



**450 Crawler with  
207 Diesel Engine  
S/N 3060306 and After**

**Parts Catalog**

Burl A1303

**J I Case**  
A Tenneco Company



**REVISION RECORD LOG**

REVISION NO.	DATE INSERTED
1.	
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TS/6-6-76

**450 CRAWLER WITH  
207 DIESEL ENGINE**

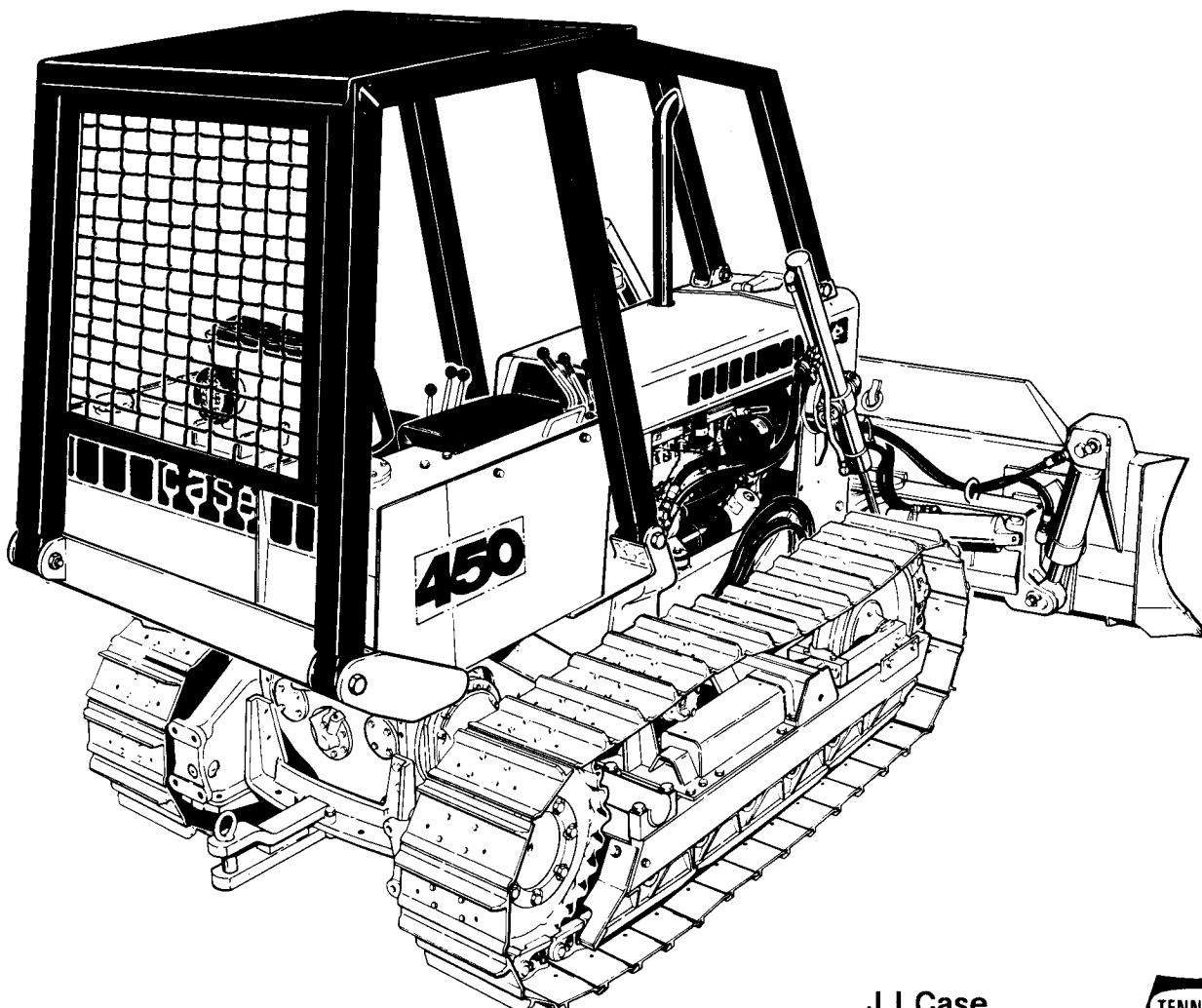
**S/N 3060306 AND AFTER**

**Parts Catalog A1303**

Whitehall 4000

Published October 1977

**Note: This parts catalog replaces  
the previous issue - 1303 -  
which is obsolete and  
should be discarded.**



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A Tenneco Company



Service Parts Supply

750574

Printed in U.S.A.

700 State Street  
Racine, Wisconsin 53404

# GENERAL INFORMATION

## Indexes

This parts catalog is arranged for easy identification on parts. The Alphabetical Index at the front of the catalog gives location of major groups and assemblies. The Numerical Index at the rear of the catalog gives part numbers and the page on which they are listed.

## Abbreviations and Terms

PIN - Product Identification Number.  
 SN - Serial Number.  
 NSS - Not sold separately.  
 REF - Reference. Used to clarify drawing.  
 RESERVED - No item listed.  
 UAR - Use as required.

## Changes

When changes are made to the machine, revised pages for this catalog will be issued. These pages must be inserted into your catalog as soon as they are received. Failure to keep your catalog up to date will result in confusion and may cause you to order wrong parts.

## Description, Quantity and Machinery Items

All parts are briefly described under DESCRIPTION. The quantity used is listed under REQ'D. Notice in the example below that the description of some items is moved in (indented) from the left-hand margin. An indented item is part of the item under which it is indented. The example shows that one hydraulic oil filter is used on the machine. Each filter contains one head assembly, one element kit, and one housing (indented items with no reference numbers and item 6). The head assembly and kit are further divided to show individual part (items 2, 3, 4 & 5).

Machinery items must be ordered from the Machinery Price List. See item 7 in the example.

REF.	PART NO.	DESCRIPTION	REQ'D
1	D 43567	FILTER ASSEMBLY - hydraulic oil .....	1
	D 61903	HEAD ASSEMBLY - filter .....	1
2	NSS	HEAD - filter .....	1
3	D 58199	VALVE - bypass .....	1
	D 43800	KIT - filter element .....	1
4	NSS	ELEMENT - filter .....	1
5	A 27994	O-RING - filter .....	1
6	D 42439	HOUSING - filter .....	1
7	REF	CANOPY - ROPS, machinery item, see page 2 for ordering .....	2
8	R 42849	HOSE - from upper valve port, 38" (965 mm) long .....	1
9	13- 728	BOLT - hex head, 7/16" - 14 NC x 1-3/4" .....	2
10	814- 8030	BOLT - hex head, 8 mm - 1.25 x 30 mm (8.8) .....	2

## Orders

Orders should specify correct part number, full description, quantity required, machine and engine model, machine and engine serial numbers, method of shipment and shipping address.

