

a. Broken wires; six randomly distributed broken wires in the length of one lay or pitch of the rope.
b. Worn wires; individual outside wires worn to two-thirds (2/3) of original wire diameter, 1/3 worn away. Check individual wire at hoist socket dead end. Wire size will vary with wire rope manufacturers.
c. Damaged wires; kinked, crushed, or birdcage wires. Evidence of heat damage from any cause.



*****WARNING*****

Do not position the bucket, empty or loaded, over any person. Falling buckets can cause injury or death.

*****WARNING*****

Do not let anyone ride in the bucket. The bucket is not designed to be an elevator.

*****WARNING*****

Do not throw or cast the bucket as, this imposes loads on the crane not covered by the capacity tables, and may tip the crane causing personnel injury or equipment damage.

*****WARNING*****

Daily inspect the pins and other parts suspending the bucket. Be sure they do not become unduly worn and can no longer suspend the load of the bucket.

*****WARNING*****

Repair the bucket immediately if damage is found. Failure to do so may result in injury or death.

*****WARNING*****

Do not operate the bucket outside the recommended capacities of your crane. Know the weight of the bucket. Use the crane's load chart to calculate the expected loads picked up. Overloading may tip the crane causing personnel injury and equipment damage.

*****WARNING*****

Ensure all nuts, bolts, and cotter pins are secure (tight) and in place.

*****WARNING*****

Supervisor/operator will ensure personnel not involved with operations remain at least 50 feet from the equipment. Failure to do this may cause personnel injury.

*****WARNING*****

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use in a well ventilated area. Avoid contact with skin, eyes, and clothes. Do not use near open flames of excessive heat. The flash point is 100 degrees F (38 degrees C - 59 degrees C). If you become dizzy when using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

*****WARNING*****

Compressed air, used for cleaning purposes will not exceed 30 PSI. Use only with personal protective equipment (goggles, shield, gloves, etc).

****CAUTION****

Keep it clean: Dirt, grease, oil and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (P-D-680) to clean surfaces, Use soap and water when cleaning rubber or plastic surfaces.

****CAUTION****

Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to maintenance personnel immediately.

****CAUTION****

Replace worn, broken, missing, or damaged teeth.

SECTION I

GENERAL

1. PURPOSE: To provide user and support personnel supplemental operation, maintenance and repair parts instructions that have special application to Military Adopted Commercial Items (MACI).

2. SCOPE: This application applies to Department of the Army units, organizations, and activities that use and/or support the Bucket, Drag line Integrity Incorporated, Model DMD 34.

3. MILITARY ADOPTED COMMERCIAL ITEM (MACI). The term MACI Item" used in this publication applies to a standard commercial item of construction equipment that has been approved and adopted by the Army for a specific TOE requirement and is procured and supported under the CCI system plan. The plan permits maximum utilization of the civilian construction industry's competitive research and development, manufacturer's equipment publications and commercial sources for repair parts.

4. DESCRIPTION: The Drag line Bucket has no closing mechanism. It is a single unit shaped in the form of a scoop which, under direct pull, scoops material into the bucket. Balance design type of operation and the capacity of the crane, will determine the amount of efficiency provided to the user. Operating efficiency is also determined by the working radius, boom length, type of crane mounting, and engine capacity.

5. OPERATIONAL CONCEPT: The Drag line Bucket, with spreader bar and chains, is designed to be used with cranes with lattice or solid type booms and having a minimum capacity of 12 1/2 tons for excavation and dredging projects. It is portable and is used by engineer construction support companies and engineer port construction companies.

6. EQUIPMENT PUBLICATIONS: Initial publications are a commercial manual and Supplemental Operating, Maintenance and Repair Parts Instructions (SOMARPI). Two manuals will be over packed with each end item. (See Appendix E). Department of the Army publications will be forthcoming and will be available through the normal publications supply channels.

7. PERSONNEL REQUIRED:

   a. MOS Requirements: In accordance with AR 611-201
      (1) Crane Operator: MOS 62F
      (2) Organizational Maintenance: MOS 62B
      (3) Direct/General Support Maintenance: MOS 62B
   b. Depot maintenance is not required.
8. LOGISTICS ASSISTANCE: Logistic Assistance Representatives (LARS) are stationed at CONUS and OCONUS installations and are available to provide onsite technical assistance, upon request, from the installation.
9. RECOMMENDING PUBLICATION CHANGE: You can improve this publication by recommending improvements, using DA Form 2028 (Recommended Changes to Publications and Blank Forms) and mail direct to Commander, US ARMY TANK-AUTOMOTIVE COMMAND, ATTN: AMSTA-MVB, Warren, MI 48397-5000.
10. OPERATIONAL EQUIPMENT REQUIREMENTS:
    a. The bucket may be used with any of the following cranes:

	NSN	MODEL
(1)	3810-00-043-5354	2385 20 TON RT
(2)	3810-00-763-7728	2380 20 TON RT
(3)	3810-00-275-1167	M320 RT 20 TON
(4)	3810-00-542-3048	855BG2 40 TON
(5)	3810-00-542-3049	85BG2 40 TON
(6)	3810-00-606-3569	855BG 40 TON
(7)	3810-00-786-5200	855BG 40 TON
(8)	3810-00-933-0588	855BG2 40 TON
(9)	3810-00-933-0589	855BG 40 TON
(10)	3810-00-933-0590	855BG3 40 TON
(11)	3810-00-145-8288	5060 40 TON
(12)	3810-00-151-4431	M320T-2 20 TON
(13)	3810-00-527-8613	M-20AF 20 TON
(14)	3810-00-542-4980	M200W 20 TON
(15)	3810-00-542-4982	M200 20 TON

(16)	3810-00-820-0698	M202 20 TON Track/Crank
(17)	3810-00-861-8088	M320T 20 TON Truck/Crane
(18)	3810-00-989-0505	2360 20 TON Truck/Crane
(19)	3810-00-869-3092	22BM 12 1/2 TON
(20)	3810-00-937-3939	L36M 12 1/2 TON
(21)	3810-01-054-9779	Truck/Crane TMS300-5
(22)	3801-00-018-2021	Truck/Crane MT250

b. There is no separately authorized equipment required to transport this bucket.

SECTION II

MAINTENANCE

1. MAINTENANCE CONCEPT: Operators shall possess an MOS of 62F and maintenance will be performed by a 62B MOS. This is a Non-Developmental Item (NDI) and as such, there is no maintenance engineering effort on the part of the Army. However, consistent with maintenance policy and procedures of Preventive Maintenance Checks and Services (PMCS) and Maintenance Allocation Charts (MAC), the level of repair assigned to maintenance and associated tasks identified in the MAC should be reflective of training and repair part support for similar items of equipment in the inventory for unit through depot maintenance. Maintenance will be performed by MOS 62B at the level authorized by the MAC and TOE mission statements.

a. MAINTENANCE PLAN: Maintenance capabilities will be governed by the MAC and will be tailored to accommodate the complexity of the maintenance requirement.

b. UNIT MAINTENANCE: Unit Maintenance is performed by a crew, the operator, or unit maintenance personnel as shown in the MAC of the appropriate TM or commercial manual. Unit Maintenance normally includes inspection by sight and touch of easily accessible components; lubrication, cleaning preserving, tightening, and isolation using BITE, go no-go, or onboard instrumentation, if applicable; and the replacement of easily removed and installed components that do not require other than common tools.

c. INTERMEDIATE DIRECT SUPPORT MAINTENANCE: Intermediate Direct Support Maintenance is performed by installation shops and selected intermediate maintenance support units and activities in the Army force structure. Intermediate Direct Support Maintenance will remove and replace major assemblies and components and provide contact maintenance teams for local support of unit maintenance when required. Intermediate Direct Support Maintenance personnel shall be capable of diagnosing causes of equipment failures, repairing specified components and repair parts so they may be returned to the supply system in support of the bucket. This maintenance level shall maintain a supply support system which allows unit maintenance to obtain repair parts through reparable exchange (RX) and requisitions.

d. Intermediate General Support Maintenance:
No maintenance tasks are required at General Support Level.

e. DEPOT MAINTENANCE: No depot maintenance programs are planned for the overhaul of these buckets.

2. MAINTENANCE ALLOCATION CHART (MAC): (See Appendix A). Units may exceed their authorized scope and function in the M.IAC when approved by the support maintenance commander.
3. MODIFICATION: Modifications will be accomplished by the end item manufacturer after TACOM approves the field campaign or modification plan.
4. EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR): Equipment Improvement Recommendations will be submitted in accordance with DA PAM 738-750.
5. SHIPMENT AND STORAGE: Refer to the manufacturer's manual and TB 740-97-2. Packaging, handling, and storage will be IAW MIL-C-3530.
6. DESTRUCTION TO PREVENT ENEMY USE. Refer to TM 750-244-3 for procedures covering destruction of equipment to prevent enemy use.
7. BASIC ISSUE ITEMS LIST (BIIL): ADDITIONAL AUTHORIZED ITEMS: See Appendix C
8. SPECIAL TOOLS and EQUIPMENT: None
9. MAINTENANCE and OPERATING SUPPLIES: See Appendix D for a list of maintenance and operating supplies required for initial operation.
10. MAINTENANCE FORMS and RECORDS:
    a. Operational Records: Operational records (DD Form 1970, daily dispatch and DA Form 2401, Equipment Control Record) will be used to control the use and record operators and locations of equipment operation.
    b. Maintenance Records:
        (1) SF 91 Accident Form
        (2) DD 518 Personnel Injury Accident Form
        (3) DD Form 314, Preventive Maintenance Schedule and Records
        (4) DA Form 2404, Equipment Inspection and Maintenance Worksheet
        (5) DA Form 2407, Maintenance Request
        (6) DA Form 2408-14, Uncorrected Faults Record

    c. Historical Records:
        (1) DA Form 2408, Equipment Log Book Assembly
        (2) DA Form 2408-9, Equipment Control Record

11. LUBRICATION: To insure proper operation of this machine, all points requiring lubrication must be serviced with the correct lubrication at the proper time intervals. All lubrication points requiring service are shown on the lubrication chart (Appendix F).
    a. Points not equipped with lubrication fittings (clevis pins, lever, guides, linkages, etc.) should be lubricated according to working and climate conditions with an oil squirt can using OE 30.
    b. Intervals specified are for normal operations where moderate temperatures, humidity, and atmospheric conditions prevail. In areas of extreme condition, the service periods should be adjusted accordingly.
12. QUALITY DEFICIENCY REPORT (QDR): Standard Form 368 (Quality Deficiency Report) was adopted for Equipment Improvement Recommendation (EIR) reporting. This action was taken to standardize reporting within all governmental services. Submissions to be in accordance with DA Pam 738-750.
13. MAINTENANCE EXPENDITURE LIMITS:

    The average life expectancy for the buckets is 18 years.

REPAIR LIMITS	YEAR
50%	1996
45%	1998
40%	2000
35%	2002
30%	2004
25%	2006

14. FIRE PROTECTION:

    a. A hand operated fire extinguisher may be positioned at the work site by the using unit, 15 feet from the equipment.
    b. Refer to TB 5-4200-200-10, Hand Portable Fire Extinguishers Approved for Army users.
15. MIXTURE OF INCH AND METRIC FASTENERS:
    a. The use of worldwide sources for components has made it possible for Integrity, Incorporated products to have a mixture of inch and metric fasteners. For example, metric fasteners may be used on some parts, while not used on other components.

It is possible that the internal bolts on a component may be metric while the mounting bolts may be inch size.

b. To help mechanics know when metric fasteners are used on a product, future service publications such as Parts Books and Operation and Maintenance Manuals will use a notice similar to the one that follows:

NOTICE

Caution must be taken to avoid mixing metric and inch (customary) fasteners. Mismatched or incorrect fasteners can result in equipment damage or malfunction, or possible personal injury. Original fasteners removed from the vehicle should be saved for assembly when possible. If new ones are required, caution must be taken to replace with one that is of the same part number and grade or better.

SECTION III

REPAIR PARTS SUPPLY

3-1. General

a. The basic policies and procedures in AR 710-2 and AR 725-50 are generally applicable to repair parts management for this item. See appendix I through N for MILSTRIP examples, formats, and source codes.
b. National Stock Numbers (NSN) will be assigned to all repair parts expected to be replaced at any maintenance level.
c. Prior to submitting requisitions for repair parts, the Civilian and Government Entity (CAGE) and the part number must screened to identify possible NSNs.
d. Repair parts not immediately available through the Department of Defense Supply System may be locally purchased IAW AR 725-50, paragraph 3-29.

