

Reduction Clutches By Engine Model

MODEL	DESCRIPTION	PART NO.	
AA, AB, ABS, AKS ABN, AKN	Spur gear reduction unit (Obsolete)	WW45E	
	Chain drive reduction unit	WW45B	
	Chain drive reduction unit	WW45C	
	Gear reduction unit	WW45K	
ACN, BKN	Clutch and power take-off (Obsolete)	WW37	
	Gear reduction unit	WW35C	
	Clutch and power take-off	WW37	
	Chain drive reduction unit	WW45B	
	Chain drive reduction unit	WW45C	
	Gear reduction unit	WW45K	
	Gear reduction unit	WW45L	
ADH, AEH	Clutch take-off assembly	WW186	
	Clutch and power take-off (Obsolete)	WW25-14	
	Reduction gear assembly (Obsolete)	WW64	
	Reduction gear assembly (Obsolete)	WW64D, D3	
	Clutch reduction gear assembly (Obsolete)	WW79	
AENL	Clutch reduction gear assembly	WW79A	
	Reduction gear assembly (Obsolete)	WW64B, E	
	Reduction gear assembly (see WW64V), obsolete	WW64E6	
	Reduction gear assembly	WW64R, R3, R4, (Obsolete)	WW64R1, R2
	Reduction gear assembly	WW64T, T2, T3, T4, (Obsolete)	WW64T1
	Reduction gear assembly	WW64U, U1, 2, 3, 4	
	Reduction gear assembly	WW64V, V2, V3, V4, (Obsolete)	WW64V1
	Clutch reduction gear assembly	WW79A	
	Clutch and power take-off assembly	WW102	
	Clutch reduction gear assembly, obsolete	WW24D	
	Clutch and power take-off assembly, (Obsolete)	WW25-22	
	Reduction gear assembly (Obsolete)	WW27C	
AGND	Clutch reduction gear assembly (Obsolete)	WW24D	
	Clutch and power take-off (Obsolete)	WW25-22	
	Reduction gear assembly (Obsolete)	WW27C	
	Clutch take-off assembly	WW61K	
	Clutch reduction gear assembly	WW170	

Reduction Clutches By Engine Model (Cont.)

MODEL	DESCRIPTION	PART NO.
S7D, S8D	Gear reduction unit	WW35F
S7D, S8D	Gear reduction unit	WW45R, T, Y, Z
S7D, S8D	Clutch and power take-off (Obsolete)	WW37B
S8D	Clutch take-off	WW186
S10D, S12D	Reduction gear assembly	WW64P, P1, 2, 6
	Clutch reduction gear assembly	WW79A
TE, TF, THD, TJD	Clutch and power take-off	WW74A
TE, TF, THD, TJD	Clutch reduction gear assembly	WW75A
	Reduction gear assembly	WW77A
TJD	Drive hub and housing (for WC402)	WW101
VE4D, VF4D	Clutch take-off assembly, repl. by WW61E	WW58A
	Clutch take-off assembly	WW61E
	Clutch reduction gear assembly (Obsolete)	WW62
	Clutch reduction gear assembly	WW62A
VF4D	Reduction gear assembly	WW27J
	Drive hub and housing assembly	WW80
	Drive hub and housing assembly	WW83
	(for clutch reduction unit WC302G)	WW83
VG4D, VH4D	Drive hub and housing assembly	WW101
VH4D	Reduction gear assembly	WW27J
	Clutch take-off assembly	WW61E
	Clutch reduction gear assembly (Obsolete)	WW62
	Clutch reduction gear assembly	WW62A
V465D	Drive hub and housing	WW165
W2-880	Clutch and power take-off assembly	WW74A
W2-880	Clutch reduction gear assembly	WW75A
W2-880	Reduction gear assembly	WW77A
W2-1230, 35, 50	Reduction gear assembly	WW27U20, 5, 8
W2-1230, 35, 50	Clutch take-off assembly	WW61P
W2-1230, 35, 50	Clutch reduction gear assembly	WW62H
W2-1230, 35, 50	Drive hub and housing	WW188A
W4-1770	Reduction gear assembly	WW27J
	Clutch take-off assembly	WW61E
	Clutch reduction gear assembly (Obsolete)	WW62
	Clutch reduction gear assembly	WW62A

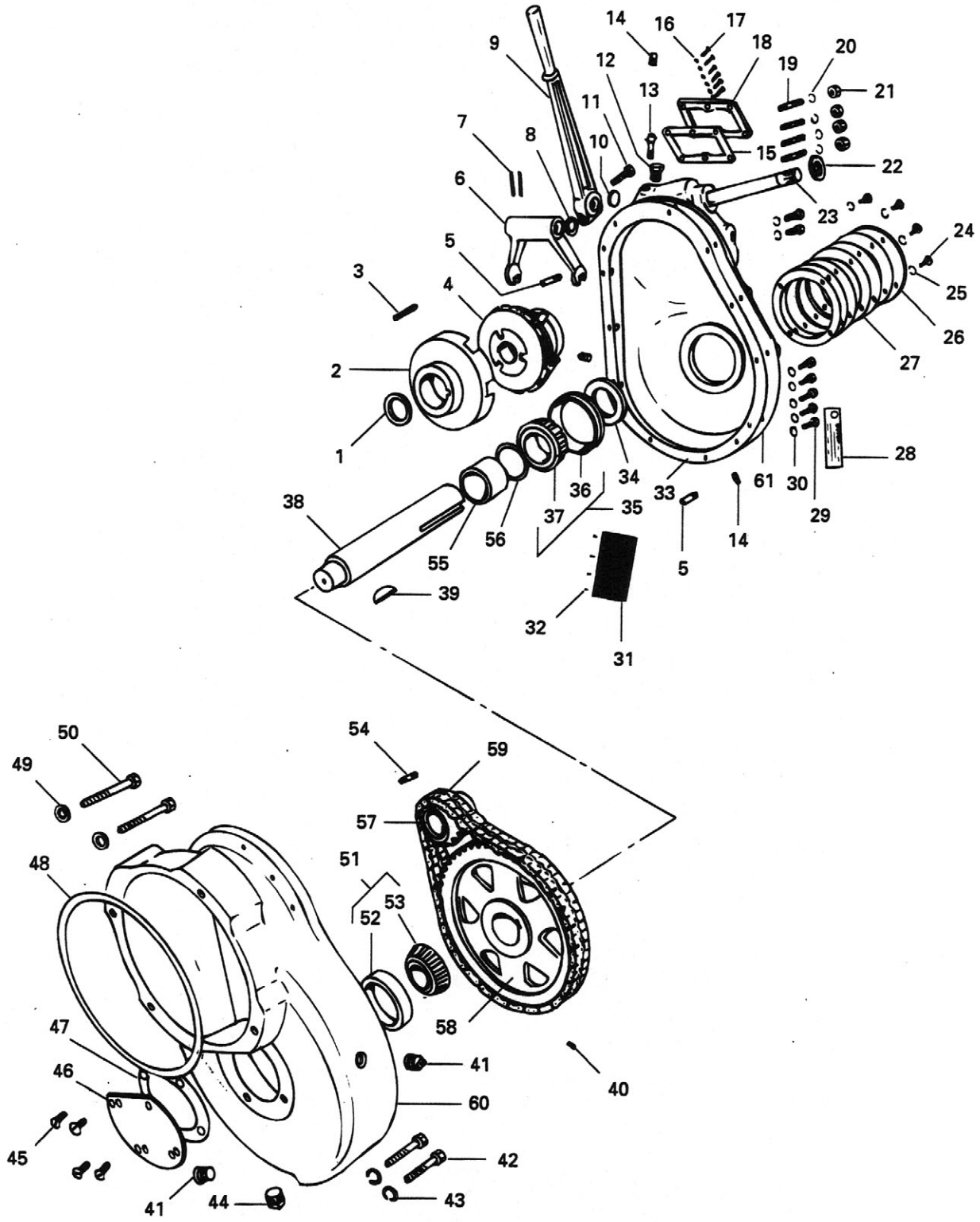
Reduction Clutches By Part Number

PART NO.	DESCRIPTION	MODEL
WW24D	Clutch reduction gear assembly	AFH, AGH, AHH, AGND
WW25-14	Clutch and power take-off assembly	ADH, AEH
WW25-22	Clutch and power take-off assembly	ADH, AEH
WW27C	Reduction gear assembly	AGND, AFH, AHH, AGND
WW27J	Reduction gear assembly	VH4D, VF4D, W4-1770
WW27U	Reduction gear assembly	W2-1230, W2-1235, W2-1250
WW35C	Gear reduction unit assembly	ACN, BKN
WW35F	Gear reduction unit assembly	S7D, S8D
WW45R	Gear reduction unit assembly	S7D, S8D
WW45T	Gear reduction unit assembly	S7D, S8D
WW45Y	Gear reduction unit assembly	S7D, S8D
WW45Z	Gear reduction assembly	S7D, S8D
WW37	Clutch and power take-off assembly	ACN, BKN, ABN, AKN
WW37B	Clutch and power take-off assembly	S7D, S8D
WW45B	Chain drive reduction unit assembly	ACN, BKN, ABN, AKN
WW45C	Chain drive reduction unit assembly	ACN, BKN, ABN, AKN
WW45E	Spur gear reduction unit assembly	AA, AB, ABS, AKS
WW45K	Gear reduction unit assembly	ACN, BKN, ABN, AKN
WW45L	Gear reduction unit assembly	ACN, BKN
WW58A	Clutch take-off assembly	VE4, VF4
WW61E	Clutch take-off assembly	VH4, VE4, VF4, W4-1770
WW61K	Clutch take-off assembly	AGND
WW61P	Clutch take-off assembly	W2-1230, W2-1235
WW62	Clutch reduction gear assembly	VE4, VF4, VH4D, W4-1770
WW62A	Clutch reduction gear assembly	VE4, VF4, VH4D, W4-1770
WW62H	Clutch reduction gear assembly	W2-123-, W2-1235, W2-1250
WW64	Reduction gear assembly	ADH, AEH
WW64D, D3	Reduction gear assembly	ADH, AEH
WW64B	Reduction gear assembly	AENL
WW64E	Reduction gear assembly	AENL
WW64E6	(see WW64V) Reduction gear assembly	AENL
WW64P	Reduction gear assembly	S10D, S12D
WW64P1	Reduction gear assembly	S10D, S12D
WW64P2	Reduction gear assembly	S10D, S12D
WW64P6	Reduction gear assembly	S10D, S12D
WW64R	Reduction gear assembly	AENL
WW64R1	Reduction gear assembly (position below R.H.)	AENL
WW64R2	Reduction gear assembly (position below L.H.)	AENL

Reduction Clutches By Part Number (Cont.)

MODEL	DESCRIPTION	PART NO.
WW64R3	Reduction gear assembly (position above L.H.)	AENL
WW64R4	Reduction gear assembly (position above R.H.)	AENL
WW64T	Reduction gear assembly	AENL
WW64T1	Reduction gear assembly (position below R.H.)	AENL
WW64T2	Reduction gear assembly (position below L.H.)	AENL
WW64T3	Reduction gear assembly (position above L.H.)	AENL
WW64T4	Reduction gear assembly (position above R.H.)	AENL
WW64U	Reduction gear assembly	AENL
WW64U1	Reduction gear assembly (position below R.H.)	AENL
WW64U2	Reduction gear assembly (position below L.H.)	AENL
WW64U3	Reduction gear assembly (position above L.H.)	AENL
WW64U4	Reduction gear assembly (position above R.H.)	AENL
WW64V	Reduction gear assembly	AENL
WW64V1	Reduction gear assembly (position below R.H.)	AENL
WW64V2	Reduction gear assembly (position below L.H.)	AENL
WW64V3	Reduction gear assembly (position above L.H.)	AENL
WW64V4	Reduction gear assembly (position above R.H.)	AENL
WW74A	Clutch and power take-off assembly TE, TF, THD, TJD, W2-880	
WW75A	Clutch reduction gear assembly TE, TF, THD, TJD, W2-880	
WW77A	Reduction gear assembly TE, TF, THD, TJD, W2-880	
WW79	Clutch reduction gear assembly ADH, ADH	
WW80	Drive hub and housing assembly	VG4D
WW83	Drive hub and housing assembly	VG4D
	(for clutch reduction units WC314, WC315, WC316)	
WW83	Drive hub and housing assembly	VG4D
	(for clutch reduction unit WC402)	
WW101	Drive hub and housing assembly	VG4D, VH4D, TJD
WW102	Clutch and power take-off assembly	AENL
WW165	Drive hub and housing	V465D
WW170	Clutch reduction gear assembly	AGND
WW186	Clutch take-off assembly	ACN, BKN, S8D
WW188A	Drive hub and housing assembly	W2-1230, W2-1235, W2-1250

WW24D Reduction Gear Assembly



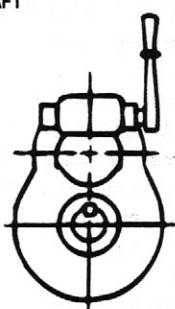
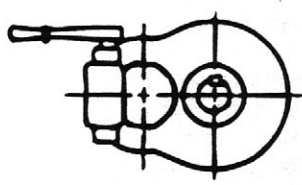
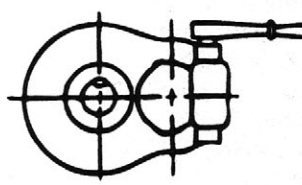

WW24D Reduction Gear Assembly (Replaced By WW170)

USE WITH MODELS AFH, AGH, AHH, AGND (see pg. 1)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH201	Pinion gear thrust washer	1	32	XA100	Screw, No. 4 x 1/4" long	
2	WC216A	Clutch drive hub	1			(replaces XA68)	4
3	PL44	Key, 1/4" square x 2-1/2" long		33	QD545	Cover to housing gasket	1
		(replaces PL91)	1	34	PH202	Bearing retainer plate oil	
4	WC220-2	Twin disc clutch, 4-1/2"				seal	1
		Model "V" 4937 (obsolete)	1	35	ME76	Outer bearing assembly	
5	PA279	Cover dowel pin	2			(includes 36 and 37)	1
6	VB64A	Shifter yoke	1	36	ME76-1	Bearing cup, Timken 3525	1
7	XH26	Pin, No. 4 x 1-3/8" long	2	37	ME76-2	Bearing cone, Timken 3578	1
8	HF392A	Spacer (replaces HF392)	4	38	WA55	Take-off shaft	1
9	VB55-1	Shifter lever	1	39	PL24	No. 29 Woodruff key	1
10	SA58	Plug, 1-3/8" expansion	1	40	XE44	Set screw,	
11	XD30	Screw,				5/16"-18 thread x 5/8" long	1
		3/8"-16 thread x 1-1/2" long	1	41	XK3	Plug, 3/8" square	4
12	XK88	Bushing, 3/8" to 1/8"	1	42	XD38	Screw,	
—	XK21	Reducer bushing, 1/4" to 1/8" ...	1			7/16"-14 thread x 2" long	2
13	LO44	Breather	1	43	PE6	Lock washer, 7/16"	2
14	XK2	Plug, 1/4" square	4	44	XK4	Plug, 1/2" square	1
15	QD592	Inspection hole cover gasket ...	1	45	XC17	Screw,	
16	PH30	Washer, 1/4" I.D. x				5/16"-18 thread x 3/4" long	4
		7/16" O.D. x 1/16" thick	6	46	BG151	Inner bearing retainer plate	1
17	XA36	Screw,		47	QD543A	Inner bearing retainer	
		1/4"-20 thread x 3/4" long	6			plate gasket	1
18	BH127B	Inspection hole cover		48	QD546	Bearing plate cork strip	1
		(replaces BH127)	1	49	PH2	Washer, 7/16" I.D. x	
19	PC133	Cover to housing studs				13/16" O.D. x 1/16" thick	2
		(obsolete)	4	50	XD39	Screw,	
20	PE5	Lock washer, 3/8"	6			7/16"-14 thread x 2-1/2" long	2
21	PD11	Nut, 3/8"-24 thread	4	51	ME77	Inner bearing assembly	
22	PH234A	Shifter lever shaft oil seal	1			(includes 52 and 53)	1
23	WA61	Shifter shaft	1	52	ME77-1	Bearing cup, Timken 02820	1
24	XD15	Screw,		53	ME77-2	Bearing cone, Timken 02877	1
		5/16"-18 thread x 3/4" long	4	54	PL95-1	Key, 3/16" square x 1" long	
25	PE4	Lock washer, 5/16"	4			(obsolete)	1
26	BG150	Outer bearing retainer plate ...	1	55	HF265	Take-off shaft spacer	1
27	QD544	Outer bearing retainer		56	PH206	Spacer collar	1
		plate gasket	6	—	BG105ES2	Main bearing plate assembly	
28	SD79	Oil instruction tag	1			(includes BG105E, PH364,	
29	XD29	Screw,				ME661)	
		3/8"-16 thread x 1-1/4" long	7			(replaces BG105A6S1)	1
30	PH26	Washer, 3/8" I.D. x		—	CA73-49S1	Crankshaft assembly	
		11/16" O.D. x 1/16" thick	5			(includes CA47F28, GA30,	
31	SD125A	Clutch adjusting instruction				ME66, PL55) (replaces	
		plate (replaces SD59)	1			CA47F28S1)	1

WW24D Reduction Gear Assembly (Replaced By WW170)

USE WITH MODELS AFH, AGH, AHH, AGND (see pg. 1)

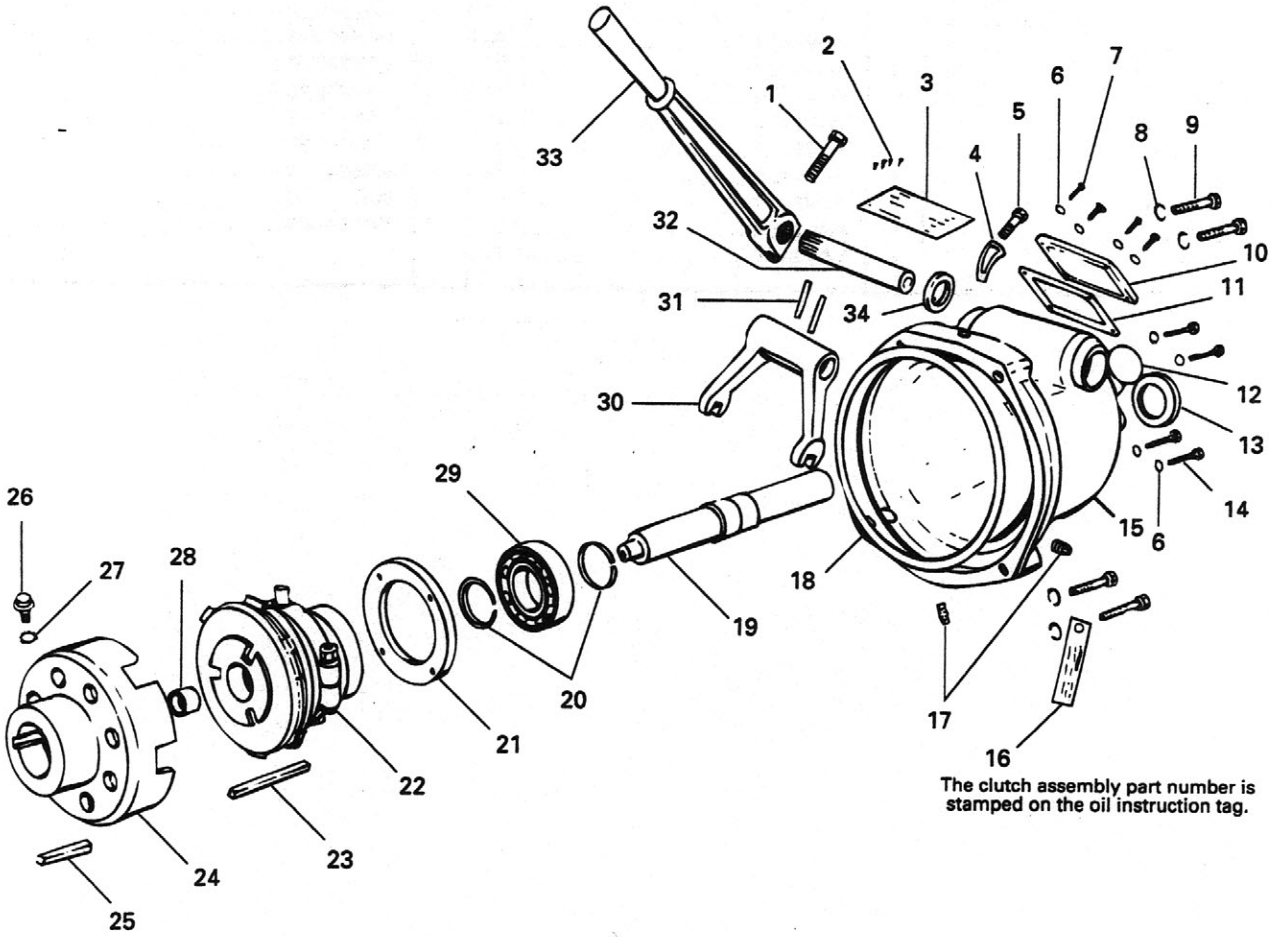
Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 57	Ref. No. 58	Ref. No. 59	Ref. No. 60	Ref. No. 61
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Cover Part No.
TAKE-OFF SHAFT BELOW 	WW24D	2.07 to 1	Ctr. engine-wise	GG66-2	GG67-1	.....	BG149G	BH113D
	WW24D1	3.00 to 1	Ctr. engine-wise	GG76-1	GG77-1	.....	BG149G	BH113D
	WW24D2	3.84 to 1	Ctr. engine-wise	GG68-1	GG69-1	.....	BG149G	BH113D
	WW24D3	2.00 to 1	Engine-wise	GG70	GG71	GJ8	BG149G	BH113D
	WW24D4	2.67 to 1	Engine-wise	GG74	GG71	GJ9	BG149G	BH113D
	WW24D5	3.79 to 1	Engine-wise	GG72	GG73	GJ10	BG149G (replaces BG149B)	BH113D (replaces BH113B2)
TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end. 	WW24D6	2.07 to 1	Ctr. engine-wise	GG66-2	GG67-1	.....	BG149G2	BH113D
	WW24D7	3.00 to 1	Ctr. engine-wise	GG76-1	GG77-1	.....	BG149G2	BH113D
	WW24D8	3.84 to 1	Ctr. engine-wise	GG68-1	GG69-1	.....	BG149G2	BH113D
	WW24D9	2.00 to 1	Engine-wise	GG70	GG71	GJ8	BG149G2	BH113D
	WW24D10	2.67 to 1	Engine-wise	GG74	GG71	GJ9	BG149G2	BH113D
	WW24D11	3.79 to 1	Engine-wise	GG72	GG73	GJ10	BG149G2 (replaces BG149B2)	BH113D (replaces BH113B2)
TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end. 	WW24D12	2.07 to 1	Ctr. engine-wise	GG66-2	GG67-1	.....	BG149G1	BH113D
	WW24D13	3.00 to 1	Ctr. engine-wise	GG76-1	GG77-1	.....	BG149G1	BH113D
	WW24D14	3.84 to 1	Ctr. engine-wise	GG68-1	GG69-1	.....	BG149G1	BH113D
	WW24D15	2.00 to 1	Engine-wise	GG70	GG71	GJ8	BG149G1	BH113D
	WW24D16	2.67 to 1	Engine-wise	GG74	GG71	GJ9	BG149G1	BH113D
	WW24D17	3.79 to 1	Engine-wise	GG72	GG73	GJ10	BG149G1 (replaces BG149B1)	BH113D (replaces BH113B2)
TAKE-OFF SHAFT ON TOP 	WW24D18	2.07 to 1	Ctr. engine-wise	GG66-2	GG67-1	.....	BG149G3	BH113D1
	WW24D19	3.00 to 1	Ctr. engine-wise	GG76-1	GG77-1	.....	BG149G3	BH113D1
	WW24D20	3.84 to 1	Ctr. engine-wise	GG68-1	GG69-1	.....	BG149G3	BH113D1
	WW24D21	2.00 to 1	Engine-wise	GG70	GG71	GJ8	BG149G3	BH113D1
	WW24D22	2.67 to 1	Engine-wise	GG74	GG71	GJ9	BG149G3	BH113D1
	WW24D23	3.79 to 1	Engine-wise	GG72	GG73	GJ10	BG149G3 (replaces BG149B3)	BH113D1 (replaces BH113B1)

WW24D Reduction Gear Assembly (Replaced By WW170)

USE WITH MODELS AFH, AGH, AHH, AGND

Part Number	Net Wt.		Part Number	Net Wt.		Part Number	Net Wt.	
	Lb	Oz		Lb	Oz		Lb	Oz
BG149G (replaces BG149B	24		GG76-1 (23 teeth)	2	8	WW24D10	75	8
BG149G1 (replaces BG149B1)	24		GG77-1 (69 teeth)	10	4	WW24D11	78	
BG149G2 (replaces BG149B2)	24		GJ8 (27" long)	1	13	WW24D12	79	
BG149G3 (replaces BG149B3)	24		GJ9 (26" long)	1	12	WW24D13	80	
BH113D1 (replaces BH113B1)	19		GJ10 (30" long)	2		WW24D14	80	
BH113D (replaces BH113B2) ...	19		WW24D	79		WW24D15	77	
GG66-2 (30 teeth)	3	2	WW24D1	80		WW24D16	75	8
GG67-1 (62 teeth)	8	11	WW24D2	80		WW24D17	78	
GG68-1 (19 teeth)	1	10	WW24D3	77		WW24D18	79	
GG69-1 (73 teeth)	10	15	WW24D4	75	8	WW24D19	80	
GG70 (20 teeth)	2		WW24D5	78		WW24D20	80	
GG71 (40 teeth)	5	4	WW24D6	79		WW24D21	77	
GG72 (14 teeth)	1	2	WW24D7	80		WW24D22	75	8
GG73 (53 teeth)	7	10	WW24D8	80		WW24D23	78	
GG74 (15 teeth)	1	4	WW24D9	77				

WW25-14 Clutch And Power Take-Off Assembly (Obsolete)

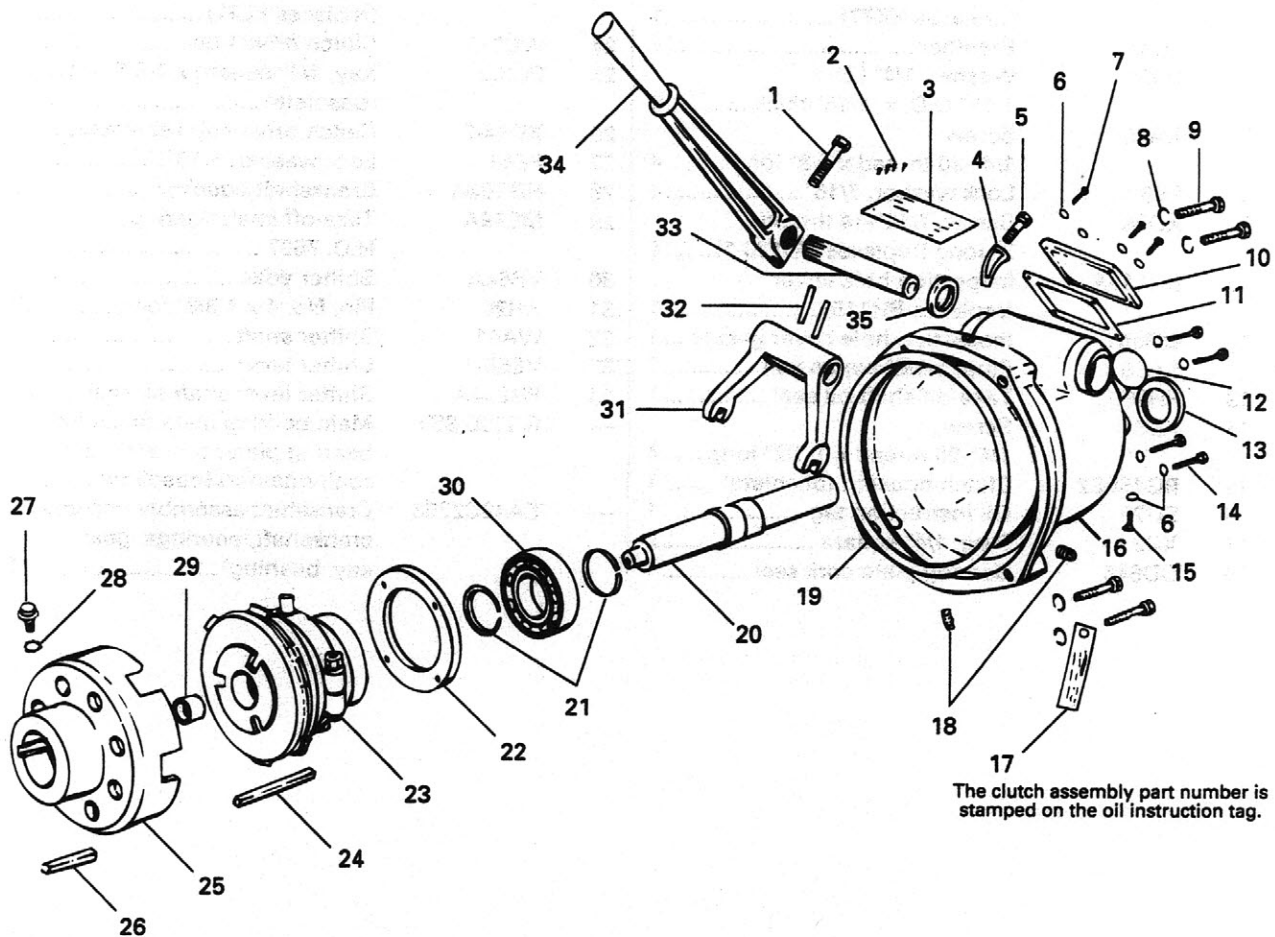


WW25-14 Clutch And Power Take-Off Assembly (Obsolete)

USE WITH MODELS ADH, AEH (see pg. 5)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD30	Screw, 3/8"-16 thread x1-1/2" long	1	19	WA48-4	Take-off shaft (obsolete)	1
2	XA100	Screw, No. 4 x 1/4" long (replaces XA68)	4	20	PK56	Bearing retainer lock spring (obsolete)	2
3	SD125A	Clutch adjusting instruction plate (replaces SD59)	1	21	BG156	Bearing retainer plate	1
4	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1	22	WC220-2	Twin disc clutch, 4-1/2" Model "V" 4937 (obsolete)	1
5	LO44	Breather	1	23	PL44	Key, 1/4" square x 2-1/2" long (replaces PL91)	1
6	PH30	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	8	24	WC219	Clutch drive hub	1
7	XA35	Screw, 1/4"-20 thread x 5/8" long	4	25	PL102	Key, 1/4" square x 1-5/8" long (obsolete)	1
8	PE6	Lock washer, 7/16"	4	26	XD14-2	Clutch drive hub set screw	1
9	XD38	Screw, 7/16"-14 thread x 2" long (replaces XD130-1)	4	27	PE46	Lock washer, 5/16"	1
10	BH115A	Inspection hole cover (replaces BH115)	1	28	HG152A	Crankshaft bushing	1
11	QD551	Inspection hole cover gasket ...	1	29	ME79A	Take-off shaft bearing, N.D. 7507	1
12	SA58	Plug, 1-3/8" expansion	1	30	VB64A	Shifter yoke	1
13	PH280	Take-off shaft oil seal	1	31	XH26	Pin, No. 4 x 1-3/8" long	2
14	XD9	Screw, 1/4"-20 thread x 1-1/2" long	4	32	WA61	Shifter shaft	1
15	BG155E2	Clutch housing (obsolete)	1	33	VB55-1	Shifter lever	1
16	SD79	Oil instruction tag	1	34	PH234A	Shifter lever shaft oil seal	1
17	XK2	Plug, 1/4" square	2	—	BG106-8S1	Main bearing plate (includes bearing plate, cork strip, oil seal, retainer) (obsolete)	1
18	QD546	Bearing plate cork seal	1	—	CA48C2253	Crankshaft assembly (includes crankshaft, bearings, gear, key, bushing)	1

**WW25-22 Clutch And Power Take-Off Assembly (Obsolete)
(Replaced By WW61K)**

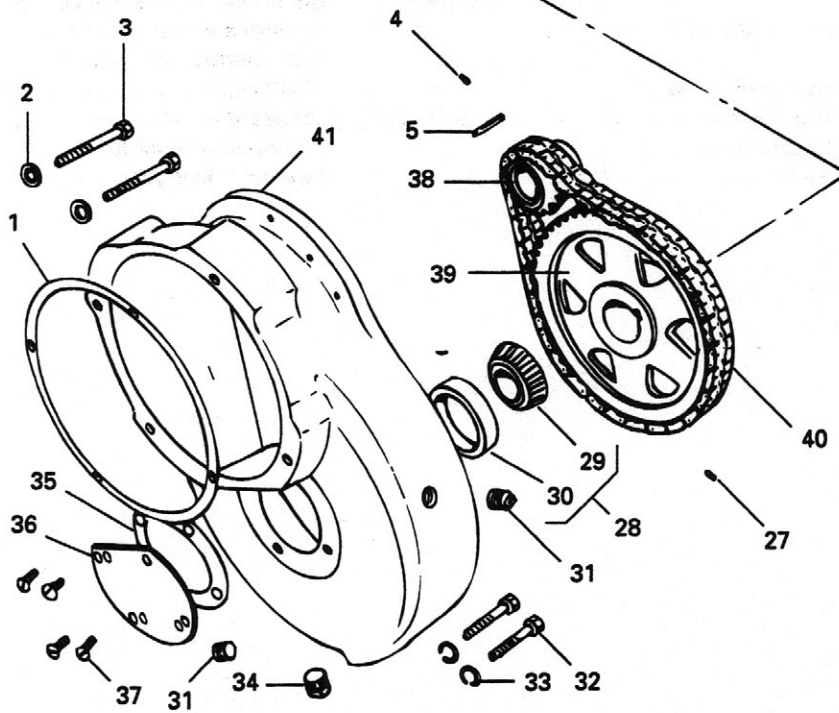
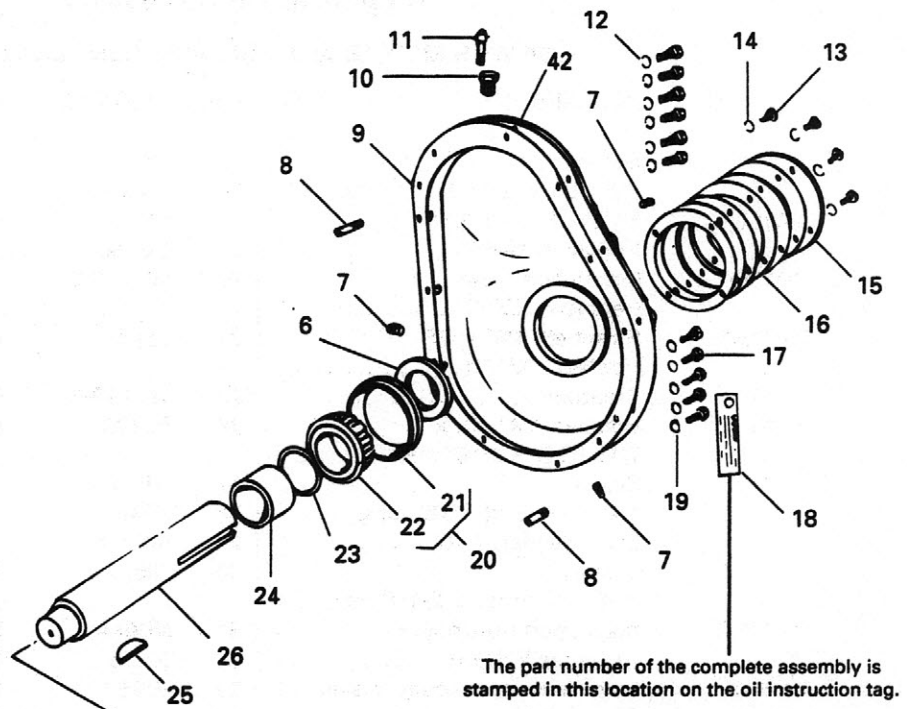


