

GEARBOX M620 fam.

TM 9-2520-246-35P

HFK II.3

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

FIELD AND DEPOT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOL LIST

FOR

TRANSMISSION (2520-347-4530), *2520-25-120-0486*

TRANSFER

(2520-786-0206, 2520-741-2632, 2520-737-2006, 2520-692-6120),

AND

2520-00-089-8287 Transfer.
2520-25-120-0497 Transfer i
trsp. case.

POWER TAKE-OFF

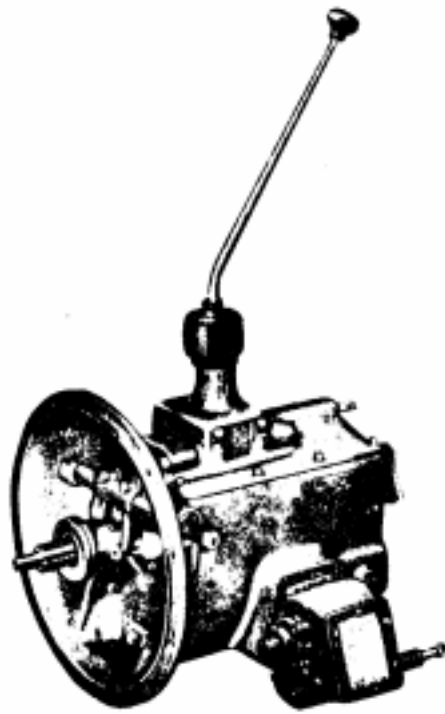
(2520-741-3281, 2520-706-1137, 2520-786-0208, 2520-706-1136)

SEE INSIDE COVER FOR
END ITEM APPLICATION



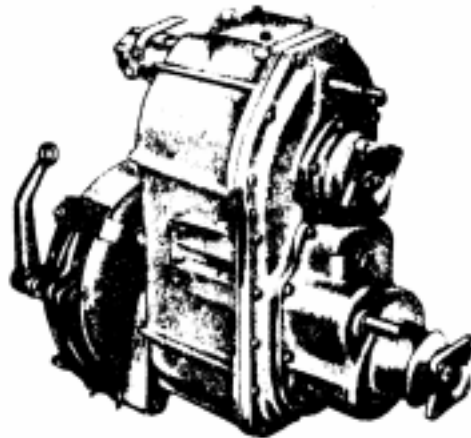
HEADQUARTERS, DEPARTMENT OF THE ARMY

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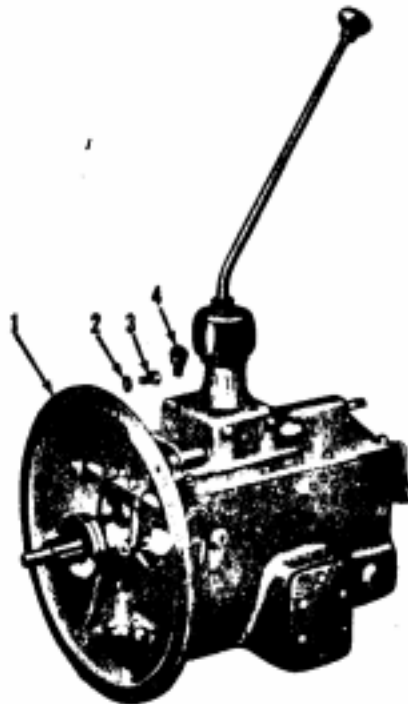
Figure 1. Transmission with power take-off - left front view.



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Figure 2. Transfer with power take-off - right front view.

