
TECHNICAL MANUAL

UNIT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LISTS

CRANE, TRUCK MOUNTED,
GED, 3/4 CUBIC YARD,
20 TON, WITH CLAMSHELL,
DRAGLINE AND BACKHOE ATTACHMENTS

NSN 3810-00-151-4431

HARNISCHFEGGER CORP MODEL M320T2

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

THIS PUBLICATION SUPERSEDES TM 5-3810-294-20P,
DATED 9 APRIL 1985 AND ALL CHANGES

HEADQUARTERS, DEPARTMENT OF THE ARMY
DECEMBER 1988

UNIT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LISTS
CRANE, TRUCK MOUNTED, GED,
3/4 CUBIC YARD, 20 TON, WITH CLAMSHELL,
DRAGLINE, AND BACKHOE ATTACHMENTS
NSN 3810-00-151-4431

HARNISCHFEGGER CORP MODEL M320T

CURRENT AS OF 14 SEP 1988

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 procedure, 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: U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI. 48397-5000. A reply will be furnished to you.

Approved for public release; distribution is unlimited.

TABLE OF CONTENTS

		PAGE	ILLUS FIG.
SECTION I	INTRODUCTION	1	
SECTION II	REPAIR PARTS LIST	1-1	
GROUP 01	ENGINE		
0100	ENGINE ASSEMBLY		
	CRANE ENGINE AND SUPPORTS	1-1	1
0101	CRANKCASE, BLOCK AND CYLINDER HEAD		
	CARRIER ENGINE CYLINDER HEAD AND RELATED PARTS.....	2-1	2
	CRANE CYLINDER HEAD AND RELATED PARTS	3-1	3
0102	CRANKSHAFT		
	CARRIER ENGINE GEAR COVER	4-1	4
0105	VALVES, CAMSHAFTS AND TIMING SYSTEM		
	CARRIER ENGINE VALVES AND RELATED PARTS.....	5-1	5

***THIS PUBULICATION SUPERSEDES TM 5-3810-294-20P, DATED 9 APRIL1985 AND ALL CHANGES**

TABLE OF CONTENTS

	PAGE	ILLUS/ FIG.
0106 CRANE ENGINE VALVES AND RELATED PARTS	6-1	6
0106 -ENGINE LUBRICATION SYSTEM		
CRANE OIL FILTER ASSEMBLY	7-1	7
CRANE OIL COOLER AND ASSOCIATED PARTS	8-1	8
CRANE OIL PAN AND OIL PUMP	9-1	9
CARRIER VENT LINES.....	10-1	10
CARRIER ENGINE DIPSTICK AND RELATED PARTS ..	11-1	11
CARRIER OIL PUMP AND OIL PAN.....	12-1	12
CARRIER OIL COOLER AND ASSOCIATED PARTS.....	13-1	13
CARRIER OIL FILTER ASSEMBLY	14-1	14
0108 -MANIFOLDS		
CARRIER MANIFOLD INSTALLATION	15-1	15
CRANE MANIFOLD.....	16-1	16
GROUP 02 CLUTCH		
0200 -CLUTCH ASSEMBLY		
CLUTCH ASSEMBLY, CARRIER.....	17-1	17
CRANE CLUTCH ASSEMBLY	18-1	18
0202 -CLUTCH RELEASE MECHANISM		
CARRIER CLUTCH PEDAL ASSEMBLY.....	19-1	19
GROUP 03 FUEL SYSTEM		
0301 -CARBURETOR, FUEL INJECTOR		
CARRIER CARBURETOR & ASSOC PARTS.	20-1	20
CARRIER CARBURETOR & ASSOC PARTS	21-1	21
CRANE ENGINE CARBURETOR & ASSOC PARTS	22-1	22
0302 -FUEL PUMPS		
CARRIER FUEL LINES	23-1	23
CARRIER ELECTRIC FUEL PUMP	24-1	24
CRANE FUEL PUMP ASSEMBLY	25-1	25
0304 AIR CLEANER		
CARRIER AIR CLEANER.....	26-1	26
CRANE AIR CLEANER & ASSOC PARTS	27-1	27
0306 -TANKS, LINES, FITTINGS, HEADERS		
CARRIER FUEL TANK, GUARD & MOUNTINGS	28-1	28
CRANE FUEL TANK AND RELATED PARTS	29-1	29
0308 -ENGINE SPEED GOVERNOR AND CONTROLS		
GOVERNOR AND ASSOCIATED PARTS.....	30-1	30
0312 -ACCELERATOR, THROTTLE OR CHOKE CONTROLS		
CRANE THROTTLE CONTROL ASSEMBLY	31-1	31
CHOKE CONTROL	32-1	32
ACCELERATOR AND ASSOCIATED PARTS	33-1	33
GROUP 04 EXHAUST SYSTEM		
0401 -MUFFLER AND PIPES		
CARRIER ENGINE EXHAUST ASSEMBLY	34-1	34
CRANE EXHAUST ASSEMBLY	35-1	35
GROUP 05 COOLING SYSTEM		
0501 -RADIATOR, EVAPORATIVE COOLER OR HEAT EXCHANGER		
CARRIER RADIATOR	36-1	36
CRANE RADIATOR.....	37-1	37

