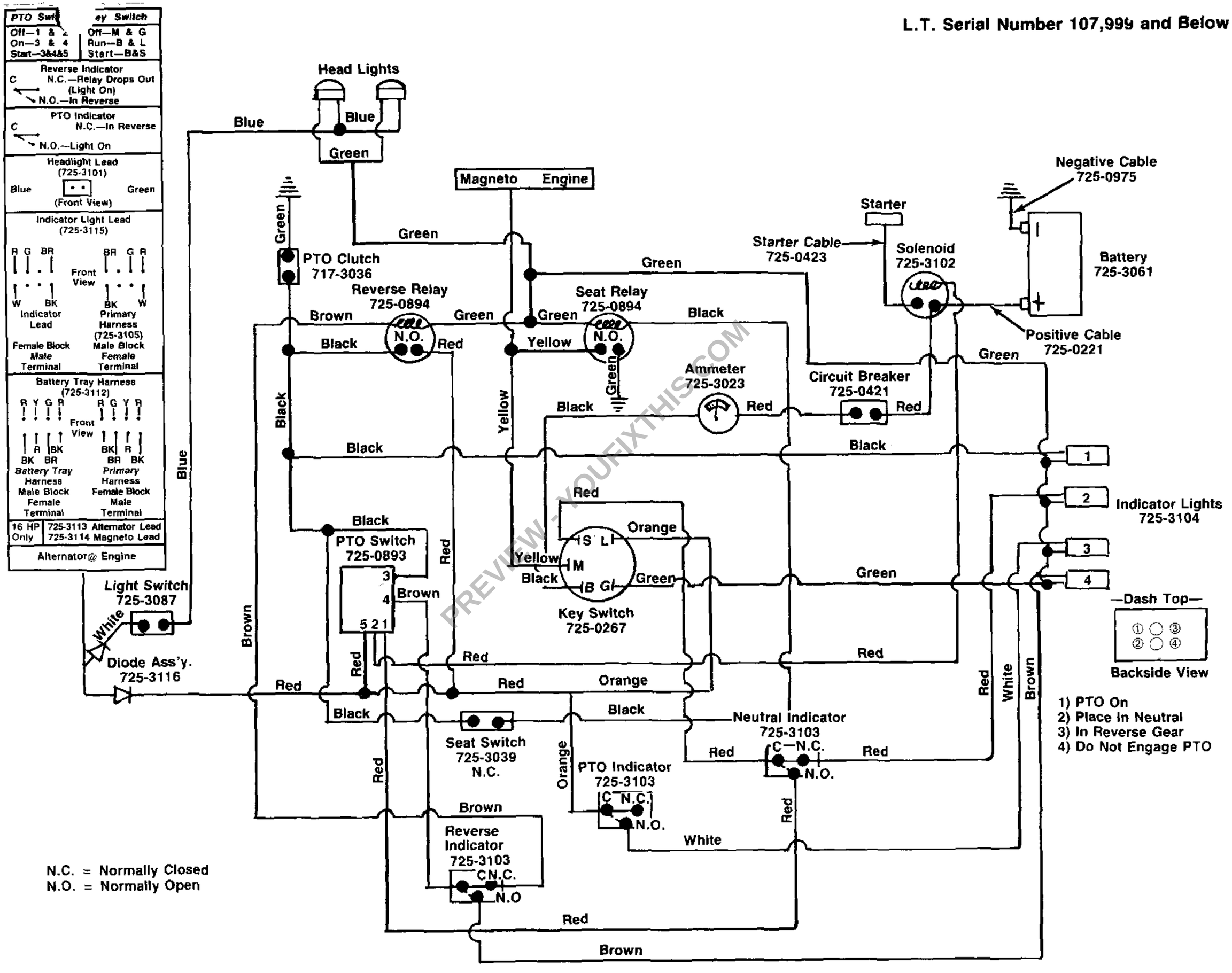


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ENGINE REMOVAL

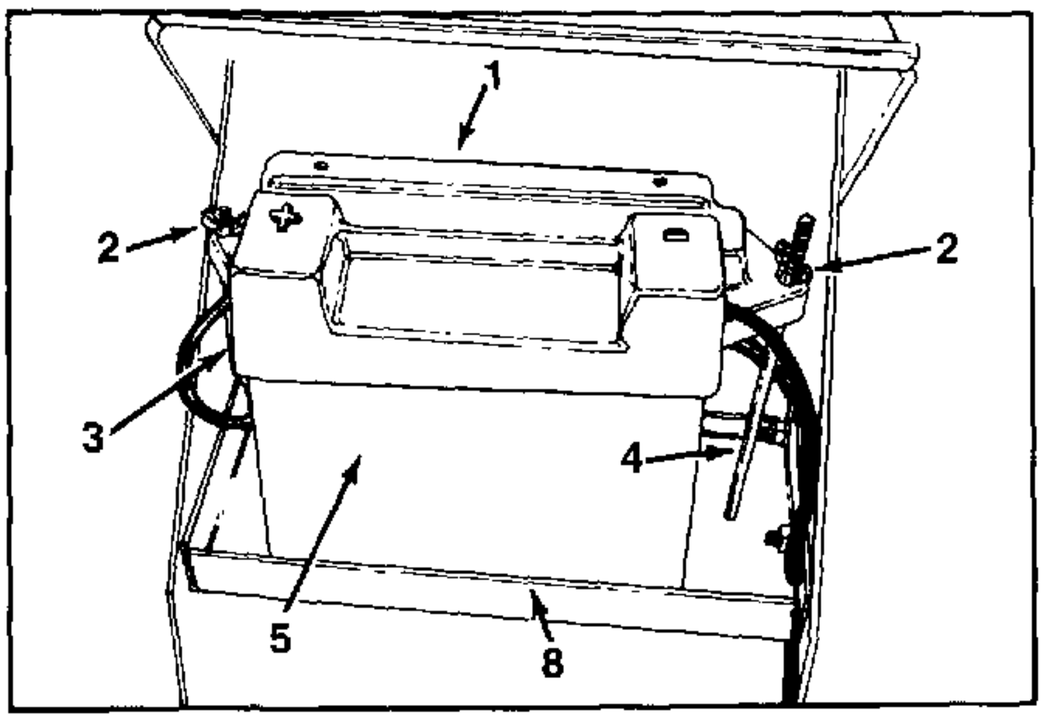


FIGURE 1.