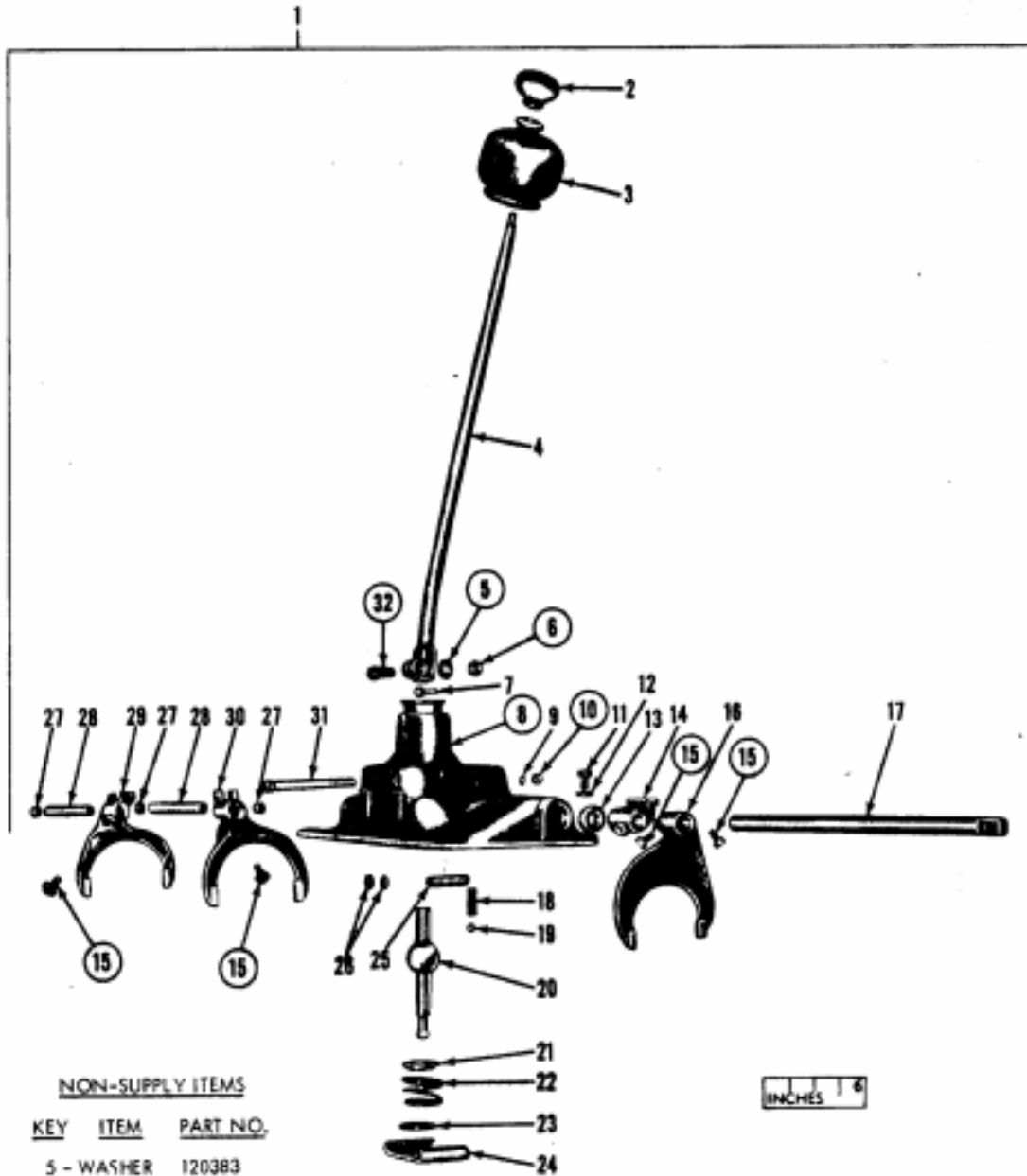
(1) ILLUST		(2) SOURCE MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUP		(8) DIRECT MAINT CHARGE PER 100 EQUP (85% BOM)
(a) FIG NO	(b) ITEM NO	(a) SOURCE SYMBOL NO	(b) MAINT SYMBOL NO	(c) RECOVER LEVEL	(d) RECOVERABILITY				(a) 3RD BOM SUPP	(b) 4TH BOM SUPP		
							TRANSMISSION TRANSMISSION ASSEMBLY (7520995) AND ASSOCIATED PARTS (Fig. 3)					
3	1			P	F R	2520-347-4520	TRANSMISSION, MECHANICAL: Assy (78080-002189) (7520995)	ea	1	.1	.1	8
3	2			P	F	5310-013-1099	WASHER, LOCK: split, hv, S, cd-or zn-pltd, 3/8 in. bolt size (131099)	ea	12	1.3	1.3	120
3	3			P	F	5305-021-5452	BOLT, MACHINE: hex-hd, med-carb-S, plain fin., 3/8-NC-2 x 1-1/4 (215452)	ea	12	1.3	1.3	120
3	4	5		P	O	4820-287-6119	VALVE: air Assy (81336-45-8575-045-10)-----	ea	1	.2	.2	20
3				P	F	5310-582-5977	WASHER, FLAT: lt, S, cd-or zn-chromate fin., 13/32 id, 13/16 od, 0.065 thk, 3/8 screw size (96906-15796-214)(Non-illustrated)	ea	1	.1	.1	10



REPLACEMENT PARTS

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Figure 3. Transmission assembly (7520995) and associated parts - partial exploded view.