**WW25-22 Clutch And Power Take-Off Assembly (Obsolete)
(Replaced By WW61K)**

USE WITH MODELS AFH, AGH, AHH, AGND (see pg. 7)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	19	QD546	Bearing plate cork seal	1
2	XA100	Screw, No. 4 x 1/4" long (replaces XA68)	4	20	WA48D	Take-off shaft	1
3	SD125A	Instruction plate (replaces SD59)	1	21	PK56	Bearing retainer lock spring	2
4	XK77A1	Street ell, 1/8" x 45° (replaces XK77)	1	22	BG156	Bearing retainer plate	1
5	LO44	Breather	1	23	WC220-2	Twin disc clutch plate 4-1/2" Model "V" 4937 (obsolete)	1
6	PH30	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	9	24	PL44	Key, 1/4" square x 2-7/8" long (replaces PL91)	1
7	XA35	Screw, 1/4"-20 thread x 5/8" long	4	25	WC219-1	Clutch drive hub	1
8	PE6	Lock washer, 7/16"	4	26	PL103	Key, 5/16" square x 1-5/8" long	1
9	XD130	Screw, 7/16"-14 thread x 2-1/4" long	4	27	XD14-2	Clutch drive hub set screw	1
10	BH115A	Inspection hole cover (replaces BH115)	1	28	PE46	Lock washer, 5/16"	1
11	QD551	Inspection hole cover gasket ...	1	29	ME115	Crankshaft needle bearing	1
12	SA58	Plug, 1-3/8" expansion	1	30	ME79A	Take-off shaft bearing, N.D. 7507	1
13	PH280	Take-off shaft oil seal	1	31	VB64A	Shifter yoke	1
14	XD9	Screw, 1/4"-20 thread x 1-1/2" long	4	32	XH26	Pin, no. 4 x 1-3/8" long	2
15	XA32	Screw, 1/4"-20 thread x 5/16" long	1	33	WA61	Shifter shaft	1
16	BG155D4	Clutch housing (obsolete)	1	34	VB55-1	Shifter lever	1
17	SD79	Oil instruction tag	1	35	PH234A	Oil seal	1
18	XK2	Plug, 1/4" square	2	—	BG105ES2	Main bearing plate assembly (includes bearing plate, oil seal, bearing cup) (replaces BG105AGS1)	1
				—	CA47F78S3	Crankshaft assembly (includes crankshaft, bearings, key gear)	1

WW27C Reduction Gear Assembly



WW27C Reduction Gear Assembly

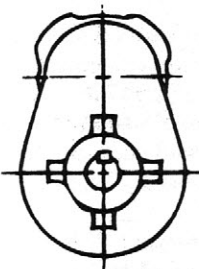
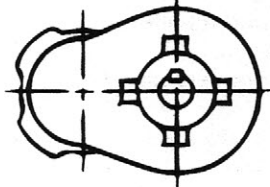
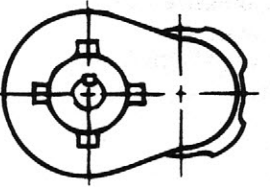

USE WITH MODELS AFH, AGH, AHH, AGND (see pg. 9)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD546	Bearing plate gasket	1	23	PH206	Spacer collar	1
2	PH2	Washer, 7/16" I.D. x 1/16" thick	2	24	HF265	Take-off shaft spacer	1
3	XD39	Screw, 7/16"-14 thread x 2-1/2" long	2	25	PL24	No. 29 Woodruff key	1
4	XE17	Screw, 1/4"-20 thread x 3/8" long	1	26	WA55	Take-off shaft	1
5	PL88	Key, 1/4" square x 2" long	1	27	XE44	Screw, 5/16"-18 thread x 5/8" long	1
6	PH202	Oil seal	1	28	ME77	Inner bearing assembly (includes 29 and 30)	1
7	XK2	Plug, 1/4" pipe	3	29	* — — —	Cone (not sold separately)	1
8	PA279	Dowel pin	2	30	* — — —	Cup (not sold separately)	1
9	QD545	Cover to housing gasket	1	31	XK3	Plug, 3/8" pipe	2
10	XK88	Reducer bushing, 3/8" to 1/8" pipe	1	32	XD38	Screw, 7/16"-14 thread x 2" long	2
11	LD44	Breather	1	33	PE6	Lock washer, 7/16"	2
12	PE5	Lock washer, 3/8"	6	34	XK4	Plug, 1/2" pipe	1
13	XD15	Screw, 5/16"-18 thread x 3/4" long	4	35	QD543A	Inner bearing retainer plate gasket	1
14	PE4	Lock washer, 5/16"	4	36	BG151	Inner bearing retainer plate	1
15	BG150	Outer bearing retainer plate	1	37	XC17	Screw, 5-16"-18 thread x 3/4" long	4
16	QD544	Outer bearing retainer plate gasket	6	—	BG105ES2	Main bearing plate assembly (includes bearing plate, oil seal, bearing cup) (replaces BG105AGS1)	1
17	XD27	Screw, 3/8"-16 thread x 1" long	11	—	CA73-3S1	Crankshaft assembly (includes crankshaft, gear, bearings, key) (replaces CA47F32S1) (obsolete)	1
18	SD79	Oil instruction tag	1				
19	PH22	Washer, 3/8" I.D. x 1/16" thick	5				
20	ME76	Outer bearing assembly (includes 21 and 22)	1				
21	* — — —	Cup (not sold separately)	1				
22	* — — —	Cone (not sold separately)	1				

* Not serviced separately.

WW27C Reduction Gear Assembly

USE WITH MODELS AFH, AGH, AHH, AGND (see pg. 9)

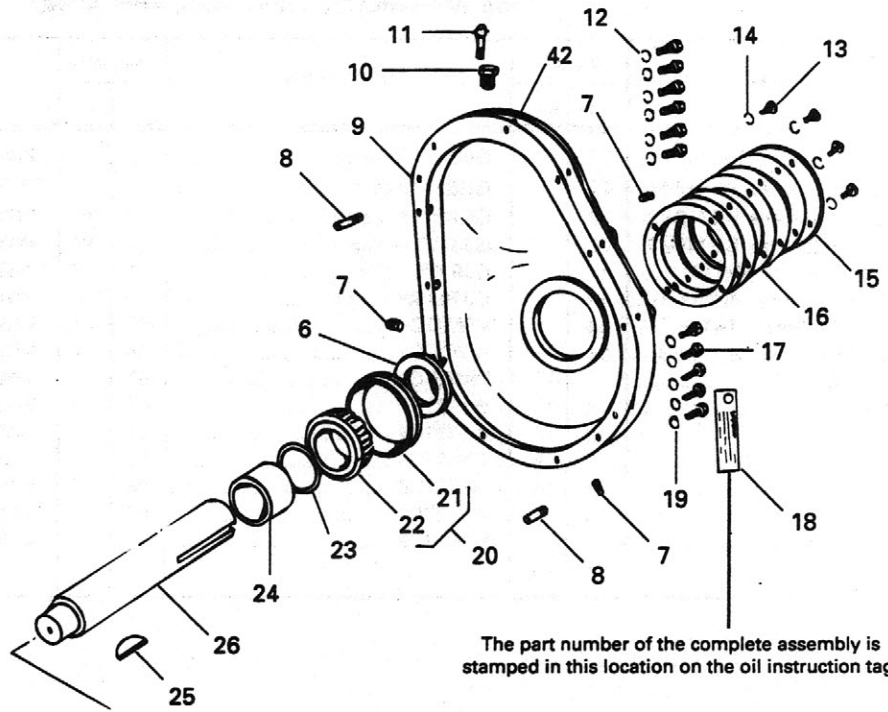
Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 38	Ref. No. 39	Ref. No. 40	Ref. No. 41	Ref. No. 42
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Cover Part No.
TAKE-OFF SHAFT BELOW 	WW27C	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG149G	BH119C
	WW27C1	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG149G	BH119C
	WW27C2	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG149G	BH119C
	WW27C3	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG149G	BH119C
	WW27C4	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG149G	BH119C
	WW27C5	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG149G (replaces BG149B)	BH119C (replaces BH119)
 TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end.	WW27C6	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG149G2	BH119C1
	WW27C7	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG149G2	BH119C1
	WW27C8	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG149G2	BH119C1
	WW27C9	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG149G2	BH119C1
	WW27C10	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG149G2	BH119C1
	WW27C11	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG149G2 (replaces BG149B2)	BH119C1 (replaces BH119-1)
 TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end.	WW27C12	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG149G1	BH119C2
	WW27C13	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG149G1	BH119C2
	WW27C14	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG149G1	BH119C2
	WW27C15	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG149G1	BH119C2
	WW27C16	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG149G1	BH119C2
	WW27C17	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG149G1 (replaces BG149B1)	BH119C2 (replaces BH119-2)
 TAKE-OFF SHAFT ON TOP	WW27C18	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG149G3	BH119C3
	WW27C19	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG149G3	BH119C3
	WW27C20	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG149G3	BH119C3
	WW27C21	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG149G3	BH119C3
	WW27C22	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG149G3	BH119C3
	WW27C23	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG149G3 (replaces BG149B3)	BH119C3 (replaces BG119-3)

WW27C Reduction Gear Assembly

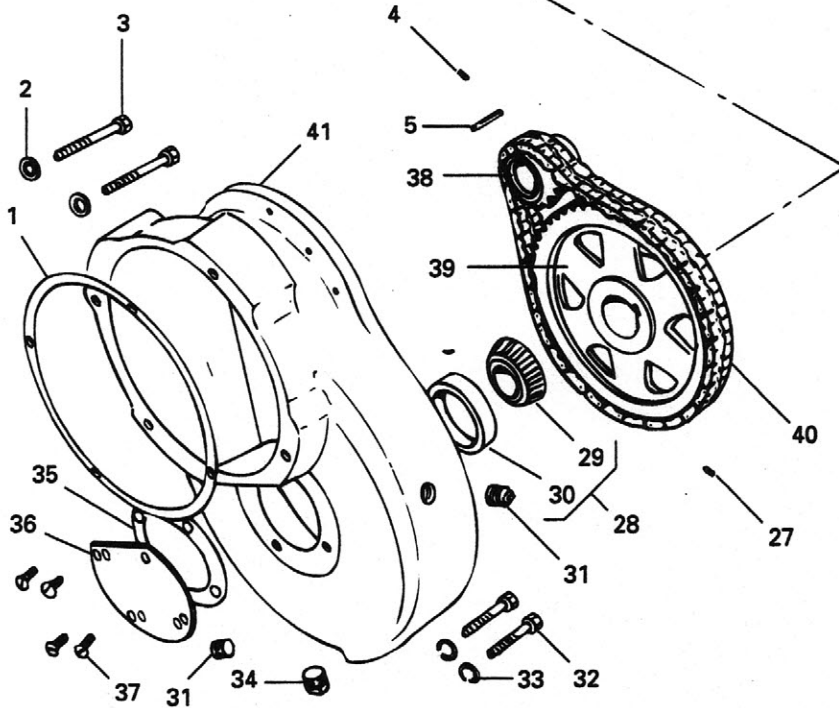
USE WITH MODELS AFH, AGH, AHH, AGND

Part Number	Net Wt.		Part Number	Net Wt.		Part Number	Net Wt.	
	Lb	Oz		Lb	Oz		Lb	Oz
BG149G (replaces BG149B)	22		GG81 (20 teeth)	2		WW27C9		62
BG149G1 (replaces BG149B1) ..	22		GG82 (15 teeth)	1	1	WW27C10		61
BG149G2 (replaces BG149B2) ..	22		GG83 (14 teeth)		15	WW27C11		63
BG149G3 (replaces BG149B3) ..	22		GJ8 (27" long)	1	13	WW27C12		66
BH119C (replaces BH119)	14		GJ9 (26" long)	1	12	WW27C13		68
BH119C1 (replaces BH119-1) ..	14		GJ10 (30" long)	2		WW27C14		67
BH119C2 (replaces BH119-2) ..	14		WW27C	66		WW27C15		62
BH119C3 (replaces BH119-3) ..	14		WW27C1	68		WW27C16		61
GG66-3 (30 teeth)	2	12	WW27C2	67		WW27C17		63
GG67-1 (62 teeth)	8	11	WW27C3	62		WW27C18		66
GG69-1 (73 teeth)	10	15	WW27C4	61		WW27C19		68
GG71 (40 teeth)	5	4	WW27C5	63		WW27C20		67
GG73 (53 teeth)	7	10	WW27C6	66		WW27C21		62
GG77-1 (69 teeth)	10	4	WW27C7	68		WW27C22		61
GG79-1 (23 teeth)	2		WW27C8	67		WW27C23		63
GG80-1 (19 teeth)	1	4						

WW27J Reduction Gear Assembly



The part number of the complete assembly is stamped in this location on the oil instruction tag.



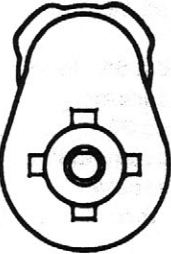
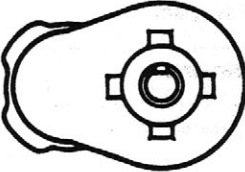
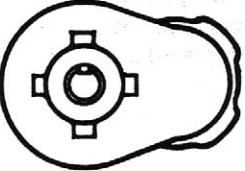
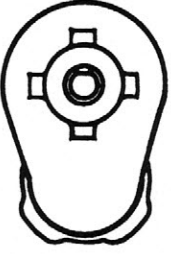
WW27J Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VF4D (see pg. 13)

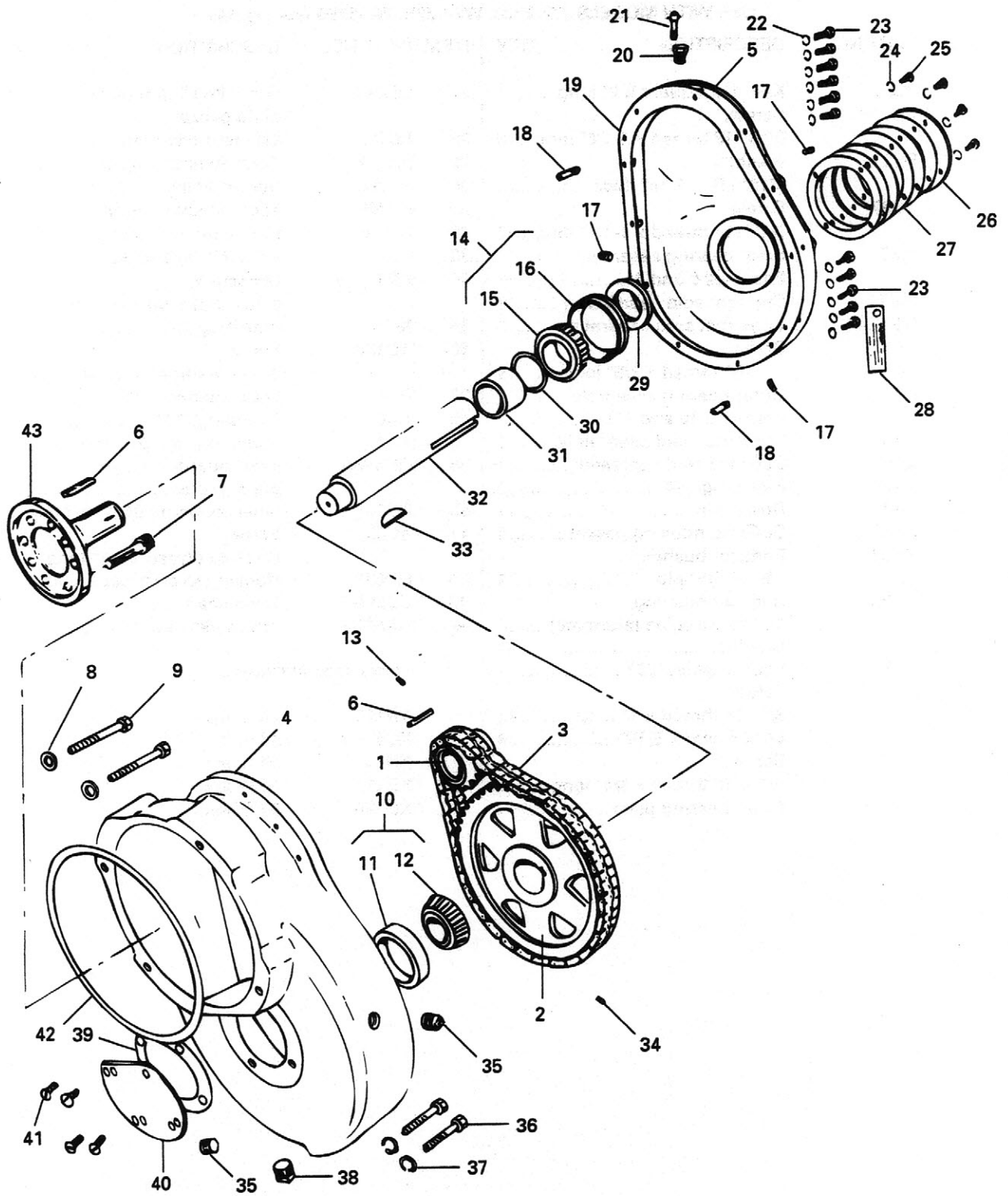
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD618	Housing to crankcase gasket ...	1	22	ME76-2	Cone (not sold separately)	1
2	PH2	Washer, 7/16" I.D. x 1/16" thick	2	23	PH206	Collar	1
3	XD37	Screw, 7/16"-14 thread x 1-3/4" long	2	24	HF265	Take-off shaft spacer	1
4	XE17	Screw, 1/4"-20 thread x 3/8" long	1	25	WA55	Take-off shaft	1
5	PL88	Key, 1/4" square x 2" long	1	26	PL24	No. 29 Woodruff key	1
6	PH202	Take-off shaft oil seal	1	27	XE44	Screw, 5/16"-18 thread x 5/8" long	1
7	XK2	Plug, 1/4" pipe thread	3	28	ME77	Inner bearing assembly (includes 29 and 30)	1
8	PA279	Cover to housing dowel pin	2	29	ME77-2	Cone (not sold separately)	1
9	QD857	Cover to housing gasket	1	30	ME77-1	Cup (not sold separately)	1
10	XK88	Reducer bushing, 3/8" to 1/8" pipe	1	31	XK3	Plug, 3/8" pipe thread	2
11	LO44	Breather assembly	1	32	XD130	Screw, 7/16"-14 thread x 2-1/4" long	2
12	PE5	Lock washer, 3/8"	6	33	PE6	Lock washer, 7/16"	2
13	XD15	Screw, 5/16"-18 thread x 3/4" long	4	34	XK6	Plug, 1/2" pipe thread	1
14	PE4	Lock washer, 5/16"	4	—	XK4	Plug, 1/2" pipe thread (optional)	1
15	BG150	Outer bearing retainer plate	1	35	QD543A	Inner bearing retainer plate gasket	1
16	QD544	Outer bearing retainer plate gasket	6-12	36	BG151	Inner bearing retainer plate	1
17	XD27A	Screw, 3/8"-16 thread x 1" long	11	37	XC68	Screw, 5/16"-18 thread x 3/4" long	4
18	SD79	Oil instruction tag	1	—	BG210C1S1	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
19	PH22	Washer, 3/8" I.D. x 1/16" thick	5	—	CA89BS1	Crankshaft assembly (includes crankshaft, spacer, bearings, key, gear, bearing race)	1
20	ME76	Outer bearing assembly (includes 21 and 22)	1				
21	ME76-1	Cup (not sold separately)	1				

WW27J Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VF4D (see pg. 13)

Determine position of take-off shaft when viewing from flywheel end of engine. (Views showing take-off end are shown).	Assembly Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No.38	Ref. No.39	Ref. No.40	Ref. No. 41	Ref. No.42
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Housing Cover Part No.
 <p>TAKE-OFF SHAFT BELOW - 6 o'clock position</p>	WW27 J	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 4	BH 119 C
	WW27 J 1	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 4	BH 119 C
	WW27 J 2	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 4	BH 119 C
	WW27 J 3	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 4	BH 119 C
	WW27 J 4	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 4	BH 119 C
	WW27 J 5	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 4	BH 119 C
 <p>TAKE-OFF SHAFT ON LEFT SIDE as Viewed from Flywheel End</p>	WW27 J 6	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 5	BH 119 C 1
	WW27 J 7	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 5	BH 119 C 1
	WW27 J 8	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 5	BH 119 C 1
	WW27 J 9	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 5	BH 119 C 1
	WW27 J 10	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 5	BH 119 C 1
	WW27 J 11	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 5	BH 119 C 1
 <p>TAKE-OFF SHAFT ON RIGHT SIDE as Viewed from Flywheel End</p>	WW27 J 12	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 6	BH 119 C 2
	WW27 J 13	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 6	BH 119 C 2
	WW27 J 14	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 6	BH 119 C 2
	WW27 J 15	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 6	BH 119 C 2
	WW27 J 16	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 6	BH 119 C 2
	WW27 J 17	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 6	BH 119 C 2
 <p>TAKE-OFF SHAFT ON TOP - 12 o'clock position</p>	WW27 J 18	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 7	BH 119 C 5
	WW27 J 19	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 7	BH 119 C 5
	WW27 J 20	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 7	BH 119 C 5
	WW27 J 21	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 7	BH 119 C 5
	WW27 J 22	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 7	BH 119 C 5
	WW27 J 23	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 7	BH 119 C 5

WW27U Reduction Gear Assembly



WW27U Reduction Gear Assembly

USE WITH MODELS W2-1230, W2-1235, W2-1250 (see pg. 16)


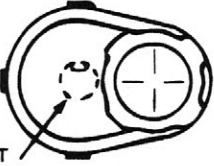

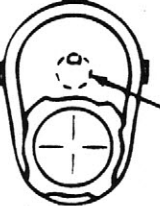
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
6	PL88	Key, 1/4" square x 2" long	1	27	QD544	Outer bearing retainer	
7	XB116	Screw, 5/16"-18 thread x 1-1/4" long	8	28	SD79	Oil instruction tag	1
8	PH2	Washer, 7/16" I.D. x 1/16" thick	2	29	PH202	Take-off shaft oil seal	1
9	XD37	Screw, 7/16"-14 thread x 1-3/4" long	2	30	PH206	Spacer collar	1
10	ME77	Inner bearing assembly (includes 6 and 7)	1	31	HF265	Take-off shaft spacer	1
11	ME77-1	Cup (not sold separately)	1	32	WA55	Reduction unit take-off shaft	1
12	ME77-2	Cone (not sold separately)	1	33	PL24	No. 29 Woodruff key	1
13	XE17	Screw, 1/4"-20 thread x 3/5" long	1	34	XE44	Set screw, 5/16"-18 thread x 5/8" long	1
14	ME76	Outer bearing assembly (includes 10 and 11)	1	35	XK3	Pipe plug, 3/8"	3
15	ME76-2	Cone (not sold separately)	1	36	XD130	Screw, 7/16"-14 thread x 2-1/4" long	2
16	ME76-1	Cup (not sold separately)	1	37	PE6	Lock washer, 7/16"	2
17	XK2	Pipe plug, 1/4"	3	38	XK6	Pipe plug, 1/2"	1
18	PA279	Dowel pin	2	—	XK4	Pipe plug, 1/2" (alternate)	1
19	QD857	Cover to housing gasket	1	39	QD543A	Inner bearing retainer	
20	XK88	Reducer bushing, 3/8" to 1/8" pipe	1	40	BG151	plate gasket	1
—	XK35	Reducer bushing, 1/2" to 1/8" pipe (alternate)	1	41	XC68	Inner retaining bearing plate	1
21	LO44	Breather	1	42	QD618	Screw, 5/16"-18 thread x 3/4" long	4
22	PE5	Lock washer, 3/8"	11	43	UC205-7	Housing to crankcase gasket	1
23	XD27A	Screw, 3/8"-16 thread x 1" long	11	—	BAA104	Drive shaft	1
24	PE4	Lock washer, 5/16"	4			Crankcase assembly	1
25	XD15	Screw, 5/16"-18 thread x 3/4" long	4				
26	BG150	Outer bearing plate	1				

Torque specifications:

XB116	24 ft. lbs.
XC68	18 ft. lbs.
XD15	18 ft. lbs.
XD27A	31 ft. lbs.
XD130	47 ft. lbs.

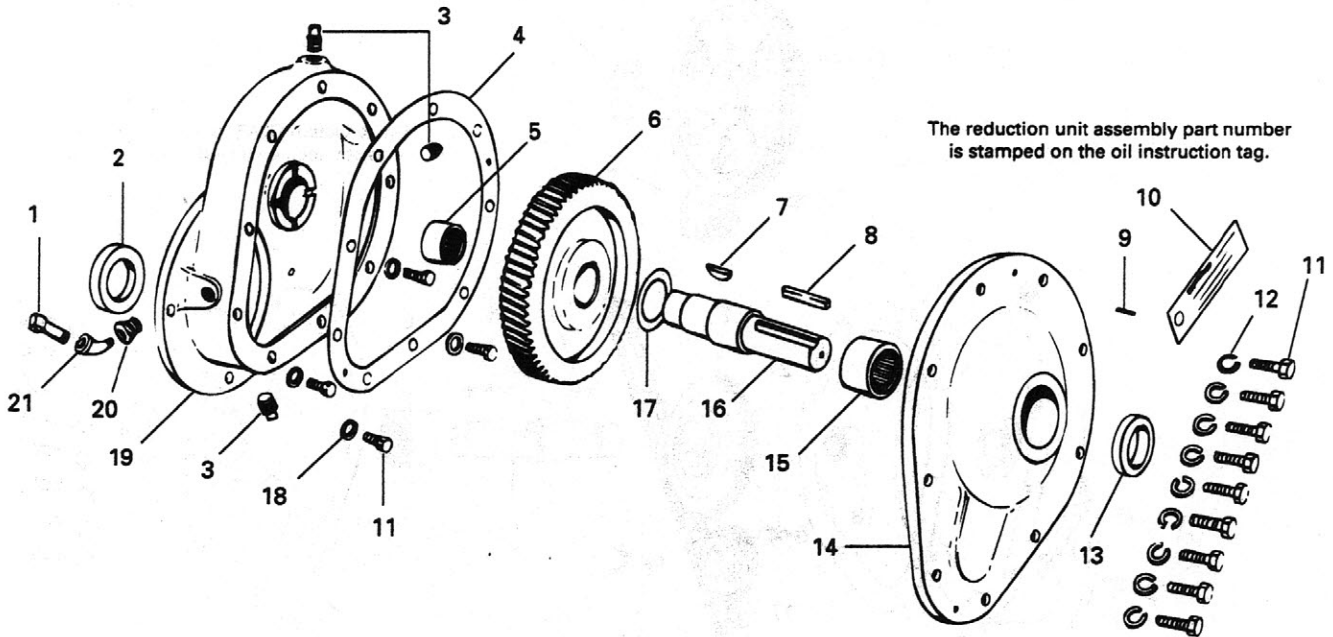
WW27U Reduction Gear Assembly

USE WITH MODELS W2-1230, W2-1235, W2-1250 (see pg. 16)

Position of drive shaft viewing from flywheel end of engine.	Assembly Part Number	Reduction Ratio	Rotation of Drive Shaft	Ref. No. 1	Ref. No. 2	Ref. No. 3	Ref. No. 4	Ref. No. 5
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Cover Part No.
 <p>DRIVE SHAFT BELOW</p>	WW27U5 (63 lbs.)	3.79 to 1	Engine-wise	GG83 (1 lbs.)	GG73 (8 lbs.)	GJ10 (2 lbs.)	BG149G4 (22 lbs.)	BH119C (14 lbs.)
 <p>DRIVE SHAFT ON LEFT SIDE as viewed from the flywheel end.</p>	WW27U8 (65 lbs.)	3.84 to 1	Ctr. engine-wise	GG80-1 (2 lbs.)	GG69-1 (11 lbs.)	-----	BG149G5 (22 lbs.)	BH119C1 (14 lbs.)
 <p>DRIVE SHAFT ON RIGHT SIDE as viewed from the flywheel end.</p>								
 <p>DRIVE SHAFT AT TOP</p>	WW27U20 (65 lbs.)	3.84 to 1	Ctr. engine-wise	GG80-1 (2 lbs.)	GG69-1 (11 lbs.)	-----	BG149G7 (22 lbs.)	BH119C5 (14 lbs.)