TABLE OF CONTENTS

	PAGE	ILLUS/ FIG.
0502 -COWLING, DEFLECTORS, AIR DUCTS, SHROUDS, ETC.		
CARRIER RADIATOR SHROUD	38-1	38
CRANE RADIATOR SHROUD	39-1	39
0503 -WATER MANIFOLD, HEADERS, THERMOSTATS AND HOUSING GASKET		
CRANE ENGINE THERMOSTAT AND HOUSING	40-1	40
0504 -WATER PUMP		
CARRIER ENGINE WATER PUMP ASSEMBLY	41-1	41
CRANE ENGINE WATER PUMP	42-1	42
CARRIER RADIATOR HOSES	43-1	43
CRANE RADIATOR HOSES	4-1	44
0505 FAN ASSEMBLY		
CARRIER ENGINE FAN AND BELT	45-1	45
CRANE ENGINE FAN AND BELTS	46-1	46
GROUP 06 ELECTRICAL SYSTEM		
0601 -GENERATOR, ALTERNATOR		
CRANE ALTERNATOR ASSOCIATED PARTS	47-1	47
CARRIER ALTERNATOR ASSOCIATED PARTS	48-1	48
ALTERNATOR ASSEMBLY	49-1	49
0603 -STARTING MOTOR		
CRANE STARTER AND ASSOCIATED PARTS	50-1	50
CARRIER STARTER AND ASSOCIATED PARTS	51-1	51
0605 -IGNITION COMPONENTS		
CRANE IGNITION WIRING	52-1	52
CRANE DISTRIBUTOR ASSEMBLY	53-1	53
CRANE IGNITION COIL & ASSOC PARTS	54-1	54
CARRIER IGNITION COIL & ASSOC PARTS	55-1	55
CARRIER DISTRIBUTOR & ASSOC PARTS	56-1	56
CARRIER IGNITION WIRING ASSEMBLY	57-1	57
0606 -ENGINE SAFETY CONTROLS		
TRANSMITTER, PRESSURES	58-1	58
0607 -INSTRUMENT OR ENGINE CONTROL PANEL		
CRANE PANEL ASSEMBLY	59-1	59
CARRIER INSTRUMENT PANEL	60-1	60
0608 -MISCELLANEOUS ITEMS		
STOP LIGHT SWITCH ..	61-1	61
0609 -LIGHTS		
CLEARANCE AND MARKER LIGHTS	62-1	62
FLOODLIGHTS AND ASSOCIATED PARTS	63-1	63
CRANE DOME LIGHT AND MOUNTING	64-1	64
CARRIER HEADLIGHT ASSEMBLY	65-1	65
CAB COMBINATION DIRECTIONAL AND PARK AND REAR PARK LIGHTS	66-1	66
BLACKOUT SERVICE STOP TAILLIGHT ASSEMBLY	67-1	67
CARRIER FRONT CLEAR MRKR LIGHT ASSEM	68-1	68
BLKOUT & RUN CLEARANCE MARKER LIGHTS	69-1	69
BLACKOUT CLEARANCE LIGHT ASSEM	70-1	70
BLACKOUT HEADLIGHT ASSEMBLY	71-1	71
CARRIER DOME LIGHT ASSEMBLY	72-1	72
TROUBLE LIGHT ASSEMBLY	73-1	73
0610- SENDING UNITS AND WARNING SWITCHES		
CARRIER SENDING UNITS ..	74-1	74
CRANE ENGINE SENDING UNITS	75-1	75
CRANE FUEL SENDING UNITS	76-1	76

TABLE OF CONTENTS

	PAGE	ILLUS/ FIG.
0611 CARRIER FUEL SENDING UNIT.....	77-1	77
0611 -HORN, SIREN		
CRANE HORN AND ASSOCIATED PARTS.....	78-1	78
CARRIER HORN BUTTON AND RELATED PARTS	79-1	79
0612 -BATTERIES, STORAGE		
BATTERY BOX AND BATTERIES.....	80-1	80
0613 -HULL OR CHASSIS WIRING HARNESS		
CARRIER CAB WIRING DIAGRAM.....	81-1	81
CARRIER CAB WIRING DIAGRAM.....	82-1	82
CARRIER PANEL LIGHTS WIRING DIAGRAM..	83-1	83
CARRIER WIRING ASSEMBLY.....	84-1	84
CARRIER WIRING ASSEMBLY RIGHT REAR	85-1	85
CARRIER WIRI ASSEM OUTRIGGER SOCKET	86-1	86
CARRIER WIRI ASSEM LEFT REAR	87-1	87
ENGINE WIRING ASSEMBLY	88-1	88
WIRING HARNESS	89-1	89
CAB WIRING HARNESS	90-1	90
UPPER WIRING ASSEMBLY.....	91-1	91
GROUP 07 TRANSMISSION		
0700 -TRANSMISSION ASSEMBLY		
TRANSMISSION HOUSING, CRANE.....	92-1	92
0701 -TRANSMISSION SHAFTS		
TRANSMISSION ASSEMBLY, CARRIER.....	93-1	93
CARRIER TRANS ASSEM & RELATED PARTS.....	94-1	94
CARRIER TRANSMISSION DROP GEAR.....	95-1	95
0705 -TRANSMISSION SHIFTING COMPONENTS		
CARRIER TRANSMISSION CONTROL ASSEMBLY.	96-1	96
GROUP 08 TRANSFER AND FINAL DRIVE ASSEMBLIES		
0801 -POWER TRANSFER AND FINAL DRIVE ASSEMBLIES		
TRANSFER CASE ASSEMBLY	97-1	97
CARRIER TRANSFER CASE ASSEMBLY	98-1	98
GROUP 09 PROPELLER, PROPELLER SHAFTS, UNIVERSAL JOINTS COUPLER AND CLAMP ASSEMBLY		
0900 -PROPELLER SHAFTS		
PROPELLER SHAFT ASSEMBLY	99-1	99
PROPELLER CASE ASSEMBLY, TRANSFER CASE TO FRONT AXLE	100-1	100
PROPELLER CASE, TRANSFER CASE TO FORWARD REAR AXLE	101-1	101
PROPELLER CASE, FRONT REAR AXLE TO REAR REAR AXLE.....	102-1	102
PROPELLER SHAFT ASSEMBLY, CRANE	103-1	103
GROUP 10 FRONT AXLE		
1000 -FRONT AXLE ASSEMBLY		
FRONT AXLE INSTALLATION	104-1	104
1002 -DIFFERENTIAL		
DIFFERENTIALASSEMBLY.....	105-1	105

