TECHNICAL MANUAL



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

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

19 NOVEMBER 1989

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

CHANGE

NO. 1

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

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 i and ii N-1 through Sheet 11 of 11 None

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

Insert Pages

i through iii/(iv Blank) N-1 through BULK-1 I-1 through I-5

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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.

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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 OUT SIDE 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

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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.

Distribution Restriction: Approved for public release; distribution is unlimited.

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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.

GENERAL DESCRIPTION

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.



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



INSTALLATION INSTRUCTIONS

- 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.

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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.							
			ſ	SOCKET WEDGE			
DEAD END							
LIVE END]					
STE	P I. APPLY ROPE TIGHT	FIRST CLAM U-BOLT OVEF EN NUTS EVE	P-ONE SADDLE WIDTH FRC R DEAD END-LIVE END RES NLY.	OM DEAD END OF WIRE TS IN CLIP SADDLE.			
DEAD END	~			SOCKET WEDGE			
LIVE END		, , , , , , , , , , , , , , , , ,					
STE	P 2. APPLY OVER	SECOND CL	AMP-NEAREST SOCKET AS JRN ON NUTS FIRM BUT DO	POSSIBLE U-BOLT O NOT TIGHTEN			
DEAD EN				SOCKET WEDGE			
LIVE_EN							
STE	P 3. ALLOT MORE SLACK TORQI	HER CLAMPS THAN ONE C TIGHTEN AL JE. (TORQUE	S-SPACE EQUALLY BETWEE LAMP SADDLE APART TUR L NUTS EVENLY ON ALL CL E 109 FT LB)	EN FIRST TWO-THIS WILL BE NO N ON NUTS-TAKE UP ROPE AMPS TO RECOMMENDED			
			7				

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.



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.

DAILY LUBRICATION AND INSPECTION

- 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).



DUMP BLOCK ASSEMBLY

- 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.

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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.

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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.



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.



- 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.

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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

*****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 11' 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 :

- I.) 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 I) 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.

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WEAR SHOE REPLACEMENT



- 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.

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WEARING SHOE REPLACEMENT



REPLACEMENT:

- I.) ASSEMBLE WEAR SHOE TO EACH SIDE ALLOWING
- APPROXIMATELY 3/8 BETWEEN WEAR SHOE AND BOTTOM RUNNER TACK WELD ALL SIDES IN CENTER AND THEN CORNERS. 2.) 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.
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	TROUBLESHOOTING GUIDE	
MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
1 SHEAVE WON'T TURN SHEAVE AND PIN NO GREASE IN ASSEMBLY CABLE WEDGED BETWEEN SHEAVE AND DUMP BLOCK SIDE	DEBRIS BETWEEN CLEAN AND REGREASE REMOVE SHEAVE, PIN CLEAN AND REGREASE REMOVE CABLE FROM BETWEEN SHEAVE AND DUMP BLOCK SIDE	REMOVE SHEAVE, PIN
2 BUCKET WON'T DIG	HITCH SHACKLE WRONG POSITION DUMP ROPE TOO LONG	CHANGE HITCH SHACKLE POSITION 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.
 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.

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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.
- 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

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

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 nogo, 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.
- 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.

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. <u>See appendix I through N for MILSTRIP examples, formats, and source codes.</u>
- 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. <u>General:</u> 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. <u>Inspect</u>: 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. <u>Test:</u> 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. <u>Service</u>: 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. <u>Adjust:</u> To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.
- e. <u>Install:</u> 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. <u>Replace:</u> The act of substituting a serviceable like-type part, subassembly, or module (component or subassembly) for an unserviceable counterpart.

A-1

- 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.

A-2

APPENDIX A

GROUP	COMPONENT/ASSEMBLY	MAINTENANCE		MAI	NT LI	EVEL		TOOLS & EQUIP. 5 (5)	REMARKS (6)
NUMBER (1)	(2)	FUNCTION (3)			INT	MED 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	1 0	1				
		Repair		1.0			1		
	Sheave Bearing	Inspect	0.1		1 0		- 1		
		кертасе			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		1			
	Spreader Bar Assy	Inspect	0.1						
		Replace		1.0		- 1		1	
		Repair		1.0					
1	Chains	Inspect	0.1						
		Replace		1.0			ļ		
	Trunion Bracket/	Inspect	0.1					i	
	Link Assy	Replace		1.0					
		Repair		1.0					
	Teeth	Inspect	0.1						
		Replace		1.0					
		1							
								İ	
								ſ	
								1	
MAINTEN	ANCE LEVELS:								

APPENDIX A

SECTION II. MAINTENANCE ALLOCATION CHART												
GROUP	r	LAINTENANCE	MAINT EVEL				TOOLSA					
NUMBER	COMPONENT/ASSEMBLY	FUNCTION	UNIT LINTM			HNIT LINTMED			UNIT INTMED			REMARKS
(1)	(2)	(3)	C	0	F	H	D	(5)	(6)			
			Τ									
7411	Teeth Equipment (continued)											
	Teeth Adapters	Inspect Replace		0.1	1.0							
7411	BUCKET ASSY											
	Lip Assy	Inspect Repair Replace	0.1		1.0 5.0							
	Wear Shoes	Inspect Replace	0.1		5.0							
	Cable	Inspect Replace	0.1	2.0								
	<u></u>	<u> </u>										
• MAINTEN C - O -	NANCE LEVELS: OPERATOR/CREW ORGANIZATIONAL = UNIT	F - INTERMEDIAT H - INTERMEDIAT	e dir Te gei	ECT NE R A	supp 1. Su	ort PPOF	۲۲	D - DEF	точ			

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, 9 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

A-5/(A-6 Blank)

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.

			0	PEI	RA [.]	OR/CREW PREVENT	IVE MAINTENA	NCE CHECKS AND) SERVICES
B - BEFORE D - DURING A - AFTER W - WEEKLY					M - MONTHLY				
ITEM		INT	ER\	/AL	· · · ·	IT PROCEDURE: (EM TO BE INSPECT	ED AVE REPAIRED,	EQUIPMENT IS NOT
	В	D	A	W	м	FILLED,	OR ADJUSTED AS	NEEDED	READY/AVAILABLE IF:
1.	•					NOTE: Perform weekly as A. You are the assi- the equipment du B. You are operation <u>!!!</u> All preventive maint performed with the construction NOTE: Lubricate prior to General: Make the follow A. Check for frayed B. Check for loose C. Check for cracks	well as before PMC gned operator but i iring the past week ng the equipment fo <u>WARNING !!!</u> cenance checks and irrane and/or carrie to operation (See L wing walk around ch d, crushed, split, or missing nuts an a or wear holes.	S if: have not operated r the first time. services will be r engines shut down. .O., Appendix F) ecks: or damaged wire rope. d bolts.	Crushed/split wire rope. Six or more strands frayed
								ж.	