## Right-Hand and Left-Hand Sides

The terms right-hand and left-hand (abbreviated to RH and LH) as used in this catalog indicate the right and left sides of the machine as viewed by the operator in the normal operating position for proper operation of the machine or attachment.

## U.S. and Metric Units

Sizes, lengths, and dimensions are given in U.S. units followed by its equivalent in metric units. See item 8 below. Sizes of hardware (bolts, nuts, etc.) are given according to hardware type --- in inches for U.S. hardware; in millimeter for metric hardware. See items 9 and 10.

# PARTS ORDERING INFORMATION FOR FRENCH, GERMAN, ITALIAN AND SWEDISH SPEAKING COUNTRIES

3

## COMMANDE DE PIÈCES DE RECHANGE

Ce catalogue Pièces Rechange est conçu pour une identification facile de toutes les pièces CASE d'origine. Situé au début du catalogue, un répertoire permet de localiser rapidement les principaux groupes ou montages. A la fin du catalogue, un index numérique de pièces de rechange précise la page sur laquelle chacune des pièces est décrite.

Les pièces sont mentionnées par ordre du numéro de référence suivies du numéro de la pièce, de la description et de la quantité nécessaire. Les quantités mentionnées sous la rubrique « Quantité » correspondent à la quantité nécessaire pour former des assemblages ou des sous-ensembles.

Toutes les pièces sont illustrées sur des dessins éclatés montrant les pièces individuellement les unes par rapport aux autres. Les numéros de référence correspondent aux numéros des pièces sur les vues éclatées. Ces chiffres se rapportent à ceux de la rubrique « Chiffre de référence » qui sont suivis par le numéro de la pièce et sa description.

Toutes les commandes doivent spécifier exactement le numéro correct de la pièce, sa description, la quantité nécessaire, le type et le NUMERO DU MATERIEL, le mode d'expédition et l'adresse du destinataire.

Pour être sûr que votre commande de pièces correspond à vos besoins, vérifier l'illustration et la description dans le catalogue avec la pièce à commander.

## BESTELLUNG VON ERSATZTEILEN

Diese Ersatzteilliste ist so zusammengestellt, dass alle Original—CASE—Ersatzteile leicht identifiziert werden können. Vorn ist ein Inhaltsverzeichnis nach Baugruppen und Bauteilen angeordnet, welches das Auffinden der Teile erleichtert. Hinten am Schluss der Liste befindet sich ein fortlaufendes Verzeichnis der Ersatzteilnummern, in dem der betreffenden Ersatzteilnummer jeweils die Seitennummer gegenübersteht, auf der das Teil verzeichnet ist.

Im Ersatzteilverzeichnis befindet sich vor der Ersatzteilnummer eine laufende Nummer, die auch auf der Abbildung wiederholt wird, daneben die Ersatzteilnummer, die Bezeichnung des Teils und die davon benötigte Stückzahl für die betreffende Baugruppe.

Alle Teile sind in Zerlegt-Darstellung so abgebildet, dass sie in ihrem natürlichen Zusammenhang mit den anderen Teilen erkennbar sind, und werden mit der « laufenden Nummer » des Ersatzteilverzeichnisses bezeichnet, um ihre Auffindung zu erleichtern.

Alle Ersatzteil-Aufträge müssen deutlich die richtige Ersatzteilnummer, die genaue Beschreibung, die benötigte Anzahl von Teilen, Modell und NUMMER des traktors, die gewünschte Versandart und die Versandadresse enthalten.

Das benötigte Teil muss sorgfältig mit der Abbildung und der Beschreibung verglichen werden, damit die in Auftrag gegebenen Teile auch richtig bestellt sind.

## ORDINI DI PEZZI

Questo libro di pezzi è disposto in modo da permettere facilmente una identificazione di tutti gli Autentici Pezzi CASE Impiegati. Un indice è fornito sulla facciata del catalogo dei pezzi per individuare i principali gruppi o montaggi. Un indice numerico alla fine del catalogo dei pezzi indica la pagina in cui ciascun pezzo numerato è descritto.

I pezzi sono elencati in ordine di numero di riferimento seguito dal numero del pozzo, descrizione, e quantitativo richiesto. I quantitativi indicati nella colonna « Quantitativo richiesto » rappresentano il numero di pezzi richiesto per comporre uno dei precedenti Montaggi o Sotto- Montaggi.

Tutti i pezzi sono illustrati in « Prospetti Sviluppati » che mostrano i singoli pezzi e la loro relazione normale tra di loro. I numeri di riferimento sono indicati nella illustrazione. Questi numeri corrispondono a quelli nella colonna « Numero di Riferimento » e sono seguiti dal numero del pezzo e la descrizione.

Tutti gli ordini devono specificare chiaramente il preciso numero del pezzo, completa descrizione, quantitativo richiesto, modello e NUMERO DELLA SERIE della trattice, metodo di spedizione e indirizzo della spedizione. Controllate l'illustrazione e la descrizione con il pezzo richiesto, per assicurarvi che i pezzi ordinati sono giusti.

## BESTÄLLNING AV RESERVDELAR

Denna reservdelkatalog har getts en speciell uppställningsform för att förenkla identifieringen av alla äkta CASE reservdelar. Ett register finns i början av katalogen upptagande de olika större grupperna och enheterna. En reservdelns nummerförteckning i slutet av katalogen anger vilken sida de olika detaljerna förekomma på.

De olika reservdelarna anges i referensnummerordning atföljda av serservdelns numret, beskrivning och antal. Antalet, som anges i kolumnen « Quantity Required », är det antal som ingår i enheten i fråga.