TABLE OF CONTENTS

	PAGE	ILLUS/ FIG.
GROUP 11 REAR AXLE		
1100 -REAR AXLE ASSEMBLY		
REAR REAR AXLE.106-1106		
FORWARD REAR AXLE	107-1	107
1102 -DIFFERENTIAL		
REAR DIFFERENTIAL ASSEMBLY	108-1	108
GROUP 12 BRAKES		
1206 -MECHANICAL BRAKE SYSTEM		
BRAKE SLACK ADJUSTER, REAR.....	109-1	109
BRAKE SLACK ADJUSTER, FRONT	110-1	110
1208 -AIR BRAKE SYSTEM		
AIR BRAKE CHAMBER.....	111-1	111
BRAKE CHAMBER ASSEMBLY	112-1	112
TREADLE VALVE AND CONNECTIONS	113-1	113
THREE WAY CONTROL VALVE ASSBLY CONNEC	114-1	114
PARKING BRAKE VALVE AND CONNECTIONS.....	115-1	115
DIFF LOCKOUT VALVE AND CONNECTION.....	117-1	117
SYNCHRONIZING VALVE PUSH-PULL CONTROL		
VALVE AND CONNECTIONS	118-1	118
Double Check Valve Lines and Fittings	119-1	119
RESERVOIR VALVE LINES AND FITTINGS	120-1	120
QUICK RELEASE VALVE LINES AND FITTINGS.....	121-1	121
CHECK VALVE LINES AND FITTINGS	122-1	122
QUICK DISCONNECT COUPLINGS, PRESSURE		
PROTECTION VALVE, LINES AND FITTINGS	123-1	123
AIR LINES AND FITTINGS 124-1124		
ELBOW-ANCHORS, LINES AND FITTINGS	125-1	125
VALVES, LINES AND FITTINGS	126-1	126
TREADLE VALVE ASSEMBLY	127-1	127
THREE WAY CONTROL VALVE	128-1	128
PARKING PROTECTION VALVE	129-1	129
DIFFERENTIAL LOCKOUT CONTROL VALVE	130-1	130
DRAIN VALVE ASSEMBLY.....	131-1	131
PUSH-PULL CONTROL VALVE	132-1	132
CHECK VALVE.....	133-1	133
CHECK VALVE ALCOHOL EVAPORATOR	134-1	134
DRAIN VALVE	135-1	135
SAFETY VALVE ASSEMBLY.....	136-1	136
QUICK RELEASE VALVE	137-1	137
PRESSURE PROTECTION VALVE.....	138-1	138
CHECK VALVE ASSEMBLY	139-1	139
RESERVOIR EXHAUST CONTROL VALVE	140-1	140
RELAY VALVE ASSEMBLY	141-1	141
ALCOHOL EVAPORATOR.....	142-1	142
AIR RESERVOIR TO FRAME	143-1	143
AIR RESERVOIR TO DRAIN VALVE.....	144-1	144
1211 -TRAILER BRAKE CONNECTIONS AND CONTROLS		
QUICK DISCONNECT COUPLINGS TRACTOR PROTECTION		
VALVES,LINES AND FITTINGS.....	145-1	145
TRACTOR PROTECTION VALVE.	146-1	146
HAND BRAKE VALVE AND CONNECTIONS.....	147-1	147

TABLE OF CONTENTS

		PAGE	ILLUS/ FIG.
	HAND BRAKE VALVE ASSEMBLY.....	148-1	148
	TRACT PROTECT CONTROL VALV & CONNECT	149-1	149
	TRACT PROTECT CONTROL VALV.	150-1	150
GROUP 13	WHEELS AND TRACKS		
	1311 -WHEEL ASSEMBLY		
	WHEEL	151-1	151
	1313 -TIRES, TUBES, TIRE CHAINS		
	TIRE AND TUBE.	152-1	152
GROUP 14	STEERING		
	1407 -POWER STEERING GEAR ASSEMBLY		
	CRANE STEERING LINKAGE	153-1	153
	STEERING COLUMN AND RELATED PARTS	154-1	154
	STEERING GEAR SUB ASSEMBLY	155-1	155
	1410 -HYDRAULIC PUMP OR FLUID MOTOR ASSEMBLY		
	HYDRAULIC PUMP ASSEMBLY, POWER STEERING	156-1	156
	1411 -HOSES, LINES, FITTINGS		
	POWER STEERING LINES AND FITTINGS	157-1	157
	1413 -TANKS, RESERVOIRS		
	POWER STEERING FILTER AND RESERVOIR	158-1	158
GROUP 15	FRAME,TOWING ATTACHMENTS, DRAWBARS AND ARTICULATION SYSTEMS		
	1501 -FRAME ASSEMBLY		
	CAB AND BODY ASSEMBLY	159-1	159
	1502 -COUNTERWEIGHTS		
	COUNTERWEIGHT ASSEMBLY	160-1	160
	1503 -PINTLES AND TOWING ATTACHMENTS		
	HOOK ASSEMBLY, PINTLE	161-1	161
	1504 -SPARE WHEEL CARRIER AND TIRE LOCK		
	SPARE TIRE CARRIER	162-1	162
GROUP 16	SPRINGS AND SHOCK ABSORBERS		
	1601 -SPRINGS		
	SPRINGS AND RELATED PARTS	163-1	163
	1605 -TORQUE, RADIUS AND STABLIZER RODS		
	REAR SUSPENSION ASSEMBLY	164-1	164
GROUP 18	BODY,CAB,HOOD AND HULL		
	1801 -BODY, CAB, HOOD AND HULL ASSEMBLIES		
	CRANE CAB, PANELS.....	165-1	165
	CRANE CAB, DOOR	166-1	166
	CRANE CAB ASSEMBLY.....	167-1	167
	CRANE CAB, DOOR AND PANEL S.	168-1	168
	UPPER FINAL ASSEMBLY	169-1	169
	CARRIER CAB ASSEMBLY	170-1	170
	CAB ASSEMBLY, CARRI ER, DOOR ASSEMBLY.....	171-1	171
	CARRIER CAB	172-1	172

TABLE OF CONTENTS

		PAGE	ILLUS/ FIG.
1801	-FENDERS, RUNNING BOARD,WITH MOUNTING& ATTACH PARTS, OUTRIGGERS, WINDSHIELD &GLASS		
	CRANE OUTRIGGER ASSEMBLY	173-1	173
	WINDSHIELD GLASS	174-1	174
1805	-FLOORS, SUBFLOORS, AND RELATED COMPONENTS		
	CAB FLOOR	175-1	175
	CAB FLOOR PLATE ASSEMBLY.	176-1	176
1806	-UPHOLSTERY SEATS AND CARPETS		
	OPERATORS SEAT ASSEMBLY	177-1	177
	CRANE SEAT ASSEMBLY	178-1	178
GROUP 22	BODY, CHASSIS AND HULL ACCESSORY ITEMS		
2202	-ACCESSORY ITEMS		
	CARRIER REFLECTORS	179-1	179
	CAB MIRROR ASSEMBLY.....	180-1	180
	WINDSHIELD WASHER ASSEMBLY.....	181-1	181
	WINDSHIELD WIPER ASSEM & CONNECTIONS	182-1	182
	WIPER MOTOR ASSEMBLY	183-1	183
	WINDSHIELD WIPER CONTROL VALVES	184-1	184
2210	-DATA PLATES AND INSTRUCTION HOLDERS		
	IDENTIFICATION PLATES	185-1	185
GROUP 24	HYDRAULIC AND FLUID SYSTEMS		
2406	-STRAINERS, FILTERS, LINES AND FITTINGS		
	CRANE HYDRAULIC SYSTEM.....	186-1	186
	HYDRAULIC SWIVEL JOINT	187-1	187
2407	-HYDRAULIC CYLINDERS		
	HYDRAULIC CYLINDER ASSEMBLY	188-1	188
	MASTER CYLINDER	189-1	189
2408	-LIQUID TANKS OR RESERVOIRS		
	RESERVOIR	190-1	190
GROUP 47	GAGES (NON-ELECTRICAL) WEIGHING AND MEASURING DEVICES		
4701	-INSTRUMENTS (SPEED AND DISTANCE)		
	CARRIER SPEEDOMETER AND TACHOMETER	191-1	191
	CRANE TACHOMETER AND RE;LATED PARTS.....	192-1	192
GROUP 50	PNEUMATIC EQUIPMENT		
5001	-CRANKCASE, BLOCK, CYLINDER HEAD		
	AIR COMPRESSOR ASSEMBLY.....	193-1	193
5012	-THROTTLING DEVICES		
	LOW PRESSURE TRANSMIT & CONNECTIONS	194-1	194
	LOW PRESSURE INDICATOR ASSEM & CONNECT	195-1	195
	LOW PRESSURE INDICATOR	196-1	196
5015	-AIR DISCHARGE SYSTEM		
	AIR MANIFOLD AND CONNECTIONS.....	197-1	197
	AIR COMPRESSOR LINES AND FITTINGS	198-1	198
GROUP 74	CRANE, SHOVELS, AND EARTH MOVING EQUIPMENT COMPONENTS		