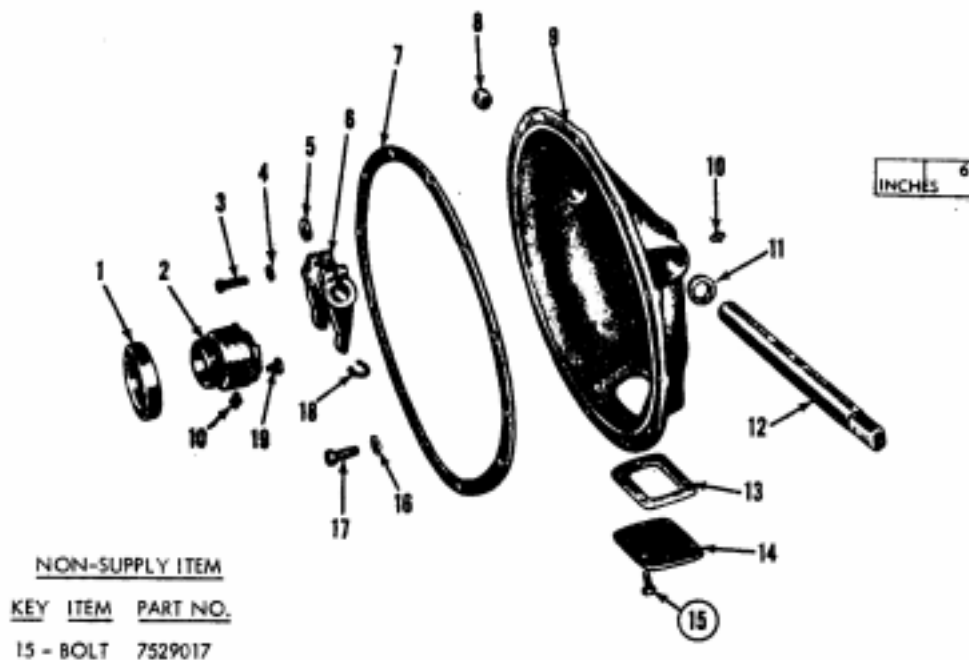
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Figure 4. Transmission cover assembly (7521056) - exploded view.

(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPT MAINT GUIDE PER 100 EQUIP (5TH ECH)
(a) FIG NO	(b) ITEM NO	(a) TECHNICAL PROJECT NO	(b) SOURCE	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY				(a) 3RD ECH (MW SUP)	(b) 4TH ECH (GEN SUP)		
TRANSMISSION COVER ASSEMBLY (7521056)(Fig. 4)												
4	1		P	F		2520-347-4591	COVER: top, w/lock, lever and shaft, assy (7521056)----	ea	1	*	*	4
4	2		P	O		5355-284-5671	KNOB: gear shift hand lever (use only after stock of KNOB, 5355-152-8353 is exhausted)(8158024)	ea	1	.2	.2	20
4	3		P	O		2520-692-6072	GROMMET: gear shift hand lever (7521062)-----	ea	1	.2	.2	100
4	4		P	F		2520-752-1092	LEVER: hand, gear shift (7521092)-----	ea	1	.1	.1	10
4	7		P	F		5315-692-6101	PIN: pivot gear shift hand lever (7539146)-----	ea	2	.2	.2	20
4	9		P	F		5310-050-2245	WASHER, FLAT: S, cd-or zn-pltd, 21/64 id, 9/16 od, 0.063 thk (shifter shaft interlock spring)(502245)	ea	2	.2	.2	20
4	11		P	F		5305-550-1310	SCREW, CAP, HEXAGON HEAD: med-carb-S, cd-or zn-pltd, 5/16-18UNC-2A x 1 top cover (180122)	ea	8	.8	.8	80
4	12		P	F		5310-543-2705	WASHER, LOCK: split, med, S, cd-or zn-pltd, 3/8 screw size top cover (96906-35338-27)	ea	8	.8	.8	80
4	13		P	F		5330-350-9987	SEAL: oil type MLP, 5/8 x 1.128 x 1/2 (first speed and reverse gear shifter shaft)(583508)	ea	1	.4	.4	100
4	14		P	F		2520-752-1094	LUG: first speed and reverse gear shifter shaft (7521094)	ea	1	.1	.1	10
4	16		P	F		2520-752-1060	FORK: shifter first speed and reverse gear (7521060)----	ea	1	.1	.1	10
4	17		P	F		2520-752-1097	SHAFT: shifter, first speed and reverse gear (7521097)	ea	1	.1	.1	10
4	18		P	F		2520-347-4563	SPRING HELICAL COMPRESSION: shifter shaft detent ball (7521100)	ea	3	.3	.3	30
4	19		P	F		3110-100-6182	BALL, BEARING: MIL-STD-CODE 999-56024-02000(high carb, cr-alloy-S, 0.3750 dia, 0.00005 sphericity (pressure relief spring)(detent, shifter shaft)(104920)	ea	3	.3	.3	30
4	20		P	F		2520-752-1093	LEVER: hand gear shift (extension)(7521093)-----	ea	1	.1	.1	10
4	21		P	F		2520-752-1096	SEAT: gear shift hand lever support spring (hand lever extension)(7521096)	ea	1	.1	.1	10
4	22		P	F		2520-692-6075	SPRING: support, gear shift hand lever extension (7521102)	ea	1	.1	.1	10
4	23		P	F		5340-699-8459	RING: snap, gear shift hand lever support spring (lever extension)(7521095)	ea	1	.1	.1	10
4	24		P	F		2520-752-1063	INTERLOCK: shifter shaft (7521063)-----	ea	1	.1	.1	10
4	25		P	F		2520-692-6074	SPRING, HELICAL, COMPRESSION: shifter shaft interlock (7521101)	ea	2	.2	.2	20
4	26		P	F		5310-050-2245	WASHER, FLAT: S, cd-or zn-pltd, 21/64 id, 9/16 od, 0.063 thk (shifter shaft interlock spring)(502245)	ea	2	.2	.2	20
4	27		P	F		5340-299-8291	PLUG, EXPANSION: S, 3/4 in., dia (shifter shaft hole) (501593)	ea	3	.3	.3	30
4	28		P	F		2520-752-1099	SHAFT: shifter, second and third speed gear and fourth and fifth speed gear (7521099)	ea	2	.1	.1	10
4	29		P	F		2520-752-1057	FORK: shifter, fourth and fifth speed gear (7521057)----	ea	1	.1	.1	10
4	30		P	F		2520-752-1059	FORK: shifter, second and third speed gear (7521059)	ea	1	.1	.1	10
4	31		P	F		5306-752-1055	BOLT: plate (75211055)-----	ea	2	.2	.2	20
			P	F		5310-582-5977	WASHER, FLAT: lt, S, cd-or zn-chromate-fin., 13/32 od, 13/16 od, 0.065 thk, 3/8 screw size (96906-15795- 214) (Non-illustrated)	ea	1	.1	.1	10