WW35C, 3-1/4 To 1 Reduction Gear Unit Assembly

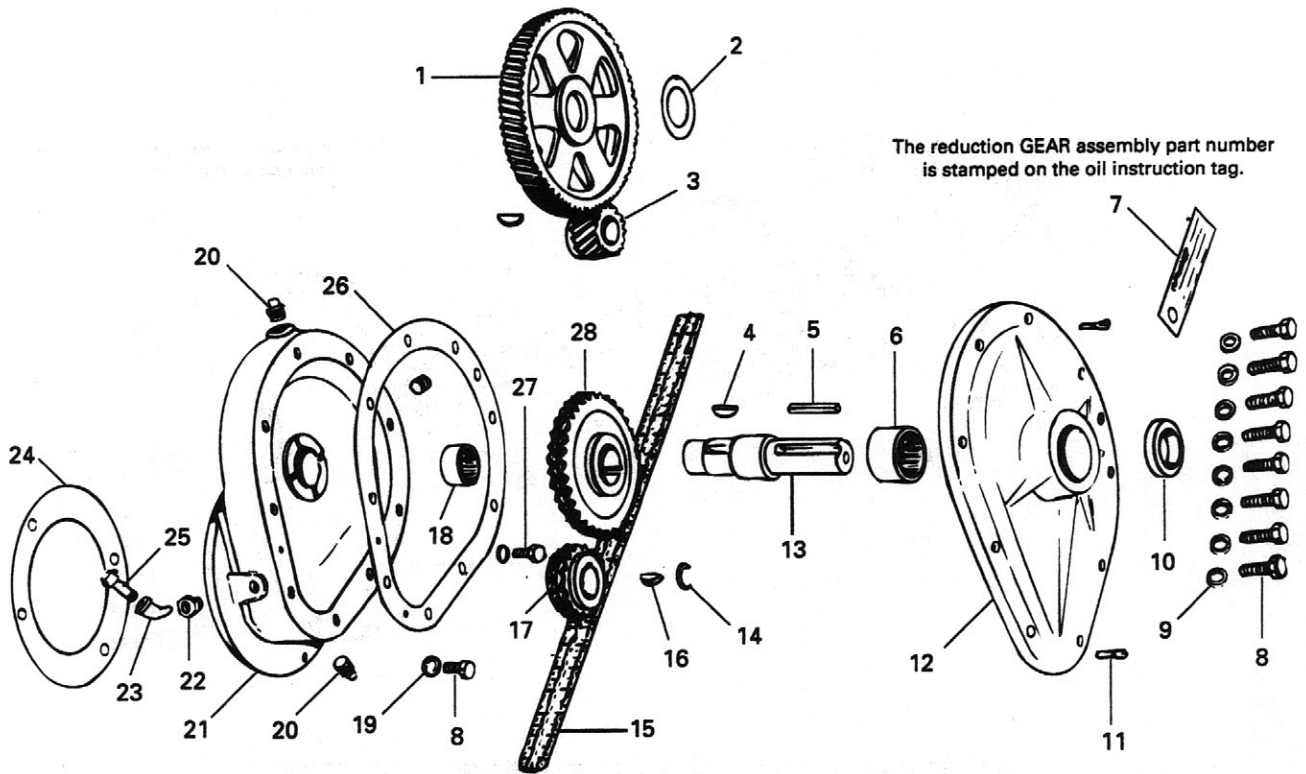
USE WITH MODELS ACN, BKN



The reduction unit assembly part number is stamped on the oil instruction tag.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO44	Breather	1	15	ME91	Outer bearing	1
2	PH280	Crankshaft oil seal	1	16	WA68	Take-off shaft	1
3	XK2	Plug, 1/4"	3	17	PH333A	Driven gear thrust washer	1
4	QD582	Cover to housing gasket	1	18	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
5	ME90	Inner bearing	1	19	BG177A1	Main housing and engine bearing plate	1
6	GG87-1	Driven spiral gear, 42 teeth	1	20	XK21	Reducer bushing	1
7	PL16	No. 11 Woodruff key	1	21	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1
8	PL102	Key, 1/4" square x 1-5/8" long	1	—	CA51-65S1	Crankshaft assembly (includes spiral gear, bearings, gear, key)	1
9	PA289	Pin, no. 2 x 5/8" long	2				
10	SD79	Oil instruction tag	1				
11	XD16	Screw, 5/16"-18 thread x 7/8" long	11				
12	PE4	Lock washer, 5/16"	7				
13	PH264A	Take-off shaft oil seal	1				
14	BH125S1	Housing cover assembly (includes bearing and oil seal)	1				

WW35F, WW45R, WW45T, WW45Y, WW45Z Reduction Gear Assemblies



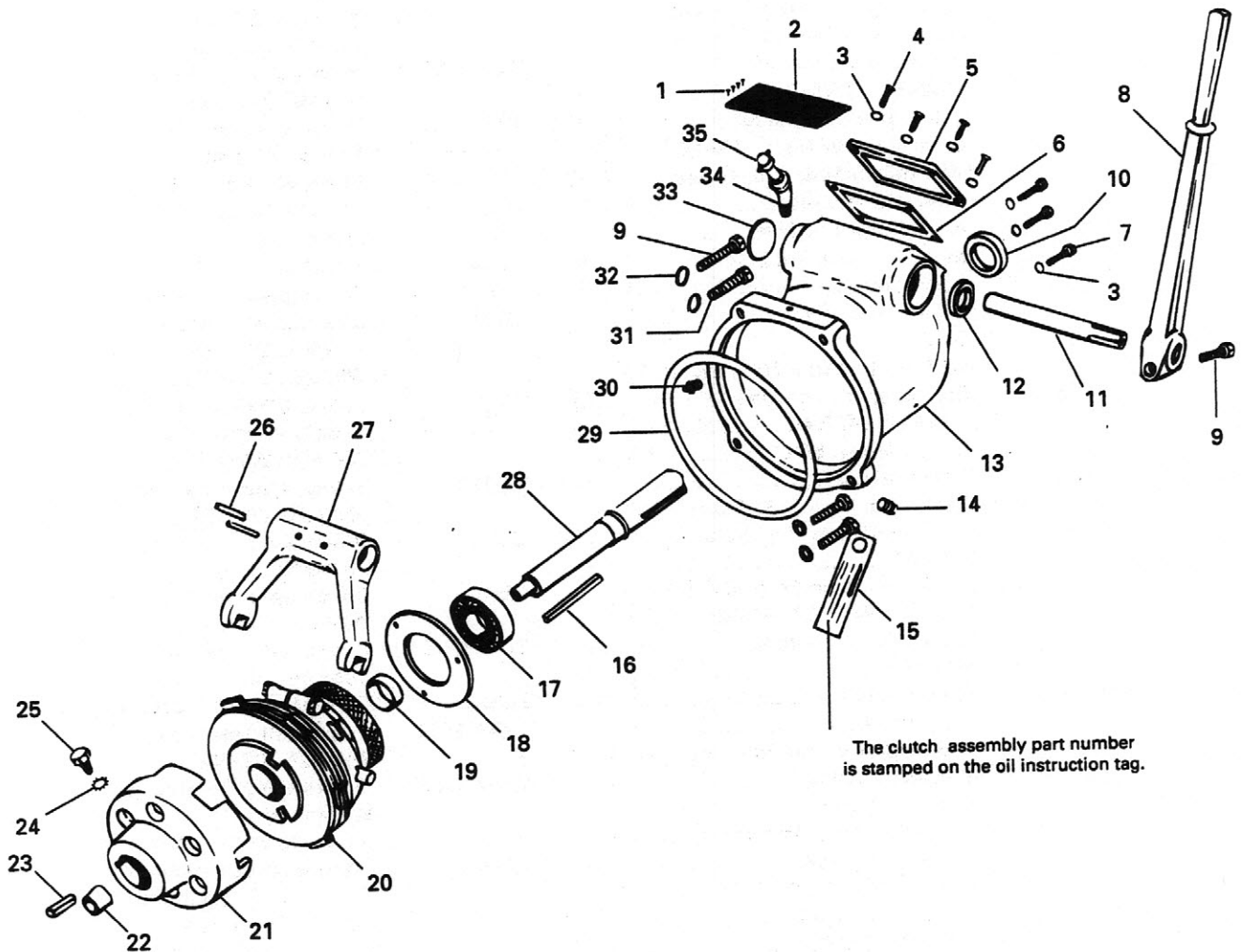
Assembly Part Number	Reduction Ratio	Rotation at Take-off Shaft	Net Weight	
			Lb	Oz
WW35F	3.25 to 1	Counter engine-wise	10	
WW45Y	5.5 to 1	Counter engine-wise	15	
WW45P	5.5 to 1	Counter engine-wise	15	
WW45Z	6 to 1	Counter engine-wise	15	
WW45Q	6 to 1	Counter engine-wise	15	
WW45R	2.92 to 1	Engine-wise (chain drive)	16	
WW45T	2 to 1	Engine-wise (chain drive)	16	

WW35F, WW45R, WW45T, WW45Y, WW45Z Reduction Gear Assemblies

USE WITH MODELS S7D, S8D (see pg. 20)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	GG87-1	Driven gear, WW35F	1	—	BG195A4S1	Housing, 3.250 centers, WW45Y, WW45P, WW45Z, WW45Q	1
—	GG90A2	Driven gear, 71 teeth, WW45Y (replaces GG90-8, WW45P)	1	—	BG195A6S1	Housing, 3.304 centers, WW45R	1
—	GG90A1	Driven gear, 72 teeth, WW45Z (replaces GG90-7, WW45Q)	1	—	BG195A5S1	Housing, 3.226 centers, WW45T (obsolete)	1
2	PH333A	Driven gear shim, WW45Y, WW45P, WW45Z, WW45Q	2	22	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
3	— — —	Drive gear integral with crankshaft, WW35F, WW45Y, WW45Z, (WW45P, obsolete), (WW45Q, obsolete)	1	23	XK77A	Street ell, 1/8" x 45°, WW35F ...	1
4	PL16	No. 11 Woodruff key	1	24	QD804	Housing to gear cover gasket	1
5	PL88	Key, 1/4" square x 2" long	1	25	LO44	Breather	1
6	ME91	Cover needle bearing	1	26	QD582	Cover gasket, WW35F	1
7	SD79	Oil instruction tag	1	—	QD596	Cover gasket, WW45R, WW45T, WW45Y, WW45P, WW45Z, WW45Q	1
8	XD16	Screw, 5/16"-18 thread x 7/8" long	13	27	XD17	Screw, 5/16"-18 thread x 1" long, WW45P, WW45Q, WW45R, WW45T	2
—	XD16B	Screw, special hardness, WW45Y, WW45Z	2	—	XD17B	Screw, special hardness, WW45Y, WW45Z	2
9	PE4	Lock washer, 5/16"	7-9	28	GG130	Driven sprocket, 38 teeth, WW45R	1
10	PH264A	Cover oil seal	1	—	GG105	Driven sprocket, 32 teeth, WW45T	1
11	PA289	Taper pin, no. 2 x 5/8" long	2	—	BD111F1S1	Gear cover assembly (replaces BD111-1S1)	1
12	BH125S1	Cover with bearing and seal, WW35F	1	—	PH529A	Oil seal, WW45Y, WW45Z	1
—	BH131AS1	Cover, 3.250 centers, WW45Y, WW45P, WW45Z, WW45Q	1	—	CA79-14S1	Crankshaft assembly, S7D, WW45R, WW45T	1
—	BH131A2S1	Cover, 3.304 centers, WW45R	1	—	CA82-175S1	Crankshaft assembly, S8D, WW45R, WW45T (replaces CA82-14S1)	1
—	BH131A1S1	Cover, WW45T (obsolete)	1	—	CA79-5	Crankshaft assembly, 12 tooth, S7D, WW45Z, (WW45Q, obsolete) (replaces CA79-64S1)	1
13	WA68	Take-off shaft	1	—	CA82-64S1	Crankshaft assembly, 12 tooth, S8D, WW45Z, (WW45Q, obsolete)	1
14	PK76	Drive sprocket retainer ring, WW45R, WW45T	1	—	CA79-65S1	Crankshaft assembly, 13 tooth, S7D, WW35F, WW45Y (WW45P, obsolete)	1
15	GJ18	Chain, 3/8" pitch, 45 pitches long, WW45R	1	—	CA82-65S1	Crankshaft assembly, 13 tooth, S8D, WW35F, WW45Y (WW45P, obsolete)	1
—	GJ13	Chain, 3/8" pitch, 42 pitches long, WW45T	1				
16	PL15	No. 9 Woodruff key, WW45R, WW45T	1				
17	GG129	Drive sprocket, 13 teeth, WW45R	1				
—	GG104	Drive sprocket, 16 teeth, WW45T	1				
18	ME90	Housing needle bearing	1				
19	PH14D	Washer, 5/16"	4				
20	XK2	Plug, 1/4"	3				
21	BG342S1	Housing with bearing, WW35F (replaces BG177A4S1) (obsolete)	1				

WW37 Clutch And Power Take-Off Assembly (Obsolete)

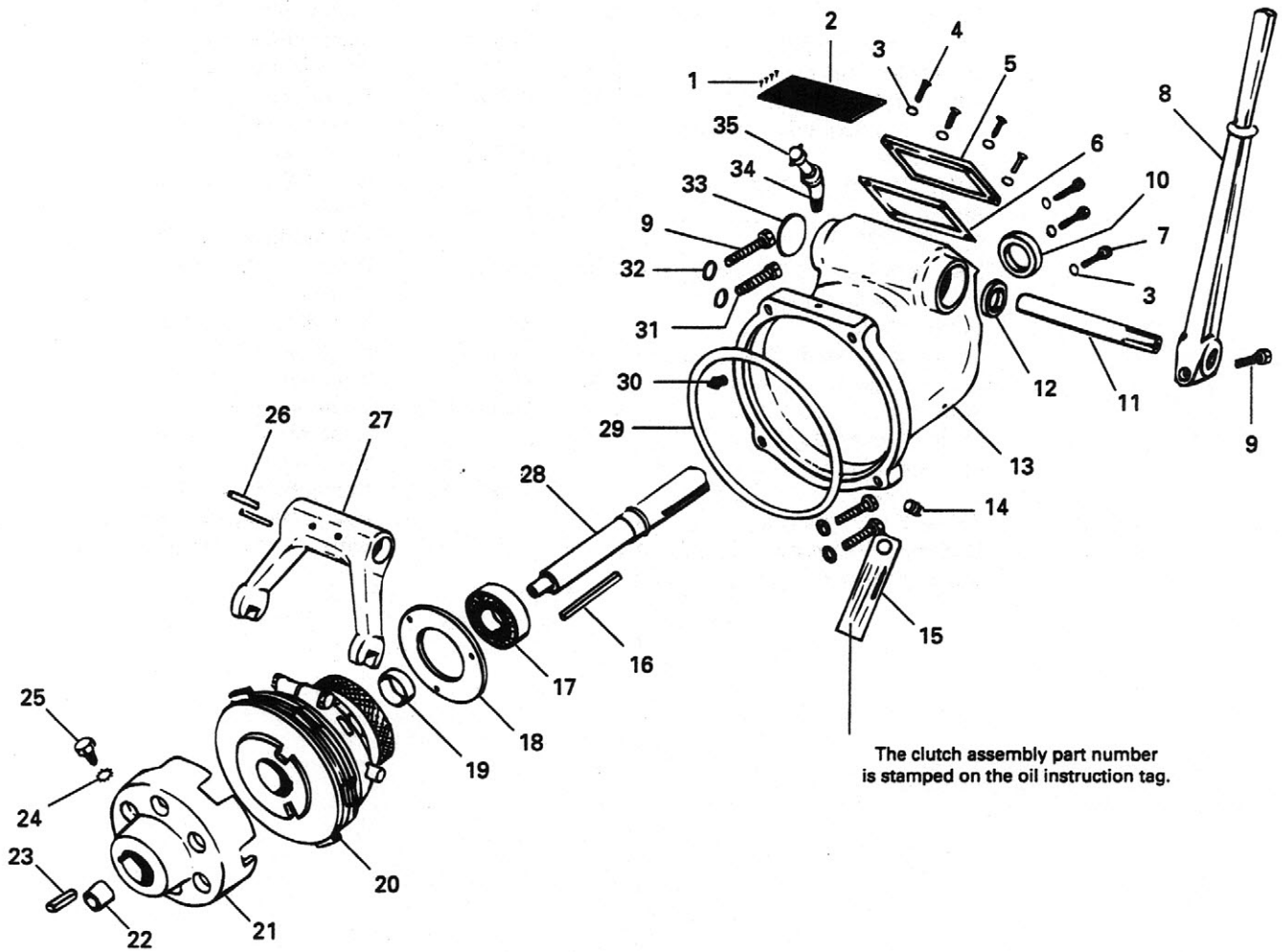


WW37 Clutch And Power Take-Off Assembly (Obsolete)

USE WITH MODELS ABN, AKN, ACN, BKN (see pg. 22)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XA100	Screw, no. 4 x 1/4" long (replaces XA68)	4	20	WC239	Twin disc clutch, Model "V" 3-1/2" no. XA3033 (obsolete) ...	1
2	SD59	Instruction plate	1	21	WC238	Clutch drive hub	1
3	PH30A	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	7	22	HG182	Shaft pilot bearing	1
4	XA35	Screw, 1/4"-20 thread x 5/8" long	4	23	PL86	Key, 1/4" square x 1" long	1
5	BH115A	Inspection hole cover (replaces BH115)	1	24	PE46	Lock washer, 5/16"	1
6	QD551	Inspection hole cover gasket ...	1	25	XD14-2	Clutch drive hub set screw	1
7	XD8	Screw, 1/4"-20 thread x 1-1/4" long	3	26	XH26	Taper pin, no. 4 x 1-3/8" long ...	2
8	VB55-1	Shifter lever	1	27	VB99	Shifter yoke	1
9	XD30	Screw, 3/8"-16 thread x 1-1/2" long	4	28	WA70	Take-off shaft	1
10	PH272A	Take-off shaft oil seal	1	29	QD593	Cork seal	1
11	WA61-1	Shifter shaft	1	30	XK1	Plug, 1/8"	1
12	PH234A	Shifter lever shaft oil seal	1	31	XD30-4	Screw, 3/8"-16 thread x 1-3/8" long	1
13	BG185	Clutch housing (obsolete)	1	32	PH22	Washer, 3/8" I.D. x 11/16" O.D. x 1/16" thick	4
14	XK2	Plug, 1/4"	1	33	SA58	Expansion plug, 1-3/8"	1
15	SD79	Oil instruction tag	1	34	XK77	Street ell, 1/8" x 45°	1
16	PL44	Key, 1/4" square x 2-1/2" long	1	35	LO44	Breather	1
17	ME101	Take-off shaft bearing	1	—	BG170-8S1	Main bearing plate (includes retainer, oil seal) (replaces BG170-1S1)	1
18	BG186	Bearing retainer plate	1	—	CA51-6S3	Crankshaft assembly (includes gear, bearing cup, bearing cone, key, bushing)	1
19	HF330	Bearing spacer	1				

WW37B Clutch And Power Take-Off Assembly (Obsolete)



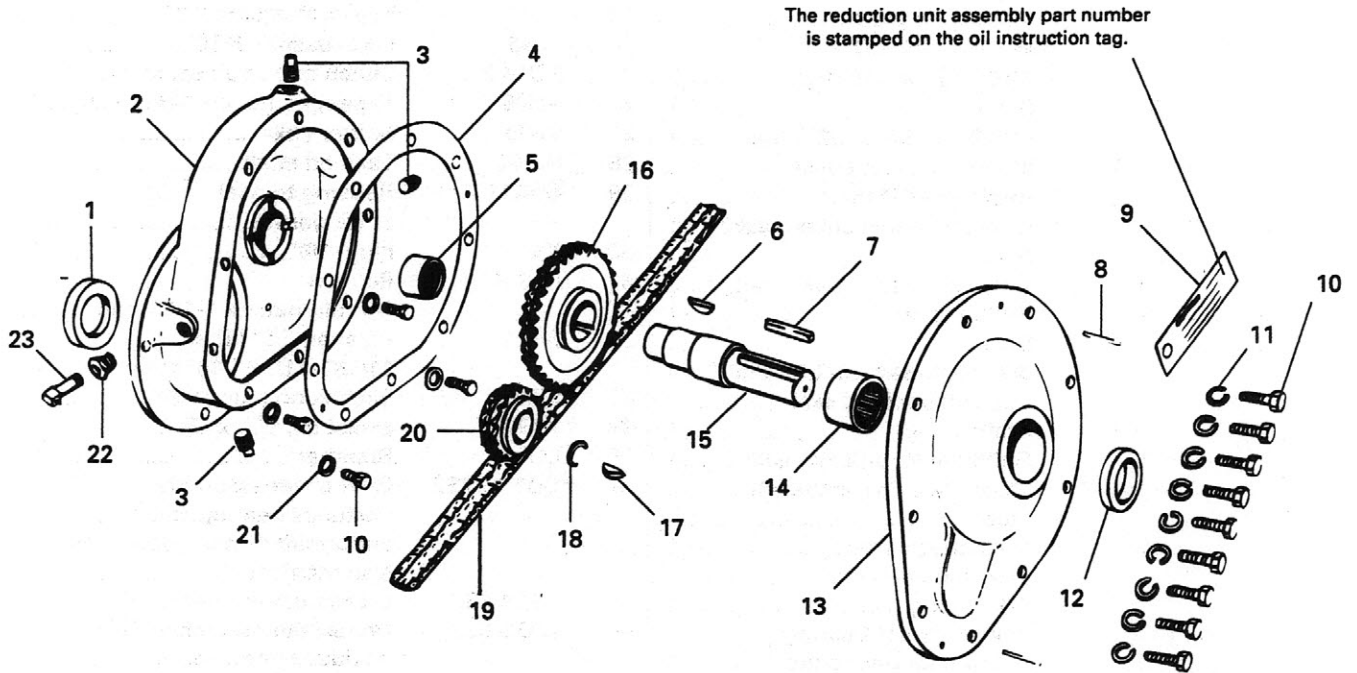
WW37B Clutch And Power Take-Off Assembly (Obsolete)

USE WITH MODELS S7D, S8D (see pg. 24)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XA100	Screw, no. 4 x 1/4" long (replaces XA68)	4	21	WC238	Clutch drive hub	1
2	SD125A	Instruction plate	1	22	HG182	Shaft pilot bearing	1
3	PH30A	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	7	23	PL86	Key, 1/4" square x 1" long	1
4	XA34	Screw, 1/4"-20 thread x 1/2" long	4	24	PE46	Lock washer, 5/16"	1
5	BH115A	Inspection hole cover (replaces BH115)	1	25	XD14-2	Clutch drive hub set screw	1
6	QD551	Inspection hole cover gasket ...	1	26	XH26	Taper pin, no. 4 x 1-3/8" long ...	2
7	XD8	Screw, 1/4"-20 thread x 1-1/4" long	3	27	VB99	Shifter yoke	1
8	VB55-1	Shifter lever	1	28	WA70	Take-off shaft	1
9	XD30	Screw, 3/8"-16 thread x 1-1/2" long	4	29	QD811	Housing to gear cover gasket	1
10	PH272B	Take-off shaft oil seal	1	30	XK1	Plug, 1/8"	1
11	WA61-1	Shifter shaft	1	31	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2
12	PH234A	Shifter lever shaft oil seal	1	32	PH22	Washer, 3/8" I.D. x 11/16" O.D. x 1/16" thick	4
13	BG185	Clutch housing (obsolete)	1	33	SA58	Expansion plug, 1-3/8"	1
14	XK2	Plug, 1/4"	1	34	XK77A	Street ell, 1/8" x 45°	1
15	SD79	Oil instruction tag	1	35	LO44	Breather	1
16	PL44	Key, 1/4" square x 2-1/2" long	1	—	BD111F2S2	Gear cover assembly (includes bearing, cup, crankshaft oil seal, governor lever shaft seal)	1
17	ME101	Take-off shaft bearing	1	—	CA79-6S2	Crankshaft assembly, S7D	1
18	BG186	Bearing retainer plate	1	—	CA82-6S2	Crankshaft assembly, S8D (includes gear, bearing cup, bearing cone, key, bushing)	1
19	HF330	Bearing spacer	1				
20	WC239	Twin disc clutch Model V-3035, XA3033B (obsolete)	1				

WW45B, 2.92 To 1 Chain Drive Reduction Unit Assembly

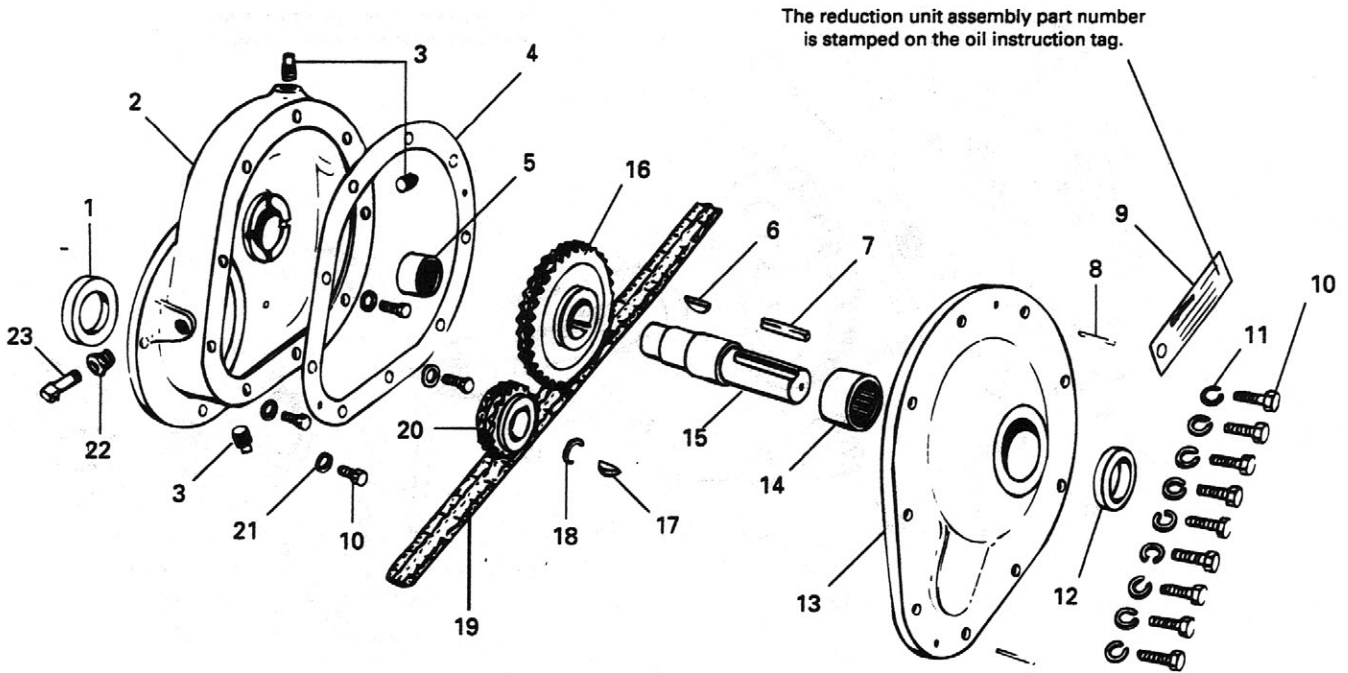
USE WITH MODELS ACN, BKN



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH280	Crankshaft oil seal	1	14	ME91	Outer bearing	1
2	BG195A2	Main housing and engine bearing plate	1	15	WA68	Take-off shaft	1
3	XK2	Plug, 1/4"	3	16	GG130	Driven sprocket, 38 teeth	1
4	QD596	Cover to housing gasket	1	17	PL15	No. 9 Woodruff key	1
5	ME90	Inner bearing	1	18	PK76	Drive sprocket retainer ring	1
6	PL16	No. 11 Woodruff key	1	19	GJ18	Chain, 3/8" pitch, 45 pitches long	1
7	PL102	Key, 1/4" square x 1-5/8" long	1	20	GG129	Drive sprocket, 13 teeth	1
8	PA289	Pin, no. 2 x 5/8" long	2	21	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
—	XH41	Taper pin, no. 2 x 3/4" long	2	22	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
9	SD79	Oil instruction tag	1	23	LO44	Breather	1
10	XD16	Screw, 5/16"-18 thread x 7/8" long	13	—	CA51-14S1	Crankshaft assembly (includes gear, bearing cups, bearing cones, key)	1
11	PE4	Lock washer, 5/16"	9				
12	PH264A	Take-off shaft oil seal	1				
13	BH131A2	Housing cover	1				

WW45C, 2 To 1 Chain Drive Reduction Unit Assembly

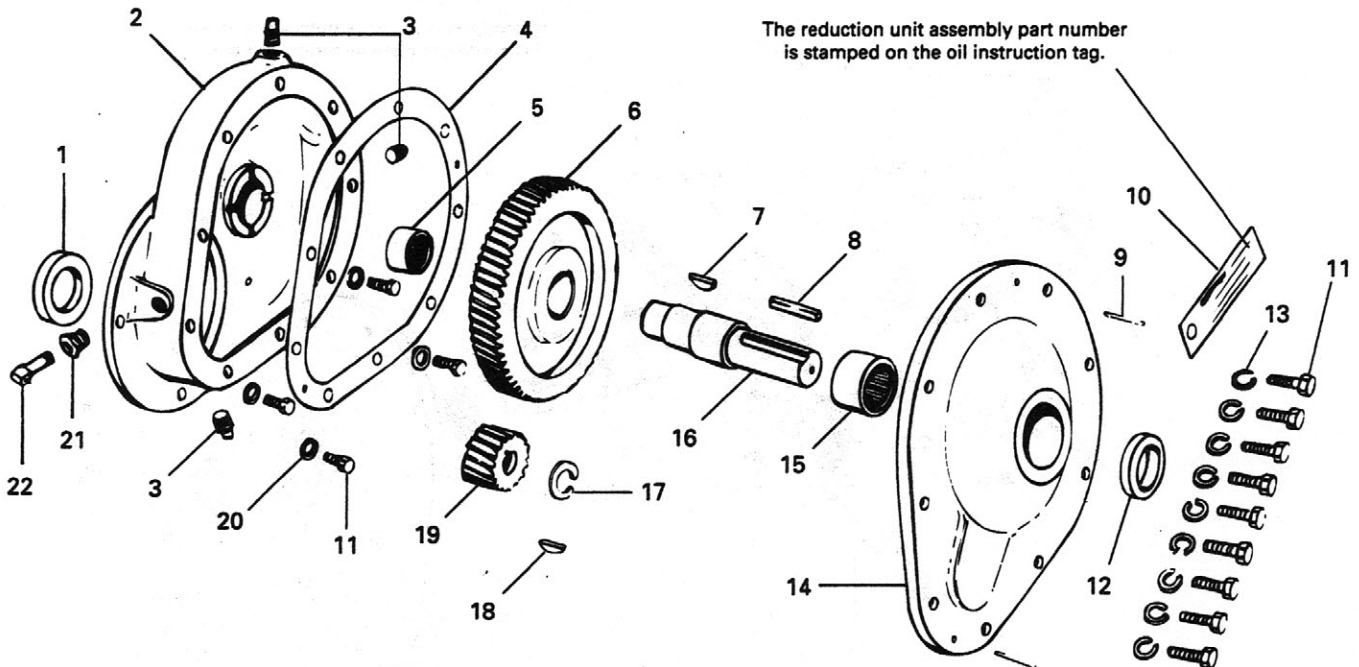
USE WITH MODELS ACN, BKN, ABN, AKN



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH280	Crankshaft oil seal	1	14	ME91	Outer bearing	1
2	BG195A1	Main housing and engine bearing plate	1	15	WA68	Take-off shaft	1
3	XK2	Plug, 1/4"	3	16	GG105	Driven sprocket, 32 teeth	1
4	QD596	Cover to housing gasket	1	17	PL15	No. 9 Woodruff key	1
5	ME90	Inner bearing	1	18	PK76	Drive sprocket retainer ring	1
6	PL16	No. 11 Woodruff key	1	19	GJ13	Chain, 3/8" pitch, 42 pitches long	1
7	PL102	Key, 1/4" square x 1-5/8" long	1	20	GG104	Drive sprocket, 16 teeth	1
8	PA289	Pin, no. 2 x 5/8" long	2	21	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
—	XH41	Taper pin, no. 2 x 3/4" long	2	22	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
9	SD79	Oil instruction tag	1	23	LO44	Breather	1
10	XD16	Screw, 5/16"-18 thread x 7/8" long	13	—	CA51-14S1	Crankshaft assembly (includes gear, bearing cups, bearing cones, key)	1
11	PE4	Lock washer, 5/16"	9				
12	PH264A	Take-off shaft oil seal	1				
13	BH131A1	Housing cover	1				

WW45E, 3.266 To 1 Spur Gear Reduction Unit Assembly (Obsolete)

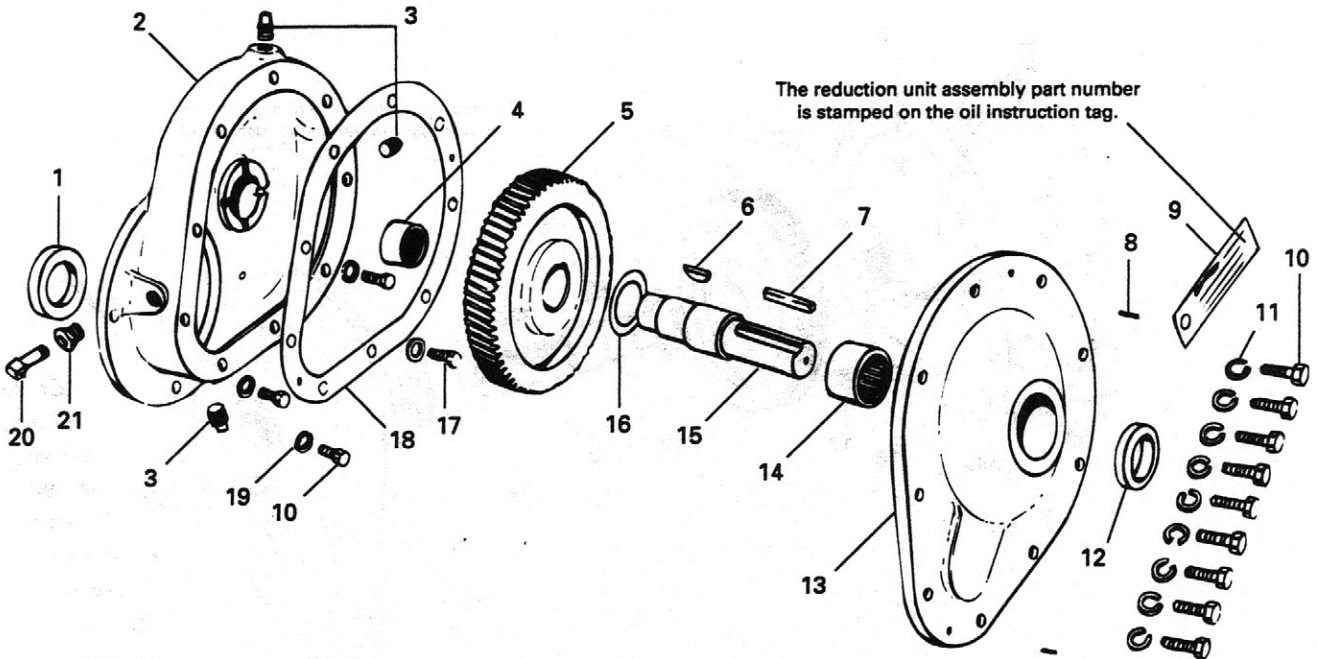
USE WITH MODELS AA, AB, ABS, AK, AKS



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH280	Crankshaft oil seal	1	13	PE4	Lock washer, 5/16"	9
2	BG195A	Main housing and engine bearing plate	1	14	BH131A	Housing cover	1
3	XK2	Plug, 1/4"	3	15	ME91	Outer bearing	1
4	QD596	Cover to housing gasket	1	16	WA68	Take-off shaft	1
5	ME90	Inner bearing	1	17	PK76	Drive gear retaining ring	1
6	GG99-1	Driven gear, 49 teeth (obsolete)	1	18	PL15	No. 9 Woodruff key	1
7	PL16	No. 11 Woodruff key	1	19	GG128	Drive gear, 15 teeth (obsolete)	1
8	PL102	Key, 1/4" square x 1-5/8" long	1	20	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
9	XH41	Taper pin, no. 2 x 3/4" long	2	21	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
10	SD79	Oil instruction tag	1	22	LO44	Breather	1
11	XD16	Screw, 5/16"-18 thread x 7/8" long	13	—	CA51-14	Crankshaft assembly (includes gear, bearing cups, bearing cones, key)	1
12	PH264	Take-off shaft oil seal	1				