TABLE OF CONTENTS

		PAGE	ILLUS/ FIG.
7411	-CRANE DRAGLINE OR CLAMSHELL ATTACHMENTS		
	PULLEY BLOCK ASSEMBLY.....	199-1	199
	SPREADER ASSEMBLY.....	200-1	200
	BOOM BACKSTOP ASSEMBLY.....	201-1	201
	BOOM ANGLE INDICATOR ASSEMBLY	202-1	202
	BOOM ASSEMBLY.....	203-1	203
	ANTI-ROTATION DEVICE	204-1	204
7415	-CLUTCH		
	HOIST CLUTCH ASSEMBLY.....	204-1	205
	HOIST AND DIGGING BRAKE ASSEMBLY	206-1	206
	LEFT AND RIGHT SWING CLUTCH ASSEMBLIES	207-1	207
	BOOM HOIST CLUTCH ASSEMBLY.....	208-1	208
7416	-SHAFTS		
	DIGGING SHAFT ASSEMBLY	209-1	209
	REVERSING SHAFT ASSEMBLY	210-1	210
	HORIZONTAL SWING SHAFT ASSEMBLY	211-1	211
7417	-HOISTS		
	BOOM HOIST BRAKE ASSEMBLY	212-1	212
	BOOM HOIST PAWL ASSEMBLY	213-1	213
7419	-TURNTABLE		
	SWING BRAKE CONTROL STAND	214-1	214
	SWING BRAKE ASSEMBLY	215-1	215
7420	-MACHINERY GEAR CASE OR FRAME		
	GEAR AND CHAIN HOUSING ASSEMBLY.....	216-1	216
7422	-MACHINERY MECHANISM CONTROLS		
	CONTROL STAND ASSEMBLY.....	217-1	217
	CONTROL STAND ASSEMBLY.....	218-1	218
	CRANE CONTROLS	219-1	219
7423	-GANTRY		
	GANTRY ASSEMBLY	220-1	220
GROUP 94	REPAIR KITS		
	9401-REPAIR KITS		
	KITS.....		KIT-1
GROUP 95	-GENERAL USE STANDARDIZED PARTS		
	9501 - BULK MATERIEL		
	BULK MATERIEL		BULK-1
SECTION III	SPECIAL TOOLS LIST (NOT APPLICABLE)		
SECTION IV	CROSS REFERENCE INDEXES		
	NATIONAL STOCK NUMBER INDEX.....		I-1
	PART NUMBER INDEX.....		I-18
	FIGURE AND ITEM NUMBER INDEX		I-75

UNIT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST SECTION I. INTRODUCTION

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, Intermediate Direct Support and Intermediate General Support Maintenance of the Crane, Truck Mounted. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

2. General.

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

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

b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance. Not applicable.

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

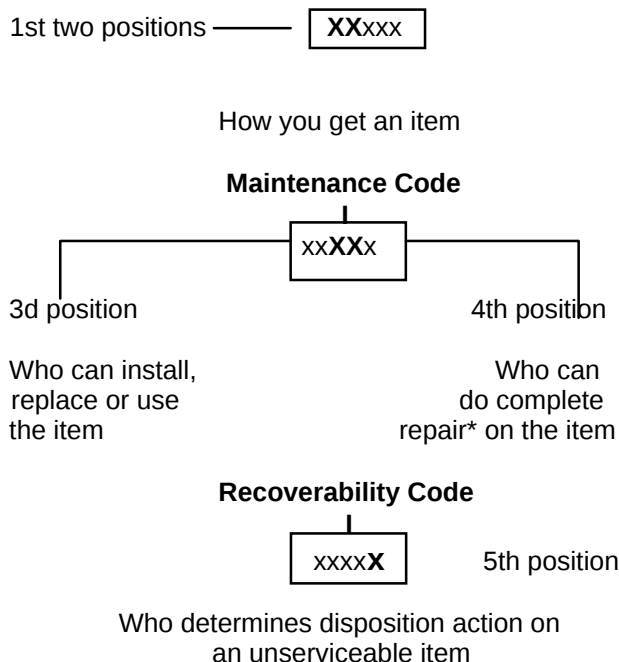
3. Explanation of Columns (Sections II and III).

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

b. SMR CODE (Column (2)). The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instructions, 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.

(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 follows:

Source Code



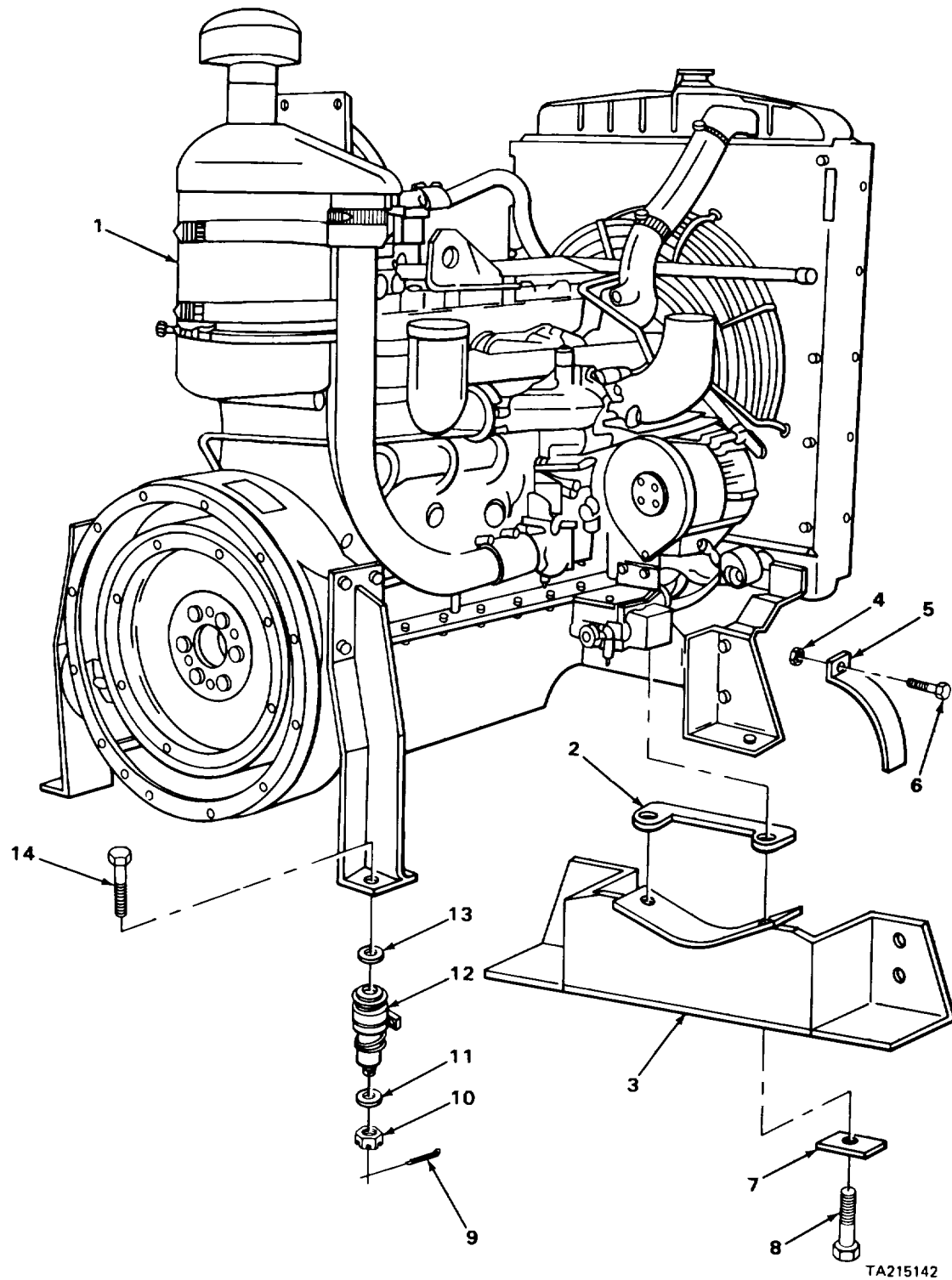


Figure 1. Crane Engine and Supports

SECTION II

TM 5-3810-294-20P

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
6	PFOZZ	96906	MS90728-12	GROUP 01 ENGINE GROUP 0100 ENGINE ASSEMBLY FIG. 1 CRANE ENGINE AND SUPPORTS SCREW,CAP,HEXAGON GUARD..... END OF FIGURE 1-1	1