3-2. Prescribed Load/Authorized Stockage List (PLL/ASL):

a. The PLL is a 15 day supply of parts recommended for initial stockage at the organizational level of maintenance. Management of PLL items is governed by AR 710-2 and local command procedure. Initial PLL is not authorized.
b. The ASL is an estimated 45 days supply of repair parts for support units and activities. Initial ASL is not authorized.

MAINTENANCE ALLOCATION CHART

FOR

BUCKET, DRAGLINE

NSN 3815-01-249-1692

INTERGY INCORPORATED MODEL DMD 34

Section I Introduction

1. General: This Maintenance Allocation Chart (MAC) designates responsibility for performance of maintenance functions to specific maintenance categories.
2. Maintenance Functions: Maintenance functions will be limited to and defined as follows:

a. Inspect: To determine the serviceability of an item and detect incipient failure by comparing its physical, mechanical and/or electrical characteristics with established standards through examination.

b. Test: To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service: Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust: To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Install: The act of employing, seating, or fixing into position an item, part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

f. Replace: The act of substituting a serviceable like-type part, subassembly, or module (component or subassembly) for an unserviceable counterpart.

g. Repair: The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly) end item or system.
h. Overhaul: That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e. DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

3. COLUM4Q ENTRIES: Columns used in the MAC and entries for these columns are explained below:

a. Column 1: Group Number: Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.
b. Column 2: Component Assembly: Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
c. Column 3: Maintenance Functions: Column 3 lists the functions to be performed on the item listed in Column 2.
d. Column 4: Maintenance Category: Column 4 specifies, by the listing of a "work time", figure in the appropriate sub column(s) the lowest level of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform the maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The number of man-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, and item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC.

APPENDIX A

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER (1)	COMPONENT/ASSEMBLY (2)	MAINTENANCE FUNCTION (3)	MAINT LEVEL					TOOLS & EQUIP. (5)	REMARKS (6)
			UNIT		INTMED				
			C	O	F	H	D		
7411	DRAGLINE BUCKET ASSY								
	Bucket	Inspect	0.1						
		Service	0.1						
		Replace		1.0					
		Repair		5.0					
	Dump Block Assy	Inspect	0.1						
		Service	0.1						
		Replace		1.0					
		Repair		1.0					
	Sheave Assy	Inspect	0.1						
		Replace		1.0					
		Repair		1.0					
	Sheave Bearing	Inspect	0.1						
		Replace			1.0				
	Crowsfoot Socket Assy	Inspect	0.1						
		Replace		1.0					
	Hitch Bracket Assy	Inspect	0.1						
		Replace			4.0				
	Arch Socket Assy	Inspect	0.1						
		Replace		1.0					
	Spreader Bar Assy	Inspect	0.1						
		Replace		1.0					
		Repair		1.0					
	Chains	Inspect	0.1						
		Replace		1.0					
	Trunion Bracket/ Link Assy	Inspect	0.1						
		Replace		1.0					
		Repair		1.0					
	Teeth	Inspect	0.1						
		Replace		1.0					

* MAINTENANCE LEVELS:

C - OPERATOR/CREW
O - ORGANIZATIONAL
= UNIT

F - INTERMEDIATE DIRECT SUPPORT
H - INTERMEDIATE GENERAL SUPPORT

D - DEPOT

APPENDIX A

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER (1)	COMPONENT/ASSEMBLY (2)	MAINTENANCE FUNCTION (3)	MAINT LEVEL UNIT C	MAINT LEVEL UNIT O	MAINT LEVEL INTMED F	MAINT LEVEL INTMED H	MAINT LEVEL D	TOOLS & EQUIP. (5)	REMARKS (6)
7411	Teeth Equipment (continued)								
	Teeth Adapters	Inspect		0.1					
		Replace			1.0				
7411	BUCKET ASSY								
	Lip Assy	Inspect	0.1						
		Repair			1.0				
		Replace			5.0				
	Wear Shoes	Inspect	0.1						
		Replace			5.0				
	Cable	Inspect	0.1						
		Replace		2.0					

* MAINTENANCE LEVELS:
C - OPERATOR/CREW
O - ORGANIZATIONAL
= UNIT
F - INTERMEDIATE DIRECT SUPPORT
H - INTERMEDIATE GENERAL SUPPORT
D - DEPOT

APPENDIX A

SECTION 3

1. SPECIAL TOOLS AND TEST SETS

None

2. COMMON TOOLS and TEST SETS

Hammer, Blacksmith, 3202 minimum
Pin Punch, 1/4 inch, 3 1/2 inch diameter
Backing Out Punch 3/4 inch diameter
Adjustable Wrench, 18 inch (optional)
Reversible Ratchet, 3/4 inch drive
7/16 inch Socket, 1/2 inch drive, 6 point
Reversible Ratchet, 1/2 inch drive
3/4 inch Socket, 3/4 inch drive, 12 point
1 1/2 inch Socket, 3/4 inch drive, 12 point
1 7/8 inch Socket, 3/4 drive, 12 point
3/4 inch Combination Wrench
1 1/2 inch Combination Wrench
1 7/8 Combination Wrench
Bearing Driver, 2 15/16 inch diameter, 3 inches long

3. SPECIAL TMDE and TEST SETS

None

4. COMMON TMDE and TEST SETS

None

5. SPECIAL PURPOSE KITS

None

APPENDIX B

OPERATOR/CREW
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

Your Preventive Maintenance Checks and Services table lists the inspection and care of your equipment required to keep it in good operating condition.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

1. The number column of your PMCS is the source for the number used on the TM Number Column on DA Form 2404.
2. The interval column of your PMCS table tells you when to do a certain check or service.

a. Before you operate, always keep in mind the CAUTIONS and WARNINGS. Perform your before (B) PMCS.
b. While you operate, always keep in mind the CAUTIONS and WARNINGS. Perform your during (D) PMCS.
c. After you operate, be sure to perform your after (A) PMCS.
d. Do your weekly (W) PMCS once a week.
e. Do your monthly (M) PMCS once a month.

3. The procedure column of your PMCS table tells you how to do the required checks and services. Carefully follow these instructions. If you do not have the tools or if the procedure tells you to, contact unit maintenance.
4. If your equipment does not perform as required, refer to the manual trouble-shooting section for possible problems. Report any malfunctions or failures on the proper DA Form 2404 or refer to DA Pamphlet 738-750.

NOTE

The terms ready/available and mission capable refer to the same status: Equipment is on hand and is able to perform all its combat missions without further endangering the lives of crew or operators in a combat environment (See DA PAM 738-750).

5. Equipment is not ready/available if: column. This column tells you when and why your equipment cannot be used.
6. Always do your PMCS in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.
7. When you do your PMCS, take along a rag or two.
8. While performing PMCS, observe CAUTIONS and WARNINGS preceding those operations which could endanger your safety or result in damage to the equipment.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in well ventilated areas. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat The flash point is 100 f - 138 F (38 C - 59 C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

a. Keep it clean: Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use soap and water when you clean rubber or plastic material.
b. Bolts, nuts, and screws: Check that they are not loose, missing, bent or broken. You can't try them all with a tool of course, but look for chipped paint, bare metal, or rust around bolt heads. Tighten any bolt, nut, or screw that you find loose.
c. Welds: Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to unit maintenance.

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY

ITEM NO	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
	B	D	A	W	M		
						NOTE: Perform weekly as well as before PMCS if: A. You are the assigned operator but have not operated the equipment during the past week. B. You are operating the equipment for the first time. !!! WARNING !!! All preventive maintenance checks and services will be performed with the crane and/or carrier engines shut down.	
						NOTE: Lubricate prior to operation (See L.O., Appendix F)	
1.	●					General: Make the following walk around checks: A. Check for frayed, crushed, split, or damaged wire rope. B. Check for loose or missing nuts and bolts. C. Check for cracks or wear holes.	Crushed/split wire rope. Six or more strands frayed.

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APPENDIX B

OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY

ITEM NO	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:
						!!!WARNING!!! DO NOT TOUCH SHEAVE EDGE. Visually check the edge for sharpness.	
2.	●					DUMP BLOCK ASSEMBLY: Check for sharp sheave edges. Edges are sharp if cable shows signs of fraying or cuts.	Evidence of wire rope being cut/frayed
3.	●					DRAGLINE BUCKET ASSEMBLY: Check for cracked welds, bent arch or spreader bar.	Any cracked weld
4.	●					CABLE: Check for worn, frayed or cut cable IAW page b, commercial manufacturer's manual.	Cable is damaged IAW, page number b, commercial manual
5.	●					CROWSFOOT/SOCKET ASSEMBLIES: Check for split socket or missing cable clamps.	Socket split, two or more missing clamps
6.	●					CHAINS: Check for broken/cracked links.	Any link broken or cracked
7.	●					TEETH: Check for missing/loose teeth	One or more missing teeth
8.	●					SPREADER BAR: Check for bent bar.	
9.	●					TRUNION LINK AND HITCH SHACKLE: Check for Bent pin or missing cotter key.	One missing cotter key

PREVIOUS EDITION IS OBSOLETE

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1 NOV 83

UNIT

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

To make sure that your vehicle is ready for operation at all times, inspect it systematically so you can discover any defects and have them corrected before they result in serious damage or failure. The charts on the next few pages contain your unit PMCS. The item numbers indicate the sequence of minimum inspection requirements. If you're operating the vehicle and notice something wrong which could damage the equipment if you continue operation, stop operation immediately.

Record all deficiencies and shortcomings, along with the corrective action taken, on a DA Form 2404. The Item Number column is the source for the numbers used on the TM Number column on DA Form 2404.

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

1. The item numbers of the table indicate the sequence of the PMCS. Perform at the intervals shown below:

a. Do your (Q) PREVENTIVE MAINTENANCE quarterly (every three months).
b. Do your (S) PREVENTIVE MAINTENANCE semiannually (every six months).
c. Do your (A) PREVENTIVE MAINTENANCE annually (once every year).
d. Do your (B) PREVENTIVE MAINTENANCE biennially (once every two years).
e. Do your (H) PREVENTIVE MAINTENANCE at the hour interval listed.
f. Do your (MI) PREVENTIVE MAINTENANCE at the mile interval listed.

2. If something doesn't work, troubleshoot it according to the instructions in this manual or the commercial manual or notify your supervisor.
3. Always do your preventive maintenance in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.
4. If anything looks wrong and you can't fix it, write it down on your DA Form 2404. If you find something seriously wrong, report it to direct support as soon as possible.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in well ventilated area. Avoid contact with skin, eyes and clothes and don't breath vapors. Do not 8se near open Blame or excessive heat. The flash point is 100 F - 138 F (38 C - 59 C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

WARNING

Compressed air, used for cleaning purposes will not exceed 30 psi. Use only with effective chip guarding and personnel protective equipment (goggles/shield/gloves, etc.).

a. Keep it clean: Dirt, grease, oil and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (P-D-680) to clean metal surfaces. Use soap and water when you clean rubber or plastic material.

b. Bolts, nuts and screws: Check that they are not loose, missing, bent or broken. You can't try them all with a tool, of course, but look for chipped paint, bare-metal or rush around bolt heads. Tighten any bolt, nut, or screw that you find loose.

c. Welds: Look for loose or chipped paint, rush or gaps where parts are welded together. If you find a bad weld, report it to intermediate direct support.

APPENDIX B

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

M-MONTHLY Q-QUARTERLY S-SEMIANNUALLY A-ANNUALLY B-BIENNIALLY H-HOURS MI-MILES

ITEM NO.	INTERVAL							ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED **PERFORM ALL OPERATOR PMCS FIRST**
	M	Q	S	A	B	H	MI	
1.			●					DRAGLINE BUCKET: Check wearshoes for holes. !!!WARNING!!! DO NOT TOUCH SHEAVE EDGE. Run a piece of paper along the sheave edge to test for a sharp edge. If paper is cut smoothly, the edge is too sharp.
2.			●					DUMP BLOCK ASSEMBLY: Check sheave for sharp edge. Check for damaged bushing and free circular movement of sheave on bearing.
3.			●					CHAINS: Check for stretched chain or damaged links.
4.			●					LIP: Check for worn/chipped LIP.