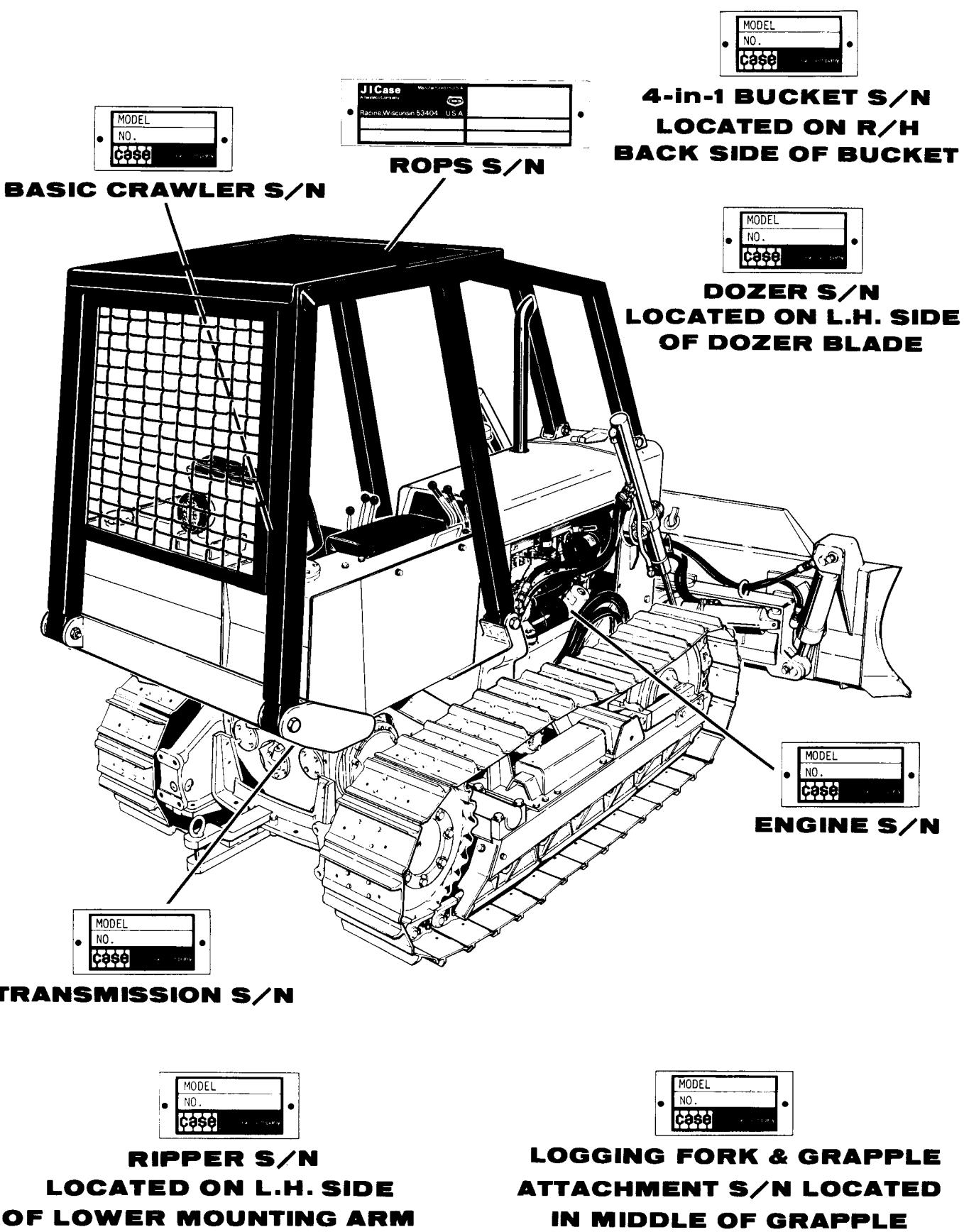
Alla reservdelaravbildas i sprängbilder i sina inbördes lägen. Referensnumraten anges på sprängbilderna. De framgå också av kolumnen « Reference Number » där de atföljas av beskrivning och reservdelns nummer.

Reservdelbeställningar skall upptaga korrekt reservdelns nummer, beskrivning, beställt antal, modell och serienummer på maskinen, transportsätt och mottagarens adress.

Kontrollera noga att bild och beskrivning motsvara den önskade detaljen så att misstag undvikas.

# MODEL 450 CRAWLER TRACTOR

## SERIAL NUMBER LOCATION



# DEALERS OWNERS RECORD

5

OWNERS NAME	SERIAL NUMBER	YEAR	ATTACHMENTS
TRACTOR.	3060769		
TRANSMISSION	2792336		

## MODEL 450 CRAWLER TRACTOR

## ALPHABETICAL INDEX

**A**

Air Cleaners	
Dry type	39
Extensions	39
Alternator	57, 69
Mounting and Adjusting Parts	69
Anti-Rollback - loader	259

**B**

Backhoe - Model 26, See Parts Catalog No. 1109	
Backhoe - Model 33, See Parts Catalog No. 995	
Backup Alarm	75
Battery - dry charge	69
Cables	69
Belts	
Fan	37
Seat	293
Blades	
Power Angle Dozer	265
Power Angle Tilt Dozer	267
Block - engine cylinder	21
Brake Assembly - transmission	111
Brake Cylinders - master	141
Brake Cylinders - slave	111, 113
Brake - parking	145
Brake Pedals	141
Brush Guard	289, 297
Brush Sweeps	297
Buckets	
1 cu. yd.	253
4-in-1 (Clam)	255
Teeth (See individual buckets)	
Bumpers	289

**C**

Cold Start Aid	79
Camshaft - engine	19
Chain - track	135
Clutch - transmission	103, 105, 109
Connecting Rods - engine	27
Control Levers	
Brake pedals	141
Declutch lockout	143
Dual range	81
Engine shutoff	65, 67
Engine throttle	43
Forward, reverse and steering	81
Four spool valves	219
Three spool valves	217
Two spool valves	215

**C**

Control Tower - transmission	81
Counterweights	
Backhoe, 1400 lbs.	277
Dozer, Front (1000 lbs.)	279
Loader, Front (1000 lbs.)	279
Rear, 1665 lbs.	279
Winch, 900 lbs.	277
Couplings - hydraulic, quick disconnect	171
Cowl	287
Crankshaft - engine	23
Crossbar - main frame	281
Crossmember - main frame	281
Cushions - seat	293
Cylinders - brake, master	141
Cylinder - brake, slave	111, 113
Cylinder Sleeves - engine	21

**D**

Decals - 4-in-1 Bucket (See buckets)	
Decals - crawler	301, 303
Declutch Lockout - crawler	143
Dipstick - engine	21
Dipstick - hydraulic oil	147
Dipstick - transmission	97
Dozers - mechanical	
Power Angle Dozer	265
Power Angle Tilt Dozer	267, 269
Drawbars	273, 275
Drive - final	115
Drive Shaft	95

**E**

Electrical System	
Crawler	69, 71
BackUp Alarm	75
Instrument panel	63
Loader return-to-dig	259
Pre-heater	77
Emblem - slow moving vehicle	293
Engine Frame and Mounting Parts	181

# MODEL 450 CRAWLER TRACTOR

7

## ALPHABETICAL INDEX

### E

<b>Engine Sub Assemblies</b>	
Camshaft . . . . .	19
Crankshaft . . . . .	23
Cylinder block assembly . . . . .	21
Cylinder head and cover . . . . .	15
Engine gasket kits . . . . .	31
Fuel injection filter system . . . . .	49
Fuel filter . . . . .	51
Fuel injection pump and drive . . . . .	53, 55
Fuel injection system . . . . .	49
Fuel injector . . . . .	51
Manifolds . . . . .	13
Oil pump, filter, pan . . . . .	29
Piston assembly and connecting rods . . . . .	27
Valves and valve mechanism . . . . .	17
Water pump and attaching parts . . . . .	11
Exhaust - pipe and mufflers . . . . .	41