STA FORM 666 1 TV 83

	OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES									
B - BEFORE D - DURING A - AFTER W - WEEKLY									M - MONTHLY	
ITEM NO	M INTERVAL B D A W M				м	ITEN PROCEDURE: CH FILLED, O	1 TO BE INSPECT IECK FOR AND H R ADJUSTED AS	FED AVE REPAIRED, NEEDED	EQUIPMENT IS NOT READY/AVAILABLE IF:	
2. 3. 4. 5. 6. 7. 8. 9.		-				DO NOT TOUCH SHEAVE EDGE. Vi <u>DUMP BLOCK ASSEMBLY</u> : Check for cable shows signs of fraying <u>DRACLINE BUCKET ASSEMBLY</u> : Cr spreader bar. <u>CABLE</u> : Check for worn, fraye manufacturer's manual. <u>CROWSFOOT/SOCKET ASSEMBLIES</u> : clamps. <u>CHAINS</u> : Check for broken/cra <u>TEETH</u> : Check for missing/loo <u>SPREADER BAR</u> : Check for bent <u>TRUNION LINK AND HITCH SHACKL</u> key.	<pre>!!!WARNING!!! lsually check the or sharp sheave e or cuts. neck for cracked ed or cut cable I Check for split acked links. >se teeth : bar. _E: Check for Be</pre>	e edge for sharpness. edges. Edges are sharp if welds, bent arch or IAW page b, commercial : socket or missing cable ent pin or missing cotter	Evidence of wire rope being cut/frayed Any cracked weld Cable is damaged IAW, page number b, commercial manual Socket split, two or more missing clamps Any link broken or cracked One or more missing teeth One missing cotter key	

APPENDIX B

PREVIOUS EDITION IS OBSOLETE

STA FORM 666 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-MONTH	Q-QUARTERLY					S-SEMIANNUALLY A-ANNUALLY B-BIENNIALLY H-HOURS MI-MILES						
	r	INTERVAL				r	ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED FILLED OR ADJUSTED AS NEEDED					
NU. M	Q	S	A	В	н	мі	PERFORM ALL OPERATOR PMCS FIRST					
1. 2. 3. 4.							DRAGLINE BUCKET: Check wearshoes for holes. I!!!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. DUMP BLOCK ASSEMBLY: Check sheave for sharp edge. Check for damaged bushing and free circular movement of sheave on bearing. CHAINS: Check for stretched chain or damaged links. LIP: Check for worn/chipped LIP.					

B-7/(B-8 blank)

APPENDIX C

BASIC ISSUE ITEMS: None

ADDITIONAL AUTHORIZED ITEMS: (Items Troop Installed)

SMR CODE	NATIONAL STOCK NUMBER	DESCRIPTION	<u>UN</u>	<u>QTY</u>	<u>AUTH</u>
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

C-1/(C-2 blank)

APPENDIX D

NOMENCLATURE: BUC	KET, DRAGLIN	E, TYPE II	MEDIUM DUTY	MAKE: INTERC	Y. INC.			MODEL: D-34		
MFR PART NO: (9" 107512	Y918)	NSN: 3815-01-249-1692				SERIAL NO. RANGE: DATE: 186104421-1 TO 1186104421-225 Jul 87				
(1) Component Application	(2) MFR PAR OR NAT [®] L ST(т но. Оск но.	DESC	(3) RIPTION		(4) QTY REQ F/INITIAL OPN	(5) QTY REQ F/8 HRS OPN		(6) Notes	
PIVOT POINTS GREASE	9150-00-13 9150-00-190	8–9858)–0907	OIL, LUBRICAT GAA	ING		1 qt 35 1b	Variable Variable			

D-1/(D-2 blank)

APPENDIX E

DA EQUIPMENT PUBLICATIONS

NOMENCLATURE

Department of the Army Authenticated Commercial Edited Manuals: Operator's Manual Service and Repair Manual Parts Manual

EQUIPMENT PUBLICATION NUMBER OR TYPE

DATE AVAILABLE

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,		Current
	Maintenance and Repair		
Lubrication and	Parts Instructions		
Maintenance Guide	(SOMARPI)		Current
Parts Book			Current
	E-1/(E-2 blank)		

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

F-1



USE ENDUGH 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.

-KEY-								
	EXPECTED TEMPERATURES							
	CARACITY	Above + 60°F (Above +15°C)	+59°to -15°F (+15° to -25°C)	-14° to -65°F (-25° to -65°C)		INTERVALS		
OE/HDO- Lubricating 0il, Internal Combustion Engine, Tac- tical Service	_	30	30		TO FM 9-207	See note 2		
OEA- Lubricating Oil, Internal Combustion, Arctic					FOR ARTIC OPERATION REFER	Intervals given are in hours of normal operation UNLESS OTHER- WISE SPECIFIED.		
GAA- Grease, Auto- Motive & Artiviery		ALL -	TEMPERA	TURES		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								

F-3/(F-4 blank)
APPENDIX G

SAMPLE FORMAT - DA FORM 2765 PART NUMBER REQUEST



(CONUS REQUESTER)

G-1/(G-2 blank)

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

H-1/(H-2 blank)

APPENDIX I

SAMPLE FORMAT - MILSTRIP REQUISITION (NSN)



Card Column	Description of Data	Mandatory Entry <u>for CCE</u>
1-3	Document Identifier Code	AOA-CONUS AO1-CONUS
4-6 7 8-22 23-24 25-29 30-43 44 45-50 51 52-53 54-50	Routing Identifier Code Media/Status Code NSN Unit of Issue Quantity Document Number Demand Code Supplementary Address Signal Code 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
62-64 65-66	Priority Code Required Delivery Date Advice Code	

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

I-1/(I-2 blank)