4
5 THRU 7

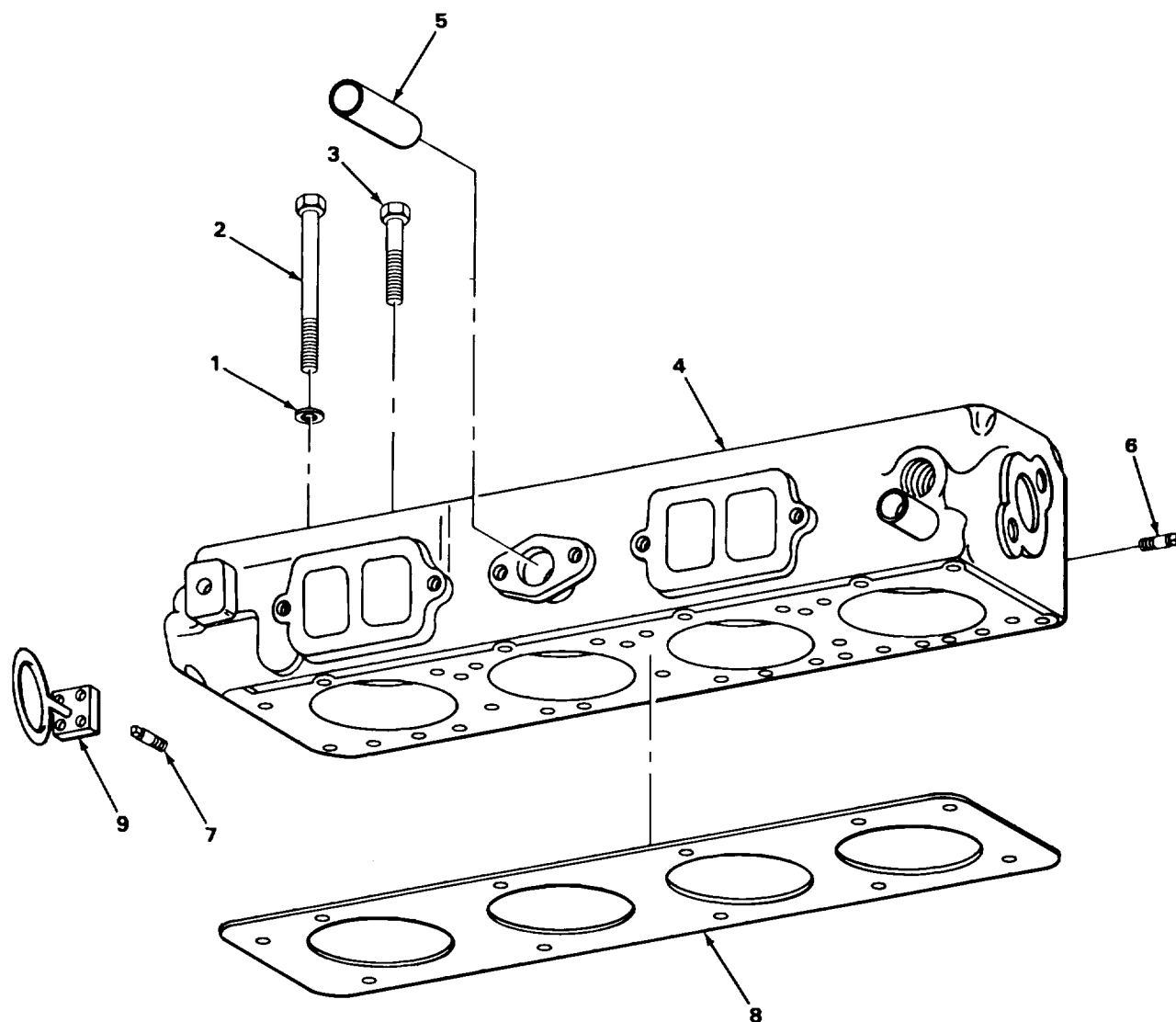
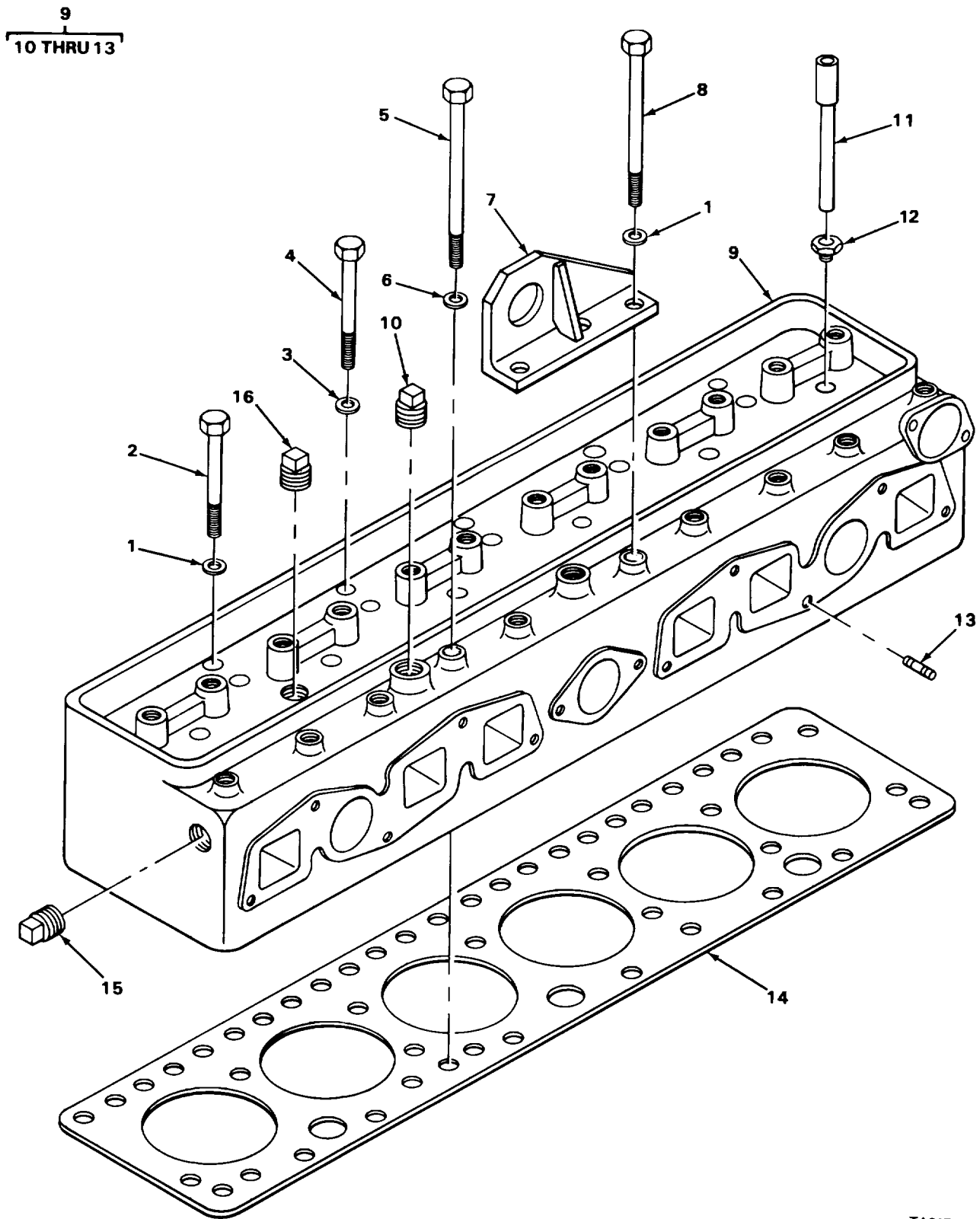