### F

Fan - radiator . . . . .	37
<b>Filters</b>	
Fuel . . . . .	45, 51
Oil, engine . . . . .	29
Oil, hydraulic . . . . .	151
Oil, transmission . . . . .	89
Final Drive - crawler . . . . .	115
Fitting - carryover, backhoe (See valves)	
Floor Plates - crawler . . . . .	287
Flywheel - engine . . . . .	25, 35
Fork - logging . . . . .	261
<b>Frames</b>	
Dozer (See dozers)	
Loader . . . . .	249
Main . . . . .	281
Seat . . . . .	293
Track . . . . .	123
Fuel Injector - engine . . . . .	51
Fuel Lines - engine . . . . .	45, 47, 49
Fuel Tank Assemblies . . . . .	291

### G

Gaskets - engine (Service Kits) . . . . .	31
Gauges - engine and crawler . . . . .	65, 67
Gears - engine (See Engine Sub Assemblies)	
Gears - final drive . . . . .	115
Gears - transmission (See transmission)	
General Information . . . . .	2-3
Grapple Attachment - logging . . . . .	261
Grille - radiator . . . . .	285

### G

<b>Guards</b>	
Radiator . . . . .	285, 289
Roll-Over Protection Structure . . . . .	295
Side shield and screens . . . . .	289, 295, 297
Track guides . . . . .	131, 133
Undercarriage and sediment bowl . . . . .	283

### H

Head - engine cylinder . . . . .	15
Headlight . . . . .	73
Heater - engine block . . . . .	21
Heater - engine manifold . . . . .	77
Hood - crawler . . . . .	285
Hook - pull . . . . .	283
Hose - see fuel lines or hydraulic circuits	
Hose - radiator . . . . .	37
Hose and Fitting Chart . . . . .	306
Housing - flywheel . . . . .	35

### Hydraulic Circuits

Bucket, 4-in-1 . . . . .	157, 255
Crawler . . . . .	83-87
Dozer Angle Circuit	
Angle Dozer . . . . .	161
Angle Tilt Dozer . . . . .	163
Dozer Lift Circuit . . . . .	159
Dozer Tilt Circuit - Angle Tilt Dozer . . . . .	163
Dual Pull Behind . . . . .	169
Equipment . . . . .	147
Loader Dump . . . . .	155
Loader Hydra-Leveling . . . . .	155
Loader Lift . . . . .	153
Loader Optional . . . . .	157
Logging Fork . . . . .	157, 261
Pull Behind . . . . .	167
Ripper . . . . .	165
Transmission . . . . .	119
Hydraulic Reservoir Assemblies . . . . .	291

### I

Idler Wheel - track . . . . .	125
Instrument - gauges . . . . .	65, 67
Instrument Panel . . . . .	63

### L

Levers - see controls	
Lights - head and tail . . . . .	73
Lights - instrument panel (See instrument panel)	
Linkage - anti-rollback . . . . .	259

## MODEL 450 CRAWLER TRACTOR

## ALPHABETICAL INDEX

**L**

Linkage - equipment control .....	215-221
Linkage - dual range.....	81
Linkage - loader .....	249, 251
Linkage - throttle control.....	43
Links - track chain .....	135
Loader - mechanical .....	249, 251
Lock Up Parts - tractor .....	299

**M**

Manifold - exhaust .....	13
Manifold - intake .....	13
Manifold Heater .....	71
Moldboards - see blades	
Mounts - engine and torque converter .....	35
Muffler - exhaust, standard.....	41

**N**

Noise Reduction Pads .....	305
Nozzle - fuel injector .....	51

**O**

Oil Pan - engine .....	29
------------------------	----

**P**

Pan - oil, engine .....	29
Parking Brake - crawler .....	145
Pedals - brake .....	141
Piston Assemblies .....	27
Plates - floor .....	287
Plates - track shoes .....	137, 139
Preheater - engine manifold .....	71
Pulley - alternator .....	69
Pulley - fan drive.....	23
Pump	
Drive - hydraulic oil.....	151
Fuel injection.....	53, 55
Oil, engine .....	29
Oil, hydraulic (equipment).....	149
Oil, torque converter .....	91
Water, engine .....	11

**R**

Radiator - cooling .....	37
Recoil System - track .....	123
Regulators - voltage .....	69

**R**

Return-To-Dig - loader .....	259
Rings - piston .....	27
Ripper - mechanical .....	271
Rocker Arms - engine .....	17
Rods - connecting, engine .....	27
Rods - push, engine .....	17
Roll-Over Protection Structure.....	295
Roller - track .....	127, 129
Roller - track carrier .....	127, 129

**S**

Screen - fuel .....	291
Screen - guard, brush .....	289, 297
Seat Assemblies.....	293
Serial Number Locations .....	4
Shafts Engine - see engine sub assemblies	
Shafts Transmission - see transmission sub assemblies	
Shields - side.....	289
Shoes - track .....	137, 139
Shroud - radiator .....	285
Sleeve - piston .....	27
Solenoid - manifold heater .....	71
Solenoid - starter .....	61
Sprocket - drive .....	123
Steps .....	287
Strainer - fuel .....	51
Starter - engine .....	59, 61, 71

**T**

Taillight .....	73
Tank Assemblies - fuel and hydraulic .....	291
Thermostat - engine water temperature .....	11
Torque Converters .....	35, 91
Track	
Adjuster, hydraulic .....	125
Carrier rollers .....	127, 129
Chain .....	135
Chain Service Kits .....	135
Frames .....	123
Guides .....	131, 133
Recoil System .....	123
Rollers .....	127, 129
Shoes .....	137, 139

# MODEL 450 CRAWLER TRACTOR

9

## ALPHABETICAL INDEX

### T

Transmission Sub Assemblies	
Bevel pinion and shaft .....	107
Clutch - forward and reverse .....	109
Clutch - high and low speed .....	109
Control valve .....	121
Final drive and housing .....	115
Forward, reverse and P.T.O. shafts .....	103
High and low clutch shafts .....	105
Hydraulic brake cylinders.....	113
Hydraulic brakes .....	111
Mechanical range shift.....	101
Pinion and shaft .....	117
Transmission housing and covers .....	97, 99
Transmission hydraulics .....	119