WW45K, 5.5 To 1 Reduction Gear Unit Assembly

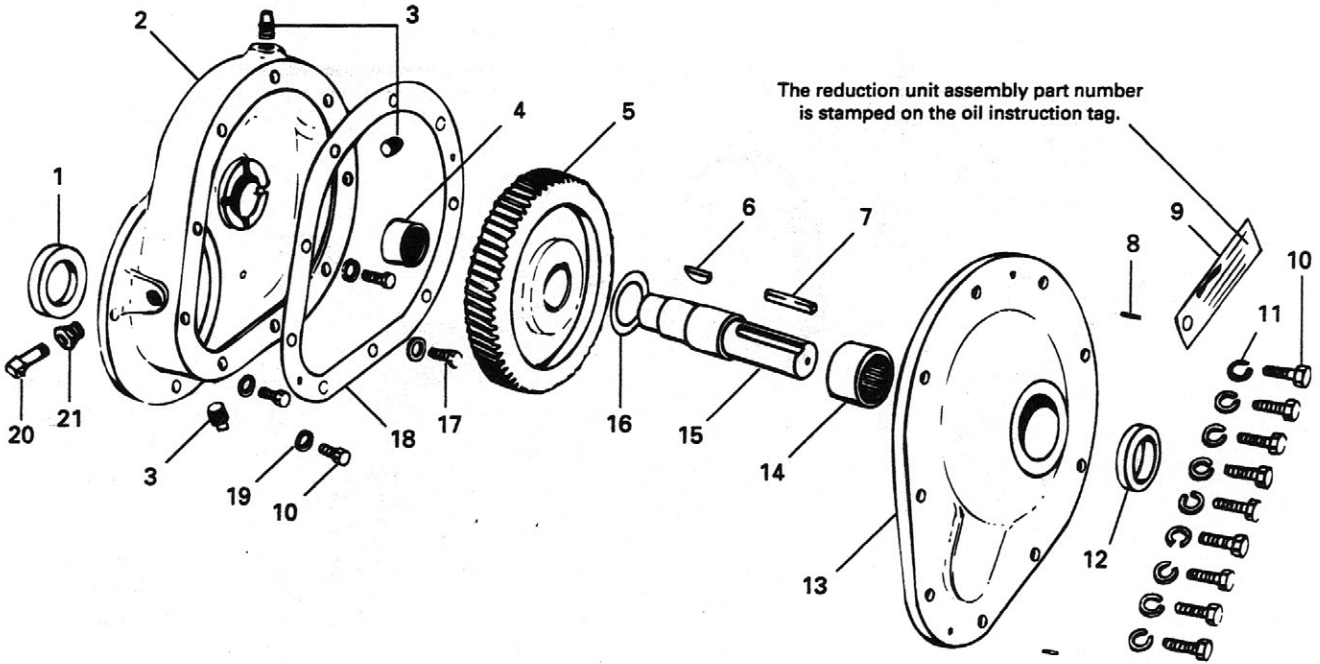
USE WITH MODELS ACN, BKN



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH280	Crankshaft oil seal	1	13	BH131A	Housing cover	1
2	BG195A	Main housing and engine bearing plate	1	14	ME91	Outer bearing	1
3	XK2	Plug, 1/4"	3	15	WA68	Take-off shaft	1
4	ME90	Inner bearing	1	16	PH333A	Driven gear thrust washer	1
5	GG90-8	Driven spiral gear, 71 teeth	1	17	XD17	Screw, 5/16"-18 thread x 1" long	2
6	PL16	No. 11 Woodruff key	1	18	QD596	Cover to housing gasket	1
7	PL102	Key, 1/4" square x 1-5/8" long	1	19	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
8	PA289	Pin, no. 2 x 5/8" long	2	20	LO44	Breather	1
9	SD79	Oil instruction tag	1	21	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
10	XD16	Screw, 5/16"-18 thread x 7/8" long	11	—	CA51-65S1	Crankshaft assembly (includes bearings, gear, key)	1
11	PE4	Lock washer, 5/16"	9				
12	PH264A	Take-off shaft oil seal	1				

WW45L, 6 To 1 Reduction Gear Unit Assembly

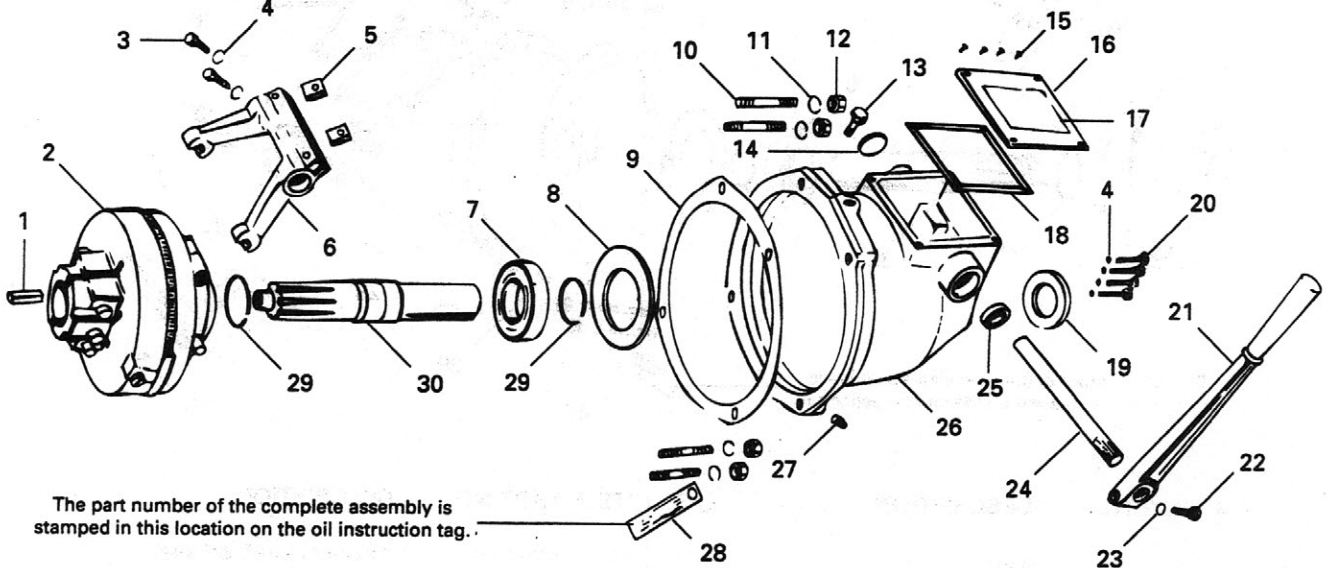
USE WITH MODELS ACN, BKN



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH280	Crankshaft oil seal	1	13	BH131A	Housing cover	1
2	BG195A	Main housing and engine bearing plate	1	14	ME91	Outer bearing	1
3	XK2	Plug, 1/4"	3	15	WA68	Take-off shaft	1
4	ME90	Inner bearing	1	16	PH333A	Driven gear thrust washer	1
5	GG90-7	Driven gear, 72 teeth	1	17	XD17	Screw, 5/16"-18 thread x 1" long	2
6	PL16	No. 11 Woodruff key	1	18	QD596	Cover to housing gasket	1
7	PL102	Key, 1/4" square x 1-5/8" long	1	19	PH14D	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	4
8	PA289	Pin, no. 2 x 5/8" long	2	20	LO44	Breather	1
9	SD79	Oil instruction tag	1	21	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
10	XD16	Screw, 5/16"-18 thread x 7/8" long	11	—	CA51-64S1	Crankshaft assembly (includes bearings, gear and key)	1
11	PE4	Lock washer, 5/16"	9				
12	PH264A	Take-off shaft oil seal	1				

WW58A Clutch Take-Off Assembly (Obsolete)

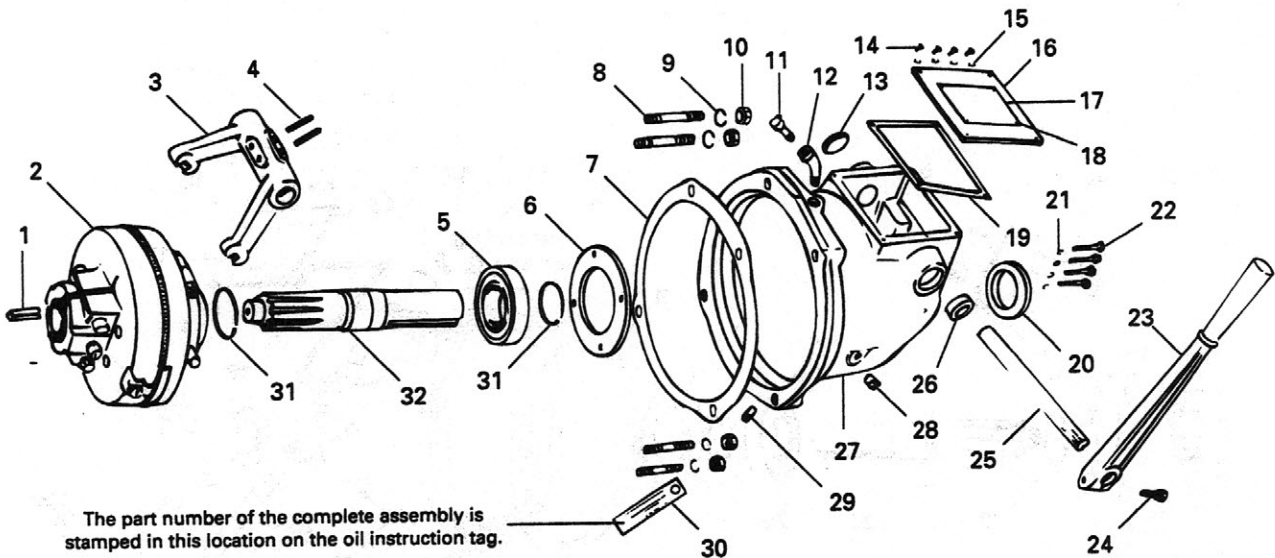
USE WITH MODELS VE4, VF4 (Up to and including serial no. 3012339, replaced by WW61E thereafter)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PL140	Key, 5/16" square x 1-1/8" long	1	16	63PT557	Housing cover	1
2	WC288A	Clutch assembly, Rockford no. CLA1467AF	1	17	63PT1800	Instruction plate	1
3	63PT582	Cap screw	2	18	63PT673	Cover gasket	1
4	63CL4701	Lock washer	6	19	63PT581	Take-off shaft oil seal	1
5	63PT533	Key	2	20	63PT579	Screw	4
—	63PT1707	Clutch yoke roll pin	2	21	63UPT532	Shifting lever	1
6	63PT1704	Clutch yoke (replaces PT531) ...	1	22	63PT352	Screw	1
7	ME36B	Bearing, Rockford no. 63PT578	1	23	PE5	Lock washer (replaces 63PT353)	1
8	63PT536	Bearing retainer plate	1	24	63PT1705	Yoke shaft	1
9	QD618	Housing to crankcase gasket ...	1	25	63PT583	Oil seal	1
10	PC419	Stud (replaces PC242)	4	26	63PT539	Housing	1
11	PE6	Lock washer, 7/16"	4	27	63PT577	Pipe plug	2
12	PD12	Nut, 7/16"-20 thread	4	28	SD79	Oil instruction tag	1
13	LO44	Breather	1	29	63PT535	Snap ring	2
14	63PT584	Plug	1	30	63PT623	Clutch take-off shaft	1
15	63PT1832	Screw	4	—	BG210BS2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1

WW61E Clutch Take-Off Assembly

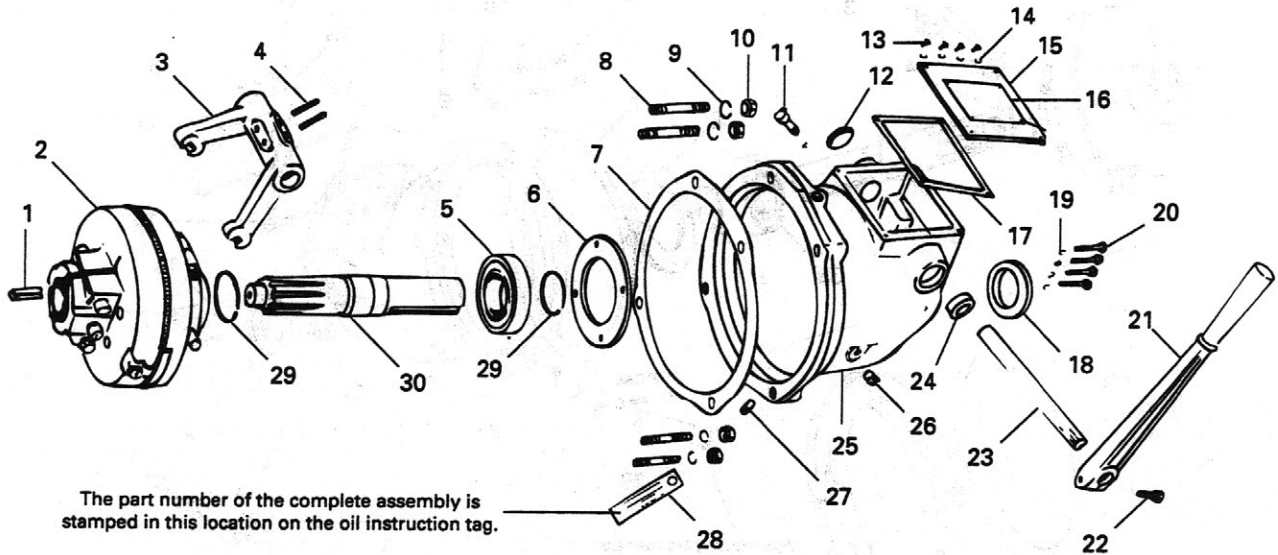
USE WITH MODELS VH4, VE4, VF4, W4-1770



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PL140	Key, 5/16" square x 1-1/8" long	1	20	PH344A	Take-off shaft oil seal, Victor no. 60534	1
2	WC288A	Clutch assembly, Rockford Drilling Model 5-1/2 L.O.C. no. CLA1467AF	1	21	PH30A	Washer, 1/4"	4
3	VB64A	Clutch yoke	1	22	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4
4	PA341	Roll pin, 1/4" x 1-1/8" long	2	23	VB55-1	Shifting lever	1
5	ME36B	Bearing, N.D. no. 7208 (replaces ME36A)	1	24	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
6	BG225A	Bearing retainer plate	1	25	WA61	Yoke shaft	1
7	QD618	Housing to crankcase gasket ...	1	26	PH234A	Yoke shaft oil seal, Trottel no. BR124484	1
8	PC392	Studs	4	27	BG234	Housing	1
9	PE6	Lock washer, 7/16"	4	28	XK1	Pipe plug, 1/8"	2
10	PD12	Nut, 7/16"-20 thread	4	29	XK2	Pipe plug, 1/4"	1
11	LO44A	Breather (replaces LO44)	1	30	SD79	Oil instruction tag	1
12	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1	31	PK148	Snap ring, beginning with engine serial no. 3205301	2
13	SA58	Welch plug, 1-3/8"	1	—	PK136	Snap ring, engines to and including serial no. 3205300	2
14	XA34	Screw, 1/4"-20 thread x 1/2" long	4	32	WA96B	Clutch take-off shaft	1
15	PE3	Lock washer, 1/4"	4	—	BG210C1S2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
16	BH158	Housing cover	1	—	CA71A23S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
17	SD125A	Instruction plate (replaces SD132)	1				
18	XA106B	Drive screw (replaces XA64) ...	2				
19	QD652	Cover gasket	1				

WW61K Clutch Take-Off Assembly

USE WITH MODEL AGND

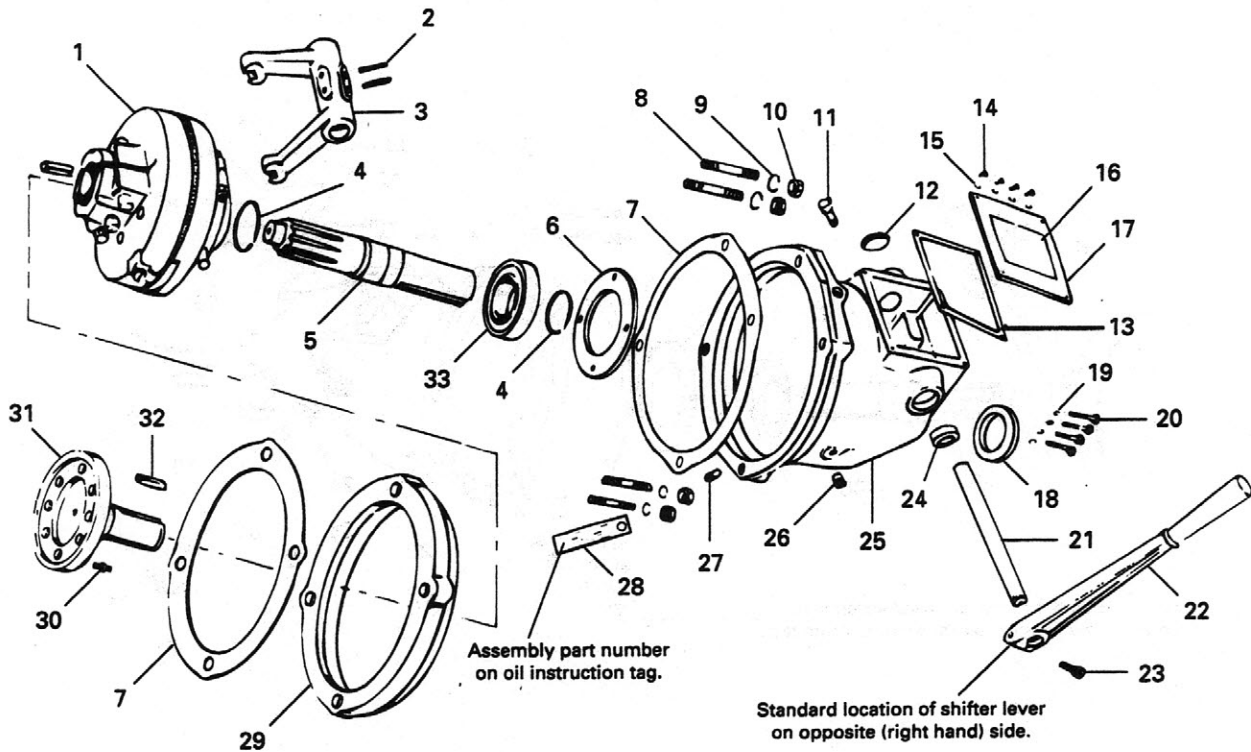


The part number of the complete assembly is stamped in this location on the oil instruction tag.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PL140	Key, 5/16" square x 1-1/8" long	1	18	PH344A	Take-off shaft oil seal	1
2	WC288A	Clutch assembly, Rockford Drilling Model 5-1/2 L.O.C. no. CLA1467AF	1	19	PH30A	Washer, 1/4"	4
3	VB64A	Clutch yoke	1	20	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4
4	PA341	Roll pin, 1/4" x 1-1/8" long	2	21	VB55-1	Shifting lever	1
5	ME36B	Bearing	1	22	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
6	BG225A	Bearing retainer plate	1	23	WA61	Yoke shaft	1
7	QD546	Bearing plate cork seal	1	24	PH234A	Yoke shaft oil seal	1
8	PC392	Studs	4	25	BG234-2	Housing	1
9	PE6	Lock washer, 7/16"	4	26	XK1	Pipe plug, 1/8"	2
10	PD12	Nut, 7/16"-20 thread	4	27	XK2	Pipe plug, 1/4"	1
11	LO44A	Breather assembly	1	28	SD79	Oil instruction tag	1
12	SA58	Plug, 1-3/8"	1	29	PK148	Snap ring	2
13	XA34	Screw, 1/4"-20 thread x 1/2" long	4	30	WA96B	Clutch take-off shaft	1
14	PE3	Lock washer, 1/4"	4	—	BG105E3S2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
15	BH158	Housing cover	1	—	CA73-49S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
16	SD125A	Instruction plate	1				
17	QD652	Cover gasket	1				

WW61P Clutch Take-Off Assembly

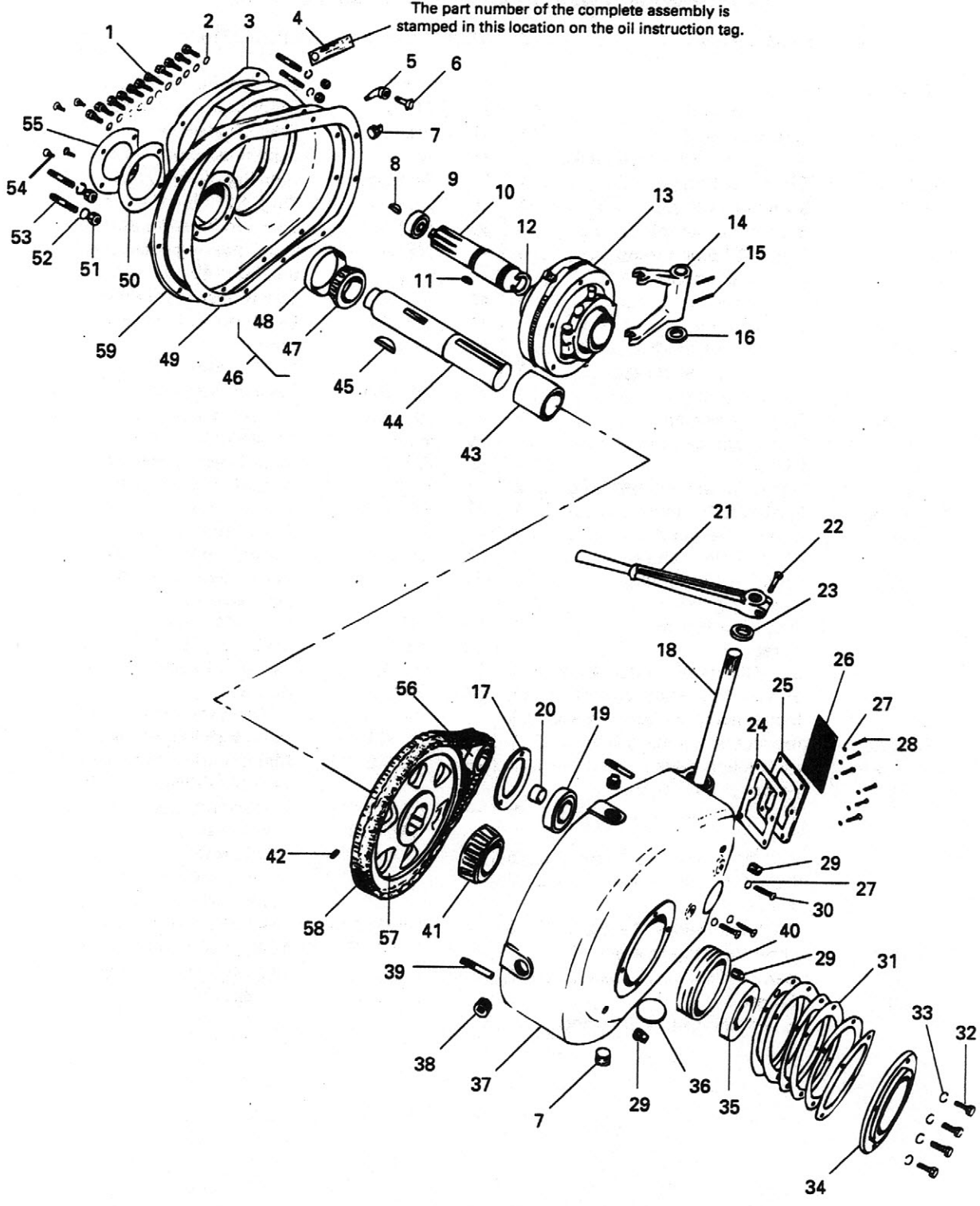
USE WITH MODELS W2-1230, W2-1235



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	WC288A	Clutch assembly, Rockford Drilling Model 5-1/2 L.O.C. no. CLA1467AF	1	18	PH344A	Take-off shaft oil seal	1
2	PA341	Roll pin, 1/4" x 1-1/8" long	2	19	PH30A	Washer, 1/4"	4
3	VB64A	Clutch yoke	1	20	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4
4	PK148	Snap ring	2	21	WA61	Yoke shaft	1
5	WA96B	Clutch take-off shaft	1	22	VB55-1	Shifting lever	1
6	BG225A	Bearing retainer plate	1	23	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
7	QD618	Housing and adapter ring gasket	2	24	PH234A	Yoke shaft oil seal	1
8	PC639	Studs	4	25	BG234	Housing	1
9	PE6	Lock washer, 7/16"	4	26	XK1	Plug, 1/8"	2
10	PD12	Nut, 7/16"-20 thread	4	27	XK2	Plug, 1/4"	1
11	LO44A	Breather assembly	1	28	SD79	Oil instruction tag	1
12	SA58	Plug, 1-3/8	1	29	BG361	Adapter ring	1
13	QD652	Cover gasket	1	30	XD116	Screw, 5/16"-18 thread x 1-1/4" long	8
14	XA34	Screw, 1/4"-20 thread x 1/2" long	4	31	UC205-5	Drive shaft	1
15	PE3	Lock washer, 1/4"	4	32	PL140	Key, 5/16" square x 1-1/8" long	1
16	SD125A	Instruction plate	1	33	ME36B	Bearing, N.D. no. 7508	1
17	BH158	Housing cover	1				

WW62A Reduction Gear Assembly

The part number of the complete assembly is stamped in this location on the oil instruction tag.



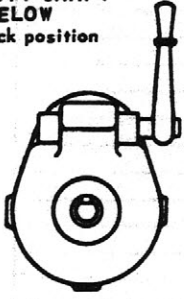
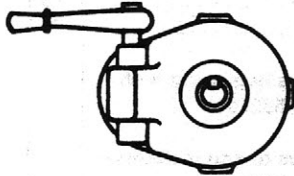
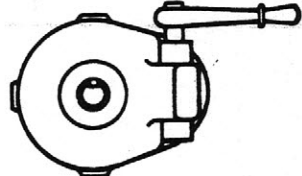
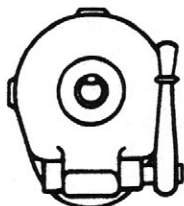
WW62A Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VE4D, VF4D (see pg. 35)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD28	Screw, 3/8"-16 thread x 1-1/8" long	11	33	PE4	Lock washer, 5/16"	4
2	PE5	Lock washer, 3/8"	11	34	BG150	Outer bearing retainer plate	1
3	QD618	Housing to crankcase gasket ...	1	35	PH202	Take-off shaft oil seal	1
4	SD79	Oil instruction tag	1	36	SA58	Expansion plug, 1-3/8"	1
5	XK77A	Street ell, 1/8" pipe x 45°	1	37	BH143B	Housing cover	1
6	LO44	Breather assembly	1	38	XK6	Plug, 1/2" pipe thread	1
7	XK4	Plug, 1/2" pipe thread	5	39	PA279	Cover to housing dowel pin	2
8	PL140	Key, 5/16" square x 1-1/8" long	1	—	ME76	Outer bearing assembly (includes 40 and 41)	1
9	ME189	Pilot bearing	1	40	ME76-1	Cup (not sold separately)	1
10	WA87A	Clutch drive shaft	1	41	ME76-2	Cone (not sold separately)	1
11	PL17	No. 13 Woodruff key	1	42	XE44	Screw, 5/16"-18 thread x 5/8" long	1
12	PK82	Retaining ring	1	43	HF265A	Take-off shaft spacer	1
13	WC288A	Clutch assembly	1	44	WA55H	Take-off shaft	1
14	VB64A	Clutch shifter yoke	1	45	PL24	No. 29 Woodruff key	1
15	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2	46	ME77	Inner bearing assembly (includes 48 and 49)	1
16	HF392A	Spacer, 3/16" thick	1	47	ME77-2	Cone (not sold separately)	1
17	BG216	Clutch bearing plate	1	48	ME77-1	Cup (not sold separately)	1
18	WA61D	Clutch shifter shaft	1	49	QD856	Cover to housing gasket	1
19	ME119	Clutch shaft bearing	1	50	QD543A	Inner bearing retainer plate gasket	1
20	HF372	Bearing spacer	1	51	PD12	Nut, 7/16"-20 thread	4
21	VB55-1	Clutch shifter lever	1	52	PE6	Lock washer, 7/16"	4
22	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	53	PC419	Housing to crankcase stud	4
23	PH234A	Shifter lever shaft oil seal	1	54	XC68	Screw, 5/16"-18 thread x 3/4" long	4
24	QD592	Inspection hole cover gasket ...	1	55	BG151	Inner bearing retainer plate	1
25	BH127B	Inspection opening cover	1	—	BG210C1S2	Main bearing plate assembly, W41770 (includes CA89CS1)	1
26	SD125A	Instruction plate	1	—	CA71A23S1	Crankshaft assembly, VH4D	1
27	PH30	Washer, 1/4" I.D. x 1/16" thick	9	—	CA55-1S1	Crankshaft assembly, VE4D, VF4D, WW62-etc., to and including engine serial no. 653269	1
28	XA34	Screw, 1/4"-20 thread x 1/2" long	6	—	CA55-23S1	Crankshaft assembly, VE4D, VF4D, WW62A-etc., units beginning with serial no. 653270	1
29	XK2	Plug, 1/4" pipe thread	2				
30	XD7	Screw, 1/4"-20 thread x 1" long	3				
31	QD544	Outer bearing retainer plate gasket	8-12				
32	XD15	Screw, 5/16"-18 thread x 3/4" long	4				

WW62A Reduction Gear Assembly

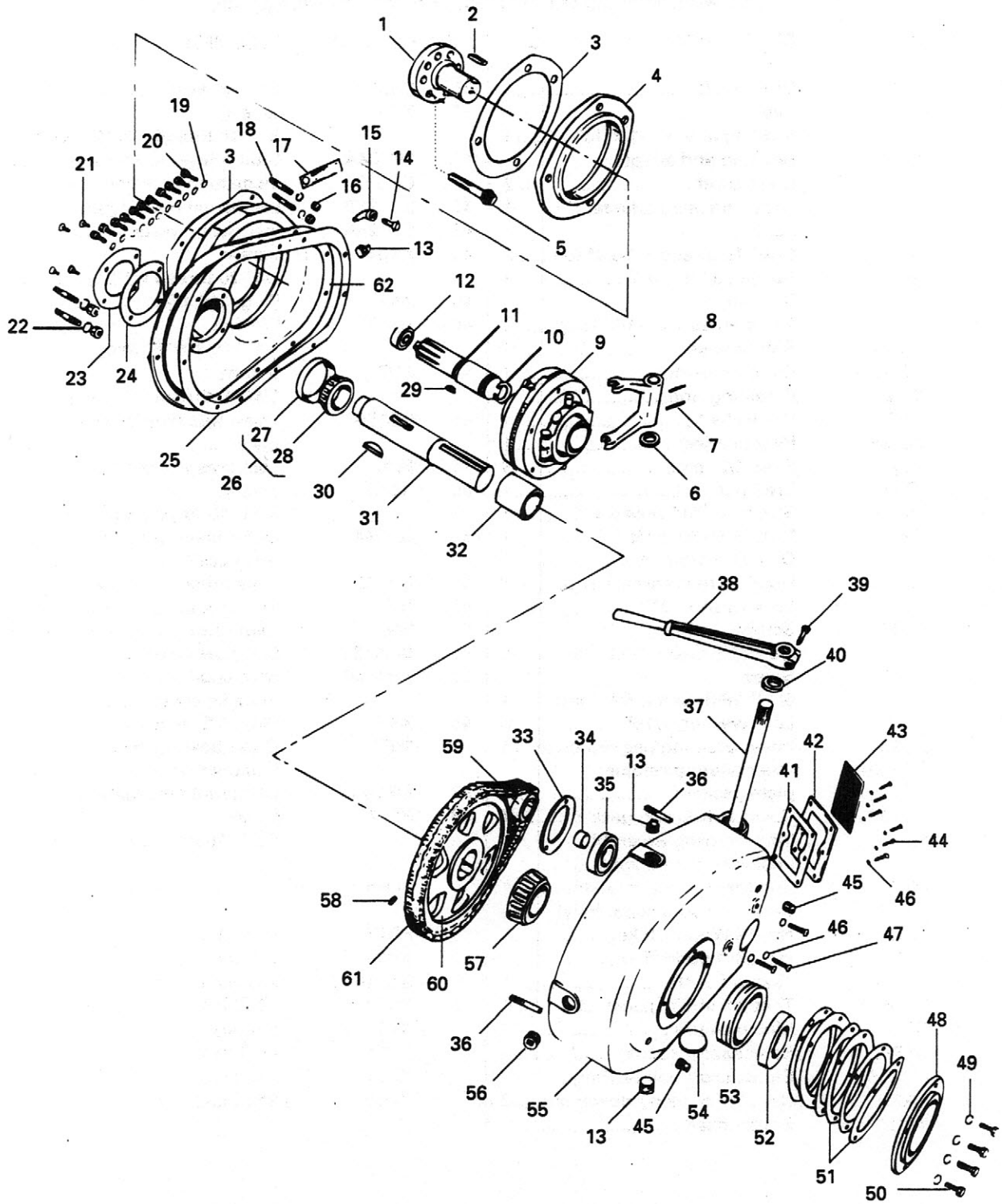
USE WITH MODELS W4-1770, VH4D, VE4D, VF4D (see pg. 35)

Determine position of take-off shaft when viewing from flywheel end of engine. (View facing take-off end are shown.)	Assembly Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 56	Ref. No. 57	Ref. No. 58	Ref. No. 59
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.
TAKE-OFF SHAFT BELOW 6 o'clock position 	WW 62 A	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B
	WW 62 A 1	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B
	WW 62 A 2	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B
	WW 62 A 3	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B
	WW 62 A 4	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B
	WW 62 A 5	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B
TAKE-OFF SHAFT ON LEFT SIDE as viewed from flywheel end 	WW 62 A 6	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 1
	WW 62 A 7	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 1
	WW 62 A 8	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 1
	WW 62 A 9	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 1
	WW 62 A 10	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 1
	WW 62 A 11	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 1
TAKE-OFF SHAFT ON RIGHT SIDE as viewed from flywheel end 	WW 62 A 12	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 2
	WW 62 A 13	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 2
	WW 62 A 14	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 2
	WW 62 A 15	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 2
	WW 62 A 16	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 2
	WW 62 A 17	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 2
TAKE-OFF SHAFT ON TOP 12 o'clock position 	WW 62 A 18	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 3
	WW 62 A 19	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 3
	WW 62 A 20	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 3
	WW 62 A 21	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 3
	WW 62 A 22	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 3
	WW 62 A 23	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 3