1. Remove the battery cover (Ref. 1), wing nuts (Ref. 2) and battery hold down rods (Ref. 3 and 4). See figure 1.

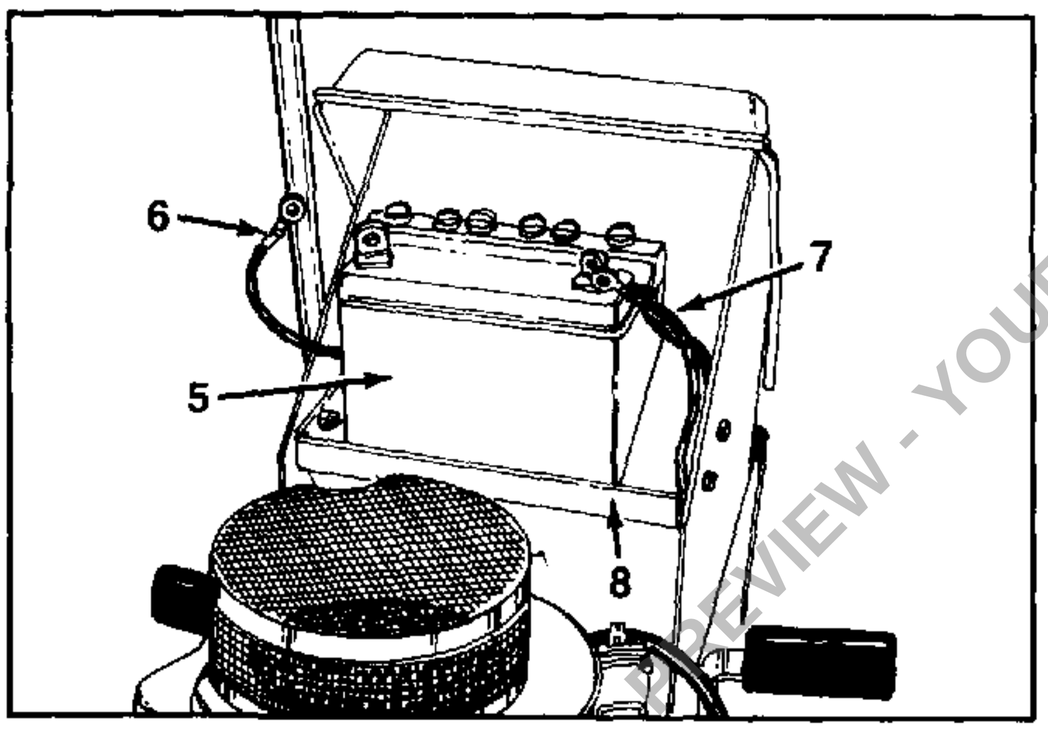


FIGURE 2.

2. Disconnect the battery cables **negative cable first** (Ref. 6 and 7) from battery post. See figure 2.

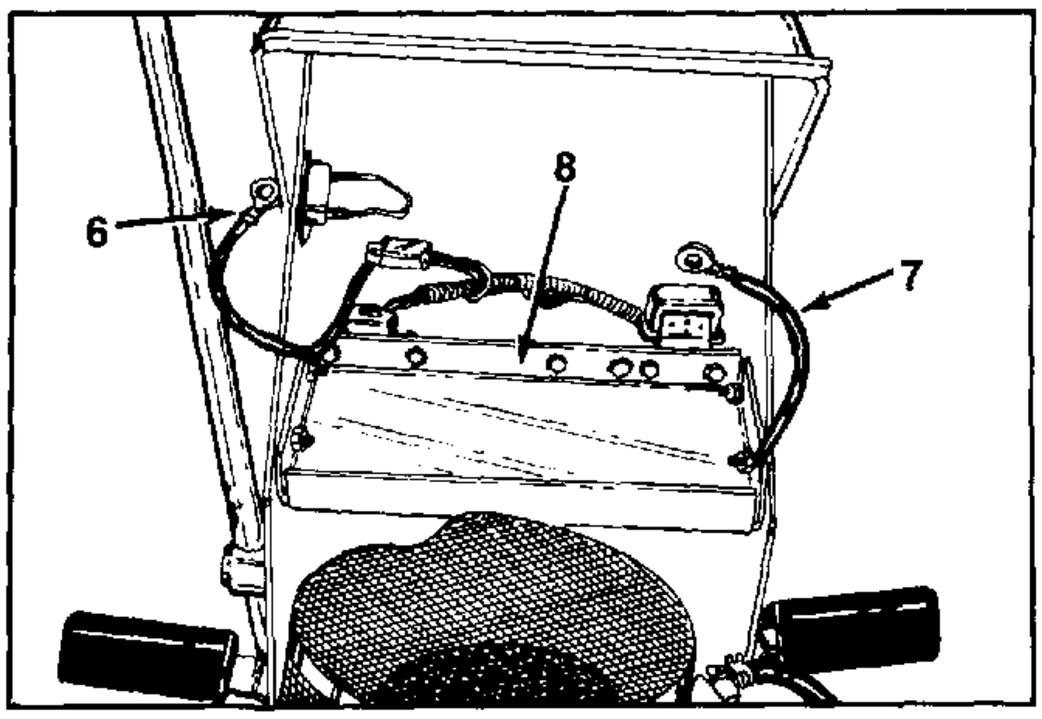


FIGURE 3.

3. Lift out the battery (Ref. 5) from the battery tray (Ref. 8). See figures 2 and 3.

1. Battery Cover
2. Wing Nuts
3. Battery Hold Down Rod
4. Battery Hold Down Rod
5. Battery
6. Battery Cable—Positive
7. Battery Cable—Negative
8. Battery Tray

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REPAIR PARTS LIST
BDU-10S-114
BDU-10S-217