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

D	OC En	:U- T		R		JT. G	•	M	MANUFACTURER'S CO						co	DE	*				UNIT							DOCUMENT NUMBER																		
01 F	EN IE	Ti- R	•	ID F	EN 1E	R	머	8 5	┢		FS	CM		A			RT.	PAP		NU	MB	ER			-	SSU	ε	QL		NTI	TΥ		E REQUISI- DATE					1	SERIAL							
	5]3	7	4	5	T	6	7	8	•	Ī	10	11	12	13	14	15	16	117	711	8 11	2	0 2	21 2	22	23 2	4	25 2	6 2	27 2	8	29	30	31	32	33	34	3	5 3	6 3	7	38	39	40	4	2
						I																												I L					i				1			
	S V N		PL A	EI DC	JE R	NT ES	* A I 5	RY	IGNAL	F	JN DO	P	019 80 C	ST F TIC	31- 2N E		PRO	С- С- СТ ОЕ	ROR	۲۲ ۲	T		E- RE(LI-	D	DVICE	5	<u>se</u>	ANK	Ī				<u></u>	2224							٦		REJ (FO	EG1 R U UP1	CO SE B PLY	D Y
	45	46	5 4	17	48	14	9	50	51	52	15	3	54	55	56	57	58	159	60	161		2 6 3	16		-	66	7 0	68 6	17	0 7	آ آه	2	73	74	75	76	77	7	179		10	÷	6	RCE	6	L :
1	_	T	T			t	1			Ī	T	1						Γ	Ī	T	T	T	T	Ť	T	T	T		Ť	T	T					ſ	T	T	T	T						
1			-		L	-	4	_		L	1	4					_	<u> </u>	-	1	늡	ĒN	TI	FIC			N	DAT		-1-	1	1				1	1	1	1	1	Ŀ		_			_
	м,	EC		•	CT		RE	R'		A1	UN	181	GI	DE	NT	181	CA	TIC	N /	AN (D D	N	e Am	EC	DF	ITE	M	REQ	UE	STE	20		4.	TE	C+				R	E	R N	UN	BE	R		
•	Б	ĒS	CR	HP	TI	01	10	F	ĪŤ	EM	R	ĒQ	UE	ST	ED																			-	7.	C	OL	OR			<u>-</u>					-
																																			76.	S	†Z E			•••••						
	EN	AK	IT	Ē	A A	P	PL	.1C	ÁŤ	101	NA	N	5 5	ōŪ	RC	EO	F	50F	PL	.¥	86	. M	100	DEL	. NI	UME	IE I	R		18,		SE	RI	ĒS				84		EF			NUN	BE		
	RE	QL	UIS	1	10	N	ER	(C	1	f 7	'ez	t N	1 440		nd	Ad	dre	••)			10). 1	REA	MAI	RKS	5		·····-																		
.					1		_																																							_

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

J-1

APPENDIX J (Continued)

Card Column 7 8-22 23-24 25-29 30-43 44 45-50 51 52 52	Description of Data Media/Status Code CAGE and Part Number Unit of Issue Quantity Document Number Demand Code Supplementary Address Signal Code	Mandatory Entry
52-55 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 62-64 65-66 67-69 70	Priority Code Required Delivery Date Advice Code Blank Identification code appli- cable 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.

J-2

APPENDIX K

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

	oc	U٠	R	υc	T-	Ι.	Ι			м							-	DE	*			I	41									C	000	:UM	1EN	IT I	NUN	ABE	R		
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NON-NSN REQUISITION MANUAL K-1

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.

<u>Card Column</u> 1-3	Description of Data Document Identifier Code	Mandatory Entry <u>for CCE</u> AOE - CONUS A05 - OVERSEAS
4-6 7	Routing Identifier Code Media Status Code	Always S9C
8-22	CAGE and Part Number	Leave Blank Enter in Block under Identifi- cation 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	х , , , , , , , , , , , , , , , , , , ,
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.

K-2

APPENDIX L

REQUISITION FORM T

NON-NSN REQUISITION FORMAT

CARD COLUMN	DESCRIPTION	ENTRY CONUS	<u>(</u> OCONUS
1-3	Document Identifier Code	AOB	A02
4-6	Routing Identifier Code	S9C	S9C
8-22	Part Number	Enter Commer cial and Goverr ment 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

L-1/(L-2 blank)

APPENDIX M

NSN FORMAT

CARD COLUMN	DESCRIPTION	ENTR CONUS	
1-3	Document Identifier Code	AOA	AO1
8-22	National Stock Number	Enter the Appli 13 Digit NSN	icable
54-56	Distribution Code	Same as Table above.	91,
57-59	Project Code	Not Required	

M-1/(M-2 blank)

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. <u>Section II. Repair Parts List</u>. 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. <u>Section III. Special Tools List</u>. 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. <u>Section IV. Cross-reference Indexes</u>. 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. <u>SMR CODE [Column (2)].</u> 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:

<u>Code</u>

PA PB PC PD ** PE PF PG



- MO Made at UM/AVUM Level MF – Made at DS/AVUM Level MH – Made at GS Level

MD - Made at Depot

- AO Assembled by UM/ AVUM Level AF – Assembled by DS/ AVUM Level AH – Assembled by GS Level
- AD Assembled at De-

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.

Application/Explanation

**Items coded PC are subject to deterioration.

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.

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.

.....

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 lovel 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.

Change1 N-2

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.

<u>Code</u>	Application/Explanation
С	 Crew or operator maintenance done within unit maintenance or aviation unit maintenance.
0	- 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.
Н	 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:

<u>Code</u>	Application/Explanation
0	 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.
Н	- 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.
В	 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.

Change 1 N-3

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:

<u>Code</u>	Application/Explanation
Ζ	 Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3d position of the SMR code.
0	 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.
Н	 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. <u>CAGEC [Column (3)]</u>. 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. <u>PART NUMBER [Column (4)]</u>. 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.

Change 1 N-4

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. <u>QTY [Column (6)]</u>. 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) When using this column to locate an item, ignore the first 4 digits of the NSN. However, the NIIN

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. <u>Part Number Index</u>. 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. <u>Usable On Code</u>. The usable on code appears in the lower left comer of the Description column heading. Not Applicable.

b. <u>Fabrication Instructions</u>. 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. <u>Assembly Instructions</u>. 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. <u>Kits.</u> Line Item entries for repair parts kits appear in group 9401 in Section II. Not Applicable.

e. <u>Index Numbers</u>. 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.*

<u>Abbreviations</u>	<u>Explanation</u>
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools Lists

Change 1 N-7

SECTION II



TA705251

FIGURE 1. DRAGLINE GENERAL ASSEMBLY.