WW62A Reduction Gear Assembly
USE WITH MODELS W4-1770, VH4D, VE4D, VF4D

Part Number	Net Wt.		Part Number	Net Wt.		Part Number	Net Wt.		
	Lb	Oz		Lb	Oz		Lb	Oz	
BG215	19	8	† PL140 Square key, 5/16" x 1-1/8" long	1	8	WW62A9	86	8	
BG215-1	19	8				WW62A10	85		
BG215-2	19	8				WW62A11	87		
BG215-3	19	8				WW62A12	89		
BH143	20		† WA87 Drive shaft	2	8	WW62A13	89		
GG67-1 (62 teeth)	8	11	† WA87A Drive shaft	2	8	WW62A14	89		
GG67A (65 teeth)	9		Complete clutch reduction gear assemblies for engines beginning with serial no. 653270 (with ball bearing pilot). For engines to and in- cluding serial no. 653269, WW62-etc. units (with needle bearing pilot) were used. These are replaced by corres- ponding WW62A-etc. assem- blies by cutting off 19/32" from end of engine crank- shaft for clearance of the ball bearing pilot.			WW62A15	86		
GG69-1 (73 teeth)	10	15				WW62A16	85		
GG71 (40 teeth)	5	4				WW62A17	87		
GG73 (53 teeth)	7	10				WW62A18	89		
GG77-1 (69 teeth)	10	4				WW62A19	89		
GG113 (20 teeth)	1	14				WW62A20	89		
GG114 (15 teeth)		14				WW62A21	86		
GG115 (14 teeth)		11				WW62A22	85		
GG116 (30 teeth)	2	10				WW62A23	87		
GG117 (23 teeth)	2	1				WW62A24	89		
GG118 (19 teeth)	1	12				WW62A25	89		
GG131 (28 teeth)	3					WW62A26	89		
GJ8 (27" long)	1	13				WW62A27	89		
GJ9 (26" long)	1	12							
GJ10 (30" long)	2		WW62A	89	† For engines beginning with serial no. 653270.				
† ME15B Ball (pilot) bearing (furnished by Rockford with clutch, Rockford no. CL5616)		8	WW62A1	89		†† For engines to and including serial no. 65369.			
†† ME115 Needle (pilot) bearing		3	WW62A2	89					
†† PL103 Square key, 5/16" x 1-5/8" long		1	WW62A3	86					
			WW62A4	85					
			WW62A5	87					
			WW62A6	89					
			WW62A7	89					
			WW62A8	89					

WW62H Reduction Gear Assembly



WW62H Reduction Gear Assembly

USE WITH MODELS W2-1230, W2-1235, W2-1250 (see pg. 39)

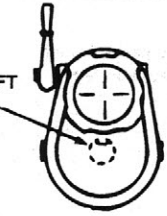
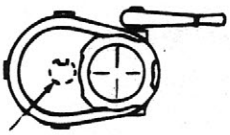


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	UC205-5	Drive shaft	1	38	VB55-1	Shifter lever	1
2	PL140	Key, 5/16" square x 1-1/8" long	1	39	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
3	QD618	Housing and adapter ring gasket	2	40	PH234A	Shifter lever shaft oil seal	1
4	BG361	Clutch housing adapter ring	1	41	QD592	Inspection hole cover gasket ...	1
5	XB116	Screw, 5/16"-18 thread x 1-1/4" long	8	42	BH127B	Inspection opening cover	1
6	HF392A	Spacer, 3/16" thick	1	43	SD125A	Instruction plate	1
7	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2	44	XA34	Screw, 1/4"-20 thread x 1/2" long	6
8	VB64A	Shifter yoke	1	45	XK2	Plug, 1/4" pipe	2
9	WC288A	Clutch assembly	1	46	PH30	Washer, 1/4" I.D. x 1/16" thick	9
10	PK82	Retaining ring	1	47	XD7	Screw, 1/4"-20 thread x 1" long	3
11	WA87	Drive shaft	1	48	BG150	Outer retaining bearing plate	1
12	ME189	Pilot bearing	1	49	PE4	Lock washer, 5/16"	4
13	XK4	Plug, 1/2" pipe	6	50	XD15	Screw, 5/16"-18 thread x 3/4" long	4
14	LO44	Breather	1	51	QD544	Outer bearing retainer plate gasket	8-12
15	XK77A	Street ell, 1/8" pipe x 45°	1	52	PH202	Take-off shaft oil seal	1
16	PD12	Nut, 7/16"-20 thread	4	53	ME76-1	Cup (not sold separately)	1
17	SD79	Oil instruction tag	1	54	SA58	Expansion plug, 1-3/8"	1
18	PC639	Housing to crankcase stud	4	—	BAA104	Crankcase assembly	1
19	PE5	Lock washer, 3/8"	11	55	BH143B	Reduction gear housing cover	1
20	XD28	Screw, 3/8"-16 thread x 1-1/8" long	11	56	XK6	Plug, 1/2" pipe	1
21	XC68	Screw, 5/16"-18 thread x 3/4" long	4	—	ME76	Outer bearing assembly (includes 53 and 57)	1
22	PE6	Lock washer, 7/16"	4	57	ME76-2	Cone (not sold separately)	1
23	BG151	Inner retaining bearing plate ...	1	58	XE44	Screw, 5/16"-18 thread x 5/8" long	1
24	QD543A	Inner bearing retainer plate gasket	1				
25	QD856	Cover to housing gasket	1				
26	ME77	Inner bearing assembly (includes 27 and 28)	1				
27	ME77-1	Cup (not sold separately)	1				
28	ME77-2	Cone (not sold separately)	1				
29	PL17	No. 13 Woodruff key	1				
30	PL24	No. 29 Woodruff key	1				
31	WA55H	Take-off shaft	1				
32	HF265A	Take-off shaft spacer	1				
33	BG216	Clutch bearing plate	1				
34	HF372	Ball bearing spacer	1				
35	ME119	Clutch shaft ball bearing	1				
36	PA279	Cover to housing dowel pin	2				
37	WA61D	Shifter shaft	1				

Torque specifications:

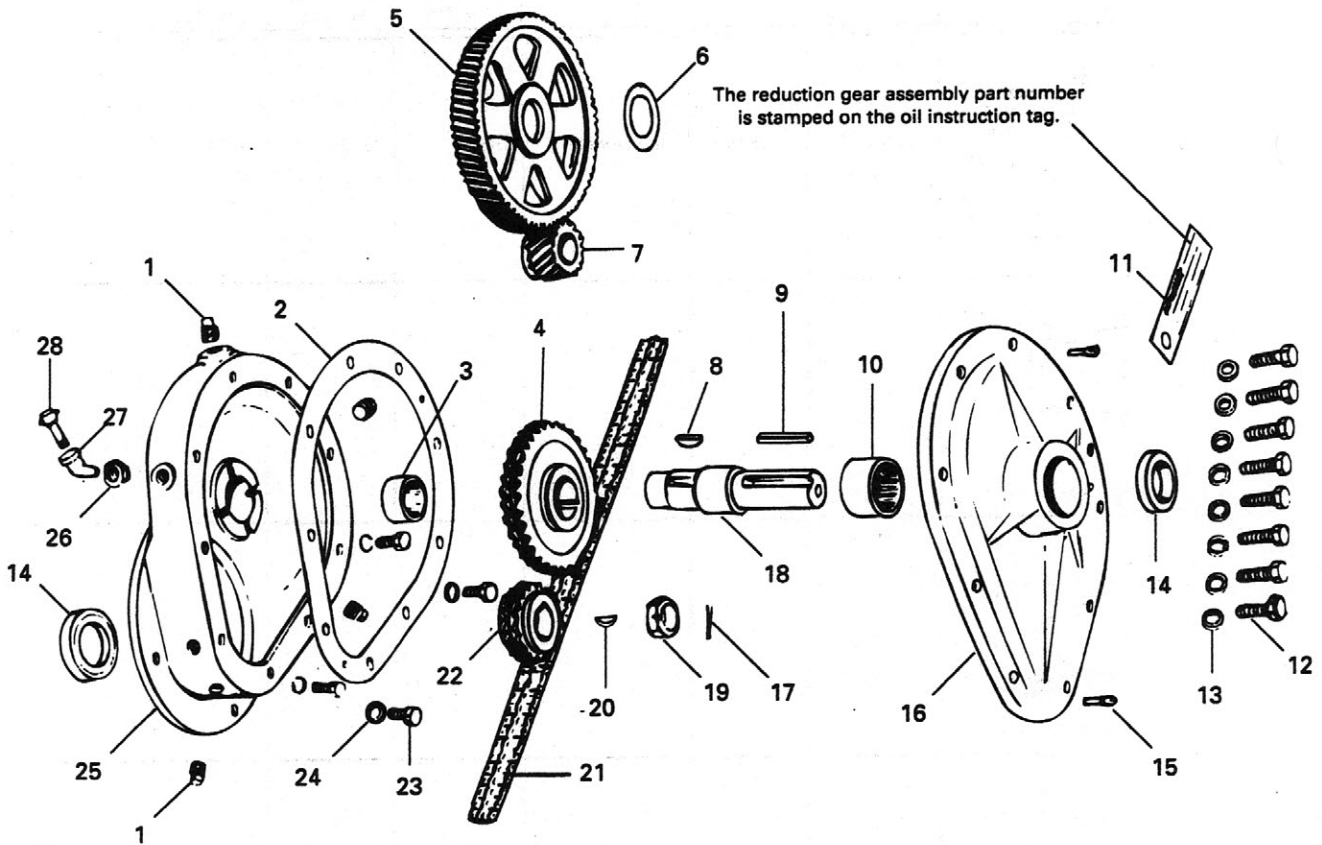
PD12	47 ft. lbs.
XA34	6 ft. lbs.
XB116	24 ft. lbs.
XC68	18 ft. lbs.
XD7	9 ft. lbs.
XD15	18 ft. lbs.
XD28	31 ft. lbs.
XD30	31 ft. lbs.

WW62H Reduction Gear Assembly

USE WITH MODELS W2-1230, W2-1235, W2-1250 (see pg. 39)

Position of drive shaft viewing from flywheel end of engine.	Assembly Part Number	Reduction Ratio	Rotation of Drive Shaft	Ref. No. 59	Ref. No. 60	Ref. No. 61	Ref. No. 62
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.
 <p>DRIVE SHAFT BELOW</p>	WW62H5 (90 lbs.)	3.79 to 1	Engine-wise	GG115 (1 lb.)	GG73 (8 lbs.)	GJ10 (2 lbs.)	BG215B (20 lbs.)
 <p>DRIVE SHAFT ON LEFT SIDE as viewed from the flywheel end.</p>							
 <p>DRIVE SHAFT ON RIGHT SIDE as viewed from the flywheel end.</p>							
 <p>DRIVE SHAFT AT TOP</p>							

WW64, WW64D Reduction Gear Assemblies



Assembly Part Number	Reduction Ratio	Rotation at Take-off Shaft	Net Weight	
			Lb	Oz
WW64E (replaces WW64R)	4 to 1	Counter engine-wise	25	
WW64 (obsolete)	4 to 1	Counter engine-wise	25	
WW64D1 (obsolete)	2.076 to 1	Counter engine-wise	25	
WW64-1 (obsolete)	2.076 to 1	Counter engine-wise	25	
WW64D2 (obsolete)	3.4 to 1	Engine-wise (chain drive)	24	
WW64-2 (obsolete)	3.4 to 1	Engine-wise (chain drive)	24	

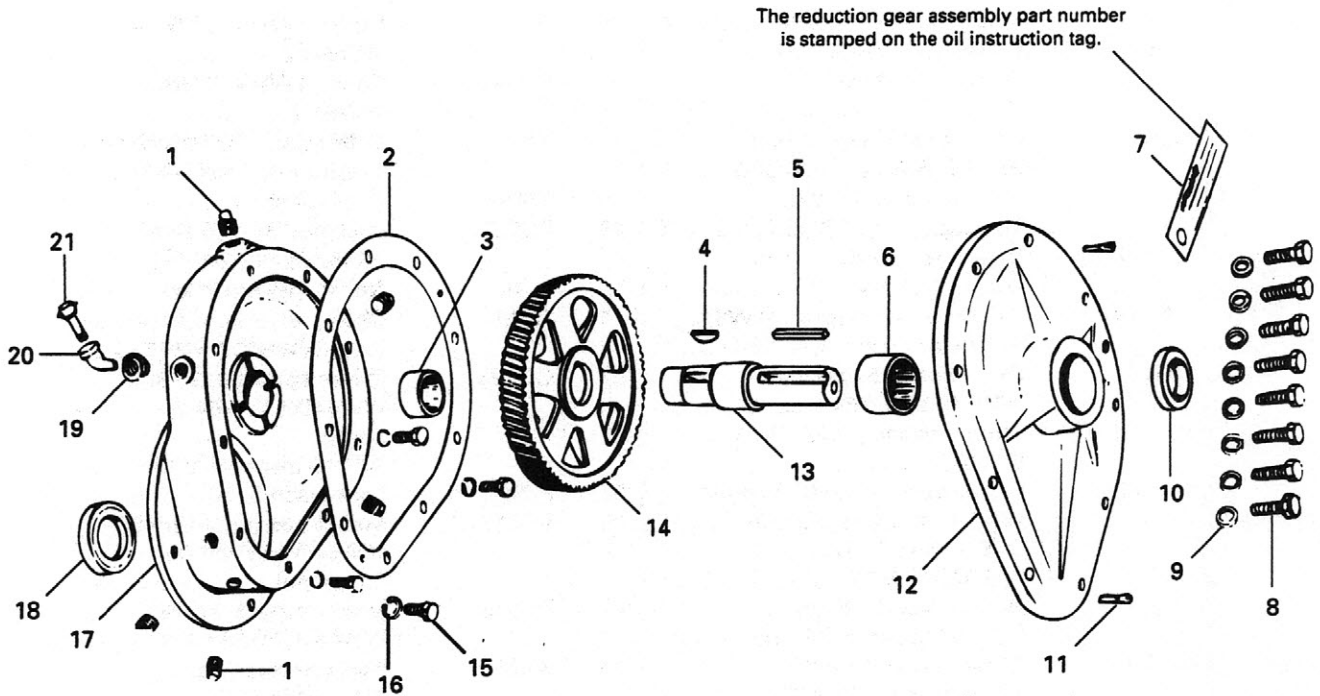
WW64, WW64D Reduction Gear Assemblies

USE WITH MODELS ADH, AEH (see pg. 42)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	4	16	BH144A	Cover, WW64D, WW64D1,	
2	QD623A	Cover to housing gasket, WW64D, WW64D1,				WW64D2	1
		WW64D2	1	—	BH144	Cover, WW64, WW64-1,	
—	QD623	Cover to housing gasket, WW64, WW64-1, WW64-2	1	17	XI9	WW64-2	1
3	ME92	Inner needle bearing, Torrington no. B1816X	1	18	WA69	Cotter pin, 3/32" diameter x 1" long (replaces XI25)	1
4	GG1221	Driven sprocket, 34 teeth, WW64D2, WW64-2	1	19	PD221	Take-off shaft	1
5	GG119-3	Driven gear, 64 teeth, WW64D, WW64 (replaces GG119-1)	1	20	PL16	Lock nut, 3/4"-16 thread (replaces PD62-2, XI9)	1
—	GG122-3	Driven gear, 54 teeth, WW64D1, WW64-1	1	21	GJ15	No. 11 Woodruff key	1
6	PH333D	Thrust washer, .022" thick, WW64D	1	22	GG123	Chain, 1/2" pitch, 40 pitches long, WW64D2, WW64-2	1
7	GG120-2	Driver gear, 16 teeth, WW64D, WW64 (replaces GG1201)	1	23	XD27	Driver sprocket, 10 teeth, WW64D2, WW64-2	1
—	GG121-2	Driver gear, 26 teeth, WW64D1, WW64-1	1	24	PE5	Screw, 3/8"-16 thread x 1" long	4
8	PL50	No. 16 Woodruff key	1	25	BG218A	Lock washer, 3/8"	4
9	PL88	Key, 1/4" square x 2" long	1			Main housing, WW64D, WW64D1, WW64D2	
10	ME93	Outer needle bearing, Torrington no. B2420X	1	—	BG218	(obsolete)	1
11	SD79	Oil instruction tag	1	26	XK21	Main housing, WW64, WW64-1, WW64-2 (obsolete) ...	1
12	XD17	Screw, 5/16"-18 thread x 1" long	8	27	XK77A	Reducer bushing, 1/4" to 1/8" pipe	1
13	PH14	Washer, 5/16" (replaces PE4) ...	8	28	LO44	Street ell, 1/8" x 45° (replaces XK77)	1
14	PH265	Oil seal, Victor no. 60320	2	—	CA48663S1	Breather	1
15	PA289	Taper pin, 3/16" diameter x 5/8" long	2			Crankshaft assembly (in- cludes crankshaft, bearings, gear, key) (obsolete)	1

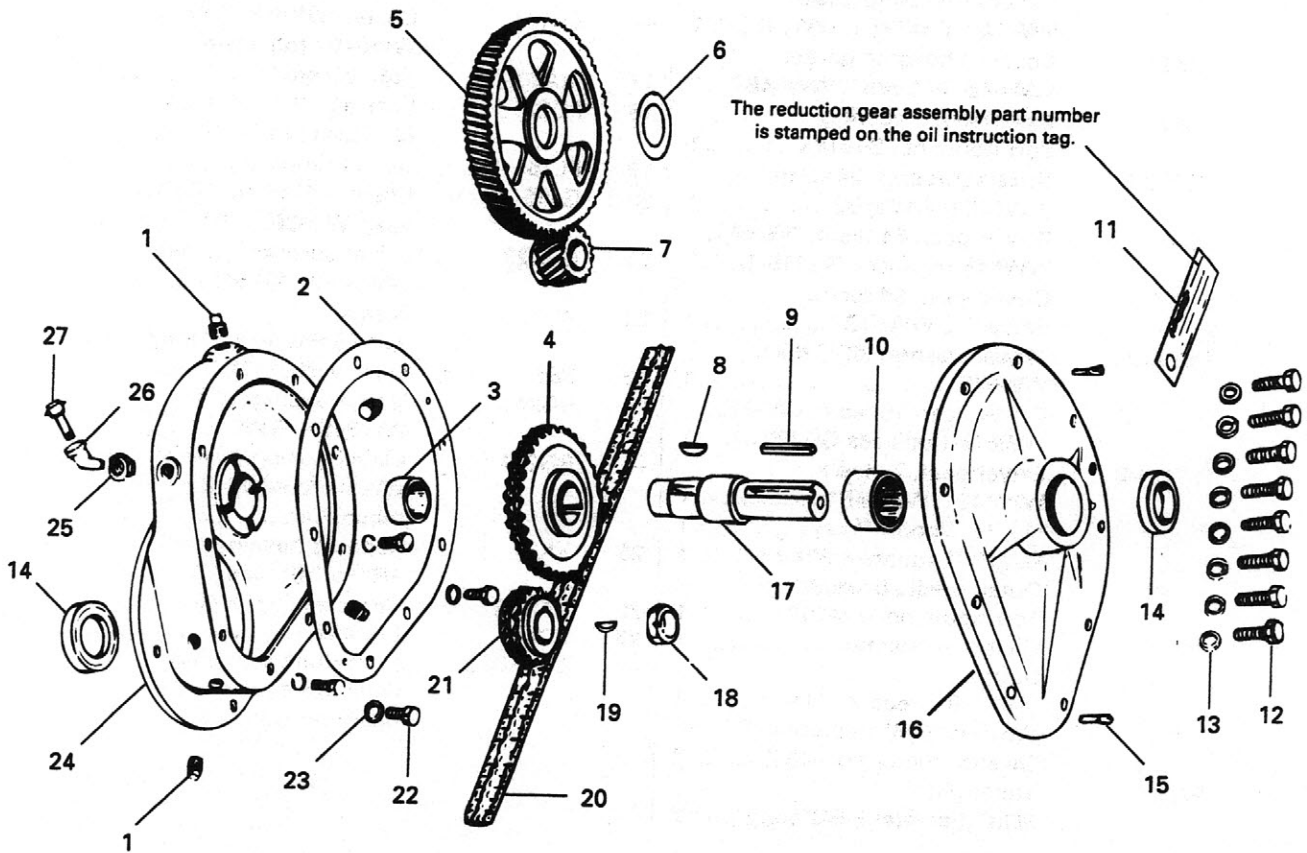
WW64D3, 6 To 1 Reduction Gear Assembly (Obsolete)

USE WITH MODELS ADH, AEH



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	6	14	GG136-2	Driven gear, 79 teeth (obsolete)	1
2	QD623A	Cover to housing gasket	1	15	XD27	Screw, 3/8"-16 thread x 1" long	4
3	ME92	Inner needle bearing, Torrington no. B1816X	1	16	PE5	Lock washer, 3/8"	4
4	PL50	No. 16 Woodruff key	1	17	BG218A1	Housing and engine bearing plate (obsolete)	1
5	PL88	Key, 1/4" square x 2" long	1	18	PH378	Crankshaft oil seal, Chicago Rawhide no. 237G110	1
6	ME93	Outer needle bearing, Torrington no. B2420X	1	19	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
7	SD79	Oil instruction tag	1	20	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1
8	XD17	Screw, 5/16"-18 thread x 1" long	8	21	LO44	Breather assembly	1
9	PE4	Lock washer, 5/16"	8	—	CA48C117S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
10	PH265	Take-off shaft oil seal, Victor no. 60320	1				
11	PA289	Taper pin, 3/16" diameter x 5/8" long	2				
12	BH144A	Cover	1				
13	WA69	Take-off shaft	1				

WW64B (Obsolete), WW64E Reduction Gear Assemblies



Assembly Part Number	Reduction Ratio	Rotation at Take-off Shaft	Net Weight	
			Lb	Oz
WW64E (replaces WW64R)	4 to 1	Counter engine-wise	25	
WW64B (replaces WW64R)	4 to 1	Counter engine-wise	25	
WW64E1 (replaces WW64T2)	2.076 to 1	Counter engine-wise	25	
WW64B1 (replaces WW64T2)	2.076 to 1	Counter engine-wise	25	
WW64E2 (replaces WW64U2)	3.4 to 1	Engine-wise (chain drive)	24	
WW64B2 (replaces WW64U2)	3.4 to 1	Engine-wise (chain drive)	24	

WW64B (Obsolete), WW64E Reduction Gear Assemblies

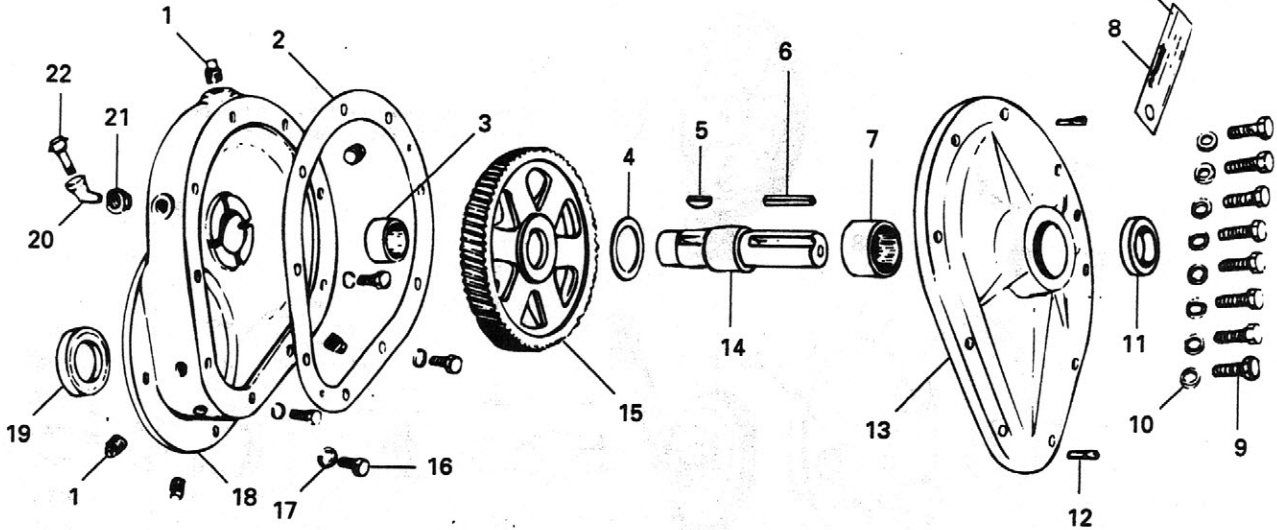
USE WITH MODEL AENL (see pg. 45)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	4	16	BH144A	Cover, WW64E, WW64E1,	
2	QD623A	Cover to housing gasket,				WW64E2	1
		WW64E, WW64E1, WW64E2 ...	1	—	BH144	Cover, WW64B, WW64B1,	
	QD623	Cover to housing gasket,				WW64B2 (obsolete)	1
		WW64B, WW64B1, WW64B2 ...	1	17	WA69	Take-off shaft	1
3	ME92	Inner needle bearing,		18	PD221	Lock nut, 3/4"-16 thread	
		Torrington no. B1816X	1			(replaces PD62-2, XI9)	1
4	GG122-1	Driven sprocket, 34 teeth,		19	PL16	No. 11 Woodruff key	1
		WW64E2, WW64B2	1	20	GJ15	Chain, 1/2" pitch, 40 pitches	
5	GG119-3	Driven gear, 64 teeth, WW64E,				long, WW64E2, WW64B2	1
		WW64B (replaces GG119-1)	1	21	GG123	Driver sprocket, 10 teeth,	
	GG122-3	Driven gear, 54 teeth,				WW64E2, WW64B2	1
		WW64E1, WW64B1	1	22	XD27	Screw,	
6	PH333D	Thrust washer, .022" thick,				3/8"-16 thread x 1" long	4
		WW64E	1	23	PE5	Lock washer, 3/8"	4
7	GG120-2	Driver gear, 16 teeth, WW64E,		24	BG244A	Main housing, WW64E,	
		WW64B (replaces GG120-1)	1			WW64E1, WW64E2	1
	GG121-2	Driver gear, 26 teeth,		—	BG244	Main housing, WW64B,	
		WW64E1, WW64B1	1			WW64B1, WW64B2	
8	PL50	No. 16 Woodruff key	1			(obsolete)	1
9	PL88	Key, 1/4" square x 2" long	1	25	XK21	Reducer bushing,	
10	ME93	Outer needle bearing,				1/4" to 1/8" pipe	1
		Torrington no. B2420X	1	26	XK77A	Street ell, 1/8" x 45°	1
11	SD79	Oil instruction tag	1	27	LO44	Breather	1
12	XD17	Screw,		—	CA48D2S1	Crankshaft assembly	
		5/16"-18 thread x 1" long	8			(includes crankshaft,	
13	PH14	Washer, 5/16" (replaces PE4) ...	8			bearings, gear, key)	1
14	PH265	Oil seal, Victor no. 60320	2				
15	PA289	Taper pin,					
		3/16" diameter x 5/8" long	2				

WW64E6, 6.059 To 1 Reduction Gear Assembly (Replaced By WW64V)

USE WITH MODEL AENL

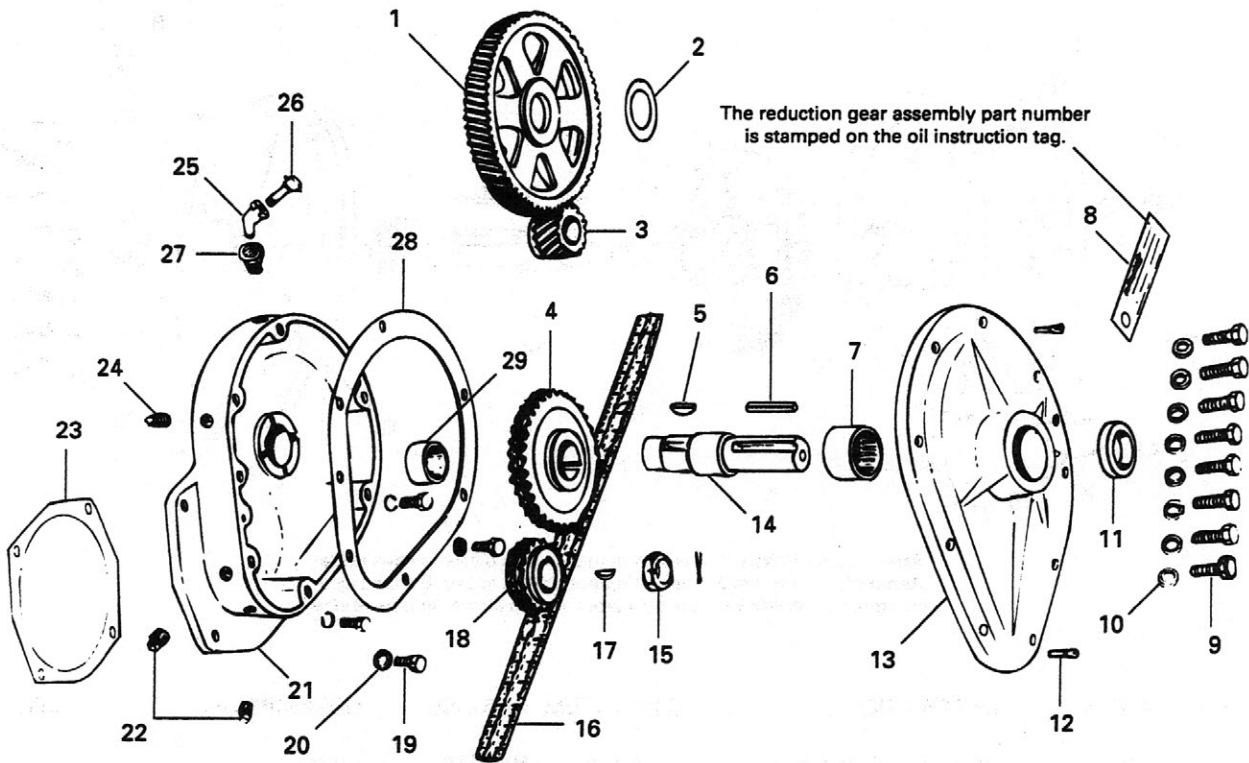
The reduction gear assembly part number is stamped on the oil instruction tag.