APPENDIX C

BASIC ISSUE ITEMS: None

ADDITIONAL AUTHORIZED ITEMS:
(Items Troop Installed)

SMR CODE	NATIONAL STOCK NUMBER	DESCRIPTION	UN	QTY	AUTH
PAOZZ	4240-00-052-3776	Goggles, (GSA)	Ea	1	1
PAOZZ	4210-00-555-8837	Extinguisher, Fire		2	2
PAOZZ	7520-00-559-9618	Bag, Pamphlet		1	1

APPENDIX D

NOMENCLATURE: BUCKET, DRAGLINE, TYPE II MEDIUM DUTY	MAKE: INTERGY, INC	MODEL: D-34
MFR PART NO: 107512 (9Y918)	NSN: 3815-01-249-1692	SERIAL NO. RANGE: 1186104421-1 TO 1186104421-225 / DATE: Jul 87

(1) COMPONENT APPLICATION	(2) MFR PART NO. OR NAT'L STOCK NO.	(3) DESCRIPTION	(4) QTY REQ F/INITIAL OPN	(5) QTY REQ F/8 HRS OPN	(6) NOTES
PIVOT POINTS	9150-00-188-9858	OIL, LUBRICATING	1 qt	Variable	
GREASE	9150-00-190-0907	GAA	35 lb	Variable	

APPENDIX E

DA EQUIPMENT PUBLICATIONS

NOMENCLATURE	EQUIPMENT PUBLICATION NUMBER OR TYPE	DATE AVAILABLE
Department of the Army Authenticated Commercial Edited Manuals: Operator's Manual Service and Repair Manual Parts Manual	To Be Published	Feb 89

OTHER THAN OFFICIAL DA EQUIPMENT PUBLICATIONS

NOMENCLATURE	EQUIPMENT PUBLICATION NUMBER OR TYPE	DATE AVAILABLE OF	SOURCE SUPPLY
Commercial Manual	Manufacturer's Operating Maintenance Manual and		
Operator's Guide	Supplemental Operating, Maintenance and Repair		Current
Lubrication and Maintenance Guide	Parts Instructions (SOMARPI)		Current
Parts Book			Current

LUBRICATION ORDER

APPENDIX F

BUCKET, DRAGLINE 3/4 CU. YD MODEL DMD 34

REFERENCE: Manufacturers Commercial Manual

Hard time intervals and the related man hour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Change the hard time interval if your lubricants are contaminated or if you are operating the equipment under adverse operating conditions, including longer-than- usual operating hours. The hard time interval may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

WARNING

Dry cleaning fluid is flammable. Do not use near a flame or excessive heat. Use only with adequate ventilation. Avoid prolonged breathing of vapors and minimize skin contact.

*The time specified is the time required to perform all services at the particular interval.

Clean parts or fittings with dry cleaning solvent (SD). Type II or equivalent. Dry before lubricating. Dotted arrow shafts indicate lubrication on both sides of equipment. A dotted circle indicates a drain below. Relubricate all items found
contaminated after fording or washing.

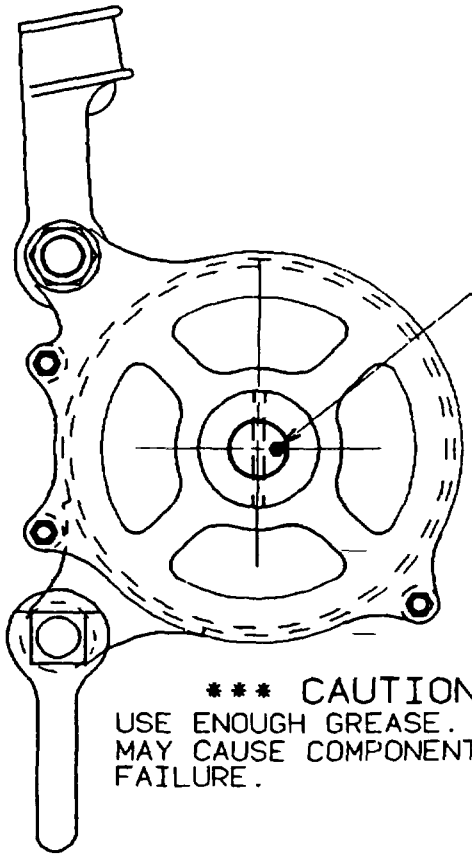
The lowest level of maintenance authorized to lubricate a point is indicated by one of the following symbols as appropriate: Operator/ Crew (C); and Organizational Maintenance (0).

Reporting errors and recommending improvements. You can help us improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

***TOTAL MAN-HOURS**		***TOTAL MAN-HOURS**	
INTERVAL	MAN-HOURS	INTERVAL	MAN-HOURS
8	0.5		
4 (SEE NOTE I)	0.5		

DAILY LUBRICATION AND INSPECTION

1 LUBRICATE DUMP BLOCK SHEAVE BEARING BEFORE OPERATION. THIS IS THE ONLY LUBRICATION THE DRAGLINE NEEDS. USE GAA GREASE, ARTILLERY, AUTOMOTIVE.



*** CAUTION ***

USE ENOUGH GREASE. FAILURE TO DO SO MAY CAUSE COMPONENT AND EQUIPMENT FAILURE.

USE ENOUGH NEW GREASE TO COMPLETELY DISPLACE ALL THE OLD GREASE AND EMBEDDED ABRASIVES. IF THE PIN WILL NOT ACCEPT GREASE, REMOVE AND CLEAN THE FITTING IN SOLVENT UNTIL GREASE FLOWS FREELY THROUGH IT. IF IT WILL STILL NOT ACCEPT GREASE, REMOVE THE PIN AND THOROUGHLY CLEAN GREASE PASSAGE AND THE BEARING.(IN SOLVENT) AN ALEMITE GREASE FITTING HAS BEEN PROVIDED IN THE PIN TO EASE MAINTENANCE. REPLACE A BROKEN FITTING IMMEDIATELY AND REGREASE. DREDGING OPERATIONS WHERE THE GREASE IS CONTINUALLY BEING WASHED OUT BY WATER WILL REQUIRE MORE FREQUENT LUBRICATION. LUBRICATE THE BEARING EVERY FOUR HOURS OF OPERATION IN DREDGING.

—KEY—

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES				INTERVALS
		Above + 60°F (Above +15°C)	+59°to -15°F (+15° to -25°C)	-14° to -65°F (-25° to -65°C)		
OE/HDO- Lubricating Oil, Internal Combustion Engine, Tactical Service	—	30	30		FOR ARTIC OPERATION REFER TO FM 9-207	See note 2
OEA- Lubricating Oil, Internal Combustion, Arctic						Intervals given are in hours of normal operation, UNLESS OTHERWISE SPECIFIED. —
GAA- Grease, Automotive & Artillery		ALL TEMPERATURES				See Note 1

NOTES:

1. Lube every 4 hours when used in water operations.

2. Lube at pivot points prior to operation and every 4 hours in water operations. (4-6 squirts).

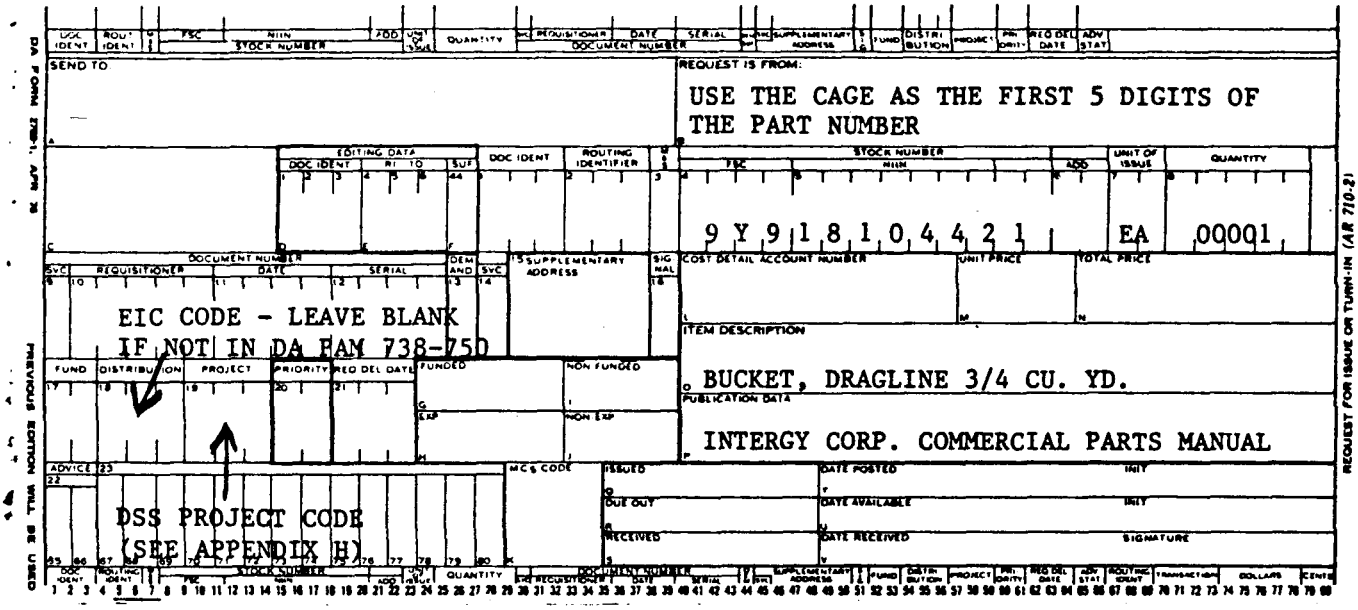
3. LUBRICANTS. The following is a list of lubricants with military symbols and applicable specification numbers:

OE/HDO	MIL-L-2104	GAA	MIL-G-10924	OEA	MIL-L-46167

APPENDIX G

SAMPLE FORMAT - DA FORM 2765 PART NUMBER REQUEST

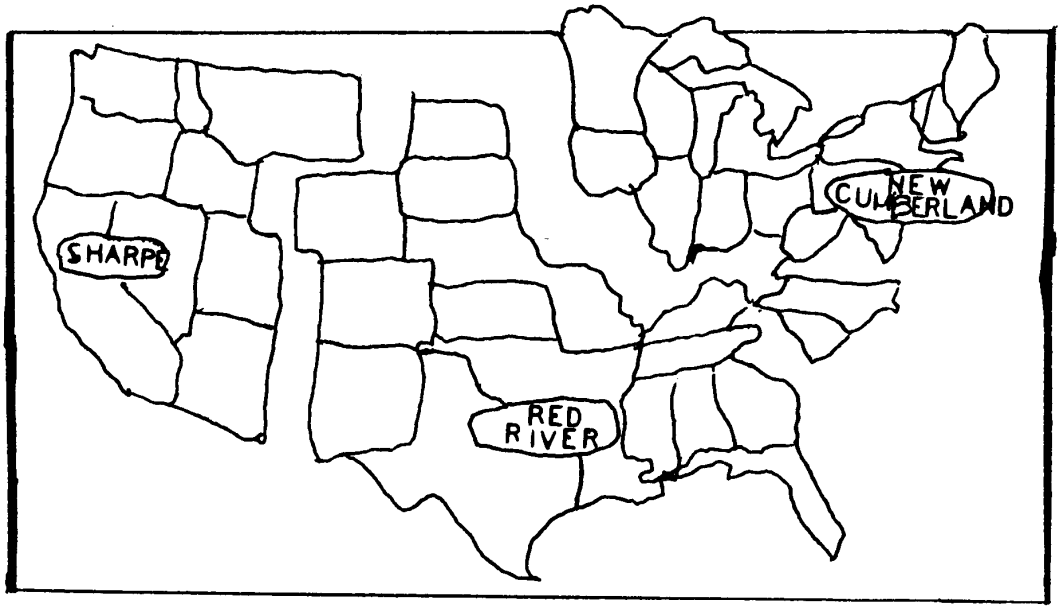
(CONUS REQUESTER)