(1) ITEM	(2) SMR	(3)	(4) PART	(5)	(6)
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC)	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 <i>19'</i> 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 END OF FIGURE	1
				1-1	

SECTION II



TA705252

FIGURE 2. DUMP BLOCK ASSEMBLY.

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



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FIGURE 3. SPREADER BAR ASSEMBLY.

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

END OF FIGURE

SECTION II



TA705254

FIGURE 4. TRUNNION ASSEMBLY.

(1) ITFM	(2) SMR	(3)	(4) PART	(5)	(6)
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC)	QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 4 TRUNNION ASSEMBLY	
1	PFOZZ	9Y918	103386	CONNECTING LINK, RIG	1
23	PFOZZ	91910	MS24665-704	PIN, STRAIGHT, HEADED	1
4	PF077	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	(2) SMR	(3)	(4) Part	(5)	(6)
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC)	QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 5 HITCH SHACKLE	
1 2 3	PFOZZ PFOZZ PFOZZ	9Y918 96906 9Y918	101190 MS24665-915 107532	PIN, STRAIGHT, HEADED PIN, COTTER SHACKLE END OF FIGURE	1 1 1

SECTION II



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FIGURE 6. CROWFOOT ASSEMBLY.

(1) ITEM	(2) SMR	(3)	(4) PART	(5)	(6)
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC)	QTY
				GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	
				FIG. 6 CROWFOOT ASSEMBLY	
1 2 3	PFOZZ PFOZZ PFOZZ	9Y918 9Y918 9Y918	103054 102558 102558	SOCKET, WIRE ROPE WEDGE, WIRE ROPE SOC WEDGE, WIRE ROPE SOC	1 1 1
4	PFOZZ	9Y918	102050	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



TA705257

TA705257

FIGURE 7. ARCH SUPPORT ASSEMBLY.

	SECTION	1 11		TM 5-3815-2	26-13&P	C01
(1) ITEM	(2) SMR	(3)	(4) PART	(5)	(6)	
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC) GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	QTY	

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



TA705258



	SECTION II			TM 5-3815-226-13&P C			
(1) ITEM	(2) SMR	(3)	(4) PART	(5)	(6)		
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC) GROUP 7411 CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS	QTY		
				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

SECTIC	DN II			TM 5-3815-2	226-13&P	C01
(1) ITEM	(2) SMR	(3)	(4) PART	(5)	(6)	
NO	CODE	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES (UOC)	QTY	
				GROUP 95 GENERAL USE STANDARDIZED PARTS		
				GROUP 9501 BULK MATERIAL		
				FIG. BULK		
1	PAOZZ	8134B	RRW410	WIRE ROPE	V	
				END OF FIGURE		

BULK-1

SECTION IV

4010-01-271-4274

4010-01-273-1717

5365-01-273-4620

ITEM

CROSS- REFERENCE-INDEXES NATIONAL STOCK NUMBER INDEX **STOCK NUMBER** FIG. ITEM **STOCK NUMBER** FIG. 4730-00-050-4208 5310-00-060-9435 5305-00-071-2079 5315-00-150-4007 4010-00-269-9361 BULK 5310-00-584-5272 5310-00-584-7889 5310-00-761-3706 5310-00-762-6219 5310-00-762-6248 5305-00-964-0557 5305-00-990-8416 5310-01-031-1458 3815-01-263-3959 3815-01-263-3960 3815-01-263-7199 5340-01-263-9489 5315-01-264-3697 3110-01-266-9372 5315-01-266-9966 5315-01-266-9968 5315-01-266-9969 5315-01-266-9970 5315-01-266-9971 5315-01-266-9972 5315-01-266-9974 5315-01-266-9975 4030-01-267-1251 4030-01-267-1252 4030-01-267-1253 4030-01-267-4214 4030-01-267-6407 4010-01-271-1913