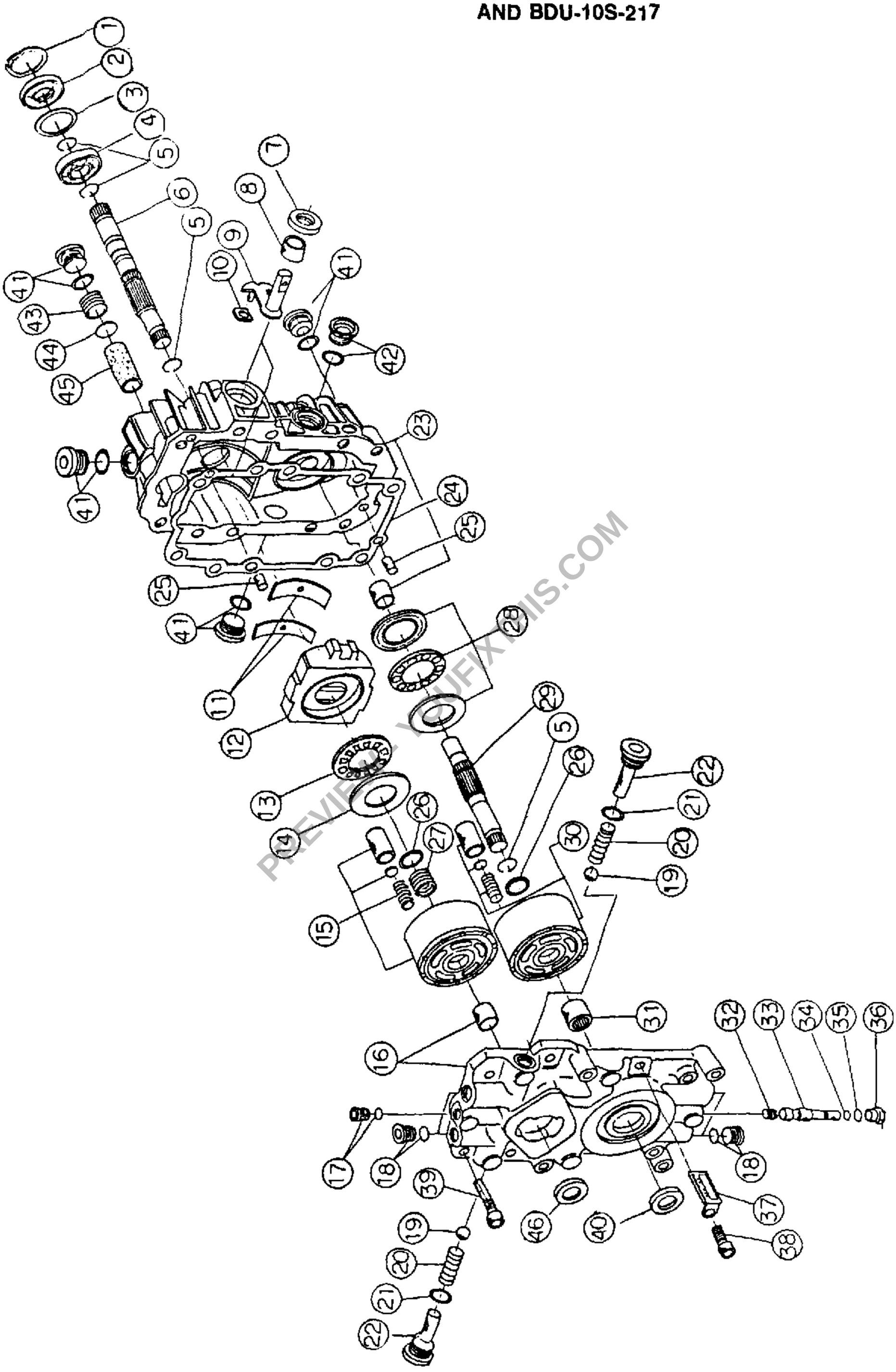
REF NO	PART NAME	QTY	REMARKS
1.	Ring—Retaining	1	JIS B 2804 For Hole 35
2.	Seal Lip	1	NOK TC-15-35-7
3.	Spacer (Seal Lip)	1	
4.	Ball Bearing	1	#6202
5.	Ring—Retaining	4	
*6.	Shaft (Pump)	1	
7.	Seal Lip	1	NOK-TC-12-25-7
8.	Journal Bearing (Control)	1	
9.	Trunnion Arm	1	
10.	Slot Guide	1	
11.	Cradle Bearing (Journal)	2	
12.	Swashplate Assy	1	
13.	Thrust Roller	1	
14.	Thrust Plate	1	
15.	Cylinder Block (Pump) Kit	1	
15-1.	Cylinder Block (Pump)	(1)	
15-2.	Piston	(5)	
15-3.	Thrust Washer (Piston)	(5)	
15-4.	Spring Piston	(5)	
*16.	Center Section Assy	1	
*16-1.	Center Section	(1)	
16-2.	Journal Bearing (Shaft)	(1)	
17.	Plug Socket Head	1	
18.	Plug Socket Head	4	
19.	Ball (Check)	2	JIS B 1501 3/8
20.	Spring (Check)	2	
21.	"O"-Ring	2	
22.	Plug Check	2	
23.	Housing Assy	1	
23-1.	Housing	(1)	
23-2.	Journal Bearing (Shaft)	(1)	
24.	Gasket	1	
25.	Pin (Straight)	2	
26.	Washer (Shaft)	2	
27.	Spring (Block)	1	
28.	Thrust Ball Bearing Assy	1	#51106
*29.	Shaft (Motor)	1	
30.	Cylinder Block (Motor) Kit	1	
30-1.	Cylinder Block (Motor)	(1)	
30-2.	Piston	(5)	
30-3.	Thrust Washer (Piston)	(5)	
30-4.	Piston Spring	(5)	
31.	Needle Bearing	1	
32.	Spring (Bypass)	1	
33.	Bypass Spool	1	
34.	"O"-Ring	1	JIS B 2401 1A-P3
35.	"O"-Ring	1	
36.	Plug (Bypass)	1	
37.	Name Plate	1	
38.	Screw (Socket Head)	4	JIS B 1176 M8*20
39.	Screw (Socket Head)	4	JIS B 1176 M8*35
40.	Seal Lip	1	NOK TC-15-24-7

(continued on 2-69)

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EXPLODED VIEW OF SUNDSTRAND BDU-10S-114 AND BDU-10S-217



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FIGURE 70.