Figure 2. Carrier Engine Cylinder Head and Related Parts

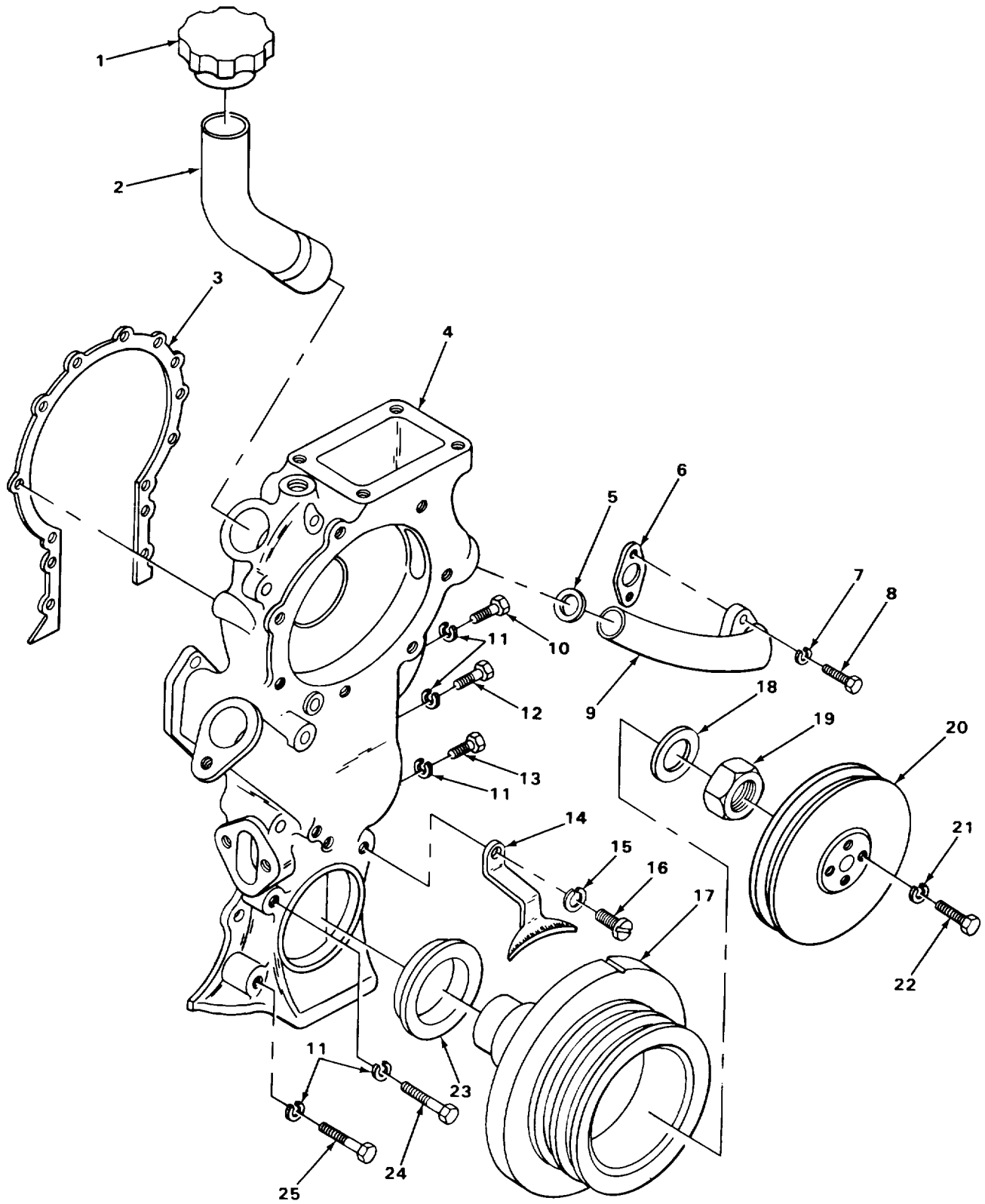
(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
9	XDOZZ	31007	303639R1	GROUP 0101 CRANKCASE. BLOCK, CYLINDER HEAD FIG. 2 CARRIER ENGINE CYLINDER HEAD AND RELATED PARTS EYE LIFTING..... 1 END OF FIGURE 2-1	



TA215147

Figure 3. Crane Cylinder Head and Related Parts

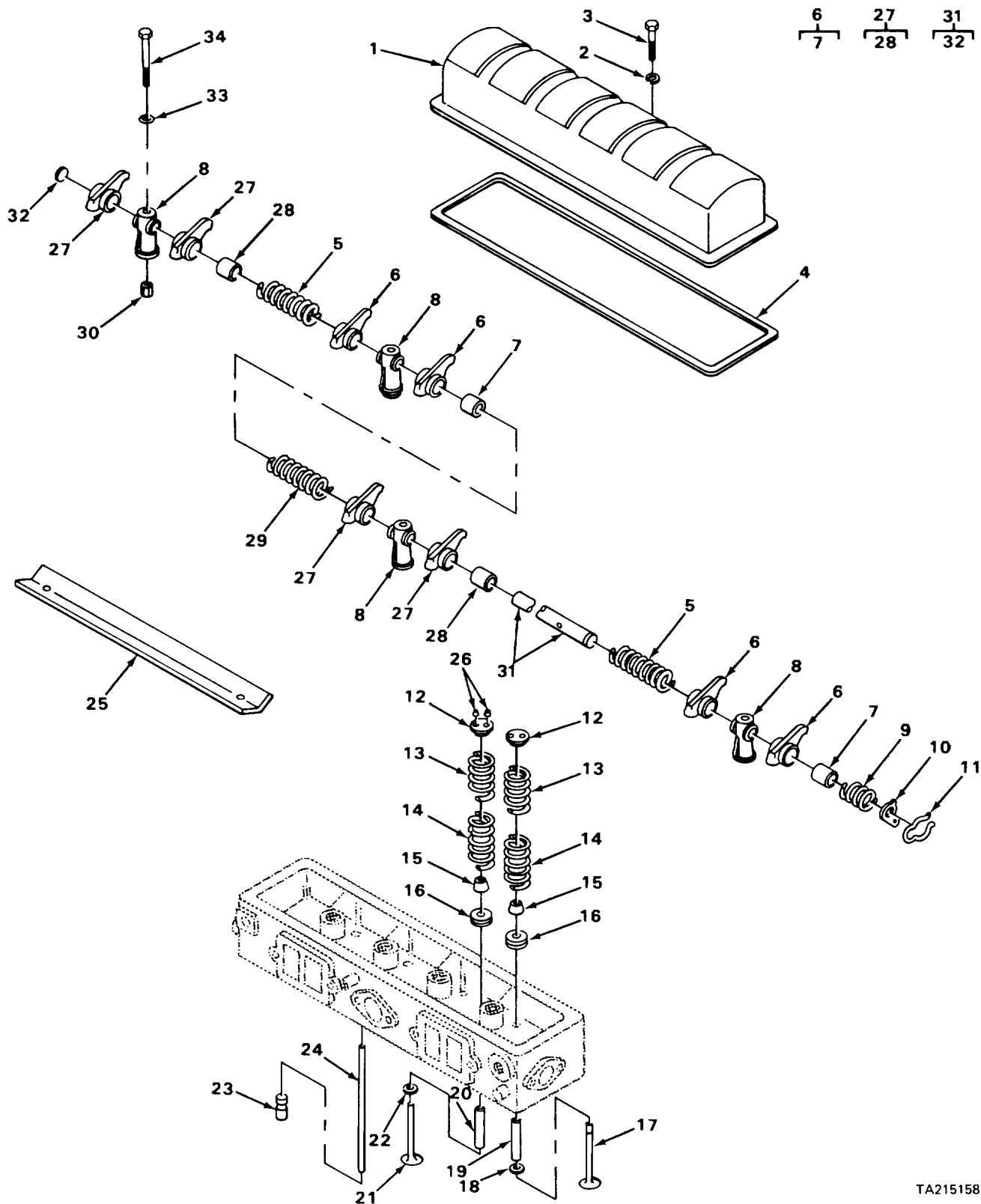
(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 0101 CRANKCASE, BLOCK, CYLINDER HEAD	
				FIG. 3 CRANE CYLINDER HEAD AND RELATED PARTS	
10	PFOZZ	24617	219191	PLUG,PIPE	1
15	XDOZZ	31007	445684	PLUG,PIPE.....	1
16	PFOZZ	96906	MS51884-7	PLUG,PIPE.....	1
				END OF FIGURE	
				3-1	