Assembly no. WW64V2 is used if output shaft is below left hand side.
 Assembly no. WW64V3 is used if output shaft is above left hand side.
 Assembly no. WW64V4 is used if output shaft is above right hand side.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	2	13	BH144A	Cover	1
—	PF51	Pipe plug, 1/4" slotted	4	14	WA69	Take-off shaft	1
2	QD623A	Cover to housing gasket	1	15	GG136-5	Driven gear, 103 teeth	1
3	ME92	Inner needle bearing, Torrington no. B1816X	1	16	XD27	Screw, 3/8"-16 thread x 1" long	4
4	PH333E	Thrust washer, .005" thick (replaces PH333A)	2	17	PE5	Lock washer, 3/8"	4
5	PL50	No. 16 Woodruff key	1	18	BG244A1	Housing and engine bearing plate	1
6	PL88	Key, 1/4" square x 2" long	1	19	PH374	Crankshaft oil seal, National no. 50129	1
7	ME93	Outer needle bearing, Torrington no. B2420X	1	20	XK77A	Street ell, 1/8" x 45°	1
8	SD79	Oil instruction tag	1	21	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
9	XD17	Screw, 5/16"-18 thread x 1" long	8	22	LO44	Breather assembly	1
10	PH14	Washer, 5/16"	8	—	CA48D112S1	Crankshaft assembly (includes crankshaft, bearings, gear, key)	1
11	PH265	Take-off shaft oil seal, Victor no. 60320	1				
12	PA289	Taper pin, 3/16" diameter x 5/8" long	2				

WW64P, WW64P1, WW64P2, WW64P6 Reduction Gear Assemblies



Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Net Weight	
			Lb	Oz
WW64P	4 to 1	Counter engine-wise	23	
WW64P1	2.076 to 1	Counter engine-wise	23	
WW64P2	3.4 to 1	Engine-wise (chain drive)	22	
WW64P6	6 to 1	Counter engine-wise	23	

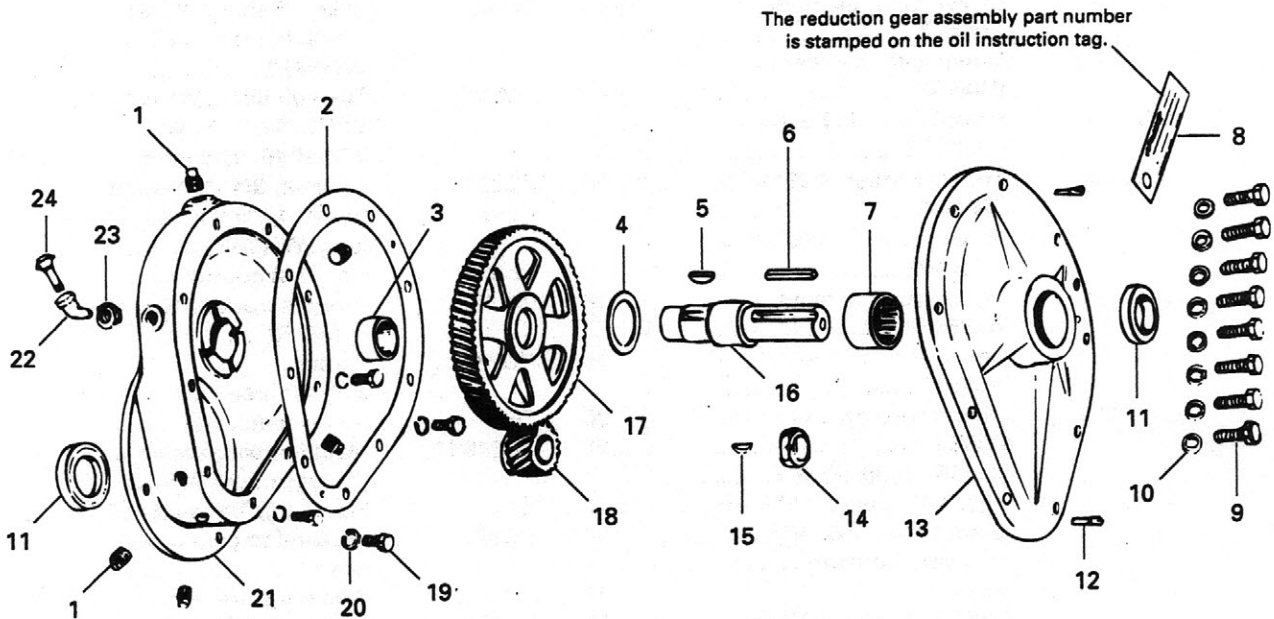
WW64P, WW64P1, WW64P2, WW64P6 Reduction Gear Assemblies

USE WITH MODELS S10D, S12D, S14D (Beginning with serial number 4265613), WW64N, WW64N1, WW64N2, WW64N6 (Obsolete) (Used on engines previous to serial no. 4265613) (see pg. 48)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	GG119-3	Driven gear, 64 teeth, WW64P	1	14	WA69	Take-off shaft, WW64P, WW64P1, WW64P2, WW64P6	1
—	GG122-3	Driven gear, 54 teeth, WW64P1	1	—	WA130	Take-off shaft, WW64N, WW64N1, WW64N2, WW64N6 (obsolete)	1
—	GG136-5	Driven gear, 103 teeth, WW64P6	1	15	PD221	Locknut, 3/4"-16 thread	1
2	PH333D	Thrust washer, .022" thick, WW64P	1	16	GJ15	Chain, 1/2" pitch, 40 pitches long, WW64P2	1
—	PH333E	Thrust washer, .005" thick, WW64P6	2	17	PL16	No. 11 Woodruff key	1
3	GG120-2	Driver gear, 16 teeth, WW64P	1	18	GG123	Driver sprocket, 10 teeth, WW64P2	1
—	GG121-2	Driver gear, 26 teeth, WW64P1	1	19	XD29	Screw, 3/8"-16 thread x 1-1/4" long	4
4	GG122-1	Driven sprocket, 34 teeth, WW64P2	1	20	PE5	Lockwasher, 3/8"	4
5	PL50	No. 16 Woodruff key	1	21	BG340S1	Main housing assembly (includes item 29)	1
6	PL88	Key, 1/4" square x 2" long	1	22	XK2	Pipe plug, 1/4" square	2
7	ME93	Outer needle bearing	1	23	QD827	Housing to gear cover gasket	1
8	SD79	Oil instruction tag	1	24	PF51	Pipe plug, 1/4" slotted	4
9	XD17	Screw, 5/16"-18 thread x 1" long	8	25	XK77A	Street ell, 1/8" x 45°	1
10	PH14	Washer, 5/16"	8	26	LO44	Breather	1
11	PH265	Oil seal, WW64P, WW64P1, WW64P2, WW64P6	1	27	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
—	PH529	Oil seal, WW64N, WW64N1, WW64N2, WW64N6 (obsolete)	1	28	QD623A	Cover to housing gasket	1
12	PA289	Taper pin, 3/16" diameter x 5/8" long	2	29	ME92	Inner needle bearing	1
13	BH144AS2	Cover assembly, WW64P, WW64P1, WW64P2, WW64P6 (includes 7, 11)	1	—	BD113C3S2	Gear cover assembly	1
—	BH144AS1	Cover assembly, WW64N, WW64N1, WW64N2, WW64N6 (obsolete) (includes item 7; includes PH529)	1	—	CA80-2S1	Crankshaft assembly, WW64P, WW64P1, WW64P2 ...	1
				—	CA80-112S1	Crankshaft assembly, WW64P6	1

WW64R, 4 To 1 Reduction Gear Assembly

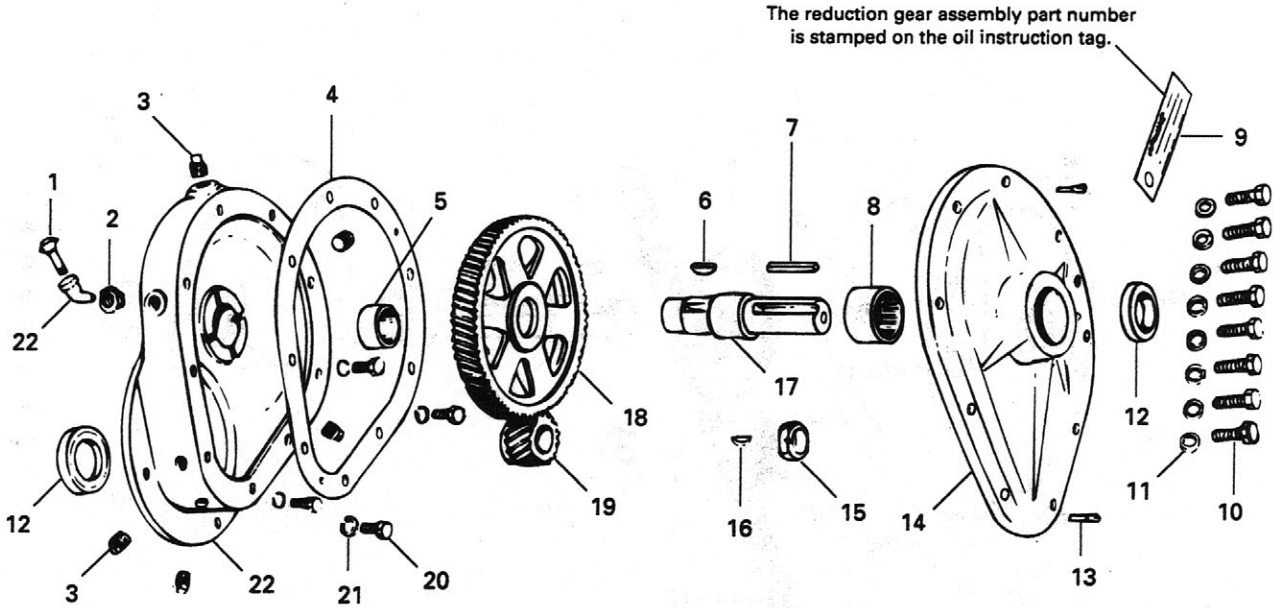
USE WITH MODEL AENL



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	4	15	PL16	No. 11 Woodruff key	1
2	QD623A	Cover to housing gasket	1	16	WA69	Take-off shaft	1
3	ME92	Inner needle bearing	1	17	GG119-3	Driven gear, 64 teeth	1
4	PH333D	Thrust washer, .002" thick	1	18	GG120-2	Driver gear, 16 teeth	1
5	PL50	No. 16 Woodruff key	1	19	XD27	Screw,	
6	PL88	Key, 1/4" square x 2" long	1			3/8"-16 thread x 1" long	4
7	ME93	Outer needle bearing	1	20	PE5	Lock washer, 3/8"	4
8	SD79	Oil instruction tag	1	21	BG244A	Housing and engine	
9	XD17	Screw,				bearing plate	1
		5/16"-18 thread x 1" long	8	22	XK77A	Street ell, 1/8" x 45°	1
10	PH14	Washer, 5/16"	8	23	XK21	Reducer bushing,	
11	PH265	Take-off and crankshaft				1/4" to 1/8" pipe	1
		oil seal	2	24	LO44	Breather assembly	1
12	PA289	Taper pin,			CA48D2S1	Crankshaft assembly	
		3/16" diameter x 5/8" long	2			(includes crankshaft,	
13	BH144A	Cover	1			bearings, gear, key)	1
14	PD221	Lock nut, 3/4"-16 thread	1				

WW64T, 2.076 To 1 Reduction Gear Assembly

USE WITH MODEL AENL

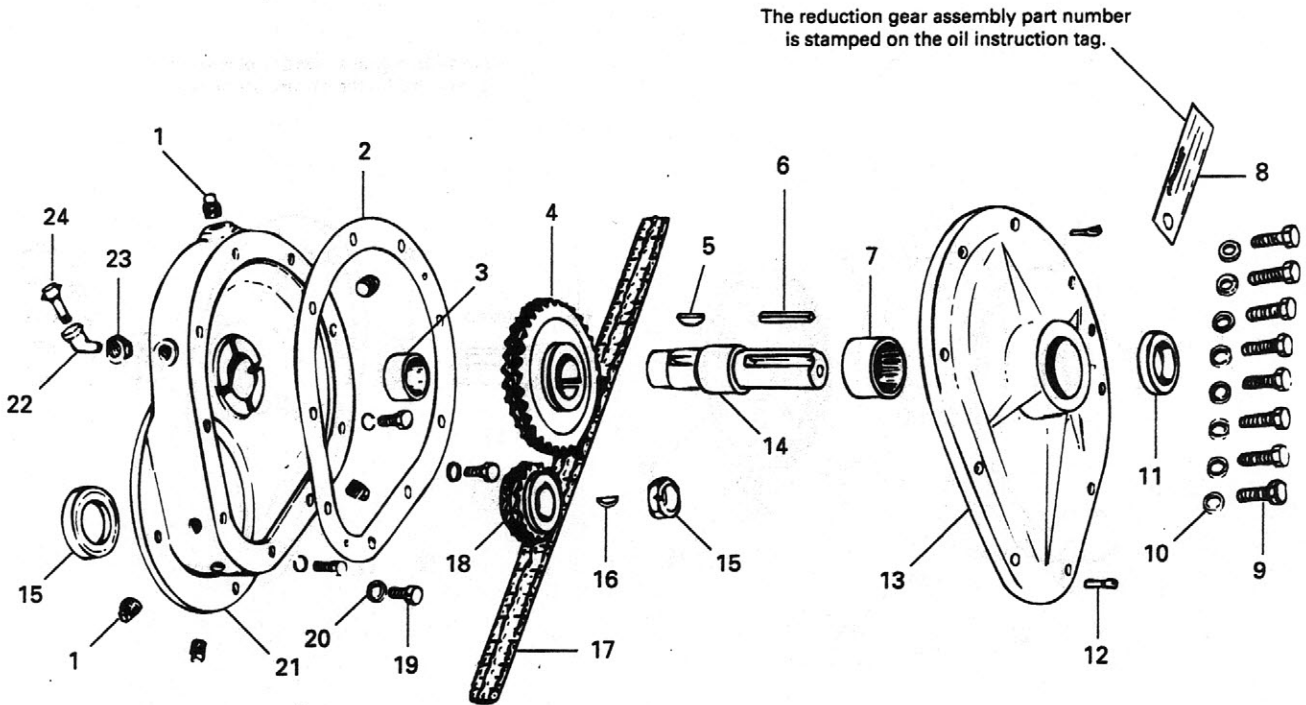


Take-off shaft can be mounted to the left or right, above or below the crankshaft centerline at a 45° angle.
 Assembly no. WW64T1 is used below right hand side.
 Assembly no. WW64T2 is used below left hand side.
 Assembly no. WW64T3 is used above left hand side.
 Assembly no. WW64T4 is used above right hand side.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO44	Breather assembly	1	14	BH144A	Cover	1
2	XK21	Reducer bushing, 1/4" to 1/8" pipe	1	15	PD221	Lock nut, 3/4"-16 thread	1
3	XK2	Pipe plug, 1/4"	4	16	PL16	No. 11 Woodruff key	1
4	QD623A	Gasket	1	17	WA69	Take-off shaft	1
5	ME92	Inner needle bearing	1	18	GG122-3	Driven gear, 54 teeth	1
6	PL50	No. 16 Woodruff key	1	19	GG121-2	Driver gear, 26 teeth	1
7		Key, 1/4" square x 2" long	1	20	XD27	Screw, 3/8"-16 thread x 1" long	4
8	ME93	Outer needle bearing	1	21	PE5	Lock washer, 3/8"	4
9	SD79	Tag	1	221	BG244A	Housing and engine bearing plate	1
10	XD17	Screw, 5/16"-18 thread x 1" long	8	23	XK77A	Street ell, 1/8" x 45°	1
11	PH14	Washer, 5/16"	8	—	CA48D2S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
12	PH265	Oil seal	2				
13	PA289	Taper pin, 3/16" dia. x 5/8" long	2				

WW64U, 3.4 To 1 Reduction Gear Assembly

USE WITH MODEL AENL

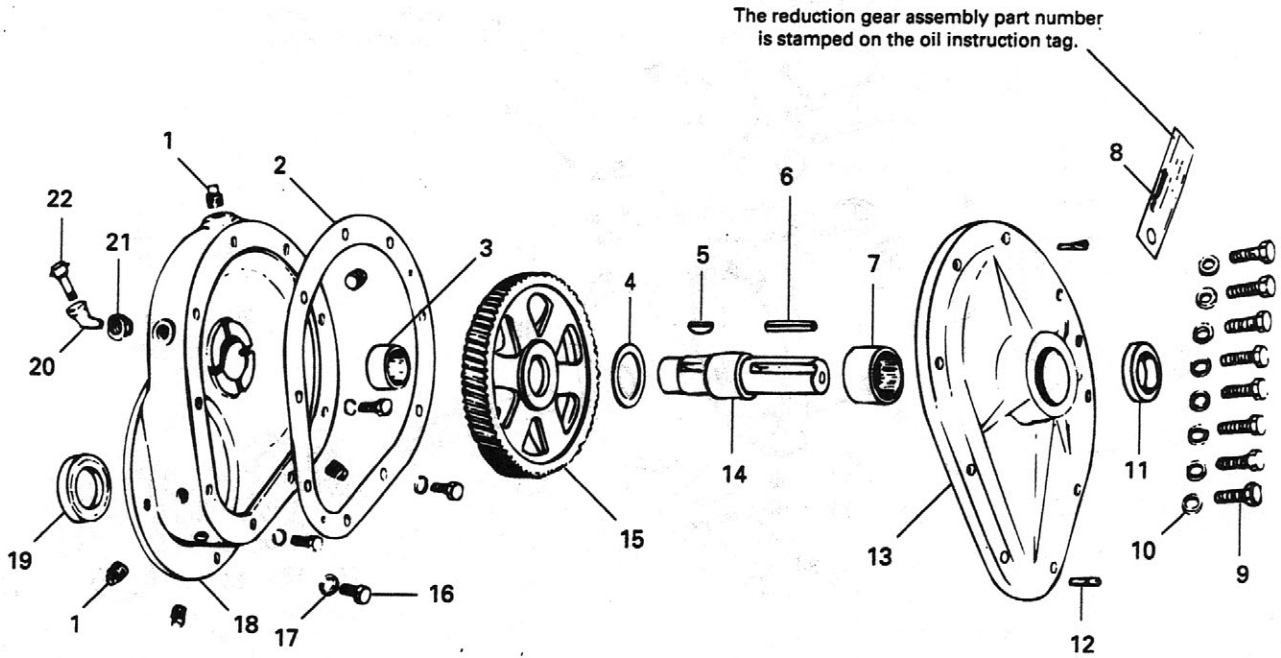


Take-off shaft can be mounted to the left or right, above or below the crankshaft centerline at a 45° angle.
 Assembly no. WW64U1 is used below right hand side.
 Assembly no. WW64U2 is used below left hand side.
 Assembly no. WW64U3 is used above left hand side.
 Assembly no. WW64U4 is used above right hand side.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square.....	4	15	PD221	Locknut, 3/4"-16 thread.....	1
2	QD623A	Cover to housing gasket.....	1	16	PL16	No. 11 Woodruff key.....	1
3	ME92	Inner needle bearing.....	1	17	GJ15	Chain, 1/2" pitch, 40 pitches long.....	1
4	GG122-1	Driven sprocket, 34 teeth.....	1	18	GG123	Drive sprocket, 10 teeth.....	1
5	PL50	No. 16 Woodruff key.....	1	19	XD27	Screw, 3/8"-16 thread x 1" long.....	4
6	PL88	Key, 1/4" square x 2" long.....	1	20	PE5	Lock washer, 3/8".....	4
7	ME93	Outer needle bearing.....	1	21	BG244A	Housing and engine bearing plate.....	1
8	SD79	Oil instruction tag.....	1	22	XK77A	Street ell, 1/8" x 45°.....	1
9	XD17	Screw, 5/16"-18 thread x 1" long.....	8	23	XK21	Reducer bushing, 1/4" to 1/8" pipe.....	1
10	PH14	Washer, 5/16".....	8	24	LO44	Breather assembly.....	1
11	PH265	Take-off and crankshaft oil seal.....	2	—	CA48D2S1	Crankshaft assembly (includes crankshaft, bearings, gear, key).....	1
12	PA289	Taper pin, 3/16" diameter x 5/8" long.....	2				
13	BH144A	Cover.....	1				
14	WA69	Take-off shaft.....	1				

WW64V, 6.059 To 1 Reduction Gear Assembly

USE WITH MODEL AENL

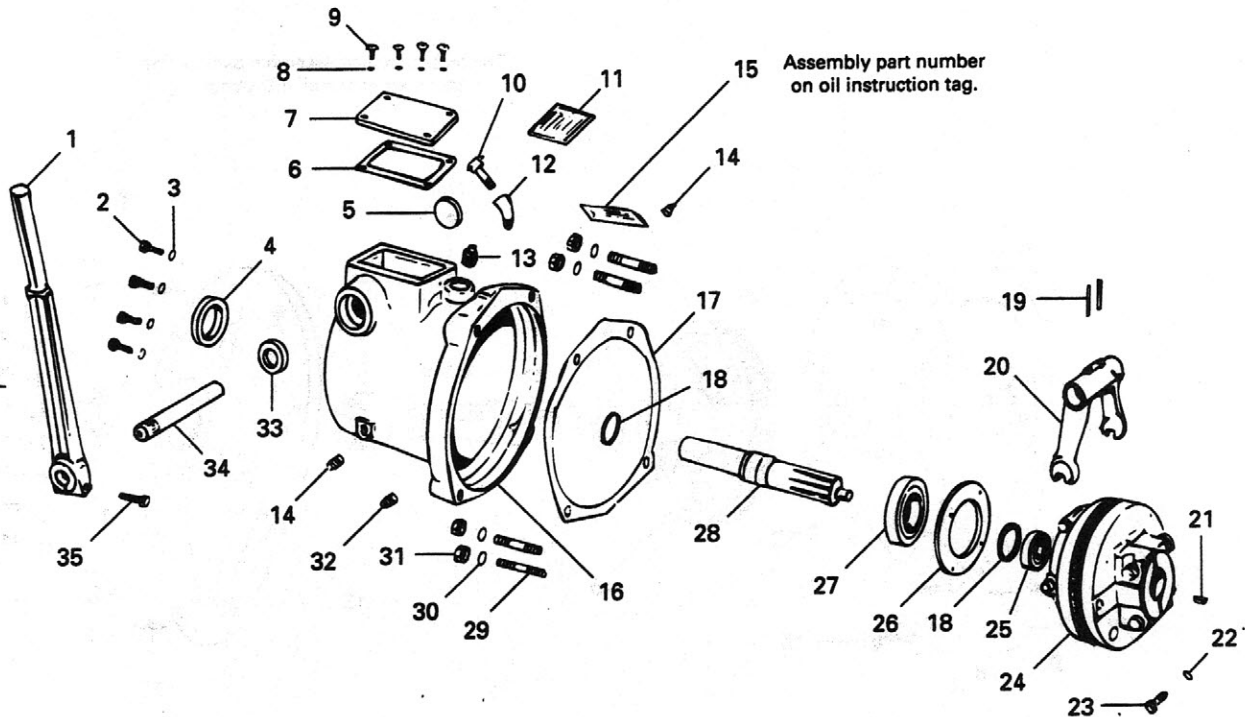


Take-off shaft can be mounted to the left or right, above or below the crankshaft centerline at a 45° angle.
 Assembly no. WW64V1 is used below right hand side.
 Assembly no. WW64V2 is used below left hand side.
 Assembly no. WW64V3 is used above left hand side.
 Assembly no. WW64V4 is used above right hand side.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XK2	Pipe plug, 1/4" square	6	15	GG136-5	Driven gear, 103 teeth	1
2	QD623A	Cover to housing gasket	1	16	XD27	Screw, 3/8"-16 thread x 1" long	4
3	ME92	Inner needle bearing	1	17	PE5	Lock washer, 3/8"	4
4	PH333E	Thrust washer, .005" thick	2	18	BG244A1	Housing and engine bearing plate	1
5	PL50	No. 16 Woodruff key	1	19	PH374	Crankshaft oil seal, National no. 50129	1
6	PL88	Key, 1/4" square x 2" long	1	20	XK77A	Street ell, 1/8" x 45°	1
7	ME93	Outer needle bearing	1	21	XK21	Reducer bushing, 1/4" to 1/8" pipe	1
8	SD79	Oil instruction tag	1	22	LO44	Breather assembly	1
9	XD17	Screw, 5/16"-18 thread x 1" long	8	—	CA48D112S1	Crankshaft assembly (includes crankshaft, bearings, gear, key)	1
10	PH14	Washer, 5/16"	8				
11	PH265	Take-off shaft oil seal	1				
12	PA289	Taper pin, 3/16" diameter x 5/8" long	2				
13	BH144A	Cover	1				
14	WA69	Take-off shaft	1				

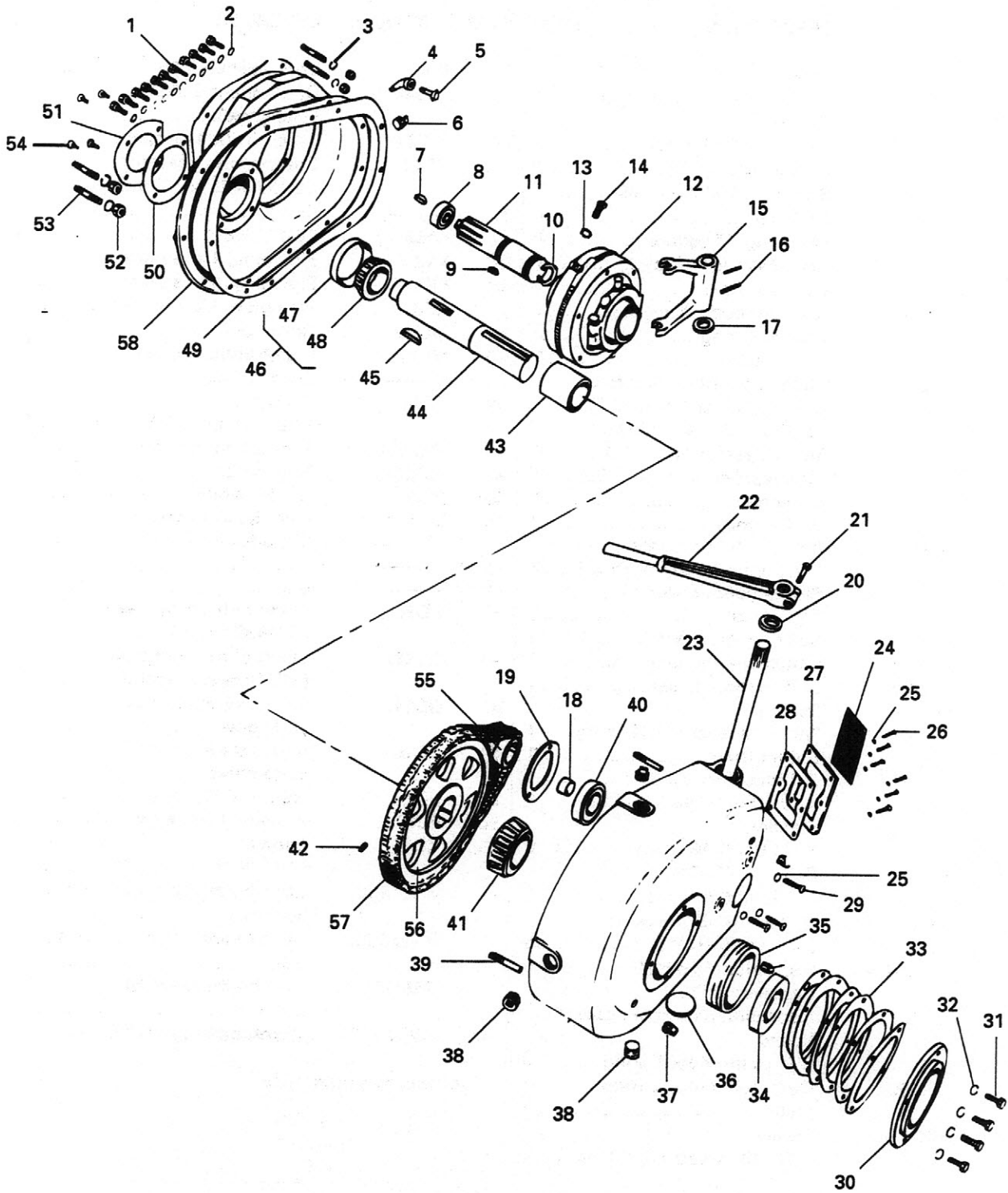
WW74A Take-Off Assembly

USE WITH MODELS W2-880, TE, TF, THD, TJD



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	VB55-1	Shifting lever	1	20	VB64A	Clutch shifting yoke	1
2	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4	21	PL47	No. 18 Woodruff key	1
3	PH30	Washer, 1/4"	4	22	PE46	Lock washer, 5/16"	1
4	PH280	Take-off shaft oil seal	1	23	XD14-2	Set screw	1
5	SA58	Plug, 1-3/8" yoke shaft	1	24	WC280A	Clutch assembly, Rockford Drilling Model 4-1/2 L.O.C. no. CLA1721-14 (includes item 25)	1
6	QD551	Inspection cover gasket.....	1	25	ME131A	Clutch shaft ball bearing	1
7	BH115A	Housing inspection cover	1	26	BG156	Bearing retainer plate	1
8	PH30A	Washer, 1/4"	4	27	ME79A	Take-off shaft bearing	1
9	XA34	Screw, 1/4"-20 thread x 1/2" long	4	28	WA94	Clutch take-off shaft.....	1
10	LO44	Breather assembly	1	29	PC392	Studs	4
11	SD125A	Adjustment instruction plate ...	1	30	PE6	Lock washer, 7/16"	4
12	XK77A	Street ell, 1/8" x 45°	1	31	PD12	Nut, 7/16"-20 thread	4
13	XK3	Pipe plug, 3/8" square.....	1	32	XK2	Plug, 1/4" square	1
14	XK1	Plug, 1/8" square	2	33	PH234A	Yoke shaft oil seal	1
15	SD79	Oil instruction tag	1	34	WA61	Yoke shaft	1
16	BG230-2	Clutch housing	1	35	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
17	QD650-1	Housing mounting gasket.....	1				
18	PK149	Snap ring	2				
19	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2				

WW75A Reduction Gear Assembly



WW75A Reduction Gear Assembly


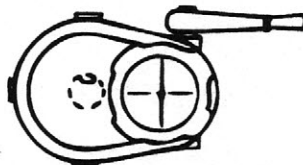
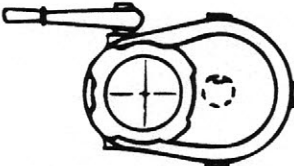

USE WITH MODELS TE, TF, THD, TJD, W2-880 (see pg. 55)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD27	Screw, 3/8"-16 thread x 1" long	11	32	PE4	Lock washer, 5/16"	4
2	PH22	Washer, 3/8" I.D. x 1/16" thick	11	33	QD544	Outer bearing retainer plate gasket	8-12
3	PE6	Lock washer, 7/16"	4	34	PH202	Take-off shaft oil seal	1
4	XK77A	Street ell, 1/8" pipe x 45°	1	—	ME76	Outer bearing assembly (includes 35 and 41)	1
5	LO44	Breather	1	35	* — — —	Cup	1
6	XK10	Pipe plug, 1" square	2	36	SA58	Plug, 1-1/8"	1
7	PL47	No. 18 Woodruff key	1	37	XK2	Pipe plug, 1/4" square	3
8	ME131A	Ball bearing	1	38	XK4	Pipe plug, 1/2" square	2
9	PL17	No. 13 Woodruff key	1	—	XK6	Pipe plug, 1/2" countersunk	1
10	PK82	Retaining ring	2	39	PA279	Dowel pin	2
11	WA93	Clutch shaft	1	40	ME119	Clutch shaft ball bearing	1
12	WC280A	Clutch assembly, Rockford Drilling Model 4-1/2 L.O.C. no. CLA1721-14 (includes item 8) (replaces CLA1721-1) ...	1	41	* — — —	Cone	1
13	PE46	Lock washer, 5/16"	1	42	XE44	Set screw, 5/16"-18 thread x 5/8" long	1
14	XD14-2	Set screw	1	43	HF265A	Take-off shaft spacer	1
15	VB64A	Shifter yoke	1	44	WA55H	Take-off shaft	1
16	PA341	Roll pin, 1/4" diameter x 1-1/8" long (replaces XH26)	2	45	PL24	No. 29 Woodruff key	1
17	HF392A	Shifter yoke spacer, 3/16" thick	1	46	ME77	Inner bearing assembly (includes 47 and 48)	1
18	HF372A	Ball bearing spacer	1	47	* — — —	Cup	1
19	BG216	Clutch bearing plate	1	48	* — — —	Cone	1
20	PH234A	Shifter shaft oil seal	1	49	QD856	Cover to housing gasket (BH143B cover)	1
21	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	—	QD619	Cover to housing gasket (BH143 cover, obsolete)	1
22	VB55-1	Shifter lever	1	50	QD543A	Inner bearing retainer plate gasket	1
23	WA61D	Shifter shaft	1	51	BG151	Inner retaining bearing plate gasket	1
24	SD125A	Instruction plate	1	52	PD12	Nut, 7/16"-20 thread	4
25	PH30	Washer, 1/4" I.D. x 1/16" thick	9	53	PC392	Housing to crankcase stud	4
26	XA34	Screw, 1/4"-20 thread x 1/2" long (BH127B)	6	54	XC17	Screw, 5/16"-18 thread x 3/4" long	4
—	XA36	Screw, 1/4"-20 thread x 3/4" long (BH127)	6	—	BG224BS2	Main bearing plate assembly, TH, THD	1
27	BH127B	Inspection hole plate (replaces BH127)	1	—	BG349-2S2	Main bearing plate assembly, TJD	1
28	QD592	Inspection hole cover gasket ...	1	—	CA62-2S1	Crankshaft assembly, TH, THD	1
29	XD7	Screw, 1/4"-20 thread x 1" long	3	—	CA86-2S1	Crankshaft assembly, TJD	1
30	BG150	Outer retaining bearing plate	1				
31	XD15	Screw, 5/16"-18 thread x 3/4" long	4				

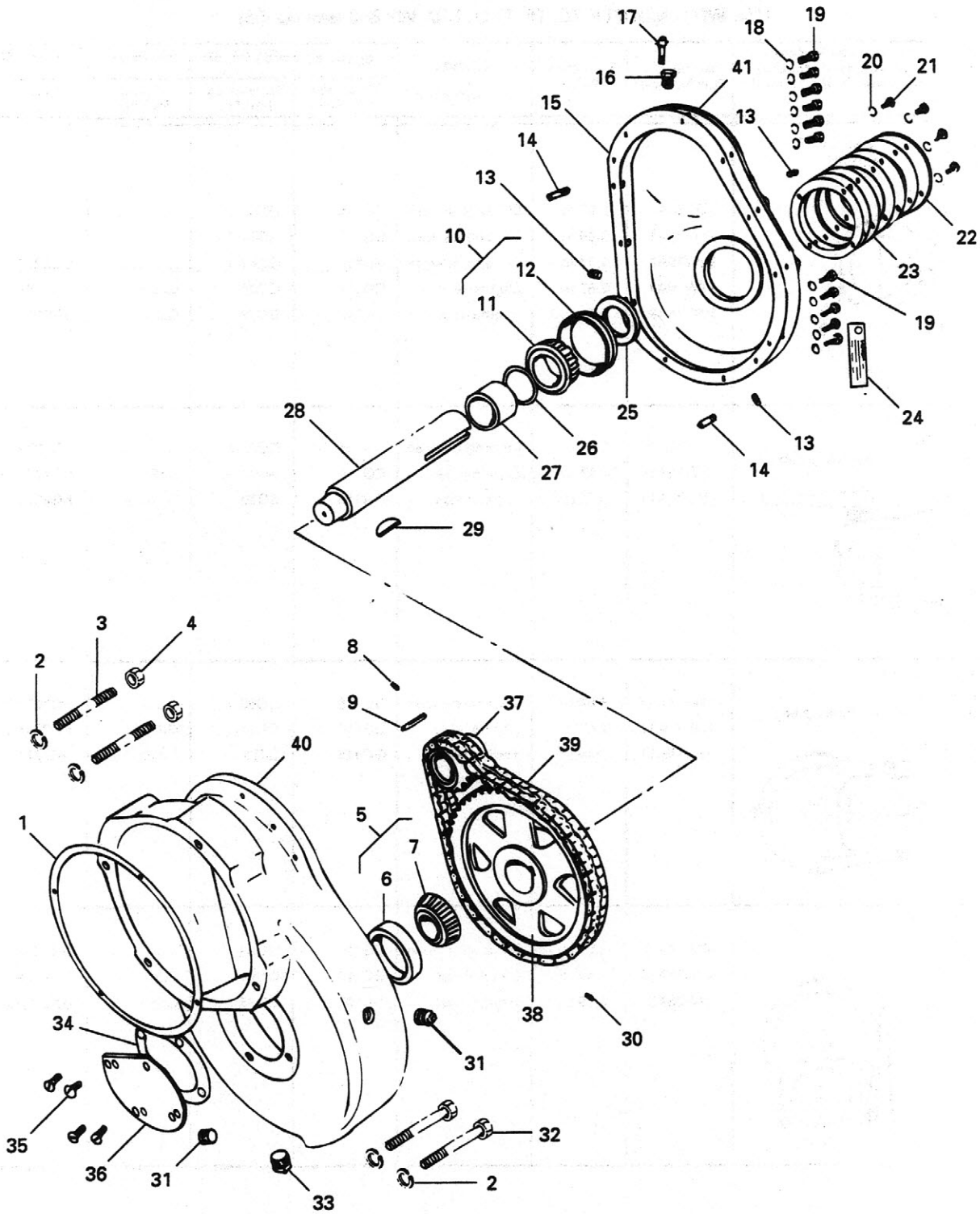
* Not serviced separately.