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Standard Torque Data for Inch Nuts and Bolts - Foot Pounds

Recommended torque for all standard unplated nuts and bolts, provided:

A. Surface finish is oxide coated, oil quenched or bright.

B. All threaded surfaces are clean and lubricated with SAE-30 engine oil or equivalent (see NOTE).

C. Joints are rigid, that is, no gaskets or compressible materials are used.

D. When reusing nuts or bolts, use minimum torque values.

NOTE: Multiply the standard torque by:
.65 when finished jam nuts are used.
.70 when Molykote, white lead or similar mixtures are used as lubricants.
.75 when phosphate coated and oiled bolts or nuts are used.
.85 when cadmium or zinc dichromate bolts or nuts are used.
.90 when hardened surfaces are used under the nut or bolt head.
(this applies to standard unplated hardware only)

1 Foot Pound = 1.355 Newton Meters

Bolt or Stud Diameter	Type 2 Studs Only		Type 2 Bolts 6" Length or Less		Type 2 Bolts Longer Than 6"		Type 5 All Lengths		Type 8 - All Lengths			
									† Only When Used In Cast (gray) Iron		All Other Applications	
Inches	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	5	6	6	7	4	4	9	10	11	13	13	14
5/16	12	13	11	13	7	8	18	20	22	25	25	28
3/8	21	24	21	24	13	14	33	37	41	46	45	50
7/16	35	38	35	38	20	23	53	60	65	74	75	85
1/2	52	58	52	59	31	35	80	90	100	112	115	130
9/16	70	80	75	85	45	51	115	130	145	160	165	185
5/8	98	110	104	117	62	70	160	180	200	225	225	255
3/4	174	195	185	205	180	200	285	320	355	400	400	450
7/8	280	315	265	300	265	300	460	575	570	640	645	725
1	420	470	380	425	380	425	685	720	855	960	970	1090
1-1/8	595	670	535	600	535	600	850	950	1210	1360	1375	1545
1-1/4	840	945	700	785	700	785	1200	1350	1705	1920	1940	2180
1-3/8	1100	1240	925	1045	925	1045	1570	1760	2235	2515	2540	2860

† When bolt penetration is 1-1/2 times the diameter of the bolt.

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Bolt Type Identification Chart

SAE Grade	Description	Bolt Head Marking *
2	WILL BE BLANK IN THE CENTER OF THE HEAD Low or Medium Carbon Steel Not Heat Treated	
5	WILL HAVE 3 RADIAL LINES Quenched and Tempered Medium Carbon Steel	
8	WILL HAVE 6 RADIAL LINES Quenched and Tempered Special Carbon or Alloy Steel	

* The center marking identifies the bolt manufacturer.

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L.T. Serial Number 108,000 and Above
Serial Number 114,000 and Above

PTO Switch	Key Switch
Off—1 & 2 On—3 & 4 Start—3&4&5	*Off*—M & G Run—B & L Start—B&S

Reverse Indicator
C — N.C.—Relay Drops Out (Light On)
N.O.—In Reverse

PTO Indicator
C — N.C.—In Reverse
N.O.—Light On

Headlight Lead (725-3101)
Blue — Green
(Front View)

Indicator Light Lead (725-3115)
R G BL BR — BL BR G R
Front View
W BK — BK W
Indicator Lead — Primary Harness (725-3121)
Female Block *Male* Terminal — Male Block *Female* Terminal

Battery Tray Harness (725-3112)
R Y G R — R G Y R
Front View
R BK — BK R
BK BR — BR BK
Battery Tray Harness Male Block Female Terminal — Primary Harness Female Block Male Terminal

16 HP Only	725-3113 Alternator Lead 725-3114 Magneto Lead

Alternator@ Engine

Head Lights
Blue — Blue
Green
Magneto Engine
Green
PTO Clutch 717-3036
Reverse Relay 725-0894
Brown — Green
Black — N.O. — Red
Green
Seat Relay 725-0894
Green — Black
Yellow — N.O.
Green
Starter
Starter Cable 725-0423
Solenoid 725-3102
Negative Cable 725-0975
Battery 725-3061
Positive Cable 725-0221
Green
Ammeter 725-3023
Black — Red
Fuse 725-3120
725-3011 Holder
Red
Diode 729-0164
Black
Black
Yellow
Black
Black
Red
Orange
Yellow — S L M B G — Green
Black
Key Switch 725-0267
Green
Blue
Black
PTO Switch 725-0893
3
4
5 2 1
Brown
Red
Red
Red
Red
Blue
Brown
Light Switch 725-3087
Red
White
Red
Red
Red
Red
Orange
Black
Black
Seat Switch 725-3039 N.C.
Neutral Indicator 725-3103
C N.C. N.O.
Red — Red
Orange
PTO Indicator 725-3103
C N.C. N.O.
Brown
White
Red
Reverse Indicator 725-3103
C N.C. N.O.
Red
Red
White
Brown
Indicator Light 725-3104
5
1
2
3
4
6
—Dash Top—
① ⑤ ③
② ⑥ ④
Backside View
1) PTO On
2) *Place In Neutral*
3) In Reverse Gear
4) Do Not Engage PTO
5) Full Throttle Required
6) Full Throttle Required

N.C. = Normally Closed
N.O. = Normally Open

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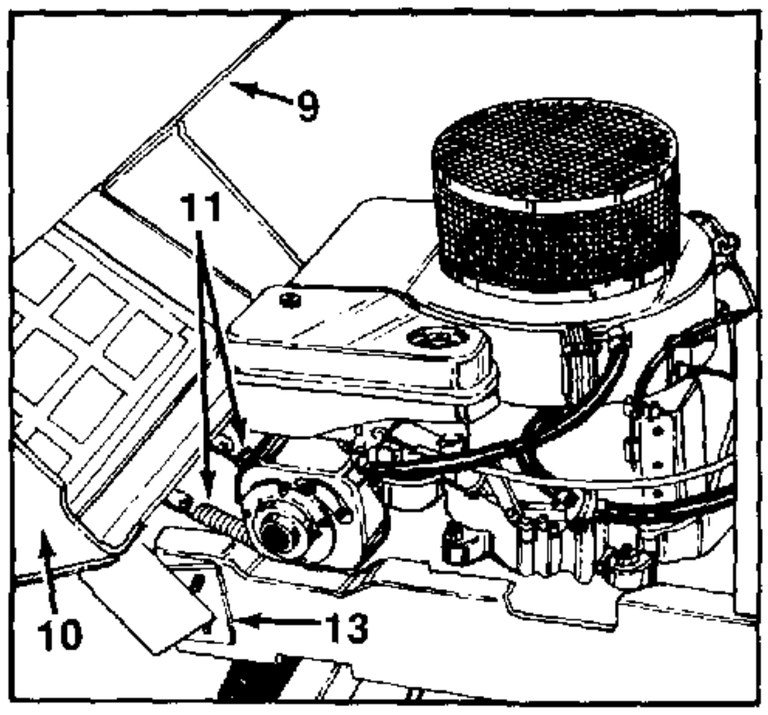


FIGURE 4.