APPENDIX H

DSS PROJECT CODES

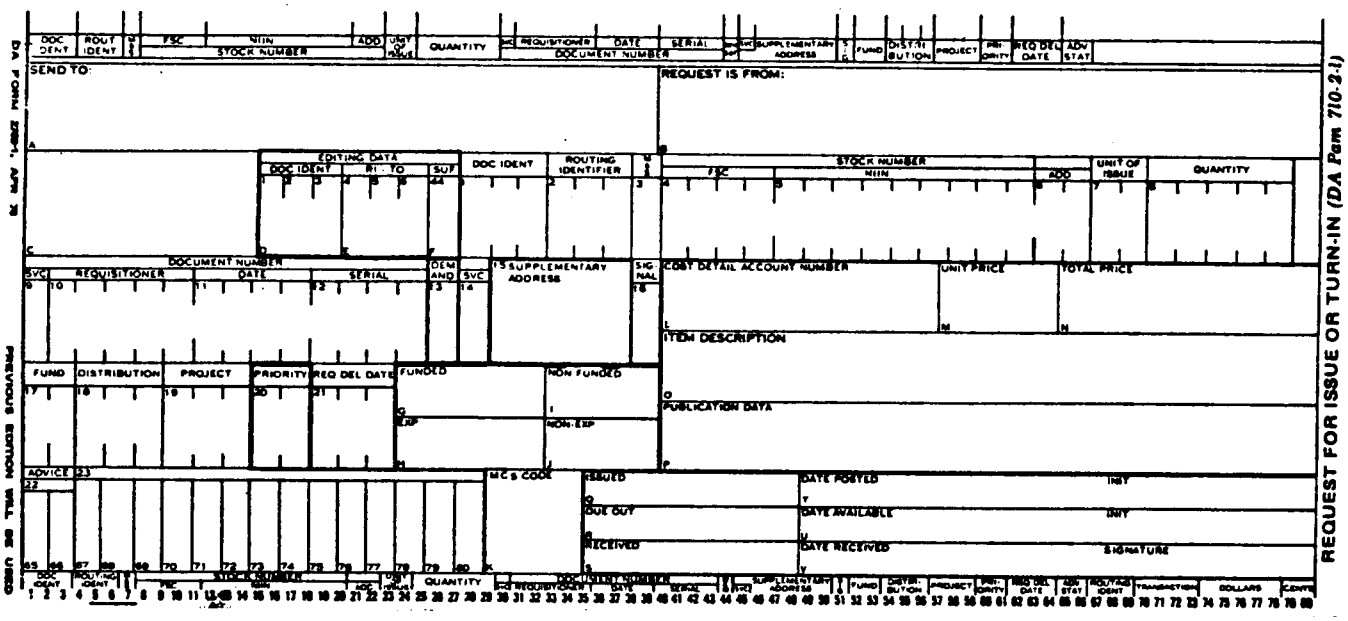
Geographic Location	ASL	NSL
CONUS (Eastern US)	XDC	NSC
CONUS (CENTRAL US)	XDA	NSA
CONUS (Western US)	XDB	NSB



Designated distribution depot support areas

APPENDIX I

SAMPLE FORMAT - MILSTRIP REQUISITION (NSN)



Card Column	Description of Data	Mandatory Entry for CCE
1-3	Document Identifier Code	AOA-CONUS AO1-CONUS
4-6	Routing Identifier Code	
7	Media/Status Code	
8-22	NSN	
23-24	Unit of Issue	
25-29	Quantity	
30-43	Document Number	
44	Demand Code	
45-50	Supplementary Address	
51	Signal Code	
52-53	Fund Code	
54-56	Distribution Code CC-54	"F" for CONUS; see AR 725-50 for OCONUS
	CC-55-56	*Weapon System Code
57-59	Project Code	DSS Code
60-61	Priority Code	
62-64	Required Delivery Date	
65-66	Advice Code	

* Weapons System Designator Code: USE EIC Code listed in DA PAM 738-750. If code is not listed, leave blank.

APPENDIX J
SAMPLE FORMAT - MILSTRIP REQUISITION WHEN NSN IS NOT LISTED IN THE AMDF

DOCUMENT IDENTIFIER	ROUTING IDENTIFIER	M&S	MANUFACTURER'S CODE AND PART NUMBER *		UNIT OF ISSUE	QUANTITY	DOCUMENT NUMBER			
			FSCM	PART NUMBER			SERV	REQUISITIONER	DATE	SERIAL
1 2 3	4 5 6	7	8 9 10 11 12	13 14 15 16 17 18 19 20 21 22	23 24	25 26 27 28 29	30 31	32 33 34 35 36 37 38 39	40 41 42	43

DEMAND	SUPPLEMENTARY ADDRESS		SIGNAL	FUND CODE	DISTRIBUTION CODE	PROJECT CODE	PRIORITY	REQUIRED DELIVERY DATE	ADVICE CODE	BLANK		REJECT CODE (FOR USE BY SUPPLY SOURCE ONLY)	
	SERV	DLY										65	66
44	45 46 47 48 49	50	51	52 53	54 55 56	57 58 59	60 61	62 63 64	65 66	67 68 69	70 71 72 73 74 75 76 77 78 79 80		

IDENTIFICATION DATA

* 1. MANUFACTURER'S CODE & PART NO. *(When they exceed Card Columns 8 thru 22)*	2. MANUFACTURER'S NAME
3. MANUFACTURER'S CATALOG IDENTIFICATION AND DATE	4. TECHNICAL ORDER NUMBER
5. TECHNICAL MANUAL NUMBER	6. NAME OF ITEM REQUESTED
7. DESCRIPTION OF ITEM REQUESTED	7a. COLOR 7b. SIZE
8. END ITEM APPLICATION AND SOURCE OF SUPPLY	
8a. MAKE / 8b. MODEL NUMBER / 8c. SERIES / 8d. SERIAL NUMBER	
9. REQUISITIONER *(Clear Text Name and Address)*	10. REMARKS

FOLD LINE — FOLD LINE

DD FORM 1 APR 77 1348-6 EDITION OF 1 MAR 74 MAY BE USED UNTIL EXHAUSTED

NON-NSN REQUISITION *(MANUAL)*

Card Column	Description of Data	Mandatory Entry for CCE
1-3	Document Identifier Code	AOB - CONUS A02 - OCONUS
4-6	Routing Identifier Code	Always S9C

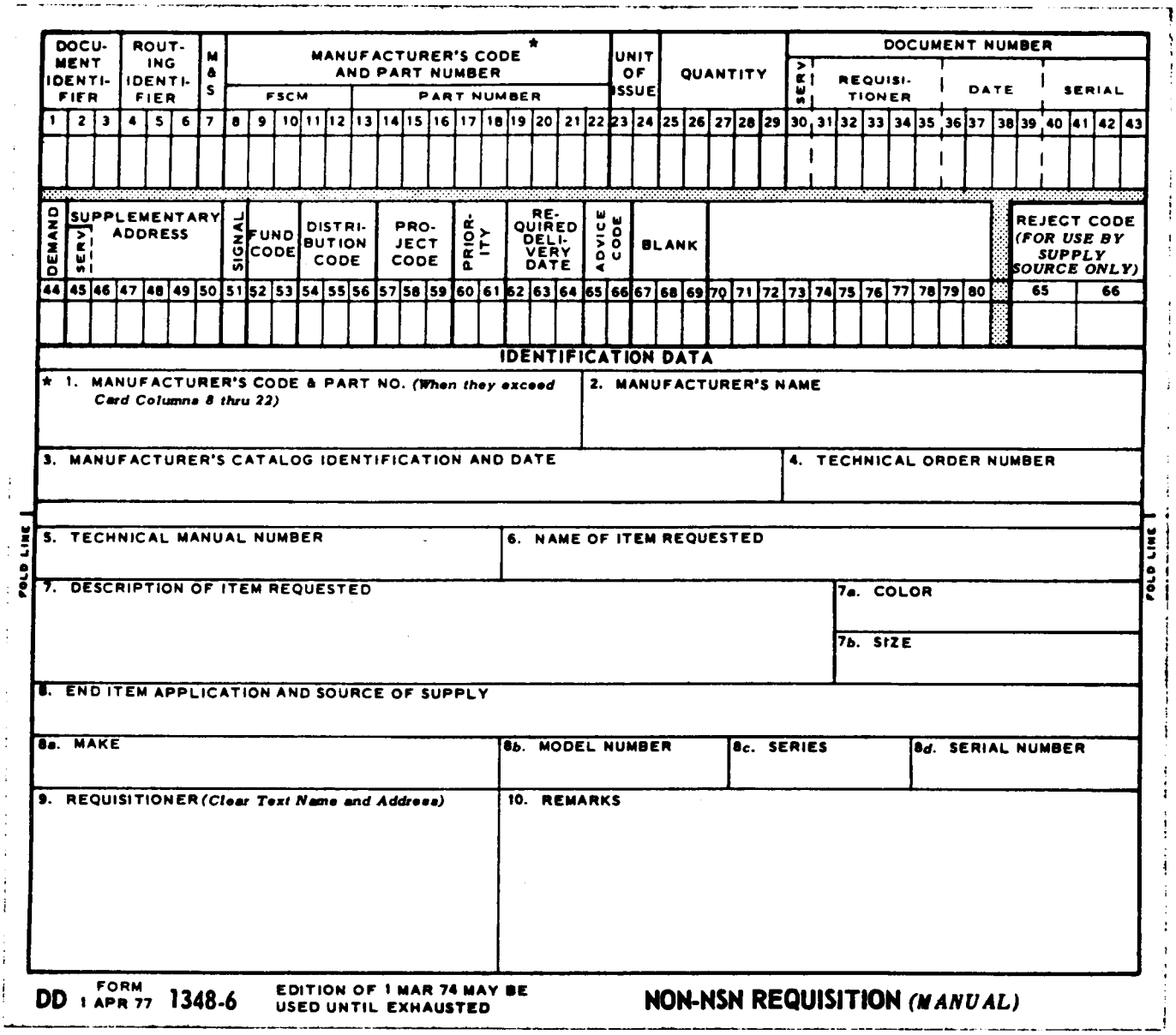
APPENDIX J (Continued)

Card Column	Description of Data	Mandatory Entry
7	Media/Status Code	
8-22	CAGE and Part Number	
23-24	Unit of Issue	
25-29	Quantity	
30-43	Document Number	
44	Demand Code	
45-50	Supplementary Address	
51	Signal Code	
52-53	Fund Code	
54-56	Distribution Code CC-54	"F" for CONUS, see AR 725-50 for OCONUS
	CC-55-56	*Weapon System Code
57-59	Project Code	DSS Code (CONUS) "JZC" (OCONUS)
60-61	Priority Code	
62-64	Required Delivery Date	
65-66	Advice Code	
67-69	Blank	
70	Identification code applicable to entry in cc 71-80 A - Technical Order or Technical Manual B - End Item Identification C - Noun Description D - Drawing or Specification Number	
71-80	Reference Identification	Identification of reference specified in CC 70

*Weapons System Designator Code: Use EIC Code listed in DA PAM 738-750. If code is not listed, leave blank.

APPENDIX K

SAMPLE FORMAT - MILSTRIP REQUISITION (NON-NSN) (MANUAL)



DOCUMENT IDENTIFIER			ROUTING IDENTIFIER			M&S	MANUFACTURER'S CODE AND PART NUMBER *															UNIT OF ISSUE		QUANTITY					DOCUMENT NUMBER																	
							FSCM					PART NUMBER																SERV	REQUISITIONER						DATE				SERIAL							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43

DEMAND	SUPPLEMENTARY ADDRESS							SIGNAL	FUND CODE		DISTRIBUTION CODE			PROJECT CODE			PRIORITY		REQUIRED DELIVERY DATE				ADVICE CODE		BLANK																			REJECT CODE (FOR USE BY SUPPLY SOURCE ONLY)	
	SERV																																											
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		65		66				

IDENTIFICATION DATA

* 1. MANUFACTURER'S CODE & PART NO. *(When they exceed Card Columns 8 thru 22)*	2. MANUFACTURER'S NAME
3. MANUFACTURER'S CATALOG IDENTIFICATION AND DATE	4. TECHNICAL ORDER NUMBER
5. TECHNICAL MANUAL NUMBER	6. NAME OF ITEM REQUESTED
7. DESCRIPTION OF ITEM REQUESTED	7a. COLOR 7b. SIZE
8. END ITEM APPLICATION AND SOURCE OF SUPPLY	
8a. MAKE	8b. MODEL NUMBER / 8c. SERIES / 8d. SERIAL NUMBER
9. REQUISITIONER *(Clear Text Name and Address)*	10. REMARKS

FOLD LINE

FOLD LINE

DD FORM 1 APR 77 1348-6 EDITION OF 1 MAR 74 MAY BE USED UNTIL EXHAUSTED

NON-NSN REQUISITION *(MANUAL)*

APPENDIX K (CONTINUED)

INSTRUCTIONS

This form will only be used in those cases where the manufacturer's code and part number exceed the spaces allocated in card columns 8-22 of the requisition.