I-1

CROSS-REFERENCE INDEXES PART NUMBER INDEX

80204 B1821BH050C400N 5305-00-964-0557 3 2 80204 B18213H100C600N 5305-00-9064-0557 3 2 96906 MS15003-1 4730-00-050-4208 2 11 96906 MS24665-704 5315-00-160-4007 2 16 96906 MS24665-915 5315-01-266-9966 5 2 0 96906 MS24665-917 5315-01-264-3697 4 5 96906 MS24665-917 5315-01-264-3697 4 5 96906 MS35338-53 5310-00-584-729 2 3 3 96906 MS35338-55 5310-00-761-3706 2 18 96906 MS51967-30 5310-00-762-8248 7 4 96906 MS51967-30 5310-00-762-8248 7 4 96906 MS51967-30 5310-00-762-8248 7 4 96906 MS51967-30 5310-00-766-9371 1 2 96906 MS51967-30 5310-01-266-9970 4 4	CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80204 B18213H100C400N 5305-00-90.8416 7 3 96906 MS15003-1 4730-00-050-4208 2 11 96906 MS24665-704 5315-01-266-9968 2 10 96906 MS24665-862 5315-01-266-9968 2 10 96906 MS24665-915 5315-01-266-9968 2 10 96906 MS24665-917 5315-01-264-3697 4 5 96906 MS24665-917 5315-01-264-3697 4 5 96906 MS35338-53 5310-00-584-722 2 19 96906 MS35338-55 5310-00-684-7289 3 3 96906 MS51967-15 5310-00-761-8706 2 18 96906 MS51967-30 5310-00-762-8248 7 4 96906 MS51967-30 5310-00-762-8248 7 4 96906 MS51967-30 5310-01-266-9974 6 5 91348 RRW410 4010-00-269-9361 BULK 1 91348	80204	B1821BH050C400N	5305-00-071-2079	2	9
80204 B18213H100C600N 5305-00-990-8416 7 3 96906 MS15003-1 4730-00-050-4208 2 11 96906 MS24665-704 5315-01-266-9968 2 10 96906 MS24665-915 5315-01-266-9968 2 10 96906 MS24665-917 5315-01-264-3697 4 5 96906 MS32338-48 5310-00-584-8572 2 19 96906 MS35338-53 5310-00-684-5272 2 19 96906 MS35338-55 5310-00-761-3706 2 18 96906 MS51967-30 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6249 3 3 96906 MS51967-30 5310-01-266-9974 6 5 96906 MS51967-30 5310-01-266-9974 6 5 1 96906 MS51967-30 5315-01-266-9974 6 5 1 4 96906 MS51967 2 2 20 9	80204	B18213H100C400N	5305-00-964-0557	3	2
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Bit State Bit State <t< td=""><td>96906</td><td>MS24665-915</td><td>5315-01-266-9966</td><td>5</td><td>2</td></t<>	96906	MS24665-915	5315-01-266-9966	5	2
96906 MS24665-917 5315-01-264-3697 4 5 96906 MS35338-53 5310-00-584-5272 2 19 96906 MS35338-55 5310-00-664-789 3 4 96906 MS35338-55 5310-00-761-3706 2 18 96906 MS51967-15 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6219 3 3 96906 MS51967-36 5310-00-762-6219 3 3 96906 MS51967-36 5310-01-031-1458 2 2 2 81348 RRW410 4010-00-269-9361 BULK 1 2 97918 101188-1 5315-01-266-9974 6 5 1 97918 1011237-1 5315-01-266-9970 4 4 4 97918 101426-1 5315-01-266-9972 2 20 97918 103054 4030-01-267-4214 2 6 97918 103054 4030-01-267-9975 2 1				FIG. 2 3 7 2 4 2 5 6 4 2 3 7 2 2 7 3 2 2 BULK 1 6 1 5 4 2 2 BULK 1 6 7 2 7 6 2 7 3 2 2 BULK 1 6 1 5 4 2 2 7 3 2 2 BULK 1 6 1 5 4 2 2 7 3 2 2 BULK 1 6 1 5 4 2 2 7 6 1 5 4 2 2 7 6 1 5 4 2 2 7 6 6 1 5 4 2 2 7 6 6 1 5 4 2 2 8 BULK 1 6 1 5 4 2 2 6 6 7 2 7 6 2 6 7 2 7 6 2 6 6 7 2 7 6 2 6 7 2 7 6 2 6 7 2 7 6 2 6 1 1 4 2 2 6 6 7 2 7 6 2 6 1 1 4 2 2 7 6 2 6 1 1 4 2 2 7 6 2 6 1 1 4 2 2 7 6 2 6 1 1 4 2 2 2 2 7 6 2 6 1 1 4 2 2 2 2 2 2 2 2 5 1 2 2 2 2 2 2 5 1 2 2 2 5 1 2 2 2 5 1 2 2 2 2 5 1 2 2 2 5 1 2 2 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 2 2 5 1 2 5 1 2 5 1 2 5 1 2 2 2 5 1 2 5 1 2 2 2 5 1 2 2 2 5 1 2 5 1 2 2 2 5 1 2 2 5 1 2 5 1 2 2 2 5 1 2 5 1 2 5 1 2 2 2 5 1 2 2 2 5 1 2 5 1 2 2 2 5 1 2 5 1 2 5 1 2 2 2 5 1 2 5 1 2 2 5 5 1 2 2 2 5 5 1 2 2 5 5 1 2 2 5 5 1 2 2 5 5 1 2 2 2 5 5 1 2 2 2 5 5 1 2 2 2 2 2 5 1 2 5 5 1 2 2 2 2 5 1 2 5 1 2 2 5 5 1 2 2 2 5 5 1 2 2 2 2 5 5 1 2 2 2 2 5 1 2 5 1 2 2 2 2 5 1 2 2 2 5 1 2 2 2 2 5 1 2 2 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 5 1 2 2 5 1 2 2 5 1 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 5 1 2 2 2 5 1 2 2 2 2 2 5 1 2 2 2 2 5 1 2 2 5 1 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 2 5 1 2 2 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 2 5 1 2 2 2 2 2 2 2 5 1 2 2 2 2 5 1 2 2 2 2 2 2 5 1 2 2 2 2 2 2 5 1 2 2 2 2 2 2 2 2 5 1 2 2 2 2 2 2 2 2 2 2 2 2 2	6
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98906 MS35338-53 5310-00-584-7889 3 4 96906 MS35338-55 5310-00-60-9435 2 3 96906 MS51967-15 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6219 3 3 96906 MS51967-30 5310-01-762-6219 3 3 96906 MS51967-30 5310-01-031-1458 2 2 96906 MS51967-30 5310-01-031-1458 2 2 81348 RRW410 4010-00-269-9361 BULK 1 81348 RRW410-19 1 2 8 9Y918 101188-1 5315-01-266-9974 6 5 9Y918 101237-1 5315-01-266-9970 4 4 9Y918 101308-1 5315-01-266-9975 2 12 9Y918 101308-1 5315-01-266-9975 2 12 9Y918 103057 3815-01-267-4214 2 6 9Y918 103054 4030-01-267-1251	96906	MS35338-48	5310-00-584-5272	2	19
0.0000 MS35338-55 5310-00-060-9435 2 3 96906 MS51967-15 5310-00-761-3706 2 18 96906 MS51967-15 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6219 3 3 96906 MS51967-36 5310-01-031-1458 2 2 8 9134 RRW410 4010-00-269-9361 BULK 1 2 9 9138 101188-1 5315-01-266-9974 6 5 1 91918 1011308-1 5315-01-266-9970 4 4 91918 101308-1 5315-01-266-9972 2 20 91918 103050 4030-01-267-4214 2 6 3 91918 103054 4030-01-267-4214 2 6 3 91918 103033 4010-01-271-4274 1 3 3 91918 103336 4010-01-271-19	96906	MS35338-53	5310-00-584-7889	3	4
96906 MS35338-55 5310-00-660-9435 2 3 96906 MS51967-29 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6248 7 4 96906 MS51967-30 5310-00-762-6219 3 3 96906 MS51967-30 5310-01-031-1458 2 2 8 81348 RRW410 4010-00-269-9361 BULK 1 2 9918 101188-1 5315-01-266-9974 6 5 9Y918 101189 1 4 9Y918 101426-1 5315-01-266-9970 4 4 9Y918 101308-1 5315-01-266-9972 2 20 9Y918 101308-1 5315-01-266-9975 2 12 9Y918 103050 4030-01-267-4214 2 6 9Y918 103054 4030-01-267-4214 2 6 9Y918 103057 3815-01-263-3959 6 4 9Y918 103057 3815-01-263-3959 6 4 9Y918 103056 4030-01-267-4214 </td <td></td> <td></td> <td></td> <td>7</td> <td>5</td>				7	5
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Noso Nash 35 Sature of 121-1458 2 2 8 96906 MSS0728-282 2 8 2 8 81348 RRW410 4010-00-269-9361 BULK 1 2 9Y018 101188-1 5315-01-266-9974 6 5 1 4 9Y918 101189 1 4 4 4 9Y918 101237-1 5315-01-266-9970 4 4 9Y918 101308-1 5315-01-266-9972 2 20 9Y918 101308-1 5315-01-266-9975 2 12 9Y918 101308-1 5315-01-267-4214 2 6 3 3 1 1 2 9 9 9 1 4 4 1 3 1 2 2 0 3 1 2 2 0 1 3 1 2 2 0 1 3 1 3 1 3 1 3 1 3 1	96906	MS51967-30	5310-00-762-6219	3	- - -