### V

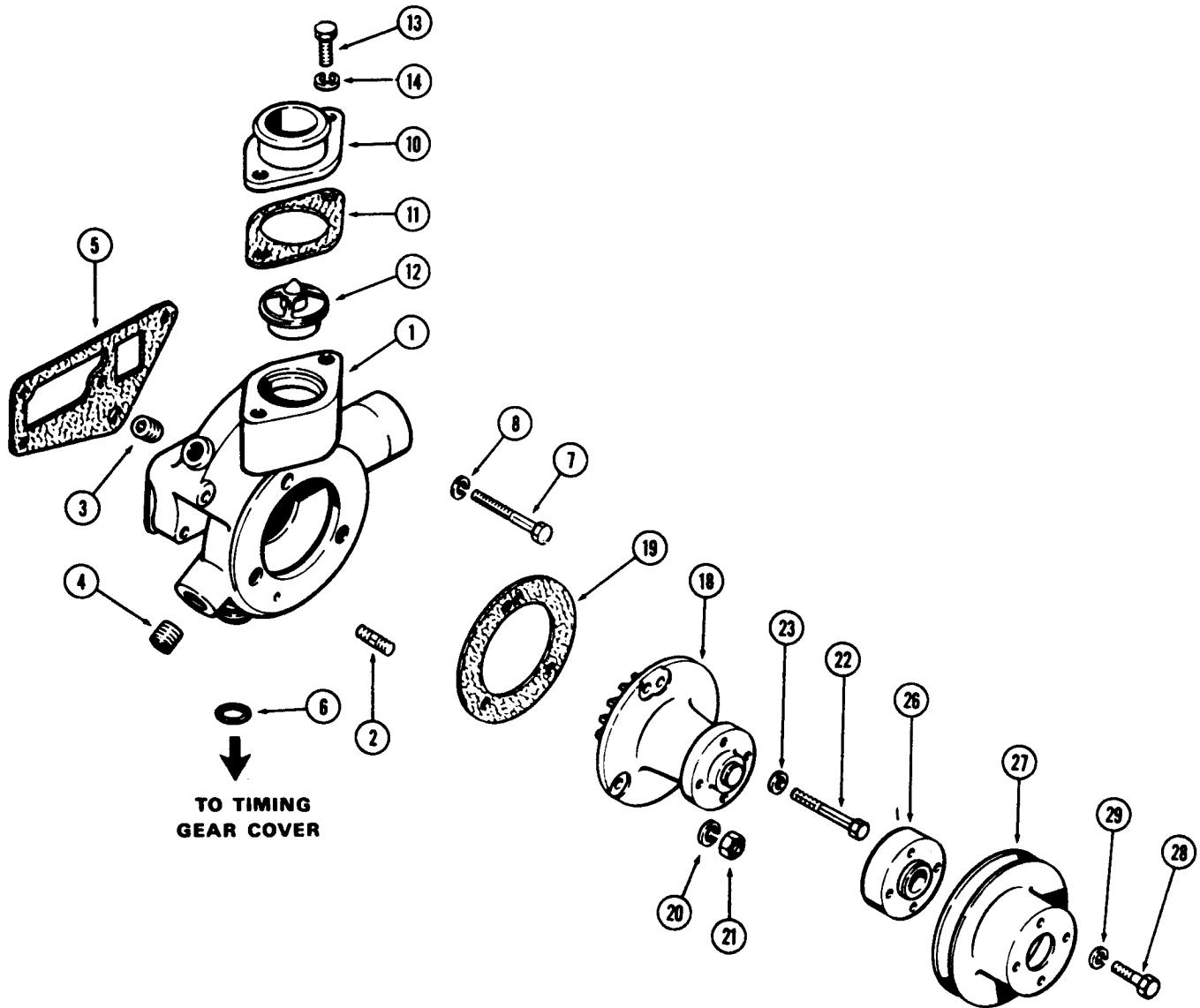
Valves	
Air, inlet and outlet (Hydraulic oil and fuel) .....	291
Declutch Lockout .....	143
Diversion .....	173
Hydraulic, dozer 2 spool .....	215
Hydraulic, dozer 3 spool .....	217
Hydraulic, dozer 4 spool .....	219
Hydraulic, loader 2 spool .....	215
Hydraulic, loader 3 spool .....	217
Hydraulic, loader 4 spool .....	219
Oil Bypass, filter .....	151
Relief, secondary (Logging Fork and Grapple) ..	261
Relief tank .....	291
Transmission.....	121

### V

Valve Mechanism - engine .....	17
Valve Sub Assemblies - dozer and loader control ..	235-247

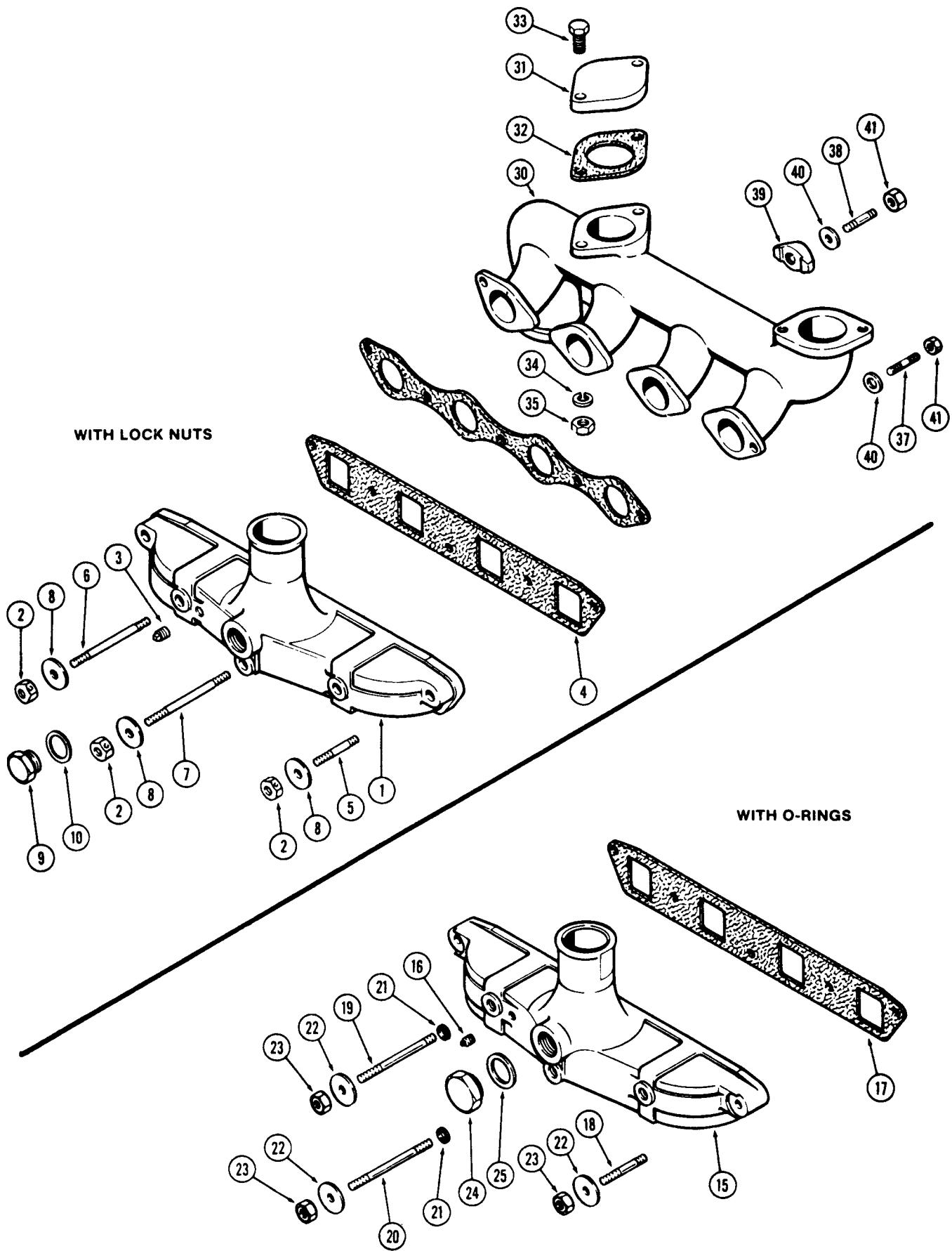
Winch - Model 9 and 19, See parts catalog 1126	
Wires - See electrical systems	