(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPOT MAINT GUIDE PER 100 EQUIP (3TH ECH)
(a) FIG NO	(b) ITEM NO	(a) TECHNICAL SERVICE NO	(b) SOURCE	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY				(a) 3RD ECH (3TH SUP)	(b) 4TH ECH (4TH SUP)		
							<u>TRANSMISSION CLUTCH HOUSING AND ATTACHING PARTS (Fig. 5)</u>					
5	1		P	F		3110-198-1502	BEARING, BALL, THRUST: MIL-STD-CODE 994-13078-0000 (sr, grooved race surface, a/gle direction, rigid backed od, bz ferrule on id, of one washer, TBEC 1 to 1.21355 in. bore, 3.5625 in. od, 0.8070 in. h) (712049)	ea	1	.2	.2	20
5	2		P	F		2520-752-0966	CARRIER: release bearing (78080-110C127)-----	ea	1	.1	.1	5
5	3		P	F		5306-174-4202	BOLT, MACHINE: release fork (cap, hex-hd, S, heat treated, 7/16-14NC-3 x 1-3/16)	ea	2	.2	.2	20
5	4		P	F		5310-012-1621	WASHER, LOCK: split, lt, S, cd-or zn-pltd, 7/16, in. bolt size (121621)	ea	2	.2	.2	20
5	5		C	O		3120-661-9586	KEY: release fork (78080-10-30)-----	ea	2	.2	.2	40
5	6		P	F		2520-752-0967	FORK: release (78080-105C124)-----	ea	1	.1	.1	4
5	7		P	F		2520-752-0959	GASKET: clutch housing (50513-2315T3)-----	ea	1	.2	.2	100
5	8		P	F		5340-752-0976	PLUG, EXPANSION: throw-out lever shaft hole (78080-30-59-7)	ea	1	.1	.1	10
5	9		P	F		2520-752-0952	HOUSING: clutch (7520952)-----	ea	1	*	*	4
5	10	5	P	O		4730-050-4208	FITTING, LUBRICATION: sight, hyd, surface check, S, cd-pltd or zn-chromate-fin., 1/8NPTF male short (pedal shaft support (2) and release shaft (2) (504208)	ea	4	.4	.4	40
5	11		P	F		5330-286-6815	SEAL: oil, type ML, 1 x 1.503 x 25/64 (throw-out lever shaft)(500021)	ea	1	.2	.2	100
5	12		P	F		2520-752-0979	SHAFT: throw-out lever (78080-106C1540)-----	ea	1	.1	.1	4
5	13						GASKET: inspection hole cover (7520957)(See page 12 for listing of GASKET SET 2520-752-0987)					