4. Remove the hood (Ref. 9) and grille (Ref. 10) by removing the two extension springs (Ref. 11) from the grille and front chassis (Ref. 15). See figures 4 and 5.

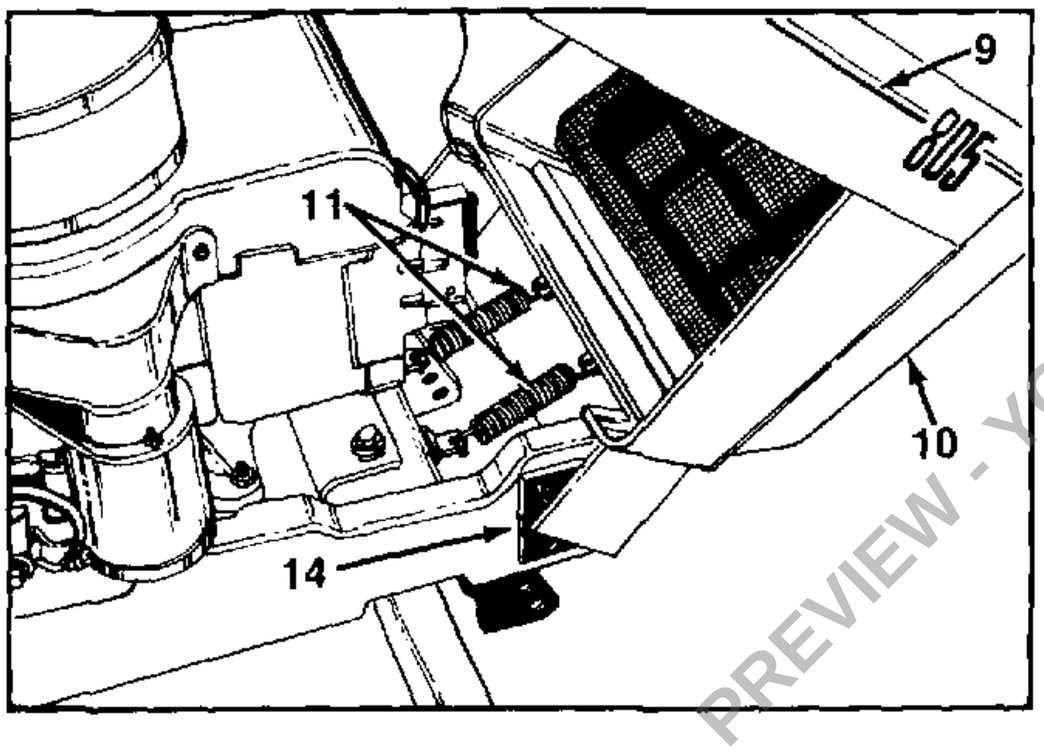


FIGURE 5.

5. Upon removal of extension spring, loosen hex bolts and Belleville washers (Ref. 12) on each side of chassis. See figure 6. Remove one set of bolts and washers from one side only. This will allow you to pull the hood and grille off of the front pivot bracket (Ref. 13 and 14). See figure 6.

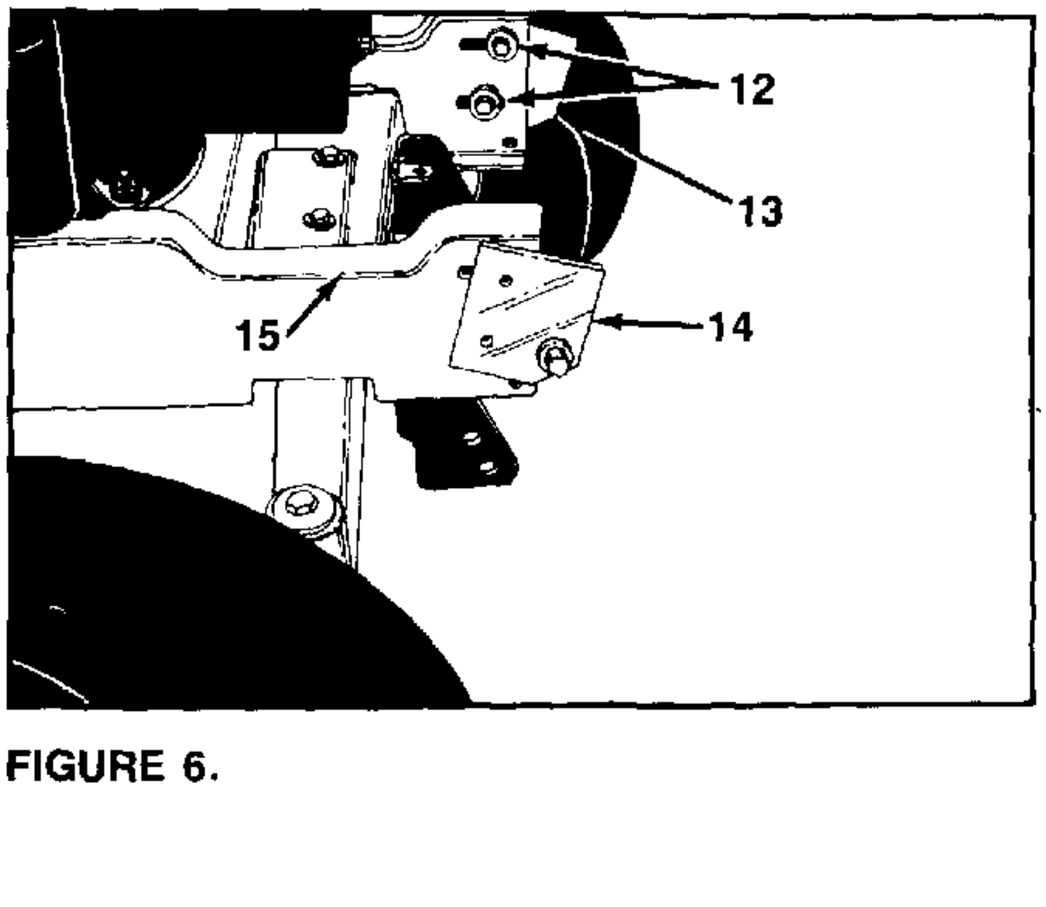


FIGURE 6.