### W



**WATER PUMP**  
**207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 152801	BODY ASSY. - water pump (Rpl. A51735 & A144054) .....	1
2	A 29433	STUD - water pump (3/8" N.C. x 1") .....	2
3	211- 843	PLUG - body (3/8" P.T., sckt. hd.) .....	1
4	221- 844	PLUG - body (1/2" P.T., sckt. hd.) .....	1
5	A 38084	GASKET - body to cylinder head .....	1
6	F 62075	O-RING - body to cover (3/4 x 1 x 1/8") .....	1
7	13- 630	BOLT - body to cyl. head (3/8 x 1-7/8" N.C. hex.) .....	1
7	13- 644	BOLT - body to cyl. head (3/8 x 2-3/4" N.C. hex.) .....	1
7	13- 648	BOLT - body to cyl. head (3/8 x 3" N.C. hex.) .....	1
8	92- 6	WASHER - 3/8" lock .....	3
10	G 2144	HOUSING - thermostat & water outlet .....	1
11	G 46907	GASKET - housing to body .....	1
12	A 57641	THERMOSTAT - (180°) .....	1
13	13- 616	BOLT - housing (3/8 x 1" N.C. hex.) .....	2
14	92- 6	WASHER - 3/8" lock .....	2
18	A 146584	PUMP ASSY. - water (Replaces A39074) .....	1
19	A 38083	GASKET - pump to body .....	1
20	92- 6	WASHER - 3/8" lock .....	2
21	25- 106	NUT - 3/8" N.C. hex. ....	2
22	13- 644	BOLT - pump to body (3/8 x 2-3/4" N.C. hex.) .....	1
23	A 22317	WASHER - 3/8 x 11/16 x 1/16" .....	1
26	A 37191	SPACER - fan hub .....	1
27	G 11339	PULLEY - fan drive .....	1
28	13- 520	BOLT - pulley & spacer (5/16 x 1-1/4" N.C. hex.) .....	4
29	92- 5	WASHER - 5/16" lock .....	4



**MANIFOLDS**  
**207 DIESEL ENGINE**  
**INTAKE MANIFOLD**  
**WITH LOCKING NUTS**

1ST USED ENG. SER. NO. 2880541

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 152536	MANIFOLD ASSY. - intake .....	1
2	131- 206	NUT - lock (3/8" N.C. w/nylon insert) .....	5
3	221- 11	PLUG - 1/8" P.T., sq. hd. ....	1
4	G 46871	GASKET - manifold to head .....	1
5	A 140924	STUD - manifold, ends (3/8" N.C. x 2-7/16") .....	2
6	A 51499	STUD - manifold, intermediate (3/8" N.C. x 4-5/16") .....	2
7	A 51500	STUD - manifold, center (3/8" N.C. x 5-5/16") .....	1
8	D 41740	WASHER - studs (3/8 x 1 x 1/8") .....	5
9	A 20917	PLUG - manifold (Heater hole) .....	1
10	A 20916	GASKET - plug .....	1