TA215149

Figure 4. Carrier Engine Gear Cover

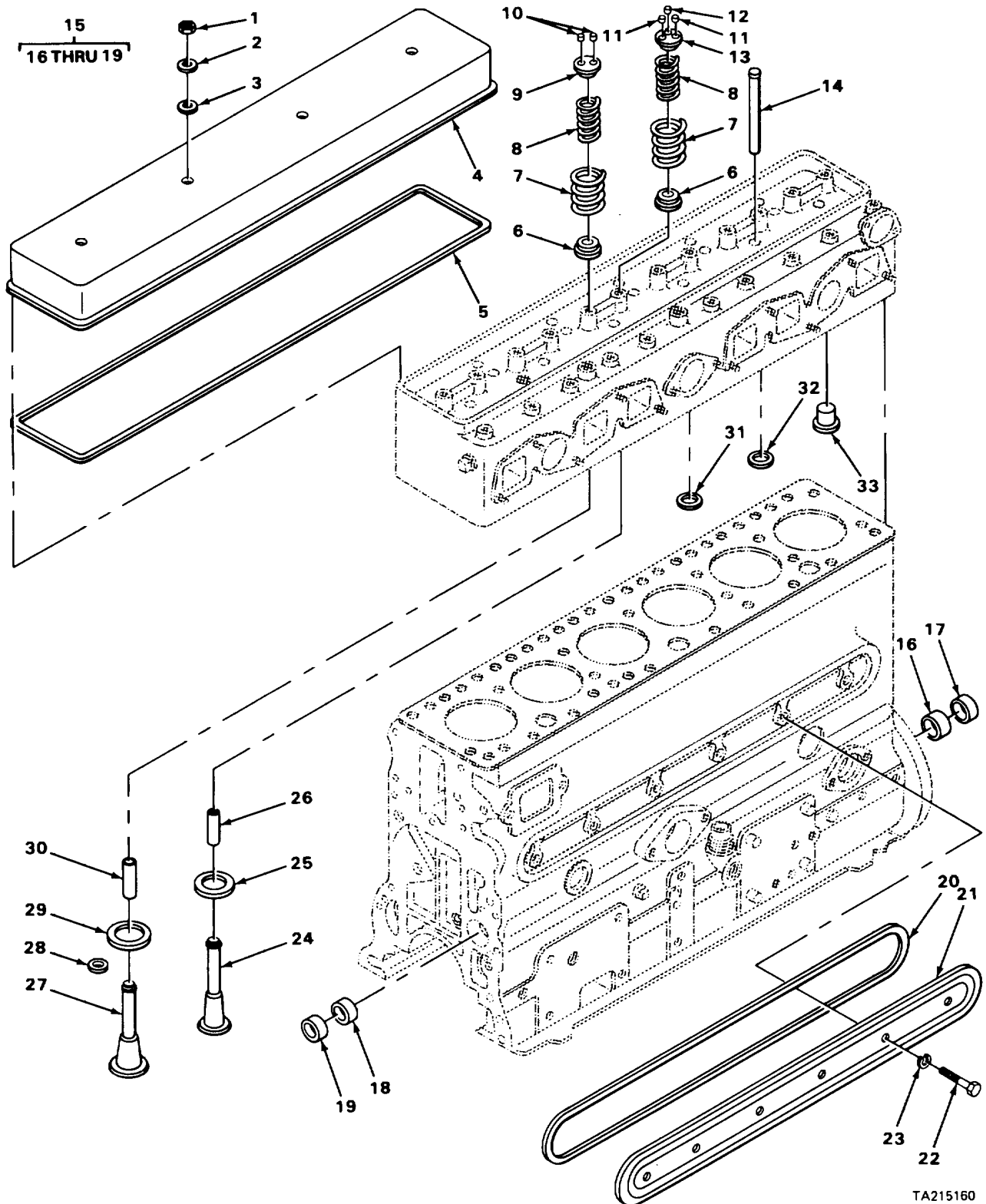
(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 0102 CRANKSHAFT	
				FIG. 4 CARRIER ENGINE GEAR COVER	
1	XDOZZ	31007	86900R1	CAP,OIL FILLER	1
2	XDOZZ	31007	133696R1	PIPE OIL FILLER	1
5	PAOZZ	9267S	261008R1	PACKING,PREFORMED INLET PIPE	1
6	PFOZZ	89346	133625R1	GASKET SET INLET PIPE.....	1
7	PFOZZ	96906	MS35338-46	WASHER,LOCK INLET PIPE	2
8	PAOZZ	96906	MS18154-58	SCREW,CAP,HEXAGON INLET PIPE	2
9	XDOZZ	89346	133570R2	ELBOW,FLANGE TO PIPE WATER INLET	1
				END OF FIGURE	
				4-1	



TA215158

Figure 5. Carrier Engine Valves and Related Parts

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 0105 VALVES, CAMSHAFTS, AND TIMING SYSTEM	
				FIG. 5 CARRIER ENGINE VALVES AND RELATED PARTS	
1	XDOZZ	31007	133675R1	COVER CYLINDER HEAD.....	2
2	PFOZZ	88907	SKA1655	WASHER,FLAT COVER	8
3	PFOZZ	96906	MS90728-42	BOLT.MACHINE COVER.....	8
4	PAOZZ	89346	133689R1	GASKET COVER	2
25	XDOZZ	31007	1670141R	TROUGH OIL	2
				END OF FIGURE	
				5-1	



TA215160

Figure 6. Crane Engine Valves and Related Parts

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODE (UOC)	(6) QTY
				GROUP 0105 VALVES, CAMSHAFTS, AND TIMING SYSTEM	
				FIG. 6 CRANE ENGINE VALVES AND RELATED PARTS	
1	PFOZZ	98960	351	NUT,PLAIN,CAP COVER.....	4
2	PFOZZ	96906	MS27183-14	WASHER,FLAT COVER	4
3	XDOZZ	31007	10675D	WASHER,NONMETALLIC COVER	4
4	XOOZZ	92679	61487HDX	COVER,ENGINE POPPET CYLINDER HEAD	1
5	PAOZZ	19207	5626138	GASKET CYLINDER HEAD COVER	1
20	PFOZZ	31007	61482H	GASKET VALVE COVER.....	1
21	XDOZZ	89346	61481HA	COVER,ACCESS VALVE	1
22	PFOZZ	31001	MS90725-29	SCREW,CAP HEXAGON VALVE COVER.....	6
23	PFOZZ	96906	MS35338-45	WASHER,LOCK VALVE COVER	6
				END OF FIGURE	
				6-1	