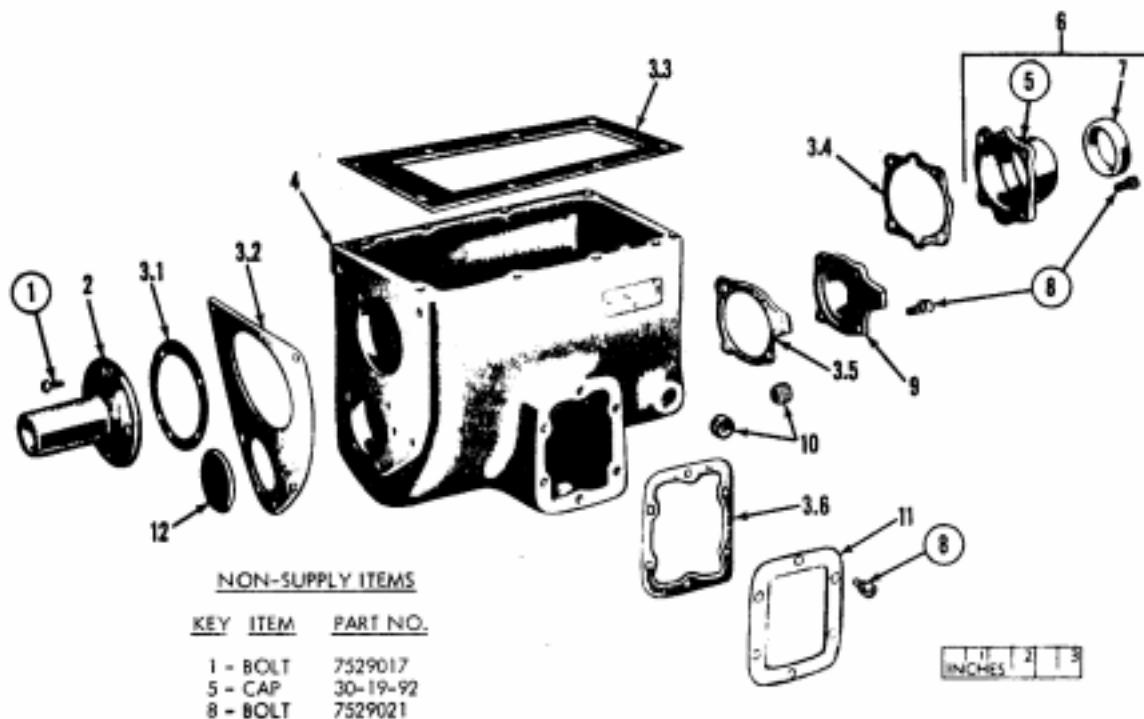
(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPT MAINT GUIDE PER 100 EQUIP (5TH ECH)
(a) FIG NO	(b) ITEM NO	(a) FORMAL SERVICE NO	(b) SABRE	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY					(a) 3RD ECH (2ND SUP)	(b) 4TH ECH (08N SUP)	
<u>TRANSMISSION CLUTCH HOUSING AND ATTACHING PARTS (Fig. 5)-Continued</u>												
5	14		X2	O	✓	2520-752-0956	COVER: inspection hole (7520956)-----	ea	1	*	*	*
5	16		P	F	✓	5310-584-5272	WASHER, LOCK: split, med, S, cd-or zn-pltd, 1/2 screw size (120384)	ea	5	.5	.5	50
5	17		P	F	✓	5305-010-6342	SCREW, CAP, HEXAGON HEAD: low-carb S, plain fin., 1/2-13UNC-2A x 1-3/8 (106342)	ea	5	.5	.5	50
5	18		P	F	✓	5340-292-4017	SPRING: release bearing carrier (78080-230C12)-----	ea	2	.4	.4	20
5	19		P	F	✓	2520-752-0965	BUTTON: release bearing carrier (78080-186C5)-----	ea	2	.1	.1	4



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Figure 5. Transmission clutch housing and attaching parts - exploded view.