NOTE

Be sure pivot brackets are reassembled as shown in figure 6.

9. Hood
10. Grille
11. Extension Springs
12. Hex Bolt and Bell.-Washers
13. Right Hand Pivot Bracket
14. Left Hand Pivot Bracket
15. Chassis

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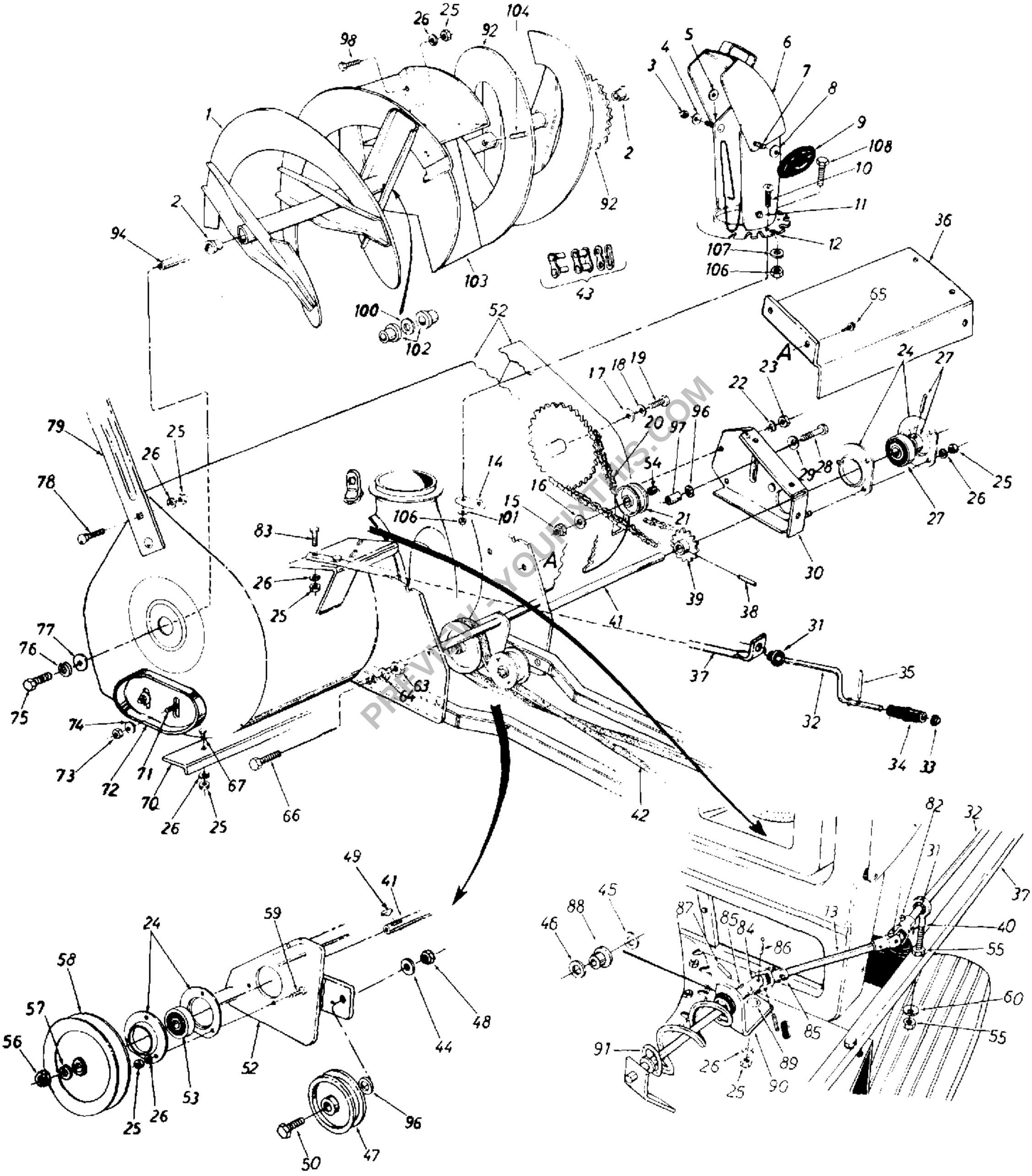
REPAIR PARTS LIST
BDU-10S-114
BDU-10S-217

REF NO	PART NAME	QTY	REMARKS
41.	Plug (Socket Head)	4	
42.	Plastic Plug	1	
43.	Spring (Filter)	1	
44.	Washer (Filter)	1	
45.	Filter	1	
*46.	Seal Lip	1	NOK TCV-12.7-22.23-6.35

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Model 350



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Standard Torque Data for Inch Nuts and Bolts - Newton Meters

Recommended torque for all standard unplated nuts and bolts, provided:

A. Surface finish is oxide coated, oil quenched or bright.

B. All threaded surfaces are clean and lubricated with SAE-30 engine oil or equivalent (see NOTE).

C. Joints are rigid, that is, no gaskets or compressible materials are used.

D. When reusing nuts or bolts, use minimum torque values.

NOTE: Multiply the standard torque by:
.65 when finished jam nuts are used.
.70 when Molykote, white lead or similar mixtures are used as lubricants.
.75 when phosphate coated and oiled bolts or nuts are used.
.85 when cadmium or zinc dichromate bolts or nuts are used.
.90 when hardened surfaces are used under the nut or bolt head.
(this applies to standard unplated hardware only)

1 Newton Meter = 0.738 Foot Pound

Bolt or Stud Diameter	Type 2 Studs Only		Type 2 Bolts 6" Length or Less		Type 2 Bolts Longer Than 6"		Type 5 All Lengths		Type 8 - All Lengths			
									† Only When Used In Cast (gray) Iron		All Other Applications	
Inches	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	7	8	8	9	5	5	12	14	15	18	18	19
5/16	16	18	15	18	9	11	24	27	30	34	34	38
3/8	28	33	28	33	18	19	45	50	56	62	61	68
7/16	47	52	47	52	27	31	72	81	88	100	102	115
1/2	71	79	71	80	42	47	109	122	136	152	156	176
9/16	95	109	102	115	61	69	156	176	197	217	224	251
5/8	133	149	141	159	84	95	217	244	271	305	305	346
3/4	236	265	251	278	244	271	387	434	482	543	543	611
7/8	380	427	360	407	360	407	624	780	773	868	875	984
1	570	638	516	577	516	577	929	977	1160	1303	1316	1479
1-1/8	807	909	726	814	726	814	1153	1289	1642	1845	1866	2096
1-1/4	1140	1282	950	1065	950	1065	1628	1832	2313	2605	2632	2958
1-3/8	1492	1682	1255	1418	1255	1418	2130	2388	3033	3412	3446	3881

† When bolt penetration is 1-1/2 times the diameter of the bolt.