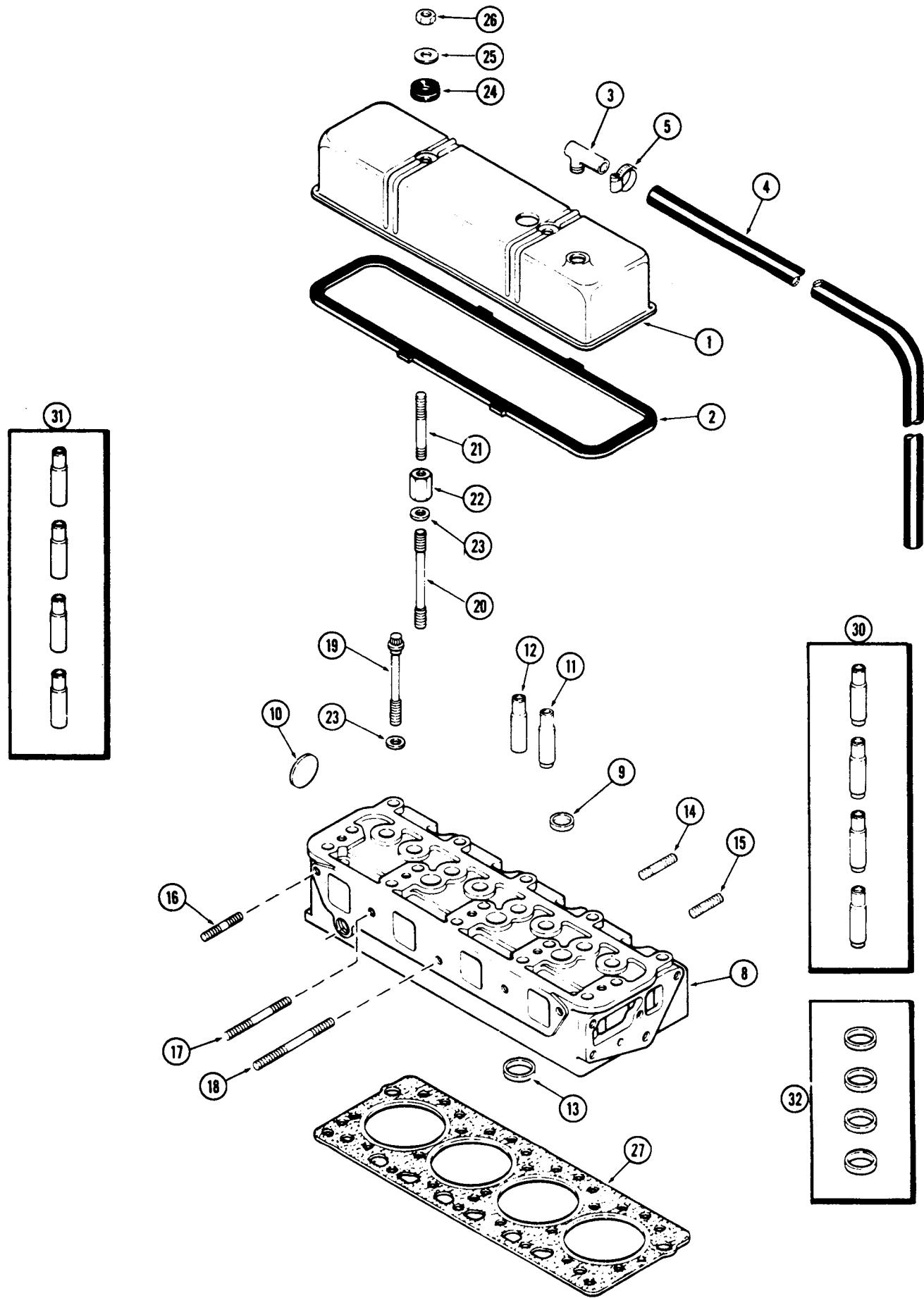
**WITH O-RINGS**

USED PRIOR TO ENG. SER. NO. 2880541

15	A 51876	MANIFOLD ASSY. - intake .....	1
16	221- 11	PLUG - 1/8" P.T., sq. hd .....	1
17	G 46871	GASKET - manifold to head .....	1
18	A 140924	STUD - manifold, ends (3/8" N.C. x 2-7/16") (Rpl. A35175) .....	2
19	A 51499	STUD - manifold, intermediate (3/8" N.C. x 4-5/16") .....	2
20	A 51500	STUD - manifold, center (3/8" N.C. x 5-5/16") .....	1
21	A 27891	O-RING - center & inter. studs (3/8 x 9/16 x 3/32") .....	3
22	D 41740	WASHER - studs (3/8 x 1 x 1/8") .....	5
23	25- 106	NUT - 3/8" N.C. hex .....	5
24	A 20917	PLUG - manifold (Heater hole) .....	1
25	A 20916	GASKET - plug .....	1

**EXHAUST MANIFOLD**

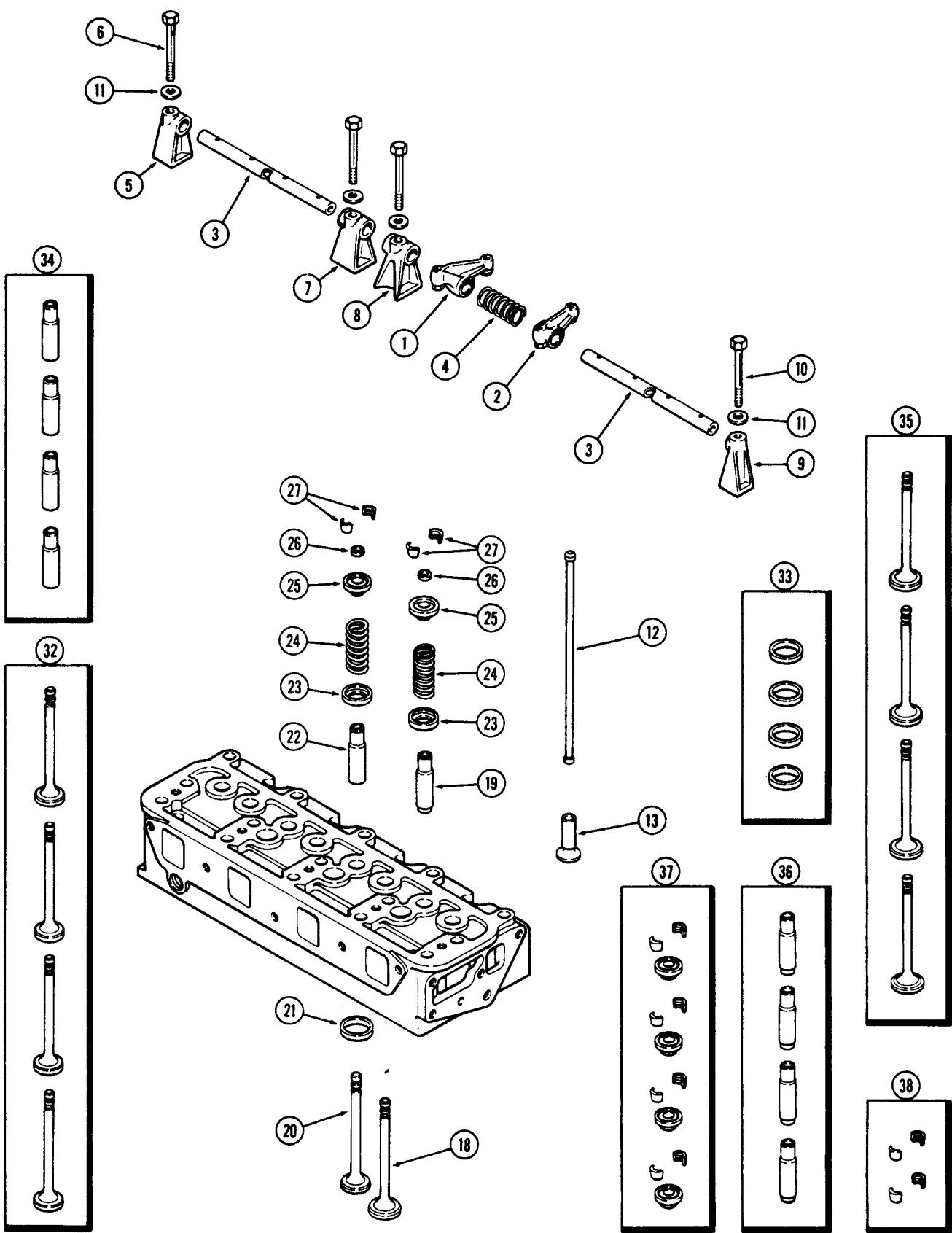
30	A 39233	MANIFOLD ASSY. - exhaust .....	1
31	A 38188	PLATE - cover .....	2
32	G 46853	GASKET - cover plate .....	2
33	13- 620	BOLT - cover plate (3/8 x 1-1/4" N.C. hex.) .....	4
34	195- 25	WASHER - 3/8" lock .....	4
35	131- 903	NUT - 3/8" N.C. Seez-Pruf .....	4
36	G 46872	GASKET - exhaust manifold .....	1
37	A 29431	STUD - manifold, ends (3/8" N.C. x 1-3/4") .....	2
38	A 39129	STUD - manifold, clamps (3/8" N.C. x 2-1/16") .....	3
39	A 35028	CLAMP - manifold .....	3
40	195- 25	WASHER - 3/8 x 13/16 x 1/16" .....	5
41	131- 903	NUT - 3/8" N.C. Seez-Pruf .....	5