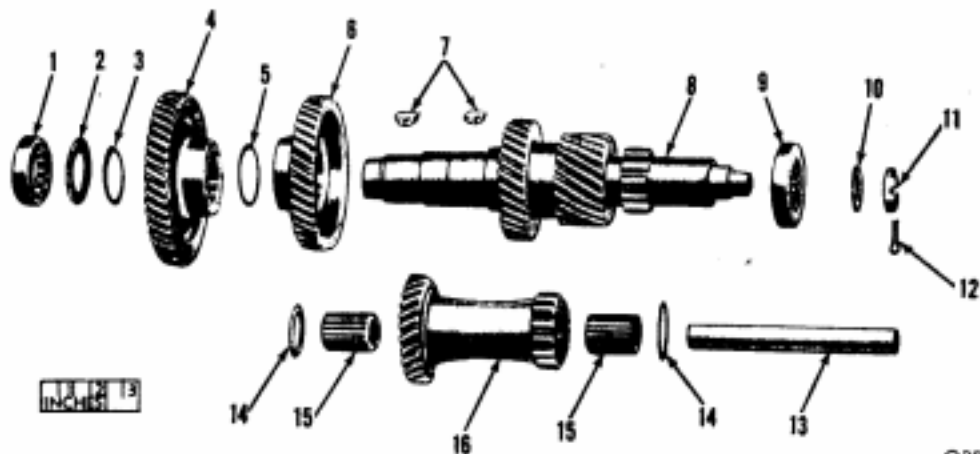
(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPOT MAINT CLASSE PER 100 EQUIP (3TH ECU)
(a) FIG NO	(b) ITEM NO	(a) TECHNICAL SERVICE NO	(b) SOURCE	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY				(a) 3RD ECH (DR SUP)	(b) 4TH ECH (GRN SUP)		
TRANSMISSION CASE AND ATTACHING PARTS (Fig. 6)												
6	2		P	H		2520-508-4664	COVER: input shaft bearing (7520989)-----	ea	1	*	4	
6	3		P	F		2520-752-0987 5326-	GASKET SET: transmission (7520987)----- Composed of:	ea	1	.4	.4	100
6	3.1						1 GASKET, input shaft bearing cover (50513-232TT2)					
6	3.2		P	F		2520-752-0958	1 GASKET, clutch housing (7520958)	ea		.2	.2	0
6	3.3		P	F		2520-752-1061	1 GASKET, top cover (7521061)	ea		.4	.4	0
6	3.4		P	H		2520-752-1004	1 GASKET, main shaft rear bearing retainer (7521004)	ea			.4	20
6	3.5		P	H		2520-752-1039	1 GASKET, countershaft rear bearing cover(7521039)	ea			.4	20
6	3.6		P	H		2520-752-1032	1 GASKET, power-take-off hole cover (50513-4175)	ea			.4	20
6			P	O		2520-752-0957	1 GASKET, clutch housing hand hole cover (7520957) (Non-illustrated)	ea		.4	.4	0
6	4		P	H		2520-090-5099	CASE, TRANSMISSION: (7520988)-----	ea	1	*	*	4
6	6		P	H		2520-692-6065	RETAINER: rear bearing, w/seal, assy (7521007)-----	ea	1	*	*	4
6	7		P	F		5330-350-9958	SEAL: oil, type MLF, 2-1/4 x 3.003 x 3/4 (rear bearing) (583509)	ea	1	.5	.5	100
6	9		P	H		2520-692-6070	COVER: countershaft rear bearing (7521038)-----	ea	1	*	*	4
6	10		P	O		4730-278-3380	PLUG, PIPE: sq-socket, hds, MI, cd-or zn-pltd, 3/4 in. (oil filler and drain)	ea	2	.2	.2	20
6	11		P	H		2520-354-0771	COVER: side (5323473)-----	ea	1	*	*	4
6	12		P	H		2520-752-1032	RETAINER: countershaft front bearing (7521032)-----	ea	1	*	*	4



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Figure 6. Transmission case and attaching parts - exploded view.