Card Column	Description of Data	Mandatory Entry for CCE
1-3	Document Identifier Code	AOE - CONUS A05 - OVERSEAS
4-6	Routing Identifier Code	Always S9C
7	Media Status Code	
8-22	CAGE and Part Number	Leave Blank Enter in Block under Identification Data
23-24	Unit of Issue	
25-29	Quantity	
30-43	Document Number	
44	Demand Code	
45-50	Supplementary Address	
51	Signal Code	
52-53	Fund Code	
54-56	Distribution Code CC 54	"F" for CONUS. See AR 725-50 for overseas.)
	CC-55-56	Weapon System Code
57-59	Project Code	DSS CODE (CONUS) "JZC" (OCONUS)
60-61	Priority Code	
62-64	Required Delivery Date	
65-66	Advice Code	
67-80		Blank

IDENTIFICATION DATA - Lower half of DD Form 1348-6, complete blocks 1 thru 9.

APPENDIX L

REQUISITION FORM T

NON-NSN REQUISITION FORMAT

CARD COLUMN	DESCRIPTION	ENTRY	
		CONUS	OCONUS
1-3	Document Identifier Code	AOB	A02
4-6	Routing Identifier Code	S9C	S9C
8-22	Part Number	Enter Commercial and Government Entity followed by the part number.	
54-56	Distribution Code		
54	Control Activity	F	AR 725-50
55-56	Weapons System Designator Code		
57-59	Project Code	BGW	JZC

APPENDIX M

NSN FORMAT

CARD COLUMN	DESCRIPTION	ENTRY	
		CONUS	OCONUS
1-3	Document Identifier Code	AOA	AO1
8-22	National Stock Number	Enter the Applicable 13 Digit NSN	
54-56	Distribution Code	Same as Table 1, above.	
57-59	Project Code	Not Required	

APPENDIX N
REPAIR PARTS AND SPECIAL TOOLS LISTS

Section I. INTRODUCTION

N-1. SCOPE.

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of unit and direct support maintenance of the Dragline Bucket. It authorizes the requisitioning, Issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

N-2. GENERAL.

In addition to Section I, *Introduction,* this Repair Parts and Special Tools List is divided into the following sections:

a. **Section II. Repair Parts List**. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materiels are listed in item name sequence. Repair parts kits are listed separately in their own functional group within Section II. Repair parts for reparable special tools are also listed in this section. Items listed are shown on the associated illustration(s)/figure(s).

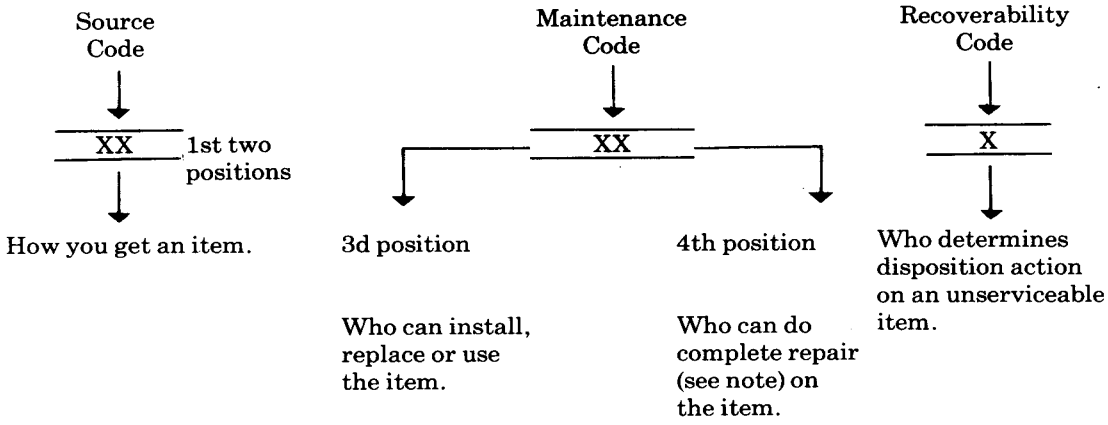
b. **Section III. Special Tools List**. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL [as indicated by Basis of Issue (BOI) information In the *DESCRIPTION AND USABLE ON CODE* column] for the performance of maintenance.

c. **Section IV. Cross-reference Indexes.** A list, In National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing In the listings. National stock numbers and part numbers are cross-referenced to each illustration/figure and item number appearance. The figure and item number index lists figure and item numbers in alphanumeric sequence and cross-references NSN, CAGE, and part numbers.

N-3. EXPLANATION OF COLUMNS (SECTIONS II AND III).

a. **ITEM NO. [Column (1)].** Indicates the number used to identify items called out in the illustration.

b. **SMR CODE [Column (2)].** The Source, Maintenance, and Recoverability (SMR) code is a 5position code containing supply/requisitioning Information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



**Complete Repair*: maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "*Repair"* function in a use/user environment in order to restore serviceability to a failed item.

N-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't).

(1) Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Code	*Application/Explanation*
PA PB PC PD ** PE PF PG	Stocked items; use the applicable NSN to request. Requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code. ***Items coded PC are subject to deterioration.*
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.
MO – Made at UM/AVUM Level *MF – Made at DS/AVUM Level* *MH – Made at GS Level* *MD – Made at Depot*	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk materiel which is identified by the part number in the *DESCRIPTION AND USABLE ON CODE (UOC)* column and listed in the bulk materiel group of the repair parts list in this RPSTL. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AO – Assembled by UM/AVUM Level *AF – Assembled by DS/AVUM Level* *AH – Assembled by GS Level* *AD – Assembled at Depot*	..... Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for Items with the above source codes, except for those source coded "XA."

XA - DO NOT requisition an "XA"-coded item. Order its next higher assembly.

XB - If an "XB" item is not available from salvage, order it using the CAGE and part number given.

N-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't).

XC - Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part

XD - Item is not stocked. Order an "XD"-coded item through normal supply channels using the CAGE and part number given, if no NSN is available.

(2) **Maintenance Code.** Maintenance codes tell you the level(s) of maintenance authorized to use and repair support Items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will Indicate authorization to one of the following levels of maintenance.

Code	*Application/Explanation*
C	- Crew or operator maintenance done within unit maintenance or aviation unit maintenance.
O	- Unit maintenance or aviation unit can remove, replace, and use the item.
F	- Direct support or aviation intermediate level can remove, replace, and use the item.
H	- General support level can remove, replace, and use the item.
L	- Specialized repair activity can remove, replace, and use the item.
D	- Depot level can remove, replace, and use the item.

NOTE

Some limited repair may be done on the item at a **lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.**

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized *"Repair"* functions). This position will contain one of the following maintenance codes:

Code	*Application/Explanation*
O	- Unit maintenance or aviation unit is the lowest level that can do complete repair of the item.
F	- Direct support or aviation intermediate is the lowest level than can do complete repair of the item.
H	- General support is the lowest level that can do complete repair of the item.
L	- Specialized repair activity is the lowest level that can do complete repair of the item.
D	- Depot is the lowest level that can do complete repair of the item.
z	- Nonreparable. No repair is authorized.
B	- No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

N-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't).

(3) Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code Is entered in the fifth position of the SMR code as follows:

Code	*Application/Explanation*
Z	- Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3d position of the SMR code.
O	- Reparable item. When uneconomically reparable, condemn and dis-pose of the item at unit maintenance or aviation unit level.
F	- Reparable item. When uneconomically reparable, condemn and dis-pose of the item at the direct support or aviation Intermediate level.
H	- Reparable item. When uneconomically reparable, condemn and dis-pose of the item at the general support level.
D	- Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.
L	- Reparable item. Condemnation and disposal of item not authorized be-low specialized repair activity (SRA).
A	- Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/ directives for specific instructions.

c. **CAGEC [Column (3)]**. The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

NOTE

When you use an NSN to requisition an item, the Item you receive may have a different part number from the part **ordered.**

d. **PART NUMBER [Column (4)]**. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

e. **DESCRIPTION AND USABLE ON CODE (UOC) [Column (5)]**. This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Physical security classification. Not Applicable.

(3) Items that are included in kits and sets are listed below the name of the kit or set on Figure KIT.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled.

(5) Part numbers for bulk materiels are referenced in this column in the line item entry for the item to be manufactured/fabricated.

N-3. EXPLANATION OF COLUMNS (SECTIONS II AND III (Con't).

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC). Not Applicable.

(7) The usable on code, when applicable (see paragraph N-5, Special Information).

(8) In the Special Tools List section, the Basis of Issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the Basis of Issue, the total authorization is increased proportionately.

(9) The statement "END OF FIGURE" appears just below the last item description In Column 5 for a given figure in both Section II and Section III.

f. **QTY [Column (6)]**. The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

N-4. EXPLANATION OF COLUMNS (SECTION IV).

a. **National Stock Number (NSN) Index.**

(1) *STOCK NUMBER* column. This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., NSN 5305-01-674-1467 NIIN) When using this column to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

(2) *FIG.* **column**. This column lists the number of the figure where the item is identified/located. The figures are In numerical order in Section II and Section III.

(3) *ITEM* **column.** The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. **Part Number Index**. Part numbers in this index are listed by part number In ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group In order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(1) *CAGEC* **column.** The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(2) *PART NUMBER* **column**. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

(3) *STOCK NUMBER* **column.** This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGE columns to the left.

(4) *FIG.* **column**. This column lists the number of the figure where the item Is identified/located in Section II and .Section III.

(5) *ITEM* **column.** The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

N-4. SPECIAL INFORMATION (Con't).

c. **Figure and Item Number Index.**

(1) *FIG.* **column.** This column lists the number of the figure where the item is identified/located in Sections II and 1II.

(2) *ITEM* **column** The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) *STOCK NUMBER* column. This column lists the NSN for the item.

(4) *CAGE* **column.** The Commercial and Government Entity (CAGE) Is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(5) *PART NUMBER* **column** Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of Its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

N-5. SPECIAL INFORMATION.

a. **Usable On Code**. The usable on code appears in the lower left comer of the Description column heading. Not Applicable.

b. **Fabrication Instructions.** Bulk materiels required to manufacture items are listed in the Bulk Materiel Functional Group of this RPSTL. Part numbers for bulk materiels are also referenced in the DESCRIPTION column of the line Item entry to be manufactured/fabricated.

c. **Assembly Instructions.** Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in TM 5-3815-226-13&P. Items that make up the assembly are listed Immediately following the assembly item entry or reference is made to an applicable figure.

d. **Kits.** Line Item entries for repair parts kits appear in group 9401 in Section II. Not Applicable.

e. **Index Numbers**. Items which have the word BULK in the FIG. column will have an index number shown in the item column. This index number Is a cross-reference between the National Stock Number/Part Number Index and the bulk materiel list in Section II.

N-6. HOW TO LOCATE REPAIR PARTS.

a. **When National Stock Number or Part Number Is Not Known:**

(1) **First.** Using the Table of Contents, determine the assembly group or subassembly group to which the item belongs. This Is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) **Second**. Find the figure covering the assembly group or subassembly group to which the item belongs.

(3) **Third.** Identify the item on the figure and use the Figure and Item Number Index to find the NSN.

b. When National Stock Number or Part Number Is Known:

(1) **First.** Using the National Stock Number or Part Number Index, find the pertinent National Stock Number or Part Number. The NSN Index is in National Item Identification Number (NIIN) sequence [see paragraph N-4.a(1)]. The part numbers in the Part Number Index are listed in ascending alphanumeric sequence (see paragraph N-4.b). Both indexes cross-reference you to the illustration/figure and item number of the item you are looking for.

(2) **Second.** Turn to the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

N-7. ABBREVIATIONS.