WW75A Reduction Gear Assembly

USE WITH MODELS TE, TF, THD, TJD, W2-880 (see pg. 55)

Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 55	Ref. No. 56	Ref. No. 57	Ref. No. 58
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.
<p>TAKE-OFF SHAFT BELOW</p> 	WW75A	2.07 to 1	Ctr. engine-wise	GG116	GG67-1	.....	BG227A
	WW75A1	3.00 to 1	Ctr. engine-wise	GG117	GG77-1	.....	BG227A
	WW75A2	3.84 to 1	Ctr. engine-wise	GG118	GG69-1	.....	BG227A
	WW75A4	2.67 to 1	Engine-wise	GG114	GG71	GJ9	BG227A
	WW75A5	3.79 to 1	Engine-wise	GG115	GG73	GJ10	BG227A
<p>TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end.</p> 	WW75A6	2.07 to 1	Ctr. engine-wise	GG116	GG67-1	.....	BG227A1
	WW75A10	2.67 to 1	Engine-wise	GG114	GG71	GJ9	BG227A1
	WW75A11	3.79 to 1	Engine-wise	GG115	GG73	GJ10	BG227A1
<p>TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end.</p> 	WW75A14	3.84 to 1	Ctr. engine-wise	GG118	GG69-1	.....	BG227A2
	WW75A16	2.67 to 1	Engine-wise	GG114	GG71	GJ9	BG227A2
	WW75A17	3.79 to 1	Engine-wise	GG115	GJ73	GJ10	BG227A2
<p>TAKE-OFF SHAFT ON TOP</p> 	WW75A20	3.84 to 1	Etr. engine-wise	GG118	GG69-1	.....	BG227A3
	WW75A22	2.67 to 1	Engine-wise	GG114	GG71	GJ9	BG227A3
	WW75A23	3.79 to 1	Engine-wise	GG115	GG73	GJ10	BG227A3

WW77A Reduction Gear Assembly




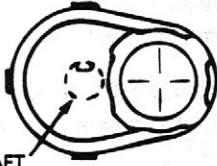
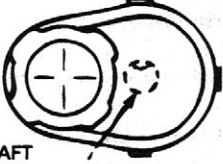
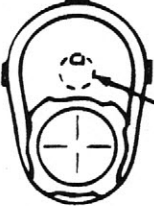
WW77A Reduction Gear Assembly

USE WITH MODELS TE, TF, THD, TJD, W2-880 (see pg. 58)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD650-1	Housing to crankcase gasket ...	1	21	XD15	Screw,	
2	PE6	Lock washer, 7/16"	4			5/16"-18 thread x 3/4" long	4
3	PC392	Housing to case stud	2	22	BG150	Outer retaining bearing	
4	PD12	Nut, 7/16"-20 thread	2			plate	1
5	ME77	Inner bearing assembly		23	QD544	Outer retainer bearing	
		(includes 6 and 7)	1			plate gasket	6-12
6	ME77-1	Cup (not sold separately)	1	24	SD79	Oil instruction tag	1
7	ME77-2	Cone (not sold separately)	1	25	PH202	Take-off shaft oil seal	1
8	XE17	Screw,		26	PH206	Take-off shaft spacer collar	1
		1/4"-20 thread x 3/8" long	1	27	HF265	Take-off shaft spacer	1
9	PL88	Key, 1/4" square x 2" long	1	28	WA55	Take-off shaft	1
10	ME76	Outer bearing assembly		29	PL24	No. 29 Woodruff key	1
		(includes 11 and 12)	1	30	XE44	Set screw,	
11	ME76-2	Cone (not sold separately)	1			5/16"-18 thread x 5/8" long	1
12	ME76-1	Cup (not sold separately)	1	31	XK3	Pipe plug, 3/8" square	3
13	XK2	Pipe plug, 1/4" square	3	32	XD38	Screw,	
14	PA279	Dowel pin	2			7/16"-14 thread x 2" long	2
15	QD857	Cover to housing gasket	1	33	XK6	Pipe plug, 1/2" countersunk	1
16	XK88	Reducer bushing,		—	XK4	Pipe plug, 1/2" square	1
		3/8" to 1/8" pipe	1	34	QD543A	Inner bearing retainer	
17	LO44	Breather	1			plate gasket	1
18	PE5	Lock washer, 3/8"	11	35	BG151	Inner retaining bearing plate ...	1
19	XD28	Screw,		36	XC68	Screw,	
		3/8"-16 thread x 1/8" long	11			5/16"-18 thread x 3/4" long	4
20	PE4	Lock washer, 5/16"	4				

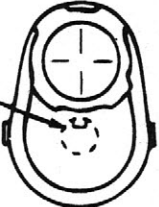
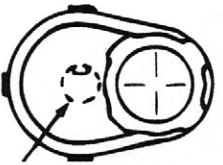
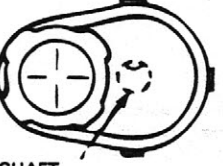
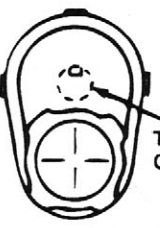
WW77A Reduction Gear Assembly

USE WITH MODELS TE, TF, THD, TJD , W2-880 (see pg. 58)

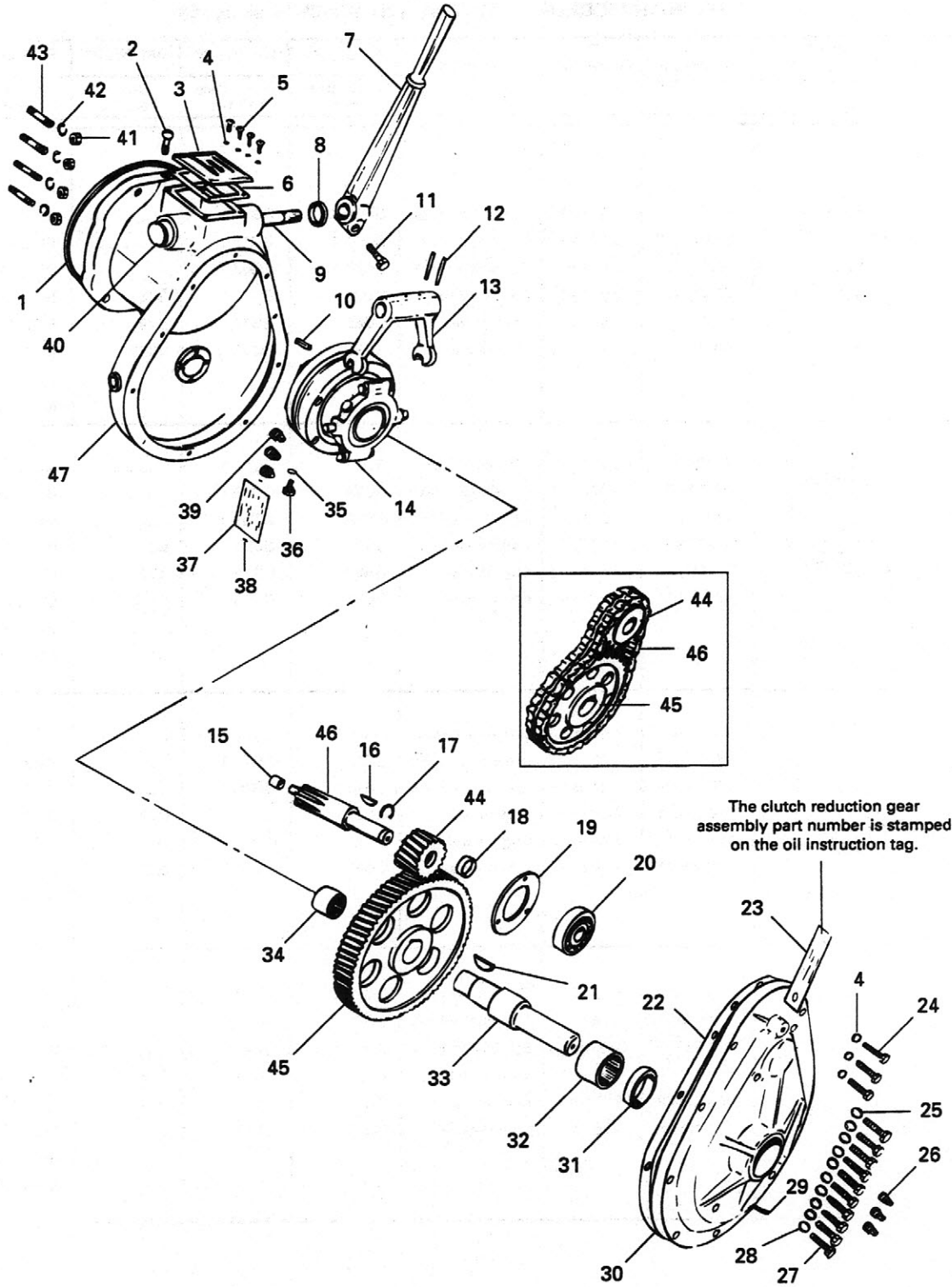
Position of drive shaft viewing from flywheel end of engine.	Assembly Part Number	Reduction Ratio	Rotation of Drive Shaft	Ref. No. 37	Ref. No. 38	Ref. No. 39	Ref. No. 40	Ref. No. 41
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Cover Part No.
 <p>DRIVE SHAFT BELOW</p>	WW77A (63 lbs.)	2.07 to 1	Ctr. engine-wise	GG66-3 (3 lbs.)	GG67-1 (9 lbs.)	-----	BG231A (19 lbs.)	BH119C (14 lbs.)
	WW77A2 (64 lbs.)	3.84 to 1	Ctr. engine-wise	GG80-1 (2 lbs.)	GG69-1 (11 lbs.)	-----	BG231A	BH119C
	WW77A5 (62 lbs.)	3.79 to 1	Engine-wise	GG83 (1 lb.)	GG73 (8 lbs.)	GJ10 (2 lbs.)	BG231A	BH119C
 <p>DRIVE SHAFT ON LEFT SIDE as viewed from the flywheel end.</p>	WW77A8	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	-----	BG231A1 (19 lbs.)	BH119C1 (14 lbs.)
	WW77A9 (60 lbs.)	2 to 1	Engine-wise	GG81 (2 lbs.)	GG71 (5 lbs.)	GJ8 (2 lbs.)	BG231A1	BH119C1
 <p>DRIVE SHAFT ON RIGHT SIDE as viewed from the flywheel end.</p>								
 <p>DRIVE SHAFT AT TOP</p>	WW77A20	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	-----	BG231A3 (19 lbs.)	BH119C5 (14 lbs.)

WW77A Reduction Gear Assembly

USE WITH MODELS TE, TF, THD, TJD, W2-880 (see pg. 58)

Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 37	Ref. No. 38	Ref. No. 39	Ref. No. 40	Ref. No. 41
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Cover Part No.
 <p>TAKE-OFF SHAFT BELOW</p>	WW77A	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG231A	BH119C
	WW77A1	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG231A	BH119C
	WW77A2	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG231A	BH119C
	WW77A3	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG231A	BH119C
	WW77A4	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG231A	BH119C
	WW77A5	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG231A (replaces BG231-4)	BH119C (replaces BH119)
 <p>TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end.</p>	WW77A6	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG231A1	BH119C1
	WW77A7	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG231A1	BH119C1
	WW77A8	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG231A1	BH119C1
	WW77A9	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG231A1	BH119C1
	WW77A10	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG231A1	BH119C1
	WW77A11	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG231A1 (replaces BG231-5)	BH119C1 (replaces BH119-1)
 <p>TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end.</p>	WW77A12	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG231A2	BH119C2
	WW77A13	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG231A2	BH119C2
	WW77A14	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG231A2	BH119C2
	WW77A15	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG231A2	BH119C2
	WW77A16	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG231A2	BH119C2
	WW77A17	3.79 to 1	Engine-wise	GG83	GJ73	GJ10	BG231A2 (replaces BG231-6)	BH119C2 (replaces BH119-2)
 <p>TAKE-OFF SHAFT ON TOP</p>	WW77A18	2.07 to 1	Ctr. engine-wise	GG66-3	GG67-1	.....	BG231A3	BH119C5
	WW77A19	3.00 to 1	Ctr. engine-wise	GG79-1	GG77-1	.....	BG231A3	BH119C5
	WW77A20	3.84 to 1	Ctr. engine-wise	GG80-1	GG69-1	.....	BG231A3	BH119C5
	WW77A21	2.00 to 1	Engine-wise	GG81	GG71	GJ8	BG231A3	BH119C5
	WW77A22	2.67 to 1	Engine-wise	GG82	GG71	GJ9	BG231A3	BH119C5
	WW77A23	3.79 to 1	Engine-wise	GG83	GG73	GJ10	BG231A3 (replaces BG231-7)	BH119C5 (replaces BG119-6)

WW79 Reduction Gear Assembly



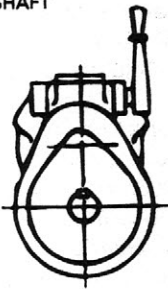
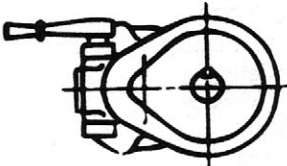


WW79 Reduction Gear Assembly

USE WITH MODELS ADH, AEH (see pg. 62)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD546	Cork strip	1	26	XK1	Plug, 1/8" square	3
2	LO44	Breather	1	27	XD17	Screw, 5/16"-18 thread x 1" long	10
3	BH115A	Cover (replaces BH115)	1	28	PH14	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	3
4	PH30	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	7	29	PA289	Taper pin, 3/16" diameter x 5/8" long	2
5	XA35	Screw, 1/4"-20 thread x 5/8" long	4	30	BH157	Housing cover	1
6	QD551	Gasket	1	31	PH265	Take-off shaft oil seal	1
7	VB55-1	Shifter lever	1	32	ME93	Outer needle bearing, Torrington no. B2420X	1
8	PH234A	Oil seal	1	33	WA69	Take-off shaft	1
9	WA61	Shifter shaft	1	34	ME92	Inner needle bearing, Torrington no. B1816X	1
10	PL86	Key, 1/4" square x 1" long	1	35	PE46	Lock washer, 5/16"	1
11	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	36	XD14-2	Set screw	1
12	PA341	Roll pin, 1/4" diameter x 1-1/8" long (replaces XH26)	2	37	SD132	Instruction plate	1
13	VB64A	Shifter yoke	1	38	XA100	Screw, no. 4 x 1/4" long (replaces XA68)	2
14	WC280B	Clutch, Rockford Model 4-1/2" L.O.C. no. CLA1751A	1	39	XK3	Plug, 3/8" square	3
15	HG182	Bushing	1	40	SA58	Plug, 1-3/8"	1
16	PL16	No. 11 Woodruff key	1	41	PD12	Nut, 7/16"-20 thread	4
17	PK76	Retaining ring	1	42	PE6	Lock washer, 7/16"	4
18	HF230	Spacer	1	43	PC392	Stud housing	4
19	BG233	Bearing retainer plate	1	—	BG106-8S1	Main bearing plate assembly (includes bearing plate, cork strip, oil seal, retainer) (obsolete)	1
20	ME10	Clutch shaft bearing	1	—	CA48C83S3	Crankshaft assembly (includes crankshaft, bearings, gear key, bushing)	1
21	PL50	No. 16 Woodruff key	1				
22	QD651	Cover to housing gasket	1				
23	SD79	Oil instruction tag	1				
24	XD7	Screw, 1/4"-20 thread x 1" long	3				
25	PE4	Lock washer, 5/16"	7				

WW79 Reduction Gear Assembly

USE WITH MODELS ADH, AEH (see pg. 62)

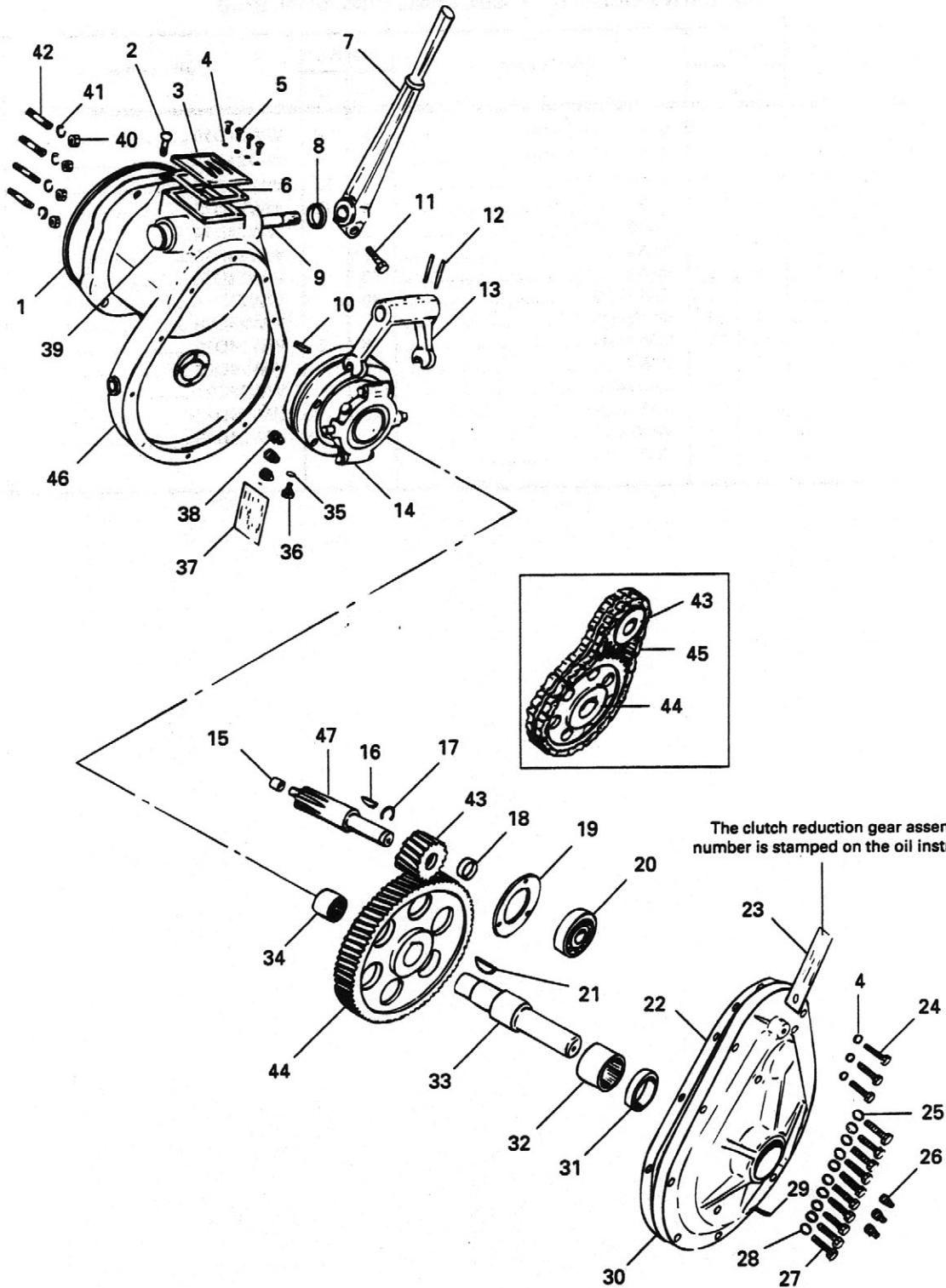
Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 44	Ref. No. 45	Ref. No. 46	Ref. No. 47	Ref. No. 48
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Clutch Shaft Part No.
TAKE-OFF SHAFT BELOW 	WW79	2.12 to 1	Engine-wise	GG138	GG137, NLA	GJ19	BG232	WA95
	WW79-1	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232	WA95
	WW79-2	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232	WA95
	WW79-3	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232	WA95
	WW79-4	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232	WA95
	WW79-5	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232	WA95
	WW79-6	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232	WA95
	WW79-7	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232	WA133AS1
 TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end.	WW79-8	2.12 to 1	Engine-wise	GG138	GG137, NLA	GJ19	BG232-1	WA95
	WW79-9	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-1	WA95
	WW79-10	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-1	WA95
	WW79-11	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-1	WA95
	WW79-12	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-1	WA95
	WW79-13	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-1	WA95
	WW79-14	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-1	WA95
	WW79-15	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-1	WA133AS1
 TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end.	WW79-16	2.12 to 1	Engine-wise	GG138	GG137, NLA	GJ19	BG232-2	WA95
	WW79-17	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-2	WA95
	WW79-18	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-2	WA95
	WW79-19	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-2	WA95
	WW79-20	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-2	WA95
	WW79-21	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-2	WA95
	WW79-22	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-2	WA95
	WW79-23	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-2	WA133AS1
TAKE-OFF SHAFT ON TOP 	WW79-24	2.12 to 1	Engine-wise	GG138	GG137, NLA	GJ19	BG232-3	WA95
	WW79-25	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-3	WA95
	WW79-26	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-3	WA95
	WW79-27	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-3	WA95
	WW79-28	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-3	WA95
	WW79-29	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-3	WA95
	WW79-30	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-3	WA95
	WW79-31	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-3	WA133AS1

WW79, WW79A Reduction Gear Assemblies

USE WITH MODELS ADH, AEH, AENL, S10D, S12D, S14D

Part Number	Net Wt.		Part Number	Net Wt.		Part Number	Net Wt.	
	Lb	Oz		Lb	Oz		Lb	Oz
BG149G (replaces BG149B)	24		GG761 (23 teeth)	2	8	WW24D10	75	8
BG149G1 (replaces BG149B1)	24		GG771 (69 teeth)	10	4	WW24D11	78	
BG149G2 (replaces BG149B2)	24		GJ8 (27" long)	1	13	WW24D12	79	
BG149G3 (replaces BG149B3)	24		GJ9 (26" long)	1	12	WW24D13	80	
BH113D1 (replaces BH113B1)	19		GJ10 (30" long)	2		WW24D14	80	
BH113D (replaces BH113B2)	19		WW24D	79		WW24D15	77	
GG66-2 (30 teeth)	3	2	WW24D1	80		WW24D16	75	8
GG67-1 (62 teeth)	8	11	WW24D2	80		WW24D17	78	
GG68-1 (19 teeth)	1	10	WW24D3	77		WW24D18	79	
GG69-1 (73 teeth)	10	15	WW24D4	75	8	WW24D19	80	
GG70 (20 teeth)	2		WW24D5	78		WW24D20	80	
GG71 (40 teeth)	5	4	WW24D6	79		WW24D21	77	
GG72 (14 teeth)	1	2	WW24D7	80		WW24D22	75	8
GG73 (53 teeth)	7	10	WW24D8	80		WW24D23	78	
GG74 (15 teeth)	1	4	WW24D9	77				

WW79A Reduction Gear Assembly



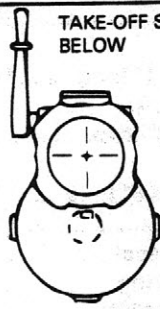
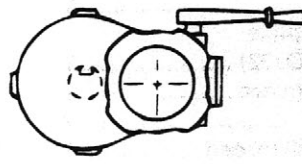
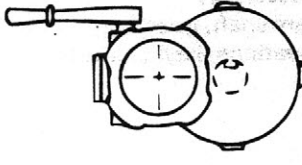
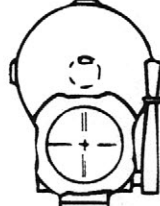
WW79A Reduction Gear Assembly

USE WITH MODELS S10D, S12D, S14D, AENL-ADH, AEH (see pg. 66)

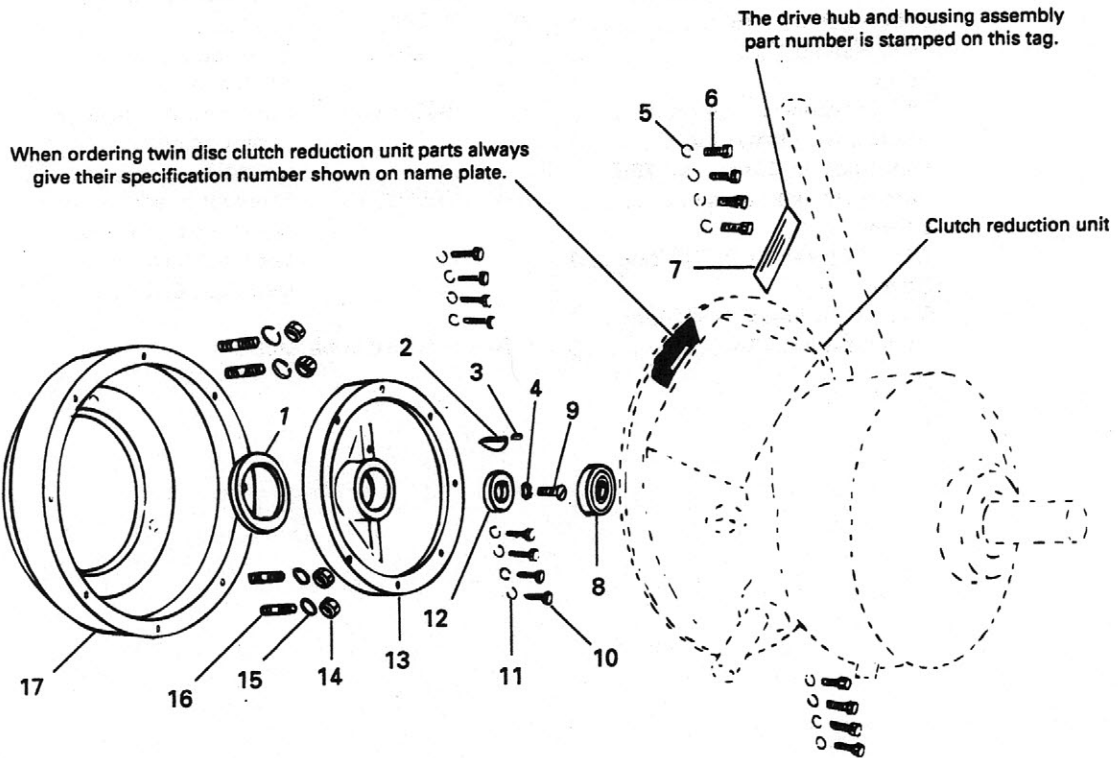
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD650-1	Housing to crankcase mounting gasket	1	25	PE4	Lock washer, 5/16"	7
2	LO44	Breather	1	26	XK1	Plug, 1/8" square	3
3	BH115A	Inspection hole cover (replaces BH115)	1	27	XD17	Screw, 5/16"-18 thread x 1" long	10
4	PH30	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	7	28	PH14	Washer, 5/16" I.D. x 19/32" O.D. x 1/16" thick	3
5	XA34	Screw, 1/4"-20 thread x 1/2" long	4	29	PA289	Taper pin, 3/16" diameter x 5/8" long	2
6	QD551	Inspection hole cover gasket ...	1	30	BH157	Housing cover	1
7	VB55-1	Shifter lever	1	31	PH265	Take-off shaft oil seal	1
8	PH234A	Shifter lever shaft oil seal	1	32	ME93	Outer needle bearing, Torrington no. B2420X	1
9	WA61	Shifter shaft	1	33	WA69	Take-off shaft	1
10	PL86	Key, 1/4" square x 1" long	1	34	ME92	Inner needle bearing, Torrington no. B1816X	1
11	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	35	PE46	Lock washer, 5/16"	1
12	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2	36	XD14-2	Set screw	1
13	VB64A	Shifter yoke	1	37	XD125A	Instruction plate (replaces SD132)	1
14	WC280B	Clutch, Rockford Model 4-1/2 L.O.C., no. CLA1761	1	38	XK3	Plug, 3/8" square	3
15	HG182	Clutch shaft pilot bushing	1	39	SA58	Plug, 1-3/8"	1
16	PL16	No. 11 Woodruff key	1	40	PD12	Nut, 7/16"-20 thread	4
17	PK76	Retaining ring	1	41	PE6	Lock washer, 7/16"	4
18	HF230	Clutch shaft bearing spacer	1	42	PC392	Stud	4
19	BG233	Bearing retainer plate	1	—	BG241-1S1	Main bearing plate assembly (includes bearing plate, bearing cup, oil seal	1
20	ME10	Clutch shaft bearing	1	—	CA48D1S2	Crankshaft assembly (includes crankshaft, gear, bushings, bearings, key)	1
21	PL50	No. 16 Woodruff key	1				
22	QD651	Cover to housing gasket	1				
23	SD79	Oil instruction tag	1				
24	XD7	Screw, 1/4"-20 thread x 1" long	3				

WW79A Reduction Gear Assembly

USE WITH MODELS S10D, S12D, S14D, AENL-ADH, AEH (see pg. 66)

Position of Take-off shaft is determined when viewed from cranking end of engine (views facing take-off end are shown)	Assembly Part Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 43	Ref. No. 44	Ref. No. 45	Ref. No. 46	Ref. No. 47
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Clutch Shaft Part No.
TAKE-OFF SHAFT BELOW 	WW79A	2.12 to 1	Engine-wise	GG138	GG137	GJ19	BG232	WA95
	WW79A1	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232	WA95
	WW79A2	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232	WA95
	WW79A3	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232	WA95
	WW79A4	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232	WA95
	WW79A5	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232	WA95
	WW79A6	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232	WA95
WW79A7	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232	WA133AS1	
TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end. 	WW79A8	2.12 to 1	Engine-wise	GG138	GG137	GJ19	BG232-1	WA95
	WW79A9	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-1	WA95
	WW79A10	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-1	WA95
	WW79A11	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-1	WA95
	WW79A12	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-1	WA95
	WW79A13	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-1	WA95
	WW79A14	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-1	WA95
WW79A15	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-1	WA133AS1	
TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end. 	WW79A16	2.12 to 1	Engine-wise	GG138	GG137	GJ19	BG232-2	WA95
	WW79A17	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-2	WA95
	WW79A18	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-2	WA95
	WW79A19	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-2	WA95
	WW79A20	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-2	WA95
	WW79A21	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-2	WA95
	WW79A22	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-2	WA95
WW79A23	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-2	WA133AS1	
TAKE-OFF SHAFT ON TOP 	WW79A24	2.12 to 1	Engine-wise	GG138	GG137	GJ19	BG232-3	WA95
	WW79A25	3.08 to 1	Engine-wise	GG133	GG132	GJ20	BG232-3	WA95
	WW79A26	4.00 to 1	Engine-wise	GG123	GG132	GJ19	BG232-3	WA95
	WW79A27	2.03 to 1	Ctr. engine-wise	GG139	GG119-2	.....	BG232-3	WA95
	WW79A28	2.96 to 1	Ctr. engine-wise	GG140	GG136	.....	BG232-3	WA95
	WW79A29	4.06 to 1	Ctr. engine-wise	GG141	GG135	.....	BG232-3	WA95
	WW79A30	5.06 to 1	Ctr. engine-wise	GG142	GG134-1	.....	BG232-3	WA95
WW79A31	6.00 to 1	Ctr. engine-wise	On shaft	GG134	.....	BG232-3	WA133AS1	

WW80 Drive Hub And Housing Assembly



Wisconsin Part Number	Twin Disc C7-1/2, Model	Twin Disc Drawing No.	Reduction Ratio	Rotation at Take-off Shaft	Net Weight	
					Lb	Oz
WC249-1	C107E2SRG5	X8515	2.56 to 1	Engine-wise	89	
WC250-1	C107E3RG5	X8515	3.6 to 1	Engine-wise	90	
WC251-1	C107E5RG5	X8516	4.9 to 1	Engine-wise	92	
WC252-1	C107A2RG5	X8518	2.5 to 1	Counter.engine-wise	83	
WC253-1	C107A4RG5	X8518	3.9 to 1	Counter engine-wise	85	

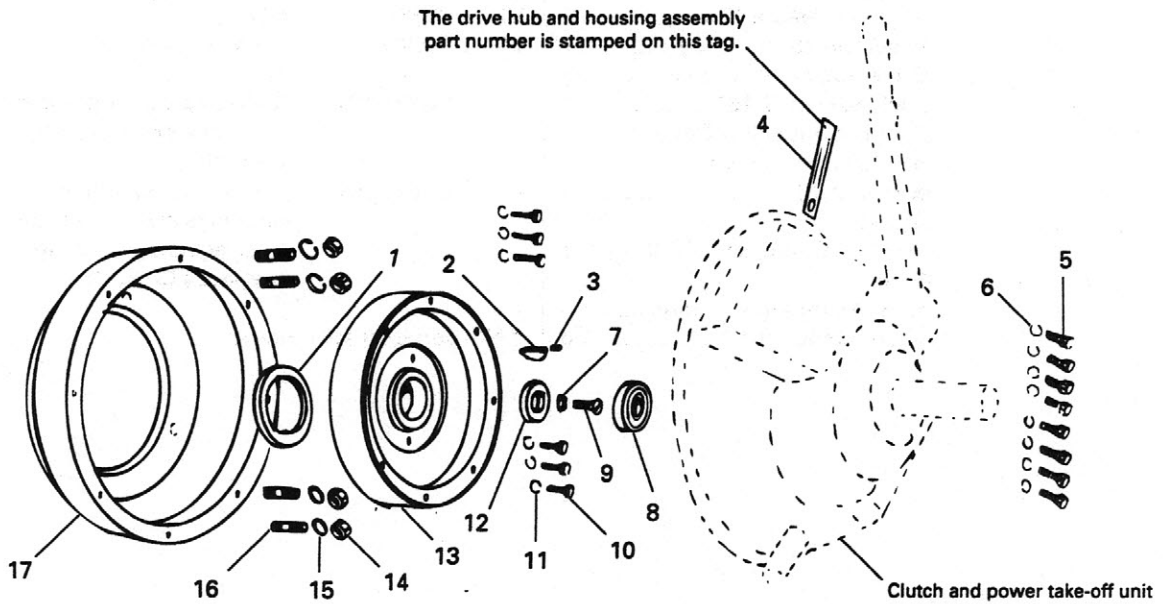
WW80 Drive Hub And Housing Assembly

USE WITH MODEL VG4D (see pg. 69)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH278	Main bearing seal, National Seal no. 55004	1	12	PH279	Drive hub retainer	1
2	PL122-1	No. 25 Woodruff key	1	13	NC135A1	Drive hub	1
3	QD678	Drive hub key cork seal	1	14	PD15	Nut, 5/8"-18 thread	4
4	PE50	Lock washer, 1/16"	1	15	PE37	Lock washer, 5/8"	4
5	PE5	Lock washer, 3/8"	8	16	PC287	Stud	4
6	XD27	Screw 3/8"-16 thread x 1" long	8	17	BO204	Drive hub housing, no. 5 S.A.E.	1
7	SD79B	Assembly number tag	1	—	BG194BS1	Main bearing plate assembly (includes bearing plate, oil seal)	1
8	* — — —	Pilot bearing, Strom no. 205F (furnished with clutch)	1	—	CA69C2S1	Crankshaft assembly (includes crank-shaft, gear, bearings, key, oil slinger) (replaces CA69-2S1)	1
9	XC22	Screw, 7/16"-14 thread x 1-1/4" long	1				
10	XD19	Screw, 5/16"-18 thread x 1-1/4" long	8				
11	PE4	Lock washer, 5/16"	8				

* Not serviced separately.