(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPOT MAINT GUIDE PER 100 EQUIP (5TH EDITION)
(a) FIG NO	(b) ITEM NO	(a) SOURCE SYMBOL	(b) MAINT LEVEL	(c) RECOVER LEVEL	(d) RECOVER LEVEL				(a) 3RD ECH (OR SUPT)	(b) 4TH ECH (OR SUPT)		
							<u>COUNTERSHAFT AND IDLER SHAFT WITH GEARS (Fig. 7)</u>					
7	1	P	II			3110-117-0693	BEARING: roller, cylindrical, MIL-STD-CODE 992-14007-0000 (sr, II non-locating separable, no inner race, 2.8346 od, 0.6650 w/countershaft, front (707617)	ea	1	.4	20	
7	2	P	II			5310-752-1048	WASHER, FLAT: countershaft front bearing (78080-976W)	ea	1	.2	10	
7	3	P	II			5340-752-1046	RING, RETAINING: snap, countershaft fourth speed gear (78080-303817)	ea	1	.4	20	
7	4	P	H			2520-752-1031	GEAR HELICAL: countershaft drive (78080-30-1-23)-----	ea	1	.2	10	
7	5	P	H			5340-752-1045	RING, RETAINING: snap, countershaft drive gear (78080-463812)	ea	1	.4	20	
7	6	P	H			2520-752-1029	GEAR HELICAL: countershaft fourth speed (78080-30-196-10)	ea	1	.2	10	
7	7	P	H			5315-045-2563	KEY, WOODRUFF: S, 5/16 x 2-1/8 (No. 128)(countershaft drive gear and countershaft fourth speed gear) (452563)	ea	2	.4	20	
7	8	P	H			2520-752-1037	COUNTERSHAFT: w/integral gears (7521037)-----	ea	1	.2	10	
7	9	P	H			3110-155-6686	BEARING: ball, MIL-STD-CODE, 112-03503-0500 (rad, sr, med, loading groove, snap ring, 1.3780 bore, 3.1496 od, 0.8268 w/countershaft, rear (700771)	ea	1	.4	20	
7	10	P	H			5310-050-2242	WASHER, FLAT: S, plain fin., 1-1/32 id, 1-3/4 od, 0.109 thk (countershaft nut)(502242)	ea	1	.2	10	
7	11	P	H			5310-362-1504	NUT: countershaft (78080-68J)-----	ea	1	.2		
7	12	P	H			5315-012-5637	PIN, COTTER: S, cd-or zn-pltd, 1/8 x 2 (countershaft nut)(125637)	ea	1	.8	100	
7	13	P	H			2520-752-1047	SHAFT: reverse idler (78080-306013)-----	ea	1	.2	10	
7	14	P	H			5310-752-1049	WASHER: thrust, reverse idler gear (78080-974W)-----	ea	2	.4	20	
7	15	P	H			3110-120-4276	BEARING: roller, journal, MIL-STD-CODE 341-01629 0000 (solid rollers, no races, type 2, 1.0000 shaft dia. 1.5000 housing bore 2.000 operating space) (reverse idler gear)(708231)	ea	2	.8	40	
7	16	P	H			2520-752-1050	GEAR: reverse idler (78080-30518)-----	ea	1	.2	10	



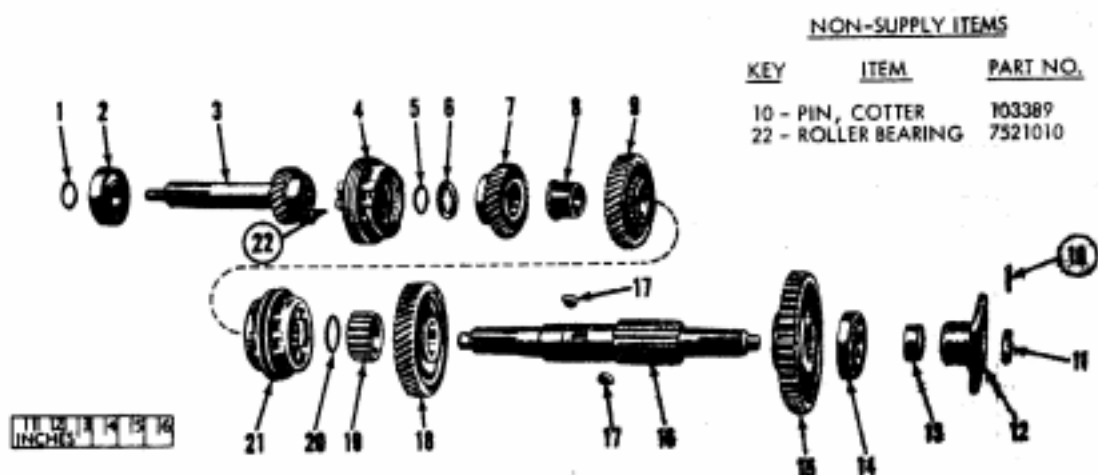
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Figure 7. Countershaft and idler shaft with gears - exploded view.