For standard abbreviations see MIL-STD-12D, *Military Standard Abbreviations for Use on Drawings, Specifications, Standards, and in Technical Documents.*

Abbreviations	*Explanation*
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL.....	Repair Parts and Special Tools Lists

SECTION II

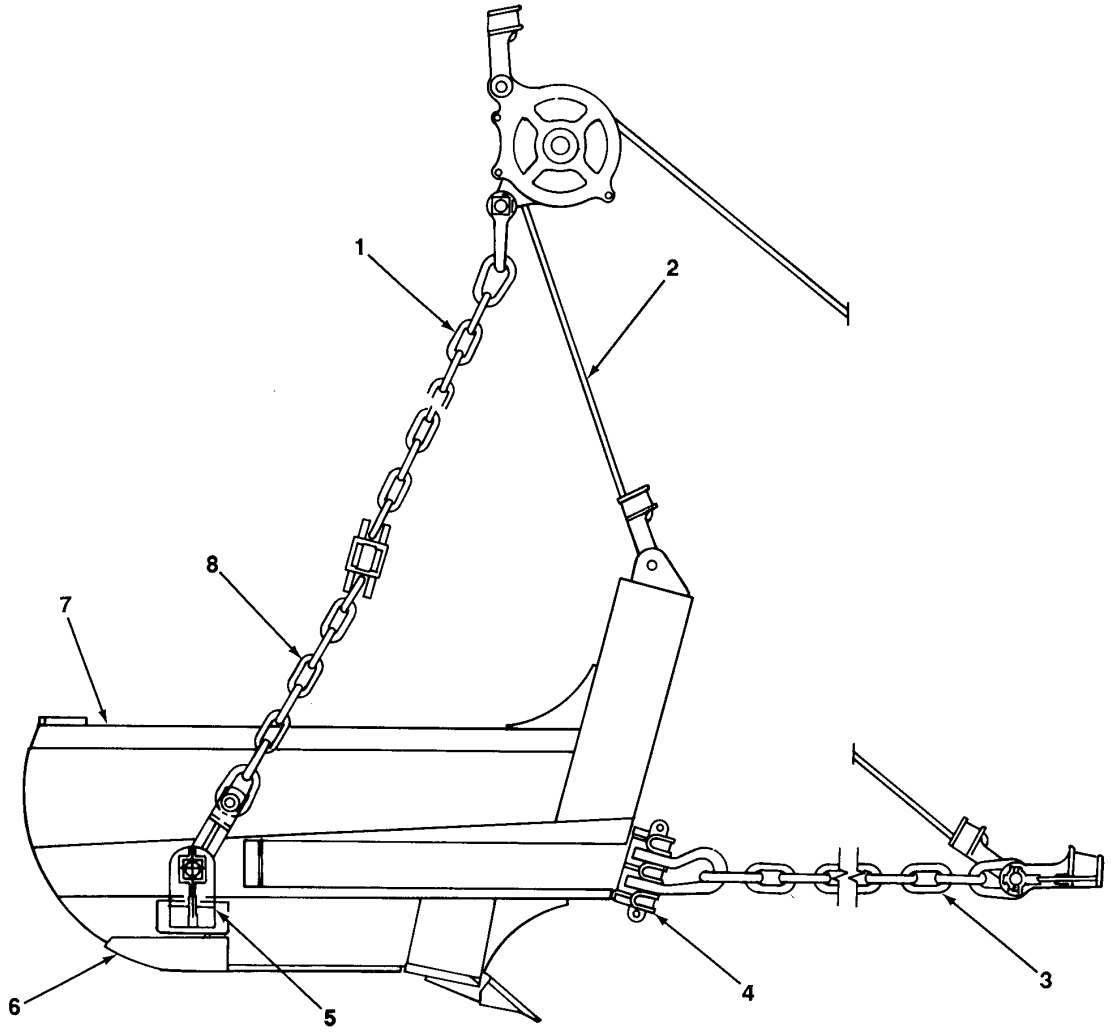


FIGURE 1. DRAGLINE GENERAL ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 74 CRANES, SHOVELS, AND EARTHMOVING EQUIPMENT COMPONENTS	
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 1 DRAGLINE GENERAL ASSEMBLY	
1	PBOZZ	9Y918	105069	CHAIN ASSEMBLY, SING	1
2	MOOZZ	81348	RRW410-19	WIRE ROPE 5/8 X *19'* MAKE FROM WIRE ..... ROPE P/N RRW410-19	1
3	PFOZZ	9Y918	103303	CHAIN, WELDED	1
4	PFFZZ	9Y918	101189	PLATE, HITCH	2
5	PBFZZ	9Y918	103382	BRACKET, TRUNNION.	1
6	PFFZZ	9Y918	107533	SHOEVWEAR, CORNER	2
7	PFFOZ	9Y918	107512	BUCKETDRAGLINE	1
	PFOZZ	9Y918	105068	CHAIN ASSEMBLY, SING	1
				END OF FIGURE	

SECTION II

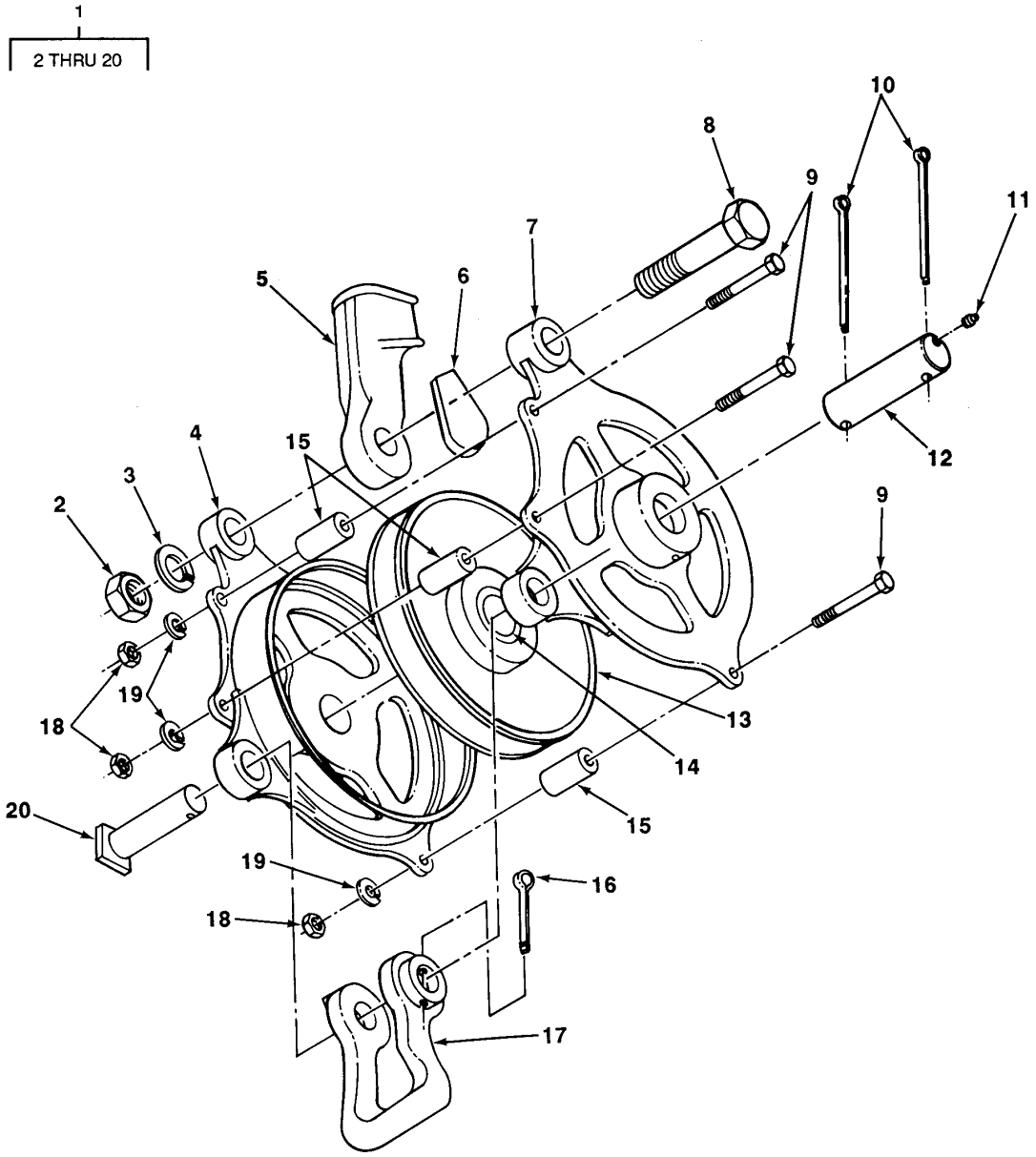


FIGURE 2. DUMP BLOCK ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 2 DUMP BLOCK ASSEMBLY	
1	XDOFF	9Y918	107514	BLOCK, TACKLE	1
2	PFOZZ	96906	MS51967-36	• NUT, PLAIN HEXAGON	1
3	PFOZZ	96906	MS35338-55	• WASHER, LOCK	1
4	PBOZZ	9Y918	107514-1	• DUMP BLOCK SIDE RH	1
5	PFOZZ	9Y918	103054	• SOCKET, WIRE ROPE	1
6	PFOZZ	9Y918	102558	• WEDGE, WIRE ROPE SOC	1
7	PBOZZ	9Y918	107514-2	• DUMP BLOCK SIDE LH	1
8	PFOZZ	96906	MS90728-282	• SCREW, CAP, HEXAGON H	1
9	PFOZZ	80204	B1821BH050C400N	• SCREW, CAP, HEXAGON H	3
10	PFOZZ	96906	MS24665-862	• PIN, COTTER	2
11	PFOZZ	96906	MS15003-1	• FITTING, LUBRICATION	1
12	PAOZZ	9Y918	101426-1	• PIN, STRAIGHT, HEADLE	1
13	PBOZZ	9Y918	107539	• PULLEY, GROOVE	1
14	PAFZZ	9Y918	107537	• BEARING, ROLLER, NEED	1
15	PFOZZ	9Y918	107514-9	• SPACER, SLEEVE	3
16	PFOZZ	96906	MS24665-704	• PIN, COTTER	1
17	PFOZZ	9Y918	103459	• SHACKLE	1
18	PFOZZ	96906	MS51967-15	• NUT, PLAINM HEXAGON	3
19	PFOZZ	96906	MS35338-48	• WASHER, LOCK	3
20	PFOZZ	9Y918	101308-1	• PIN, STRAIGHT, HEADED	1

END OF FIGURE

SECTION II

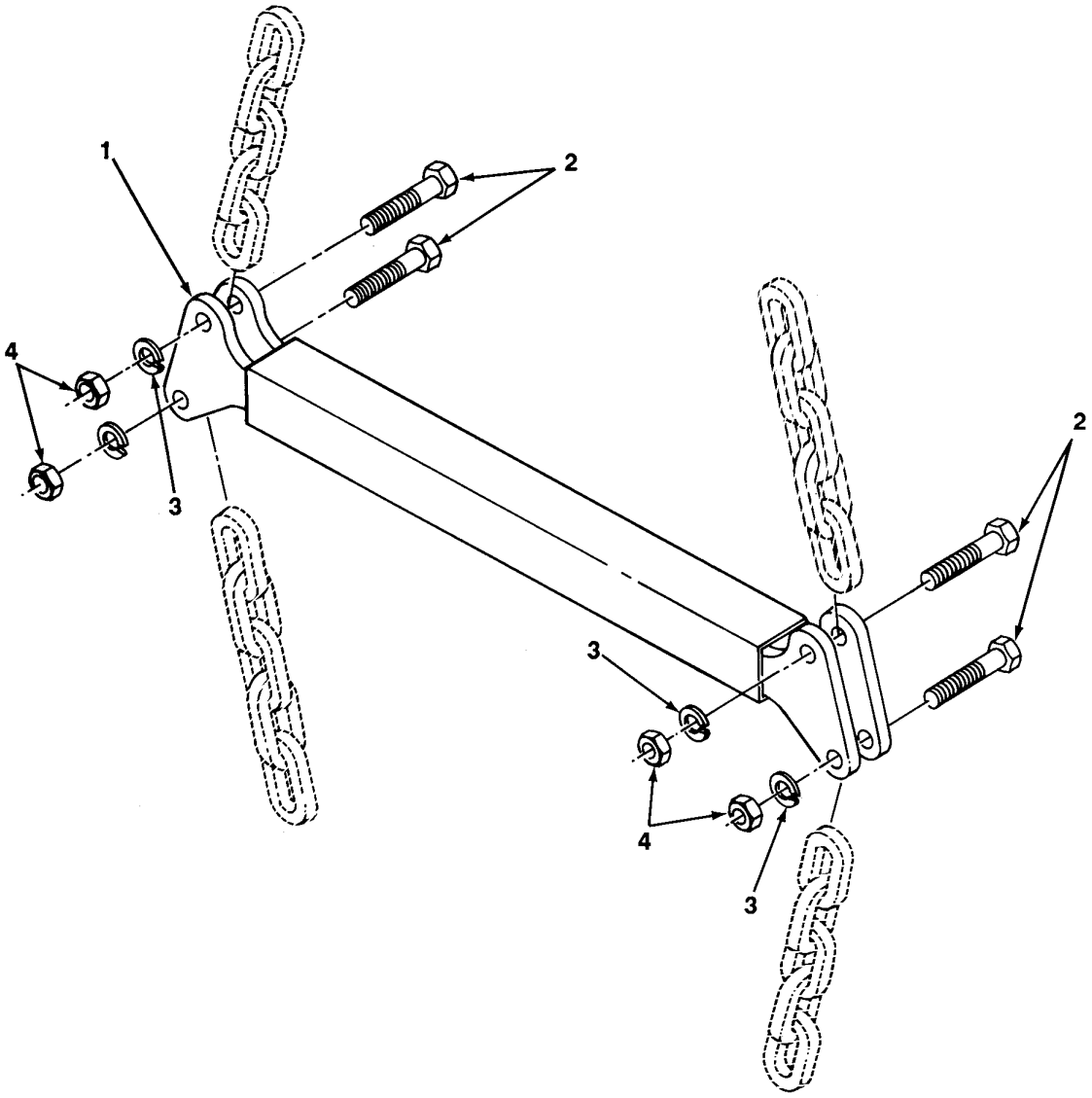


FIGURE 3. SPREADER BAR ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 3 SPREADER BAR ASSEMBLY	
1	PFOZZ	9Y918	107513	BAR, SPREADER	1
2	PFOZZ	80204	B1821BH100C400N	SCREW, CAP, HEXAGON H.....	4
3	PFOZZ	96906	MS51967-30	NUT, PLAIN, HEXAGON	4
4	PFOZZ	96906	MS35338-53	WASHER, LOCK.....	4