WW83 Drive Hub And Housing Assembly



Assembly Part Number	Reduction Ratio	Rotation at Take-off Shaft	Net Weight	
			Lb	Oz
WC314 (Rockford no. GRA586)	2.05 to 1	Counter engine-wise	80	
WC315 (obsolete; Rockford no. GRA589)	2.5 to 1	Counter engine-wise	82	
WC316 (Rockford no. GRA584)	3.9 to 1	Counter engine-wise	85	
WC402 (replaces WC302G; Rockford no. 4-011244, replaces PTA5871)			55	

WW83 Drive Hub And Housing Assembly

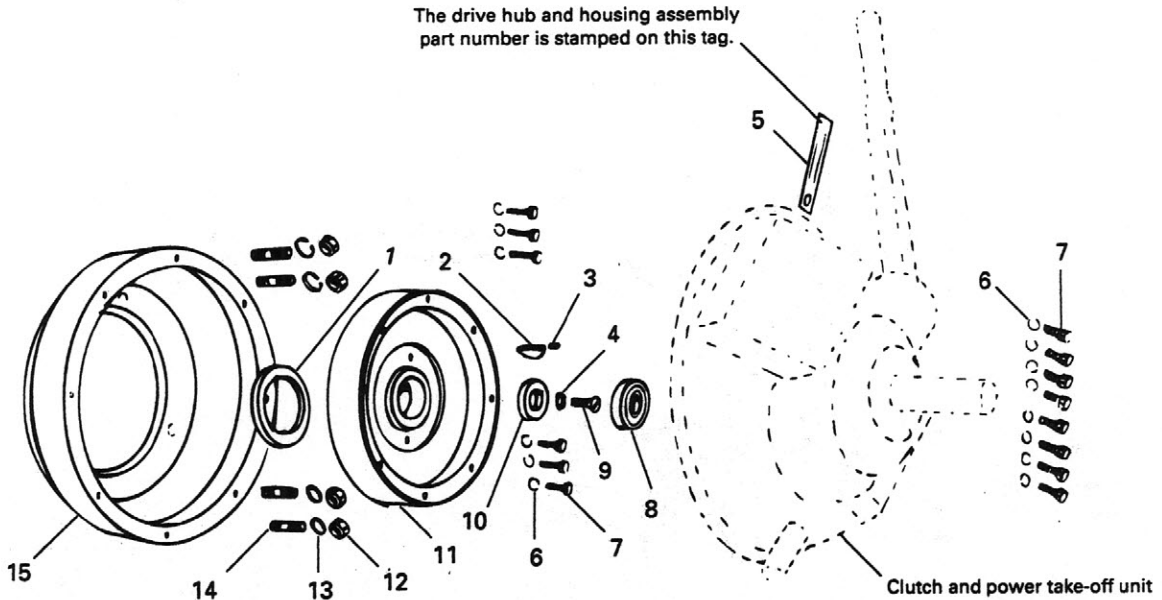
USE WITH MODEL VG4D (see pg. 71)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH278	Main bearing seal	1	12	PH279	Drive hub retainer	1
2	PL122-1	No. 25 Woodruff key	1	13	NC149	Drive hub	1
3	PE5	Lock washer, 3/8"	8	14	PD15	Nut, 5/8"-18 thread	4
4	XD27	Screw 3/8"-16 thread x 1" long	8	15	PE37	Lock washer, 5/8"	4
5	SD79B	Assembly number tag	1	16	PC287	Stud	4
6	QD678	Drive hub key cork seal	1	17	BO204	Drive hub housing, no. 5 S.A.E.	1
7	PE50	Lock washer, 7/16"	1	—	BG194BS1	Main bearing plate assembly (includes bearing plate, oil seal)	1
8	* — — —	Pilot bearing, New Departure no. 7304 (furnished with clutch)	1	—	CA69C2S1	Crankshaft assembly (includes crankshaft, gear, bearings, key, oil slinger) (replaces CA69-2S1)	1
9	XC22	Screw, 7/16"-14 thread x 1-1/4" long	1				
10	XD17	Screw, 5/16"-18 thread x 1" long	6				
11	PE4	Lock washer, 5/16"	6				

* Not serviced separately.

WW101 Drive Hub And Housing Assembly

USE WITH MODELS VG4D, VH4D, TJD

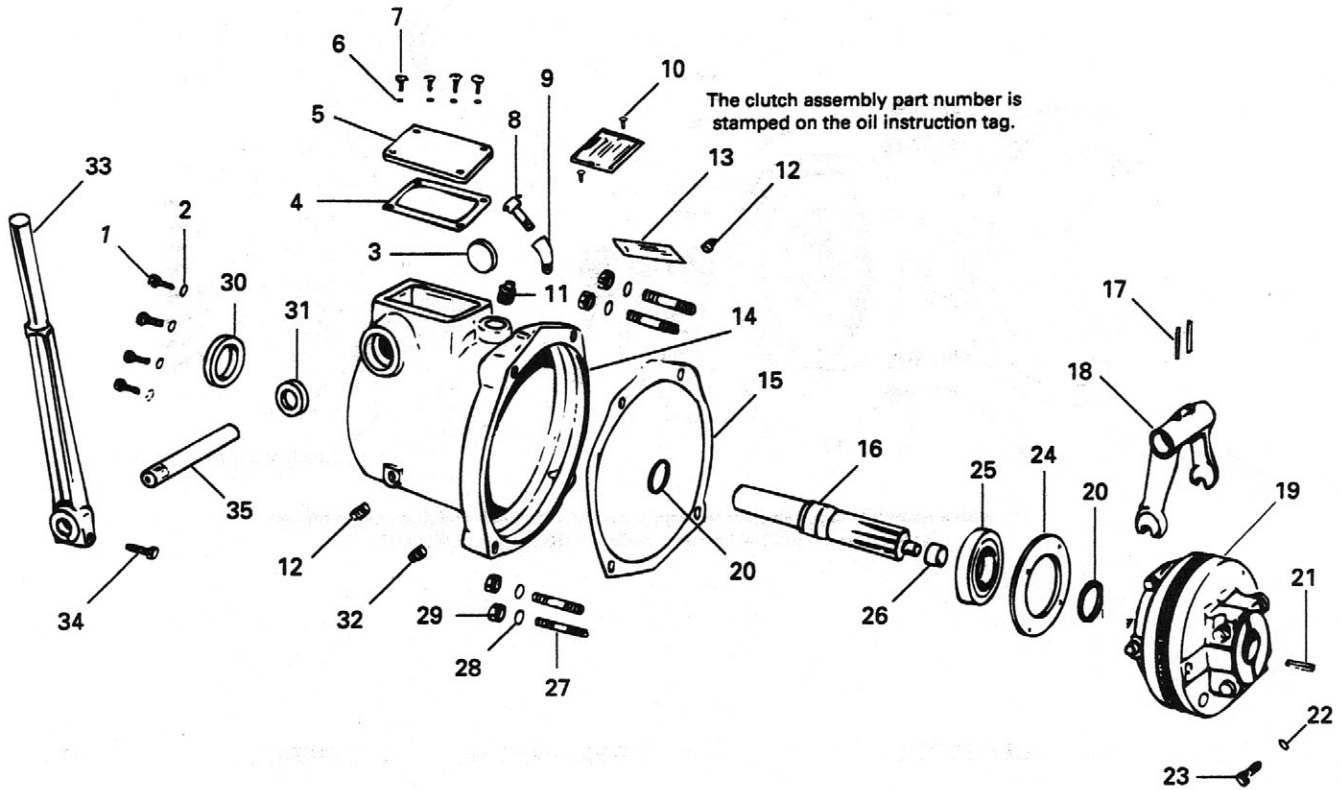


The above assembly is suitable for mounting the WC402 clutch and power take-off unit,
Rockford no. 4-011244 (replaces WC302G, Rockford no. PTA5871).

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH278	Main bearing seal	1	12	PD15	Nut, 5/8"-18 thread	4
2	PL122-1	No. 25 Woodruff key	1	13	PE37	Lock washer, 5/8"	4
3	QD678	Drive hub key cork seal	1	14	PC287	Stud	4
4	PE50	Lock washer, 7/16"	1	15	BO171-4	Drive hub housing, no. 4 S.A.E.	1
5	SD79B	Assembly number tag	1	—	BG194BS1	Main bearing plate assembly, VG4D (includes bearing plate, oil seal)	1
6	PE5	Lock washer, 3/8"	18	—	CA69C2S1	Crankshaft assembly, VG4D (includes crankshaft, gear, bearings, key, oil slinger)	1
7	XD29	Screw 3/8"-16 thread x 1-1/4" long	18				
8	* ———	Pilot bearing (furnished with clutch)	1				
9	XC22	Screw, 7/16"-14 thread x 1-1/4" long	1				
10	PH279	Drive hub retainer	1				
11	NC151	Drive hub	1				

* Not serviced separately.

WW102 Clutch And Power Take-Off Assembly



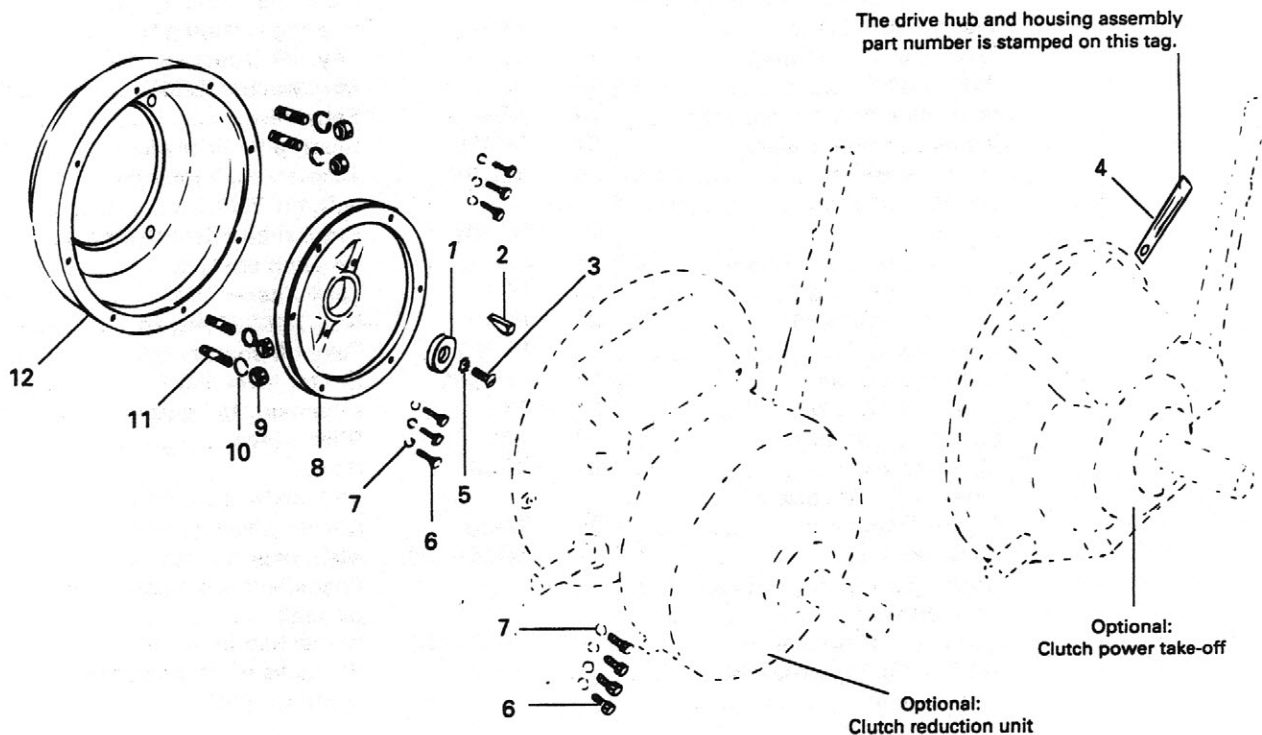
WW102 Clutch And Power Take-Off Assembly

USE WITH MODEL AENL (see pg. 74)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4	19	WC280B	Clutch, Rockford Model 4-1/2 L.O.C. no. CLA1761	1
2	PH30	Washer, 1/4" I.D. x 7/16" O.D. x 1/16" thick	4	20	PK97	Bearing retaining ring	2
3	SA58	Plug, 1-3/8"	1	21	PL86	Key, 1/4" square x 1" long	1
4	QD551	Inspection hole cover gasket ...	1	22	PE46	Lock washer, 5/16"	1
5	BH115A	Inspection hole cover (replaces BH115)	1	23	XD14-2	Set screw	1
6	PH30A	Washer, 1/16" thick	4	24	BG156	Bearing retainer plate	1
7	XA34	Screw, 1/4"-20 thread x 1/2" long	4	25	ME79A	Take-off shaft bearing, N.D. no. 7507	1
8	LO44	Breather assembly	1	26	HG182	Crankshaft pilot bushing	1
9	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1	27	PC392	Housing stud	4
10	SD125A	Instruction plate (replaces SD132)	1	28	PE6	Lock washer, 7/16"	4
11	XK118	Pipe plug, 3/8" allen (replaces XK3)	1	29	PD12	Nut, 7/16"-20 thread	4
12	XK1	Pipe plug, 1/8" square	2	30	PH280	Take-off shaft oil seal	1
13	SD79	Oil instruction tag	1	31	PH234A	Shifter lever shaft oil seal	1
14	BG230-2	Clutch housing	1	32	XK2	Pipe plug, 1/4" square	1
15	QD650-1	Housing mounting gasket	1	33	VB55-1	Shifter lever	1
16	WA101	Take-off shaft	1	34	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
17	PA341	Roll pin, 1/4" diameter x 1-1/8" long (replaces XH26)	2	35	WA61	Shifter yoke shaft	1
18	VB64A	Shifter yoke	1	—	BG241-1S1	Main bearing plate assembly (includes plate, bearing cup, oil seal)	1
				—	CA48D1S2	Crankshaft assembly (includes shaft, gear, bushing, bearings, key)	1

WW165 Drive Hub And Housing Assembly

USE WITH MODEL V465D



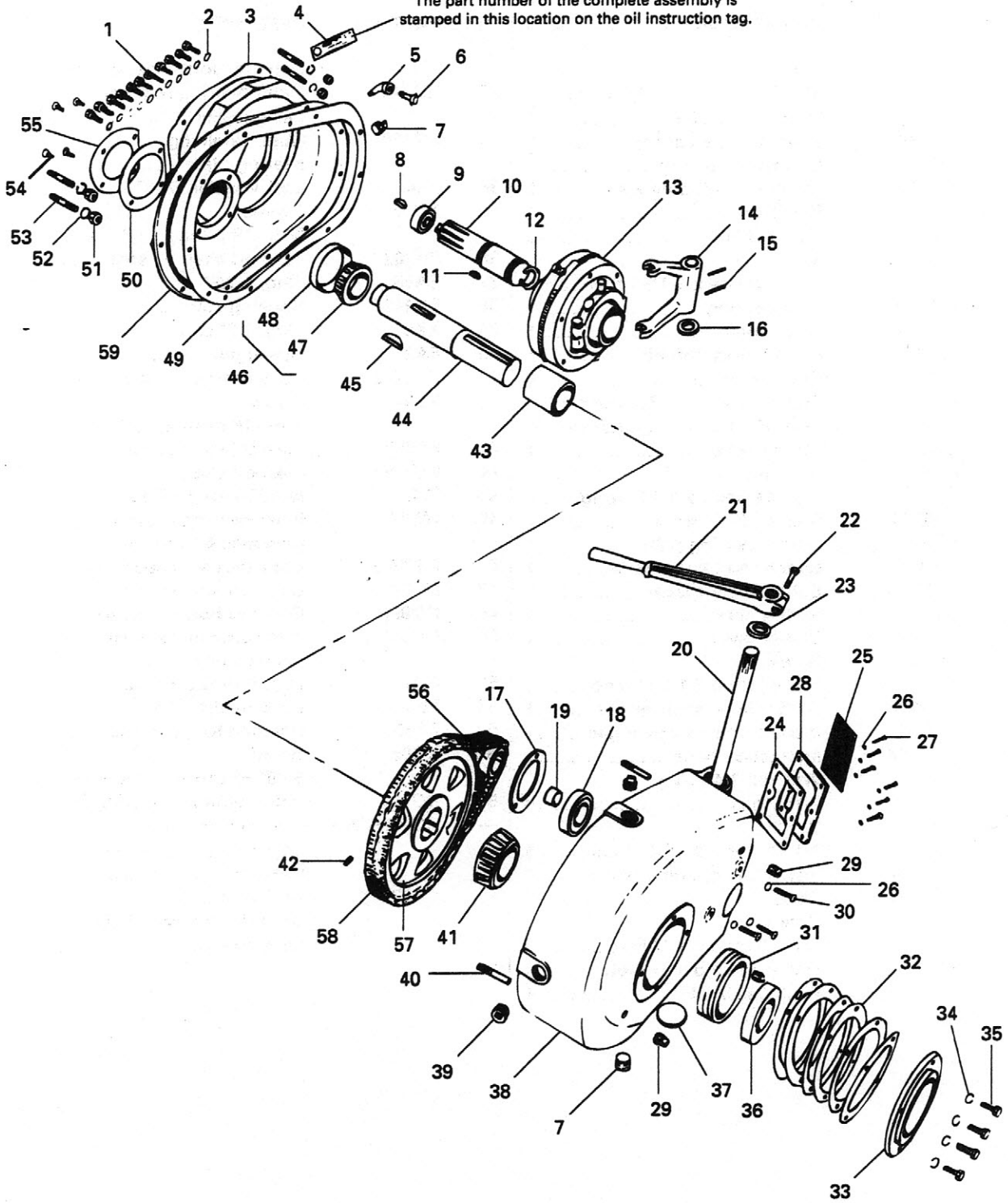
The above assembly is suitable for mounting the following clutch power take-off and clutch reduction units:

- WC328A (Rockford no. PTA4856) power take-off, engine-wise rotation;
- WC329 (Rockford no. GRA4812) reduction unit, 2.77 to 1 reduction ratio, counter engine-wise rotation;
- WC330 (Rockford no. GRA4813) reduction unit, 2 to 1 reduction ratio, counter engine-wise rotation;
- WC360 (Twin Disc no. C108E3.6RG4) reduction unit, 3.6 to 1 reduction ratio, engine-wise rotation.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PH489	Drive hub retainer	1	8	NC163-2	Drive hub	1
2	PL150-1	Drive hub key	1	9	PD15	Nut, 5/8"-18 thread	4
3	XC59	Screw, 1/2"-13 thread x 1-1/4" long	1	10	PE37	Lock washer, 5/8"	4
4	SD79B	Assembly number tag	1	11	PC464	Mounting stud	4
5	PE86	Lock washer, 1/2"	1	12	BO205	Drive hub housing, no. 4 S.A.E.	1
6	XD29	Screw, 3/8"-16 thread x 1-1/4" long	18	—	RF1096	Elbow (not illustrated)	1
7	PE5	Lock washer, 3/8"	18	—	CA75C1S1	Crankshaft (replaces CA751S1)	1

WW170 Gear Assembly

The part number of the complete assembly is stamped in this location on the oil instruction tag.

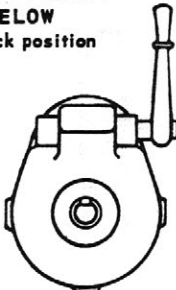
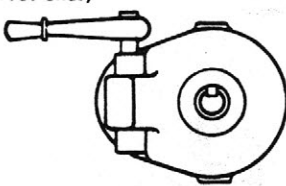
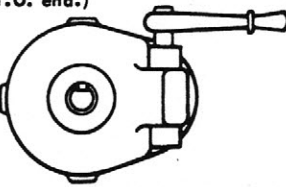
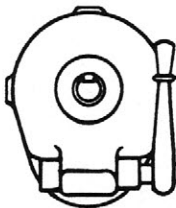


WW170 Gear Assembly

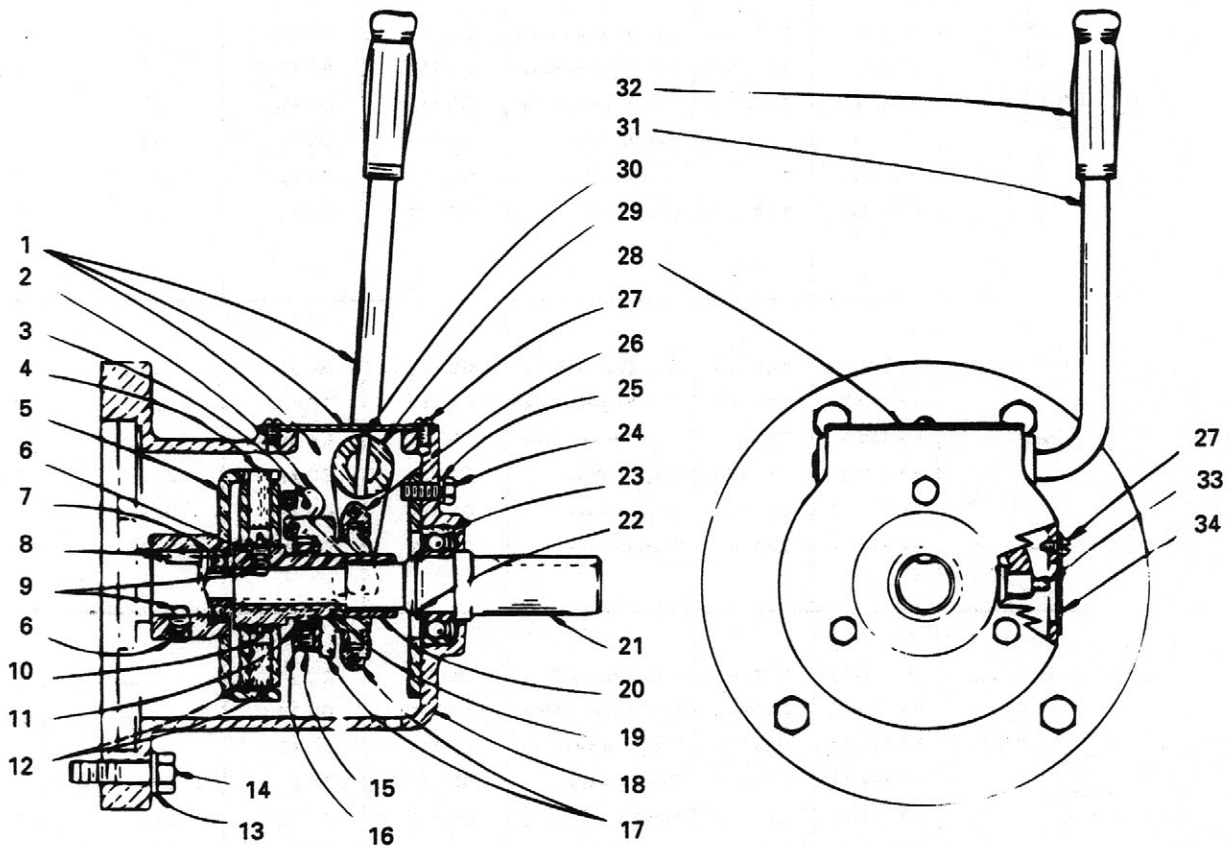
USE WITH MODEL AGND (see pg. 77)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD28	Screw, 3/8"-16 thread x 1-1/8" long	11	31	ME76-1	Cup (not sold separately)	1
2	PE5	Lock washer, 3/8"	11	32	QD544	Outer bearing retainer plate gasket	8-12
3	QD546	Bearing plate cork seal	1	33	BG150	Outer retaining bearing plate	1
4	SD79	Oil instruction tag	1	34	PE4	Lock washer, 5/16"	4
5	XK77A	Street ell, 1/8" pipe x 45°	1	35	XD15	Screw, 5/16"-18 thread x 3/4" long	4
6	LO44	Breather	1	36	PH202	Take-off shaft oil seal	1
7	XK4	Plug, 1/2" pipe	6	37	SA58	Plug, 1-3/8"	1
8	PL140	Key, 5/16" square x 1-1/8" long	1	38	BH143B	Housing cover	1
9	ME189	Pilot bearing	1	39	XK6	Plug, 1/2" countersunk	1
10	WA87A	Drive shaft	1	40	PA279	Dowel pin	2
11	PL17	No. 13 Woodruff key	1	41	ME76-2	Cone (not sold separately)	1
12	PK82	Retaining ring	1	42	XE44	Screw, 5/16"-18 thread x 5/8" long	1
13	WC288A	Clutch assembly, Rockford CLA1462AF (includes item 9) ...	1	43	HF265A	Take-off shaft spacer	1
14	VB64A	Shifter yoke	1	44	WA55H	Take-off shaft	1
15	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2	45	PL24	No. 29 Woodruff key	1
16	HF392A	Spacer, 3/16" thick	1	46	ME77	Inner bearing assembly (includes 47 and 48)	1
17	BG216	Clutch bearing plate	1	47	ME77-2	Cone (not sold separately)	1
18	ME119	Clutch shaft ball bearing	1	48	ME77-1	Cup (not sold separately)	1
19	HF372A	Ball bearing spacer	1	49	QD856	Cover to housing gasket	1
20	WA61D	Shifter shaft	1	50	QD543A	Inner bearing retainer plate gasket	1
21	VB55-1	Shifter lever	1	51	PD12	Nut, 7/16"-20 thread	4
22	XD30	Screw, 3/8"-16 thread 1-1/2" long	1	52	PE6	Lock washer, 7/16"	4
23	PH234A	Shifter lever shaft oil seal	1	53	PC392	Housing to crankcase stud	4
24	QD592	Inspection hole cover gasket ...	1	54	XC68	Screw, 5/16"-18 thread x 3/4" long	4
25	SD125A	Instruction plate	1	55	BG151	Inner retaining bearing plate ...	1
26	PH30	Washer, 1/4" I.D. x 1/16" thick	9	—	BG105E3S2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
27	XA34	Screw, 1/4"-20 thread x 1/2" long	6	—	CA73-49S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
28	BH127B	Inspection opening cover	1				
29	XK2	Plug, 1/4" pipe	2				
30	XD7	Screw, 1/4"-20 thread x 1" long	3				
—	ME76	Outer bearing assembly (includes 31, 41)	1				

WW170 Gear Assembly
USE WITH MODEL AGND (see pg. 77)

Determine position of take-off shaft when viewing from cranking end of engine. (Views facing take-off end are shown.)	Assembly Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 56	Ref. No. 57	Ref. No. 58	Ref. No. 59
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.
TAKE-OFF SHAFT BELOW 6 o'clock position 	WW 170	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 5
	WW 170-1	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 5
	WW 170-2	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 5
	WW 170-3	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 5
	WW 170-4	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 5
	WW 170-5	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 5
TAKE-OFF SHAFT ON LEFT SIDE as viewed from the cranking end. (3 o'clock position - viewing T.O. end.) 	WW 170-6	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 4
	WW 170-7	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 4
	WW 170-8	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 4
	WW 170-9	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 4
	WW 170-10	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 4
	WW 170-11	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 4
TAKE-OFF SHAFT ON RIGHT SIDE as viewed from the cranking end. (9 o'clock position - viewing T.O. end.) 	WW 170-12	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG215B6, NLA
	WW 170-13	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG215B6, NLA
	WW 170-14	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG215B6, NLA
	WW 170-15	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG215B6, NLA
	WW 170-16	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG215B6, NLA
	WW 170-17	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG215B6, NLA
TAKE-OFF SHAFT ON TOP 12 o'clock position 	WW 170-18	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 7
	WW 170-19	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 7
	WW 170-20	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 7
	WW 170-21	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 7
	WW 170-22	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 7
	WW 170-23	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 7

WW186 (Dry Type) Take-Off Assembly



Mounting of this clutch requires a special cyl-crankcase (ACN, BKN), or gear cover (S-8D), with four 3/8"16 taps at take-off end.

LUBRICATION: Do not put oil in housing — this is a dry plate clutch. Lubricate throw out bearing daily through grease fitting, ref. no. 33.

ADJUSTMENT: Release clutch lever and remove top cover. Loosen adjusting screw, ref. no. 15, in adjusting ring, ref. no. 16, and turn adjusting ring clockwise until a very firm pressure is required to engage the clutch. Tighten adjusting screw.

WW186 (Dry Type) Take-Off Assembly

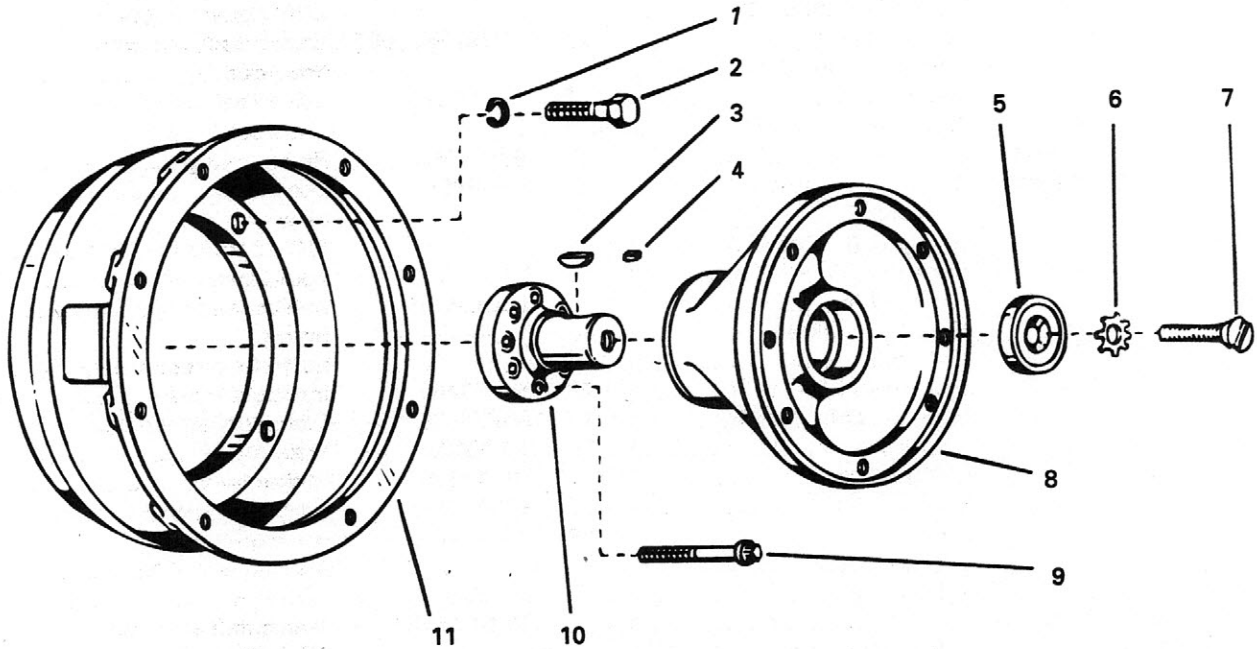
USE WITH MODELS ACN, BKN, S8D (Replaces WW37 and WW37B beginning with engine serial no. 5647618 for ACN, BKN; no. 5626528 for S8D.) (see pg. 80)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	WC399	Clutch take-off assembly, Rockford PTAS3-1/2-11	1	19	63PT1171	Key, 3/16" square x 1.62 long	1
2	63ULM304	Lever assembly (includes rollers, link pins, retaining rings)	3	20	63USLM3-3002	Clutch body assembly (includes 6, 9)	1
3	63LM310	Adjustment ring pin	3	21	63UPT1170	Drive shaft assembly (includes 22, 23)	1
4	63SLM3-3003	Drive disc	1	22	63PT1169	Retainer ring	1
5	63USLM3-3004B	Drive cup assembly (includes 6, 7, 9) (replaces 63USLM3-3004)	1	23	63GR858	Bearing	1
6	63LM303A	Set screw, 5/16"-18 thread	1	24	* — — —	Screw, 1/4"-28 thread x .75 long	3
7	63SLM3-3295	Pilot bearing	1	25	PE3	Lock washer, 1/4"	3
8	PL124-1	Key, 1/4" square x 3/4" long	1	26	63ULM301	Release bearing assembly	1
9	63LM303	Set screw, 5/16"-18 thread	1	27	* — — —	Screw, no.10-24 thread x .38 long	3
10	63SLM3-3020	Plate separating spring	1	28	63PT1640	Instruction plate	1
11	63LM316	Lock screw plug	1	29	63PT1530	Clutch shifter yoke	1
12	63LM311	Clutch plate	2	30	63CL9352	Yoke roll pin	2
13	PH22	Washer, 3/8"	4	31	63PT1529	Shifter lever	1
14	XD30	Screw, 3/8"-16 thread x 1-1/2" long	4	32	63PT1694	Shifter lever grip	1
15	63LM317	Lock screw	1	33	* — — —	Grease fitting, Alemite no. 1736	1
16	63LM307	Adjustment ring	1	34	63PT766	Instruction plate	1
17	63ULM302	Release sleeve and bearing assembly (includes 26, 33) ...	1	—	CA51-160S1	Crankshaft assembly, ACN, BKN	1
18	63PT1639	Housing	1	—	CA82-174S1	Crankshaft assembly, S8D	1

* Not serviced separately.

WW188A Drive Hub And Housing Assembly

USE WITH MODELS W2-1250, W2-1230, W2-1235



S.A.E. Bell Housing No. 5, 7-1/2" drive hub clutch size, WC248-1 (Twin Disc no. C107SP5) or generator drive.

ITEM	PART NO.	DESCRIPTION	QTY
1	PE6	Lock washer, 7/16"	4
2	XD37	Screw, 7/16"-14 thread x 1-3/4" long	4
3	PL47	No. 18 Woodruff key	1
4	QD668	Cork seal	1
5	PH279	Drive hub retainer	1
6	PE50	Lock washer, 7/16"	1
7	XC22	Screw, 7/16"-14 thread x 1-1/4" long	1
8	NC135A16	Clutch drive hub	1
9	XB116	Screw, 5/16"-18 thread x 1-1/4" long	8
10	UC205-3	Engine stub clutch shaft	1
11	BO207B2	Clutch drive housing, no. 5 S.A.E.	1