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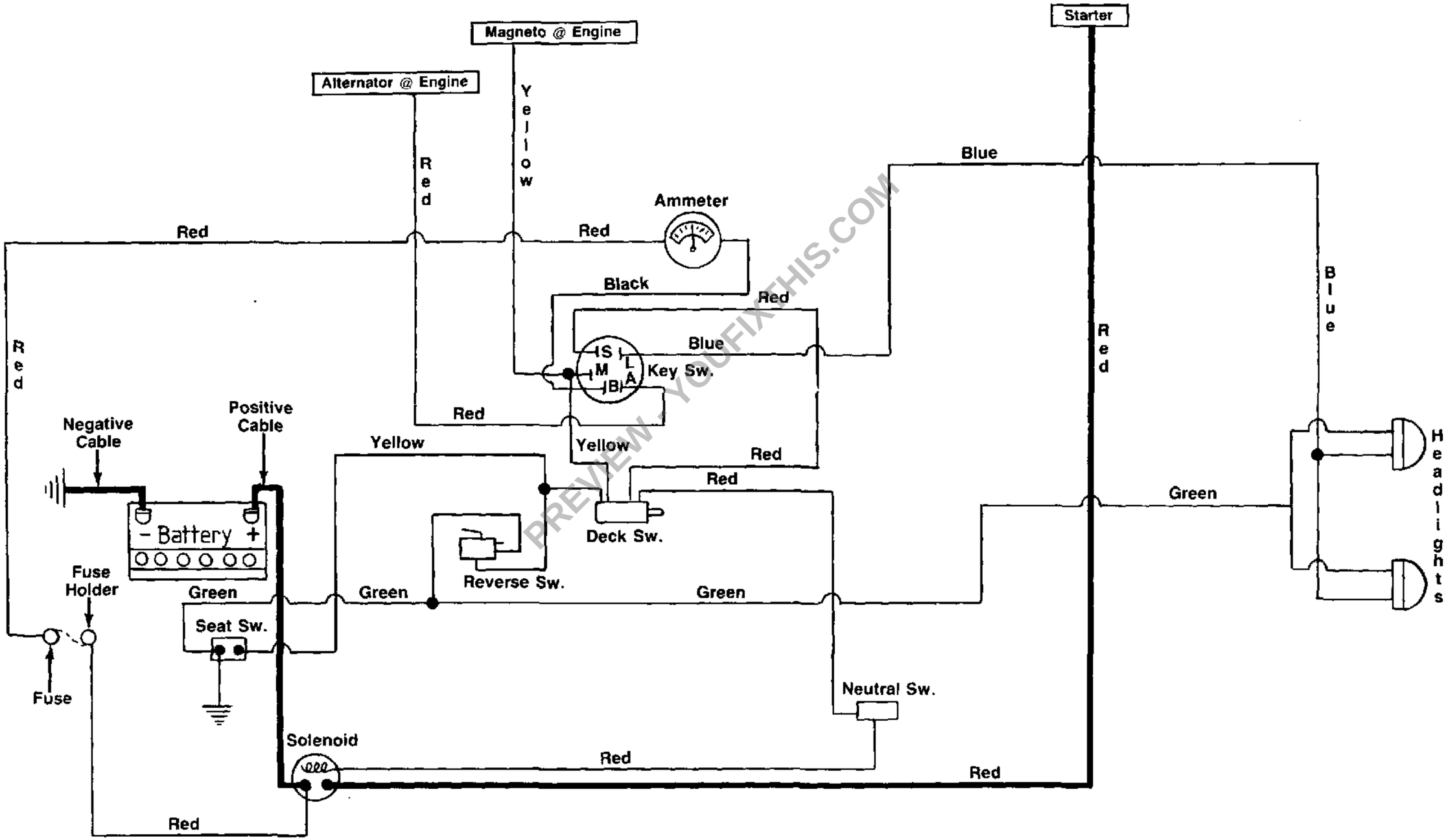
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8	WILL HAVE 6 RADIAL LINES Quenched and Tempered Special Carbon or Alloy Steel	

* The center marking identifies the bolt manufacturer.

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L.T. Serial Number 147,088 and Above
1988 = 1015 and 1020
1989 = 1315 and 1320



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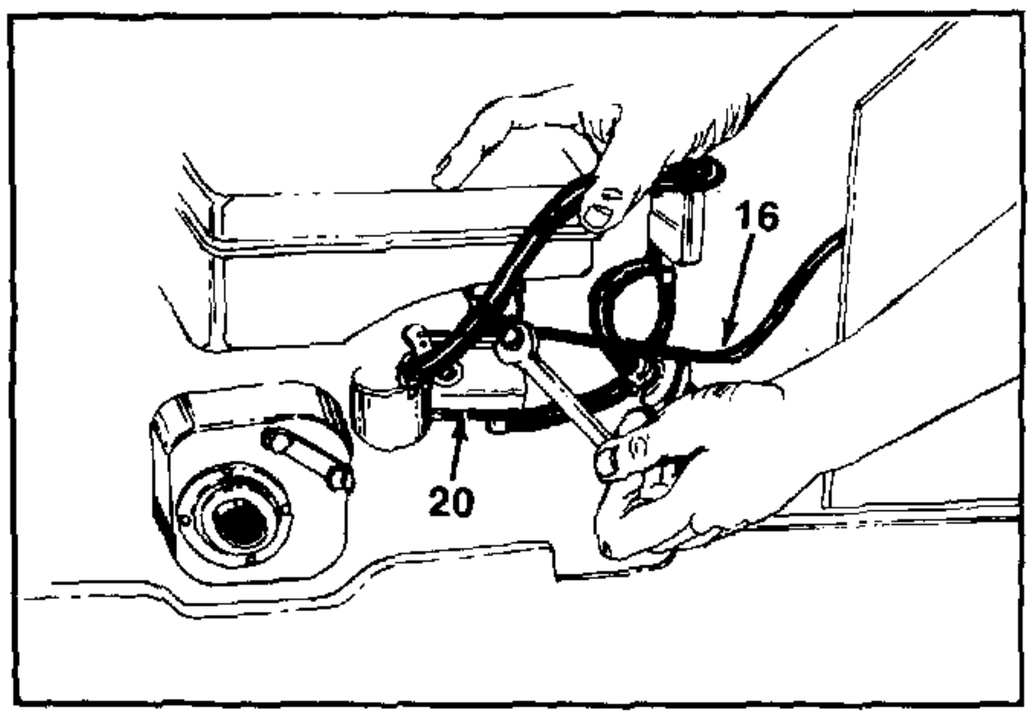


FIGURE 7.