END OF FIGURE

SECTION II

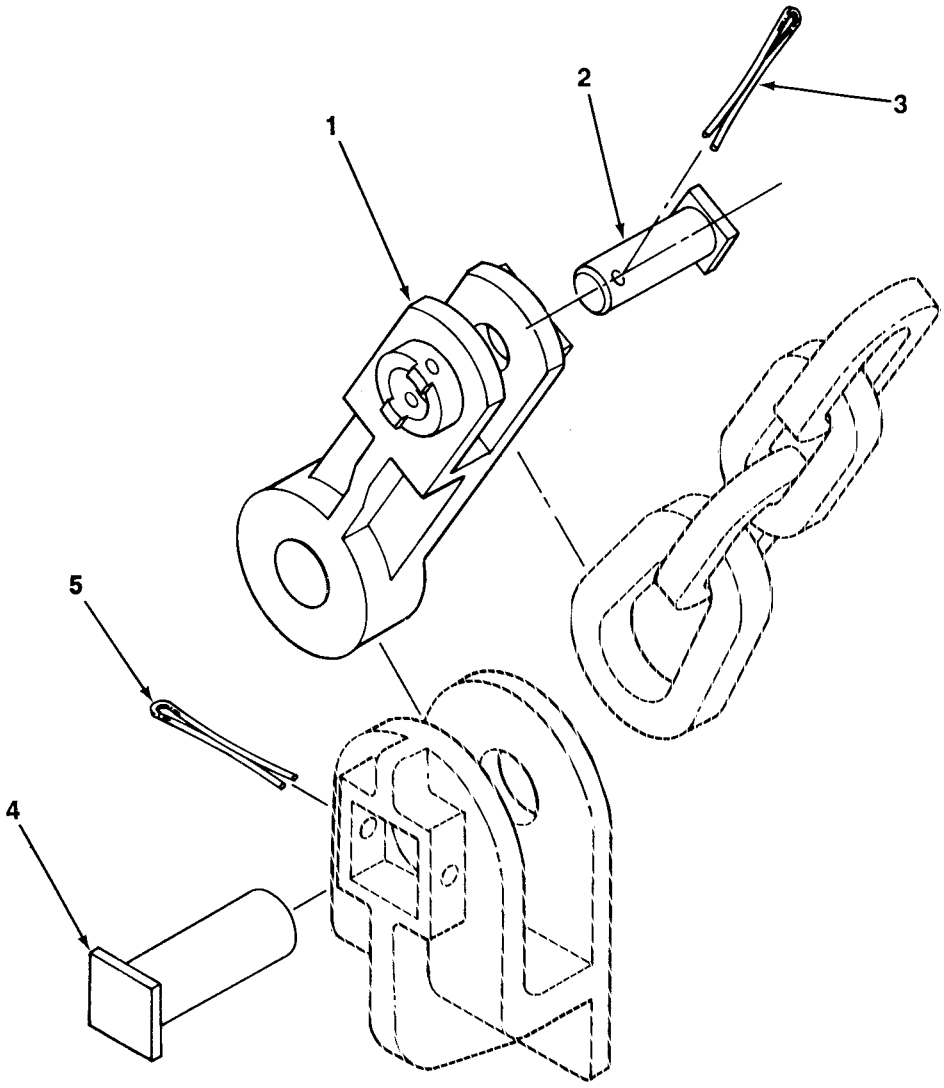


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FIGURE 4. TRUNNION ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 4 TRUNNION ASSEMBLY	
1	PFOZZ	9Y918	103386	CONNECTING LINK, RIG.....	1
2	PFOZZ	9Y918	106540	PIN, STRAIGHT, HEADED	1
3	PFOZZ	96906	MS24665-704	PIN, COTTER	1
4	PFOZZ	9Y918	101237-1	PIN, STRAIGHT, HEADED	1
5	PFOZZ	96906	MS24665-917	PIN, COTTER	2

END OF FIGURE

SECTION II

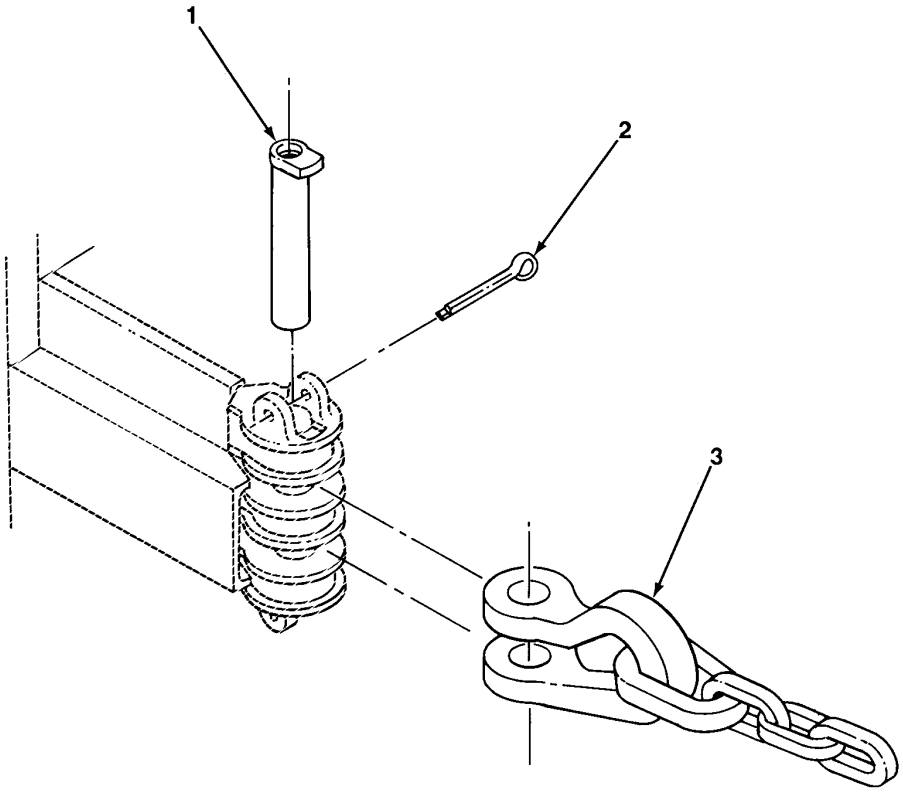

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FIGURE 5. HITCH SHACKLE.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 5 HITCH SHACKLE	
1	PFOZZ	9Y918	101190	PIN, STRAIGHT, HEADED	1
2	PFOZZ	96906	MS24665-915	PIN, COTTER	1
3	PFOZZ	9Y918	107532	SHACKLE.....	1
				END OF FIGURE	

SECTION II

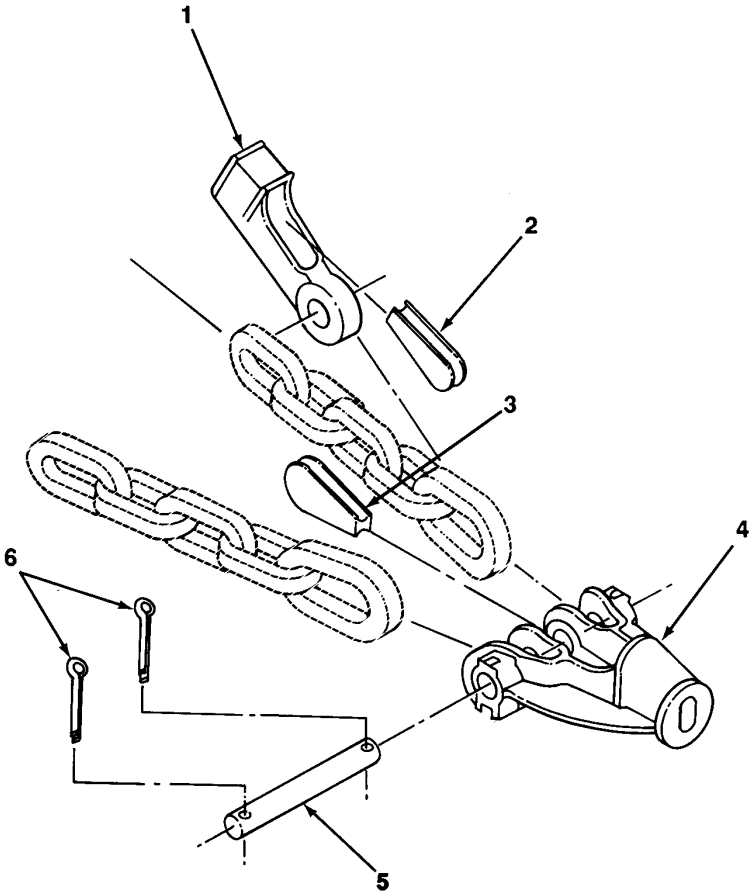

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FIGURE 6. CROWFOOT ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 6 CROWFOOT ASSEMBLY	
1	PFOZZ	9Y918	103054	SOCKET, WIRE ROPE.....	1
2	PFOZZ	9Y918	102558	WEDGE, WIRE ROPE SOC	1
3	PFOZZ	9Y918	102558	WEDGE, WIRE ROPE SOC	1
4	PFOZZ	9Y918	103057	SOCKET, CROWSFOOT	1
5	PFOZZ	9Y918	101188-1	PIN, STRAIGHT, HEADLE.....	1
6	PFOZZ	96906	MS24665-917	PIN, COTTER	1