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(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DEPOT MAINT GUIDE PER 100 EQUIP (5TH ECH)
(a) FIG NO	(b) ITEM NO	(a) FORMAL SYMBOL NO	(b) SABCS	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY				(a) 3RD ECH (ONE SUPP)	(b) 4TH ECH (GAIN SUPP)		
							<u>INPUT SHAFT AND MAIN SHAFT WITH GEARS (Fig. 8)</u>					
8	1		P	H	✓	5340-508-4875 5365	RING, RETAINING: snap, bearing (78080-21-381-1)-----	ea	1	.4	20	
8	2		P	H	✓	3110-155-6174	BEARING: ball, MIL-STD-CODE 111-04003-1500 (rad, sr, med, non-loading groove, 1 shield, snap ring, 1.5748 bore, 3.5433 od, 09055w (input shaft)(700910)	ea	1	.4	20	
8	3		P	H	✓	2520-752-1022 3040-885-3723	SHAFT: input, w/integral gear (78080-30-35-66)(730494)	ea	1	.2	10	
8	4		P	H	✓	2520-752-1022	SYNCHRONIZER: fourth and fifth speed, assy (78080-773X6)(7521022)	ea	1	.2	10	
8	5		P	H	✓	5340-699-8456	RING, RETAINING: snap, fourth speed gear thrust washer (78080-30-381-5)	ea	1	.4	20	
8	6		P	H	✓	5310-285-2169	WASHER, KEYWAY: thrust, fourth speed gear (78080-975W)(7521574)	ea	1	.2	10	
8	7		P	H	✓	2520-752-1015 884-4834	GEAR: fourth speed (78080-30-8-41)-----	ea	1	.2	10	
8	8		P	H	✓	2520-752-1020	SLEEVE: fourth speed gear (78080-30-37-11) (7521020)----	ea	1	.2	10	
8	9		P	H	✓	2520-752-1016	GEAR: third speed (7521016)-----	ea	1	.2	10	
8	11		P	H	✓	5310-529-4103	NUT: slotted, hex, S, 1-2 ONS-3 (78080-68J)-----	ea	1	.1	4	
8	12		P	F	✓	2520-752-1003	FLANGE: companion (78080-4-1-3021)-----	ea	1	.1	4	
8	13		P	H	✓	2520-752-1021	SPACER: rear bearing (7521021)-----	ea	1	*	4	
8	14		P	H	✓	3110-155-6173	BEARING, BALL, ANNULAR: MIL-STD-CODE 111-04003 0500 (sr, rad, non-loading groove, both rings same w, snap ring groove, ABEC1, std fit, 40mm bore, 90mm od, 23mm w)(rear)(700793)	ea	1	.4	20	
8	15		P	H	✓	2520-752-1006	GEAR, SPUR: first speed and reverse (78080-30-8-35)---	ea	1	.2	10	
8	16		P	H	✓	2520-752-1019	SHAFT: main (78080-30-362-11)(7521019)-----	ea	1	.2	10	

(1) ILLUST		(2) SOURCE, MAINT AND RECOVERABILITY CODE				(3) FEDERAL STOCK NO	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) QTY INC IN UNIT	(7) 15-DAY MAINT ALW PER 100 EQUIP		(8) DROPT MAINT GUIDE PER 100 EQUIP (3TH ECH)
(a) FIG NO	(b) ITEM NO	(a) TECHNICAL SERVICES BR	(b) SOURCE	(c) MAINTENANCE LEVEL	(d) RECOVERABILITY					(a) 3RD ECH (ON SUPP)	(b) 4TH ECH (ON SUPP)	
					2		INPUT SHAFT AND MAIN SHAFT WITH GEARS (Fig. 8)-Continued					
8	17		P	H		5315-011-3782	KEY, WOODRUFF: S, 1/4 x 1 (No. 88 or 15)(second and third speed synchronizer sleeve) (113782)	ea	2	.4		20
8	18		P	H		2520-752-1017	GEAR, HELICAL: second speed (78080-30-8-37)-----	ea	1	.2		10
8	19		P	H		2520-752-1005	GEAR: clutch, second and third speed (78080-30-466-5) (7521005)	ea	1	.2		10
8	20		P	H		5340-699-8457	RING, RETAINING: snap, second and third speed clutch gear (78080-30-381-6)	ea	1	.4		20
8	21		P	H		2520-752-1023	SYNCHRONIZER: second and third speed, assy (78080-7735X)	ea	1	.2		10
8			P	H		5315-699-8458	PIN: fourth speed gear sleeve (78080-4648P)(Non-illustrated)	ea	1	.2		10
8			P	H		3110-100-6180	BALL, BEARING: MIL-STD-CGDE 999-56020-0200 (high carb cr-alloy-S 0.3125 dia, 0.00005 sphericity) (detent synchronizer)(kit, 2540-740-9205)(104919) (Non-illustrated)	ea	6	1.3		0



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Figure 8. Input shaft and main shaft with gears - exploded view.