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91910 101199 5315-01-266-9969 5 1 9Y918 101237-1 5315-01-266-9970 4 4 9Y918 101426-1 5315-01-266-9972 2 20 9Y918 101426-1 5315-01-266-9972 2 12 6 2 6 3 6 2 9Y918 102558 4030-01-267-4214 2 6 3 9Y918 103050 4030-01-267-4214 2 6 1 9Y918 103054 4030-01-267-6407 2 5 6 4 9Y918 103057 3815-01-263-3959 6 4 1 3 3 1 5 9Y918 103303 4010-01-271-4274 1 3 3 1 5 9Y918 103386 4 1 3 1 5 3 1 7 2 1 7 9Y918 105068 4010-01-271-1913 1 8 8 1 7 1 7 1 7 1 7 1 7<	91910	101180-1	5515-01-200-9974	0	5
91916 101190 5315-01-266-9990 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 6 3 9Y918 102558 4030-01-267-4214 2 6 9Y918 103050 4030-01-267-4214 2 6 9Y918 103054 4030-01-267-6407 2 5 9Y918 103057 3815-01-263-3959 6 4 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 1 3 9Y918 105069 4030-01-277-1253 2 17 9Y918 105069 4010-01-271-1913 1 8 9Y918 105069 4010-01-273-1717 1 1 7 9Y918 10	91910	101169	F21F 01 266 0060		4
91918 101237-1 5315-01-266-9972 2 20 9Y918 101426-1 5315-01-266-9972 2 20 9Y918 101426-1 5315-01-266-9975 2 12 9Y918 102558 4030-01-267-4214 2 6 3 9Y918 103050 4030-01-267-4214 2 6 1 9Y918 103051 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 4010-01-271-1253 2 17 9Y918 103459 4030-01-267-1253 2 17 9Y918 105068 4010-01-273-1717 1 1 8 9Y918 105069 4010-01-273-1717 1 1 7 9Y918 107514 2 1 7 9Y918 107514 2 1 7 9Y918 107514-2 2	91918	101190	5315-01-266-9969	5	1
91918 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 1 9Y918 103050 4030-01-267-4214 2 5 9Y918 103054 4030-01-267-6407 2 5 9Y918 103057 3815-01-263-3959 6 4 9Y918 103057 3815-01-263-3959 6 4 9Y918 103303 4010-01-271-4274 1 3 9Y918 103386 4 1 5 9Y918 103386 4 1 1 1 9Y918 105068 4010-01-271-1913 1 8 9Y918 105069 4010-01-273-1717 1 1 1 9Y918 107514 2 1 7 9Y918 107514 2 1 7 9Y918 107514-1 2 4 2 7	91910	101237-1	5315-01-200-9970	4	4
9Y918 101426-1 5315-01-266-9975 2 12 6 2 6 2 6 3 7 2 9Y918 102558 4030-01-267-4214 2 6 9Y918 103050 4030-01-267-6407 2 5 9Y918 103057 3815-01-263-3959 6 4 9Y918 103057 3815-01-263-3959 6 4 9Y918 103303 4010-01-271-4274 1 3 9Y918 103386 4030-01-267-1253 2 17 9Y918 103459 4030-01-267-1253 2 17 9Y918 103459 4030-01-267-1253 2 17 9Y918 105068 4010-01-271-1913 1 8 9Y918 105640 5315-01-266-9971 4 2 9Y918 107512 1 7 7 9Y918 107514-1 2 4 4 9Y918 107514-1 2 4 9Y918 107514-2 2 7 9Y9	91918	101308-1	5315-01-266-9972	2	20
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9Y918 103050 4030-01-267-1251 7 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 3 9Y918 103459 4030-01-267-1253 2 17 9Y918 105068 4010-01-271-1913 1 8 9Y918 105069 4010-01-273-1717 1 1 1 9Y918 105069 4010-01-273-1717 1 1 7 9Y918 106540 5315-01-266-9971 4 2 1 7 9Y918 107513 3 1 7 1 7 1 7 9Y918 107514-1 2 4 2 1 7 9Y918 107514-2 2 7 7 1 5 9Y918 107514-9 5365-01-273-4620 <	9Y918	102558	4030-01-267-4214	2	6
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9Y9181030544030-01-267-6407259Y9181030573815-01-263-3959649Y9181033034010-01-271-4274139Y9181033825340-01-263-9489159Y9181033864419Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y9181075324030-01-267-125259Y918107533159Y9181075332149Y918107533214				6	1
9Y9181030573815-01-263-3959649Y9181033034010-01-271-4274139Y9181033825340-01-263-9489159Y9181033864199Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2219Y918107514-2219Y9181075324030-01-267-125259Y918107533159Y918107533159Y918107533159Y918107533159Y918107533159Y918107533159Y9181075373110-01-266-93722	9Y918	103054	4030-01-267-6407	2	5
9Y9181033034010-01-271-4274139Y9181033825340-01-263-9489159Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y9181075324030-01-267-125259Y918107533159Y918107533159Y918107533214	9Y918	103057	3815-01-263-3959	6	4
9Y9181033825340-01-263-9489159Y918103386419Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107513319Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-25365-01-273-462029Y9181075324030-01-267-1252539Y918107533159Y918107533159Y9181075373110-01-266-9372214	9Y918	103303	4010-01-271-4274	1	3
9Y918103386419Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y918107514-2219Y9181075324030-01-267-1252539Y9181075331539Y9181075331539Y9181075373110-01-266-9372214	9Y918	103382	5340-01-263-9489	1	5
9Y9181034594030-01-267-12532179Y9181050684010-01-271-1913189Y9181050694010-01-273-1717119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y918107514-22159Y9181075324030-01-267-1252539Y918107533159Y9181075332145	9Y918	103386		4	1
9Y9181050684010-01-271-1913189Y9181050694010-01-273-17171119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y918107514-25365-01-273-462029Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	103459	4030-01-267-1253	2	17
9Y9181050694010-01-273-17171119Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y918107514-2539Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	105068	4010-01-271-1913	1	8
9Y9181065405315-01-266-9971429Y918107512179Y918107514219Y918107514-1249Y918107514-2279Y918107514-2279Y918107514-2279Y918107514-2539Y9181075324030-01-267-125259Y918107533159Y918107533214	9Y918	105069	4010-01-273-1717	1	1
9Y918107512179Y918107513319Y918107514219Y918107514-1249Y918107514-2279Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y9181075331539Y9181075373110-01-266-9372214	9Y918	106540	5315-01-266-9971	4	2
9Y918107513319Y918107514219Y918107514-1249Y918107514-2279Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107512		1	7
9Y918107514219Y918107514-1249Y918107514-2279Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107513		3	1
9Y918107514-1249Y918107514-2279Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107514		2	1
9Y918107514-2279Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107514-1		2	4
9Y918107514-95365-01-273-46202159Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107514-2		2	7
9Y9181075324030-01-267-1252539Y918107533159Y9181075373110-01-266-9372214	9Y918	107514-9	5365-01-273-4620	2	15
9Y918107533159Y9181075373110-01-266-9372214	9Y918	107532	4030-01-267-1252	5	3
9Y918 107537 3110-01-266-9372 2 14	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	В	1