END OF FIGURE

SECTION II

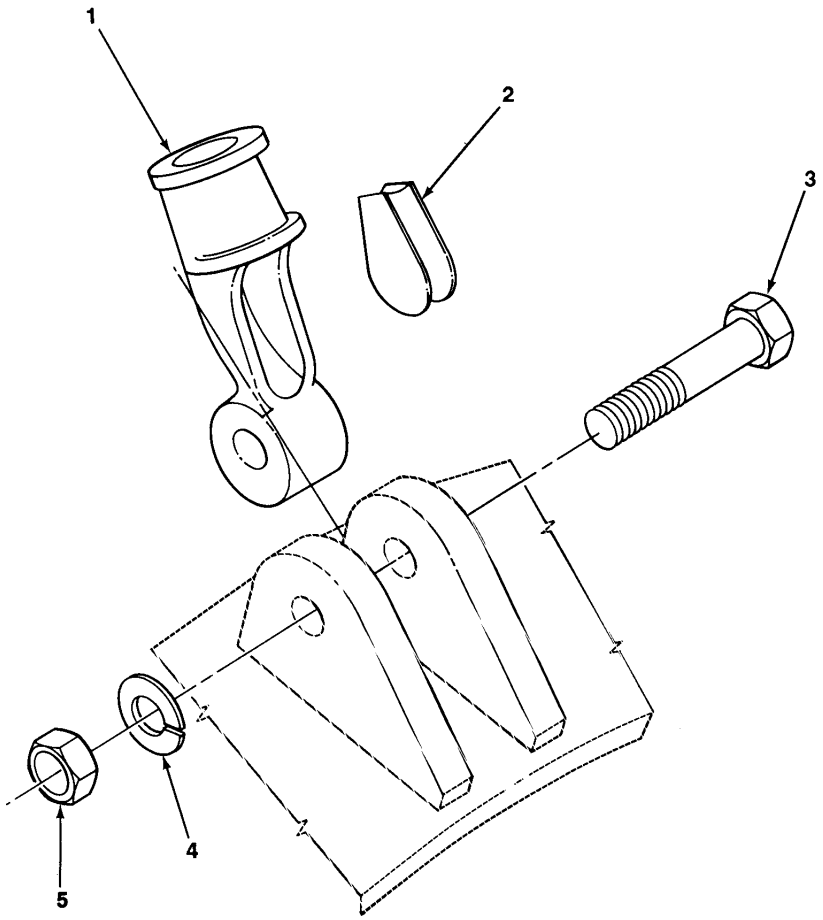

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FIGURE 7. ARCH SUPPORT ASSEMBLY.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 7 ARCH SUPPORT ASSEMBLY	
1	PFOZZ	9Y918	103050	SOCKET,WIRE ROPE	1
2	PFOZZ	9Y918	102558	WEDGE, WIRE ROPE SOC	1
3	PFOZZ	80204	B1821BH100C600N	SCREW,CAP,HEXAGON H	1
4	PFOZZ	96906	MS51967-29	NUT, PLAIN, HEXAGON	1
5	PFOZZ	96906	MS35338-55	WASHER, LOCK	1

END OF FIGURE

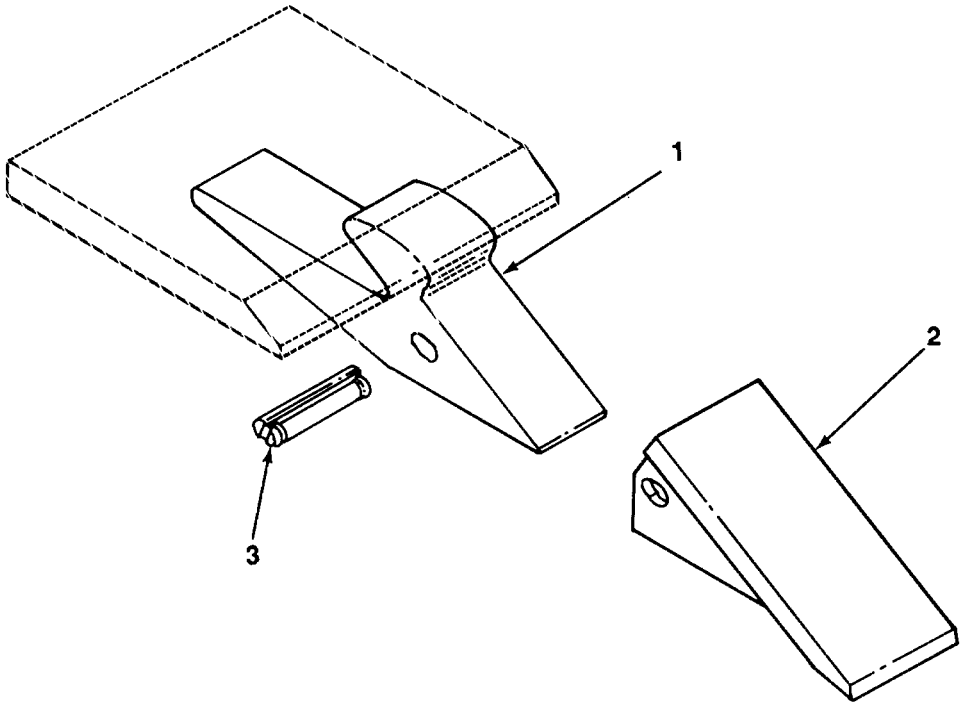

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FIGURE 8. TOOTH EQUIPMENT.

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 8 TOOTH EQUIPMENT	
1	PAFZZ	7A900	3000-W-25-HX	POINT ADAPTER	4
2	PAOZZ	7A900	251-HX	TOOTH,SURFACE RIPPI	4
3	PFOZZ	92839	25FLEXPIN	PIN,QUICK RELEASE	4

END OF FIGURE

(1) ITEM NO	(2) SMR CODE	(3) CAGEC	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 95 GENERAL USE STANDARDIZED PARTS	
				GROUP 9501 BULK MATERIAL	
				FIG. BULK	
1	PAOZZ	8134B	RRW410	WIRE ROPE.....	V

END OF FIGURE

CROSS- REFERENCE-INDEXES
NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
4730-00-050-4208	2	11
5310-00-060-9435	2	3
	7	5
5305-00-071-2079	2	9
5315-00-150-4007	2	16
	4	3
4010-00-269-9361	BULK	1
5310-00-584-5272	2	19
5310-00-584-7889	3	4
5310-00-761-3706	2	18
5310-00-762-6219	3	3
5310-00-762-6248	7	4
5305-00-964-0557	3	2
5305-00-990-8416	7	3
5310-01-031-1458	2	2
3815-01-263-3959	6	4
3815-01-263-3960	8	1
3815-01-263-7199	8	2
5340-01-263-9489	1	5
5315-01-264-3697	4	5
	6	6
3110-01-266-9372	2	14
5315-01-266-9966	5	2
5315-01-266-9968	2	10
5315-01-266-9969	5	1
5315-01-266-9970	4	4
5315-01-266-9971	4	2
5315-01-266-9972	2	20
5315-01-266-9974	6	5
5315-01-266-9975	2	12
4030-01-267-1251	7	1
4030-01-267-1252	5	3
4030-01-267-1253	2	17
4030-01-267-4214	2	6
	6	2
	6	3
	7	2
4030-01-267-6407	2	5
	6	1
4010-01-271-1913	1	8
4010-01-271-4274	1	3
4010-01-273-1717	1	1
5365-01-273-4620	2	15

CROSS-REFERENCE INDEXES
PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80204	B1821BH050C400N	5305-00-071-2079	2	9
80204	B18213H100C400N	5305-00-964-0557	3	2
80204	B18213H100C600N	5305-00-990-8416	7	3
96906	MS15003-1	4730-00-050-4208	2	11
			4	3
96906	MS24665-704	5315-00-150-4007	2	16
96906	MS24665-862	5315-01-266-9968	2	10
96906	MS24665-915	5315-01-266-9966	5	2
			6	6
96906	MS24665-917	5315-01-264-3697	4	5
96906	MS35338-48	5310-00-584-5272	2	19
96906	MS35338-53	5310-00-584-7889	3	4
			7	5
96906	MS35338-55	5310-00-060-9435	2	3
96906	MS51967-15	5310-00-761-3706	2	18
96906	MS51967-29	5310-00-762-6248	7	4
96906	MS51967-30	5310-00-762-6219	3	3
96906	MS51967-36	5310-01-031-1458	2	2
96906	MS90728-282		2	8
81348	RRW410	4010-00-269-9361	BULK	1
81348	RRW410-19		1	2
9Y918	101188-1	5315-01-266-9974	6	5
9Y918	101189		1	4
9Y918	101190	5315-01-266-9969	5	1
9Y918	101237-1	5315-01-266-9970	4	4
9Y918	101308-1	5315-01-266-9972	2	20
9Y918	101426-1	5315-01-266-9975	2	12
			6	2
			6	3
			7	2
9Y918	102558	4030-01-267-4214	2	6
9Y918	103050	4030-01-267-1251	7	1
			6	1
9Y918	103054	4030-01-267-6407	2	5
9Y918	103057	3815-01-263-3959	6	4
9Y918	103303	4010-01-271-4274	1	3
9Y918	103382	5340-01-263-9489	1	5
9Y918	103386		4	1
9Y918	103459	4030-01-267-1253	2	17
9Y918	105068	4010-01-271-1913	1	8
9Y918	105069	4010-01-273-1717	1	1
9Y918	106540	5315-01-266-9971	4	2
9Y918	107512		1	7
9Y918	107513		3	1
9Y918	107514		2	1
9Y918	107514-1		2	4
9Y918	107514-2		2	7
9Y918	107514-9	5365-01-273-4620	2	15
9Y918	107532	4030-01-267-1252	5	3
9Y918	107533		1	5
9Y918	107537	3110-01-266-9372	2	14

CROSS-REFERENCE INDEXES
PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
9Y918	107539		2	13
92839	25FLEXPIN		8	3
7A900	251-HX	3815-01-263-7199	8	*2*
7A900	3000-W-25-HX	3815-01-263-3960	B	1

CROSS REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
BULK	1	4010-00-269-9361	81348	RRW410
1	1	4010-01-273-1717	9Y918	105069
1	2		81348	RRW410-19
1	3	4010-01-271-4274	9Y918	103303
1	4		9Y918	101189
1	5	5340-01-263-9489	9Y918	103382
1	6		9Y918	107533
1	7		9Y918	107512
1	8	4010-01-271-1913	9Y918	105068
2	1		9Y918	107514
2	2	5310-01-031-1458	96906	MS51967-36
2	3	5310-00-060-9435	96906	MS35338-55
2	4		9Y918	107514-1
2	5	4030-01-267-6407	9Y918	103054
2	6	4030-01-267-4214	9Y918	102558
2	7		9Y918	107514-2
2	8		96906	MS90728-282
2	9	5305-00-071-2079	80204	B1321BH050C400N
2	10	5315-01-266-9968	96906	MS24665-862
2	11	4730-00-050-4208	96906	MS15003-1
2	12	5315-01-266-9975	9Y918	101426-1
2	13		9Y918	107539
2	15	5365-01-273-4620	9Y918	107514-9 189tw
2	14	3110-01-266-9372	9Y918	107537
2	16	5315-00-150-4007	96906	MS24665-704
2	17	4030-01-267-1253	9Y918	103459
2	18	5310-00-761-3706	96906	MS51967-15
2	19	5310-00-584-5272	96906	MS35338-48
2	20	5315-01-266-9972	9VY918	101308-1
3	2	5305-00-964-0557	80204	B182H15H00C400N
4	4	5315-01-266-9970	9Y918	101237-1
4	5	5315-01-264-3697	96906	MS24665-917
4	3	4030-01-267-1252	9Y918	107532
6	1	4030-01-267-6407	9Y918	103054
6	2	4030-01-267-4214	9Y918	102558
6	3	4030-01-267-4214	9Y918	102558
6	4	3815-01-263-3959	9Y918	103057
6	5	5315-01-26o-9974	9Y918	1C1189-1
6	6	5315-01-264-3697	96906	MS24665-917
7	1	4030-01-267-1251	9Y918	103050
7	3	5305-00-990-8416	80204	81821BH100C600N
7	4	5310-00-762-6248	96906	MS51967-29

CROSS REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	CAGEC	PART NUMBER
7	5	5310-00-060-9435	96906	MS35338-55
8	1	3815-01-263-3960	7A900	3000-W-25-HX
8	2	3815-01-263-7199	7A900	251-HX
8	3		92839	25FLEXPIN

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1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

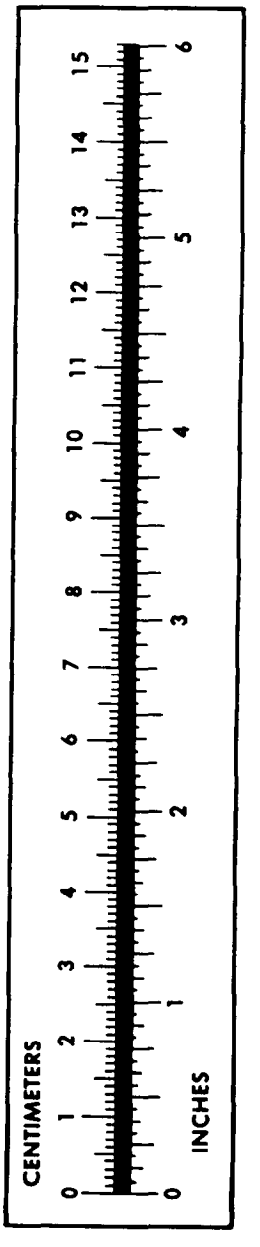
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
'ers	Gallons	0.264
.ms	Ounces	0.035
.ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
›meters per Hour	Miles per Hour	0.621



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