6. Disconnect the choke cable (Ref. 16) at the carburetor (Ref. 20). See figure 7.

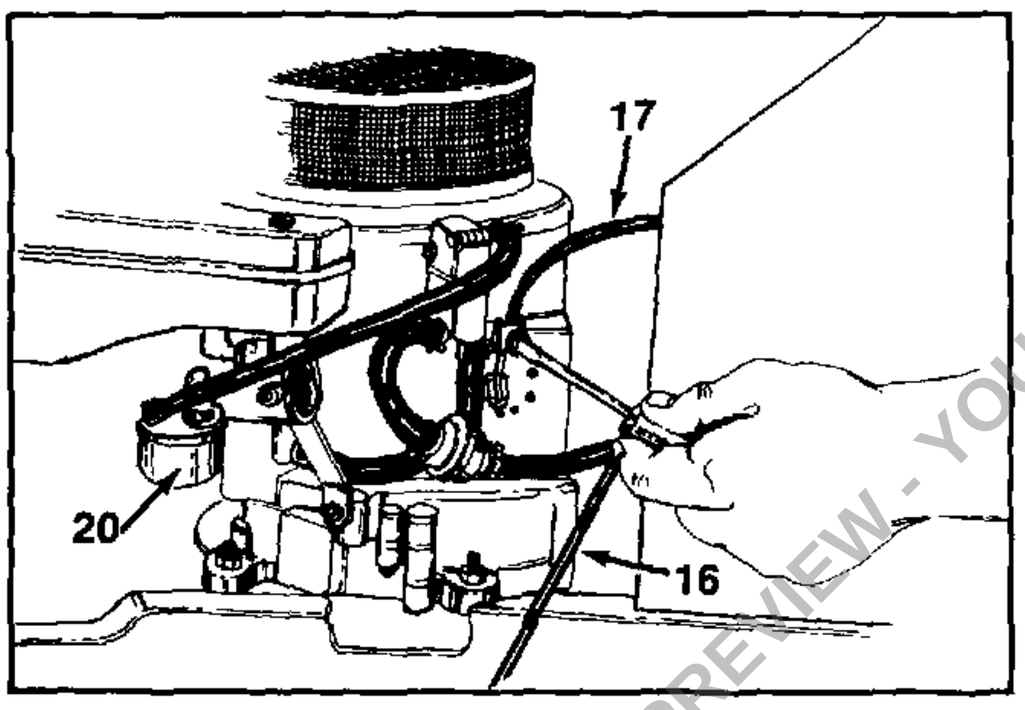


FIGURE 8.

7. Disconnect the throttle control cable (Ref. 17) from the left hand side of engine. See figure 8.

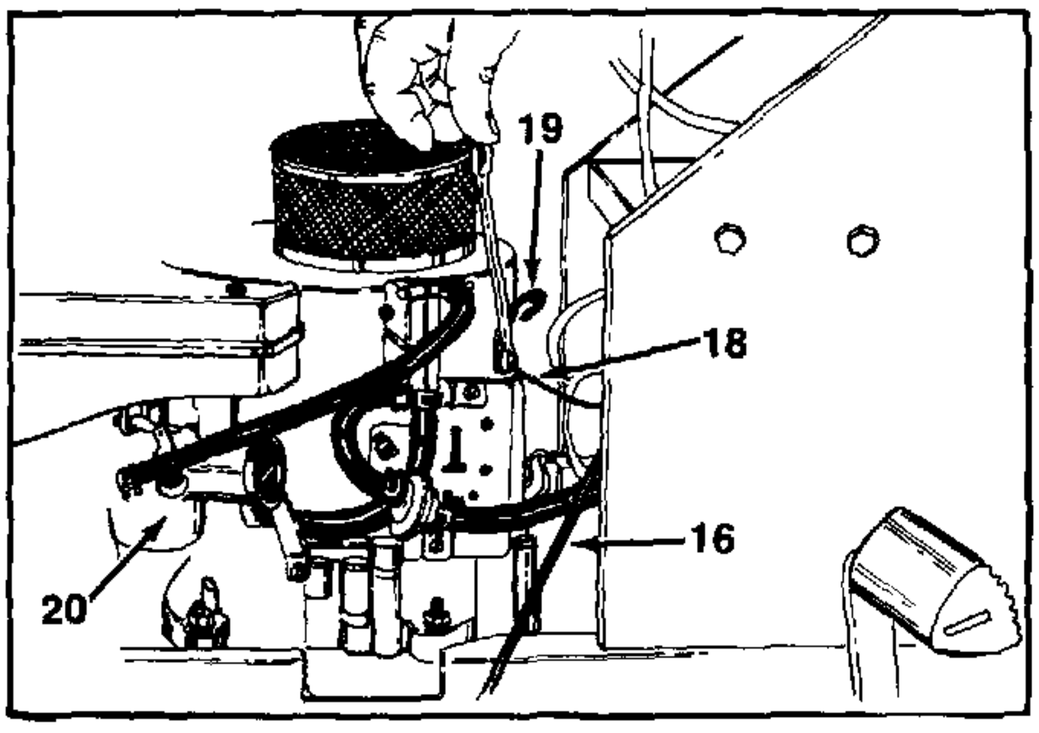


FIGURE 9.

8. Disconnect the ground wire (Ref. 18) from the back of engine and remove the cable clamp (Ref. 19) at the same time. See figure 9.

16. Choke Cable
17. Throttle Cable
18. Ground Wire at Engine
19. Cable Clamp
20. Carburetor

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