I-3
CROSS REFERENCE INDEXES

FIG.	ITEM	FIGURE AND ITEM NUMBER STOCK NUMBER	INDEX CAGEC	PART NUMBER
BULK	1	4010-00-269-9361	81348	RRW/410
1	1	4010-01-273-1717	9Y918	105069
1	2	4010 01 273 1717	81348	RRW/410-19
1	2	4010-01-271-4274	9Y918	103303
1	4		QVQ18	101189
1	5	5340-01-263-9489	97918	103382
1	6	0040 01 200 0400	QVQ18	107533
1	7		97918	107512
1	8	1010-01-271-1913	0V018	105068
2	1	4010 01 271 1010	QVQ18	107514
2	2	5310-01-031-1758	96906	MS51067-36
2	2	5310-00-060-9435	96906	MS35338-55
2	5 4	3310-00-000-9433	90900 QVQ18	107514-1
2	5	4030-01-267-6407	0V018	107014-1
2	5	4030-01-267-4214	0V018	102558
2	7	4030-01-207-4214	0V018	102550
2	8		06006	MS00728-282
2	0	5305-00-071-2079	90900 80204	B1321BH050C400N
2	10	5315-01-266-0068	06006	MS2/665-862
2	10	4730-00-050-4208	90900	MS24003-002 MS15003-1
2	12	5315-01-266-0075	90900 QVQ18	101/26-1
2	12	5515-01-200-9975	0V018	107530
2	15	5365-01-273-4620	0V018	10751 <i>1</i> -9 189tw
2	10	3110-01-266-0372	0V018	107537
2	14	5315-00-150-4007	06006	MS24665-704
2	10	4030 01 267 1253	90900 0V019	1024005-704
2	12	5310-00-761-3706	06006	MS51067-15
2	10	5310-00-584-5272	90900	MS31307-13 MS35338-48
2	20	5315-01-266-0072	90900 0\/V018	101308-1
2	20	5305-00-964-0557	80204	B182H15H00C400N
J 1	2	5315-01-266-0070	00204	101237-1
4	4	5315-01-264-3607	06006	MS2/665-017
4	3	4030-01-267-1252	90900 QVQ18	107532
4	1	4030-01-207-1232	0/019	107552
0 6	2	4030-01-207-0407	0V018	102558
6	2	4030-01-207-4214	0/019	102550
0	3	2915 01 262 2050	91910 0V019	102057
0	4	5315-01-260-0074	91910 QVQ18	103037
0	5	5315-01-200-9974	91910	MS24665 017
7	0	4030-01-204-3097 4030-01-267 4254	90900 0V010	102050
י 7	1	5205 00 000 9416	91910	91921BU100C600N
' 7	З Л	5310-00-762-69410 5310-00-762-6948	00204	MS51967-29
1	4	JJ10-00-702-0240	30300	10001301-23

CROSS REFERENCE INDEXES

FIG.	ITEM	FIGURE AND ITEM NUMBER INDEX 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

*U.S. GOVERNMENT PRINTING OFFICE:1993 -746 -017/80218

I-5

By Order of the Secretary of the Army:

Official:

CARLE.VUONO General, United States Army Chief of Staff

WILLIAM J. MEEHAN II Brigadier General United States Army The Adjutant General

Distribution:

To be distributed in accordance with DA form 12-25A (Block Nos. 0295, 0296, 0297), Operator, Unit, and Direct Support and General Support maintenance requirements for Bucket, Clamshell and Bucket, Dragline, 3/4 CU YD.

*U.S. GOVERNMENT PRINTING OFFICE: 1990 743-024/20033

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PAGE NO		FIGURE	TABLE NO.	AND W	HAT SHO	ULD BE	DONE	ABOUT IT:			
1											
	1										
1											

THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches

- 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

APPROXIMATE CONVERSION FACTORS

TO CHANGE	το	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
nte	Litors	0 473
arte	Liters	0.475
allong	Litora	9 795
		3.703
Doum da	Grams	
	Milograms	0.454
Down J East	Metric Ions	0.907
	Newton-Meters	1.355
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	το	MULTIPLY BY
TO CHANGE Centimeters	TO Inches	MULTIPLY BY 0.394
TO CHANGE Centimeters Meters	TO Inches Feet	MULTIPLY BY 0.394 3.280
TO CHANGE Centimeters Meters Meters	IO Inches Feet Yards	MULTIPLY BY 0.394 3.280 1.094
TO CHANGE Centimeters Meters Meters Kilometers	TO Inches Feet Yards Miles	MULTIPLY BY 0.394 3.280 1.094 0.621
TO CHANGE Centimeters Meters Meters Kilometers Square Centimeters	TO Inches Feet Yards Miles Square Inches	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155
TO CHANGE Centimeters Meters Meters Kilometers Square Centimeters Square Meters	TO Inches Feet Yards Miles Square Inches Square Feet	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764
TO CHANGE Centimeters Meters. Meters. Square Centimeters Square Meters. Square Meters.	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 1.196
TO CHANGE Centimeters Meters. Meters. Square Centimeters Square Meters. Square Meters. Square Meters. Square Kilometers.	TO Inches Feet Yards Miles Square Inches Square Feet. Square Yards Square Miles.	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 1.196 0.386
TO CHANGE Centimeters Meters. Meters. Kilometers Square Centimeters Square Meters. Square Meters. Square Meters. Square Heters. Square Heters. Square Heters.	TO Inches Feet Yards Miles Square Inches Square Feet. Square Yards Square Miles. Acres	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 196 386 2.471
TO CHANGE Centimeters Meters. Meters. Kilometers Square Centimeters Square Meters. Square Meters. Square Meters. Square Hectometers Square Hectometers Cubic Meters	TO Inches Feet Yards Miles Square Inches Square Feet. Square Yards Square Miles. Acres Cubic Feet.	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 1.196 0.386 2.471 35.315
TO CHANGE Centimeters Meters. Meters. Kilometers Square Centimeters Square Meters. Square Kilometers. Square Hectometers Cubic Meters. Cubic Meters.	IOInchesFeetYardsMilesSquare InchesSquare FeetSquare YardsSquare MilesAcresCubic FeetCubic FeetCubic Yards	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 1.196 0.386 2.471 35.315 308
TO CHANGE Centimeters Meters Meters Kilometers Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Hectometers Square Hectometers Cubic Meters Cubic Meters Milliliters	IOInchesFeetYardsMilesSquare InchesSquare FeetSquare YardsSquare MilesAcresCubic FeetCubic FeetCubic YardsFluid Ounces	MULTIPLY BY 0.394
TO CHANGECentimetersMetersMetersSquare CentimetersSquare MetersSquare MetersSquare MetersSquare HectometersSquare HectometersCubic MetersCubic MetersMillilitersLiters	IOInchesFeetYardsMilesSquare InchesSquare FeetSquare YardsSquare MilesAcresCubic FeetCubic YardsFluid OuncesPints	MULTIPLY BY 0.394
TO CHANGECentimetersMetersMetersKilometersSquare CentimetersSquare MetersSquare MetersSquare MetersSquare HectometersSquare HectometersCubic MetersCubic MetersMillilitersLitersLiters	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards Square Miles Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints Ouarts	MULTIPLY BY 0.394 0.394 0.94 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 2.113 1.057
TO CHANGE Centimeters Meters Meters Kilometers Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Hectometers Cubic Meters Cubic Meters Milliliters Liters 'ers	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards Square Miles Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints Quarts Gallons	MULTIPLY BY 0.394
TO CHANGE Centimeters Meters Meters Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Meters Square Hectometers Cubic Meters Cubic Meters Milliliters Liters Liters ms	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards Square Miles. Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints. Quarts Gallons Ounces	MULTIPLY BY 0.394 0.3280 094 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 2.113 0.57 0.264 0.035
TO CHANGE Centimeters Meters Moders Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Meters Square Hectometers Cubic Meters Cubic Meters Milliliters Liters iters .ms .ograms	TO Inches Feet Yards Miles Square Inches Square Inches Square Feet Square Yards Square Miles. Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints. Quarts Gallons Ounces Pounds	MULTIPLY BY 0.394 0.3280 1.094 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 2.113 1.057 0.264 0.35 2.25
TO CHANGE Centimeters Meters. Meters. Square Centimeters Square Meters. Square Hectometers Cubic Meters. Cubic Meters. Milliliters Liters. 'ers. .ograms. Metric Thms	IOInchesFeetYardsMilesSquare InchesSquare InchesSquare YardsSquare YardsSquare MilesAcresCubic FeetCubic YardsFluid OuncesPintsQuartsGallonsOuncesPoundsShort Tons	MULTIPLY BY 0.394 0.394 0.94 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 0.34 0.35 0.264 0.35 0.35 0.264 0.35 0.35 0.35 0.264 0.35 0.35 0.35 0.35 0.264 0.35 0.35 0.35 0.35 0.264 0.35 0
TO CHANGE Centimeters Meters. Meters. Square Centimeters Square Meters. Square Hectometers Cubic Meters Cubic Meters Milliliters Liters. iters. .ograms Metric Tons. Newton-Meters	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards Square Yards Square Miles. Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints. Quarts Gallons Ounces Pounds Short Tons Pounds Short Tons	MULTIPLY BY 0.394 0.394 0.94 0.621 0.155 10.764 1.196 0.386 2.471 35.315 308 0.034 0.34 0.264 0.35 0.264 0.35
TO CHANGE Centimeters	IOInchesFeetYardsMilesSquare InchesSquare FeetSquare YardsSquare MilesAcresCubic FeetCubic YardsFluid OuncesPintsQuartsGallonsOuncesPoundsShort TonsPounds por Square Square Square Labore	MULTIPLY BY 0.394 0.394 0.94 0.621 0.155 10.764 0.386 2.471 35.315 308 0.034 0.34 0.264 0.35 0.264 0.35 0.35 0.738 0.145
TO CHANGE Centimeters Meters Meters Square Centimeters Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Hectometers Cubic Meters Cubic Meters Cubic Meters Milliliters Liters Liters Liters ms ograms Metric Tons Newton-Meters Kilopascals	IOInchesFeetYardsMilesSquare InchesSquare FeetSquare YardsSquare MilesAcresCubic FeetCubic YardsFluid OuncesPintsQuartsGallonsOuncesPoundsShort TonsPounds per Square Inch	MULTIPLY BY 0.394 3.280 1.094 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 0.34 0.035 2.205 1.102 0.738 0.145 0.394 0.145
TO CHANGE Centimeters Meters. Meters. Square Centimeters Square Centimeters Square Meters Square Meters Square Meters Square Meters Square Meters Square Meters Square Meters Square Meters Square Meters Cubic Meters Cubic Meters Cubic Meters Milliliters Liters. Liters. Square Same Metric Tons. Newton-Meters Kilopascals	TO Inches Feet Yards Miles Square Inches Square Feet Square Yards Square Yards Square Miles Acres Cubic Feet Cubic Feet Cubic Yards Fluid Ounces Pints Quarts Gallons Ounces Pounds Short Tons Pounds Short Tons Pounds per Square Inch Miles per Gallon	MULTIPLY BY 0.394 0.3280 1.094 0.621 0.155 10.764 1.196 0.386 2.471 35.315 1.308 0.034 2.113 057 0.264 0.035 2.205 1.102 0.738 0.145 0521

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

 $5/9(^{\circ}F - 32) = ^{\circ}C$

212° Fahrenheit is evuivalent to 100° Celsius

90° Fahrenheit is equivalent to 32.2° Celsius

32° Fahrenheit is equivalent to 0° Celsius

 $9/5C^{\circ} + 32 = {}^{\circ}F$



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