## CYLINDER AND COVER

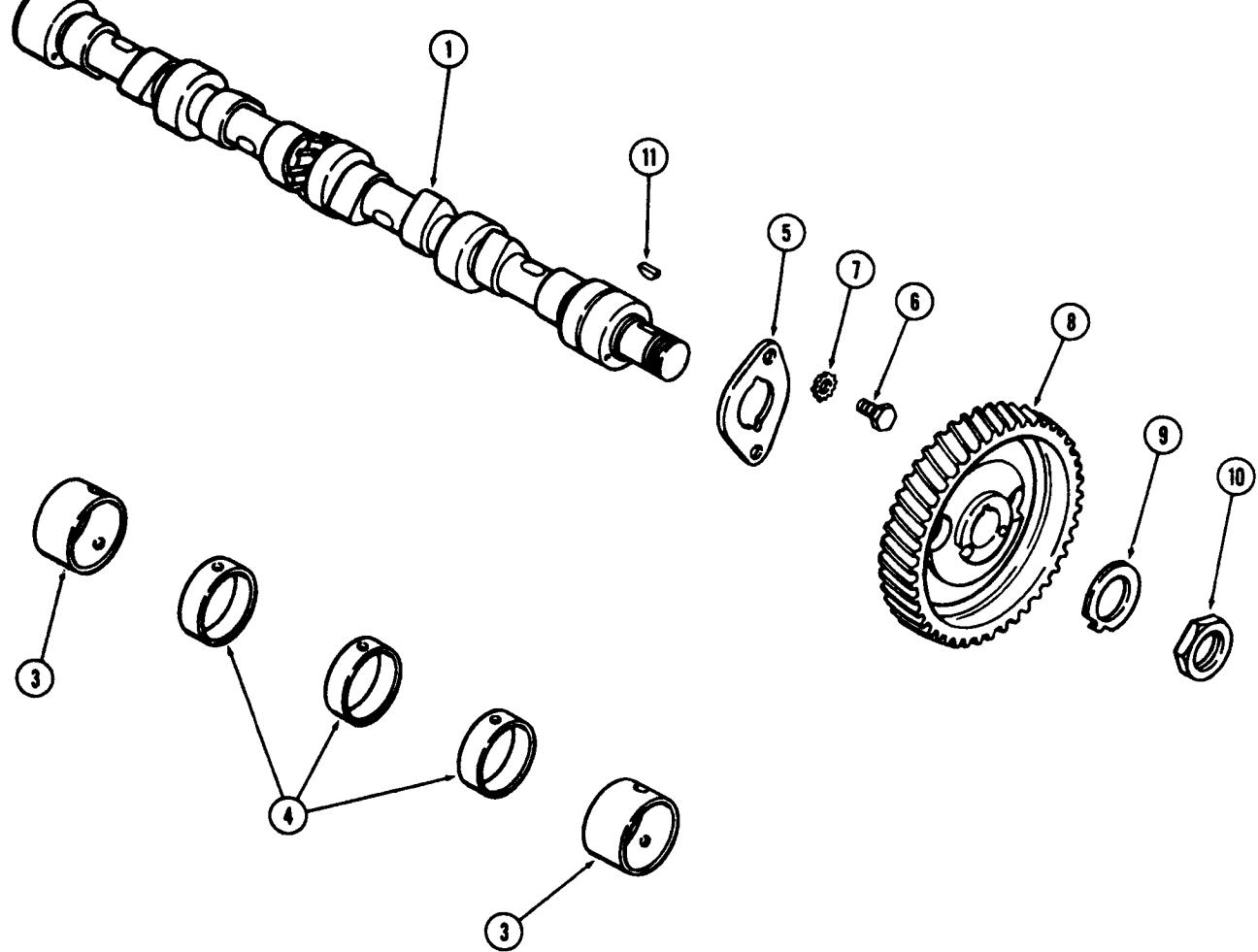
### 207 DIESEL ENGINE

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 36815	COVER - cylinder head .....	1
2	A 43030	GASKET - cover to cylinder head .....	1
3	A 9155	ELBOW - breather .....	1
4	A 39570	TUBE - breather hose .....	1
5	214- 253	CLAMP - breather hose (9/16" to 1-1/16") .....	1
8	A 150385	HEAD ASSY. - cylinder (Casting No. A150384) (Rpl. A37856) .....	1
9	41- 1016	PLUG - top (1" cup type) .....	3
10	41- 1028	PLUG - rear (1-3/4" cup type) .....	1
11	G 2069	GUIDE - exhaust valve (See Ref. 30) .....	4
12	G 2068	GUIDE - intake valve (See Ref. 31) .....	4
13	A 39268	INSERT - exhaust valve seat (See Ref. 32) .....	4
14	A 39129	STUD - exhaust manifold, clamps (3/8" N.C. x 2-1/16") .....	3
15	A 29431	STUD - exhaust manifold, ends (3/8" N.C. x 1-3/4") .....	2
16	A 140924	STUD - intake manifold, ends (3/8" N.C. x 2-7/16") .....	2
17	A 51499	STUD - intake manifold, inter. (3/8" N.C. x 4-5/16") .....	2
18	A 51500	STUD - intake manifold, center (3/8" N.C. x 5-5/16") .....	1
19	A 39047	BOLT - cylinder head (1/2 x 3-1/2" N.C., 12 pt. hd.) .....	4
19	A 39048	BOLT - cylinder head (1/2 x 5-1/8" N.C., 12 pt. hd.) .....	11
19	A 39049	BOLT - cylinder head (1/2 x 5-5/8" N.C. hex. 12 pt. hd.) .....	2
20	A 36902	STUD - cylinder head, lower (1-1/2" N.C. x 5-5/8") .....	2
21	A 51271	STUD - cylinder head cover (3/8" N.C. x 3-3/4") .....	2
22	A 51114	NUT - head studs (1/2" N.C. & 3/8" N.C.) .....	2
23	A 39046	WASHER - 1/2 x 7/8 x 1/8" .....	19
24	A 142098	GROMMET - cover (Replaces G46867) .....	2
25	G 49400	WASHER - cover nut (3/8 x 1-1/8 x 1/8") .....	2
26	25- 106	NUT - 3/8" N.C. hex .....	2
27	A 148745	GASKET - cylinder head (Replaces A39279) .....	1
30	G 11946	GUIDE KIT - exhaust valves (Set of 4) .....	1
31	G 11945	GUIDE KIT - intake valves (Set of 4) .....	1
32	A 43048	INSERT KIT - exhaust valve seat (Set of 4) .....	1



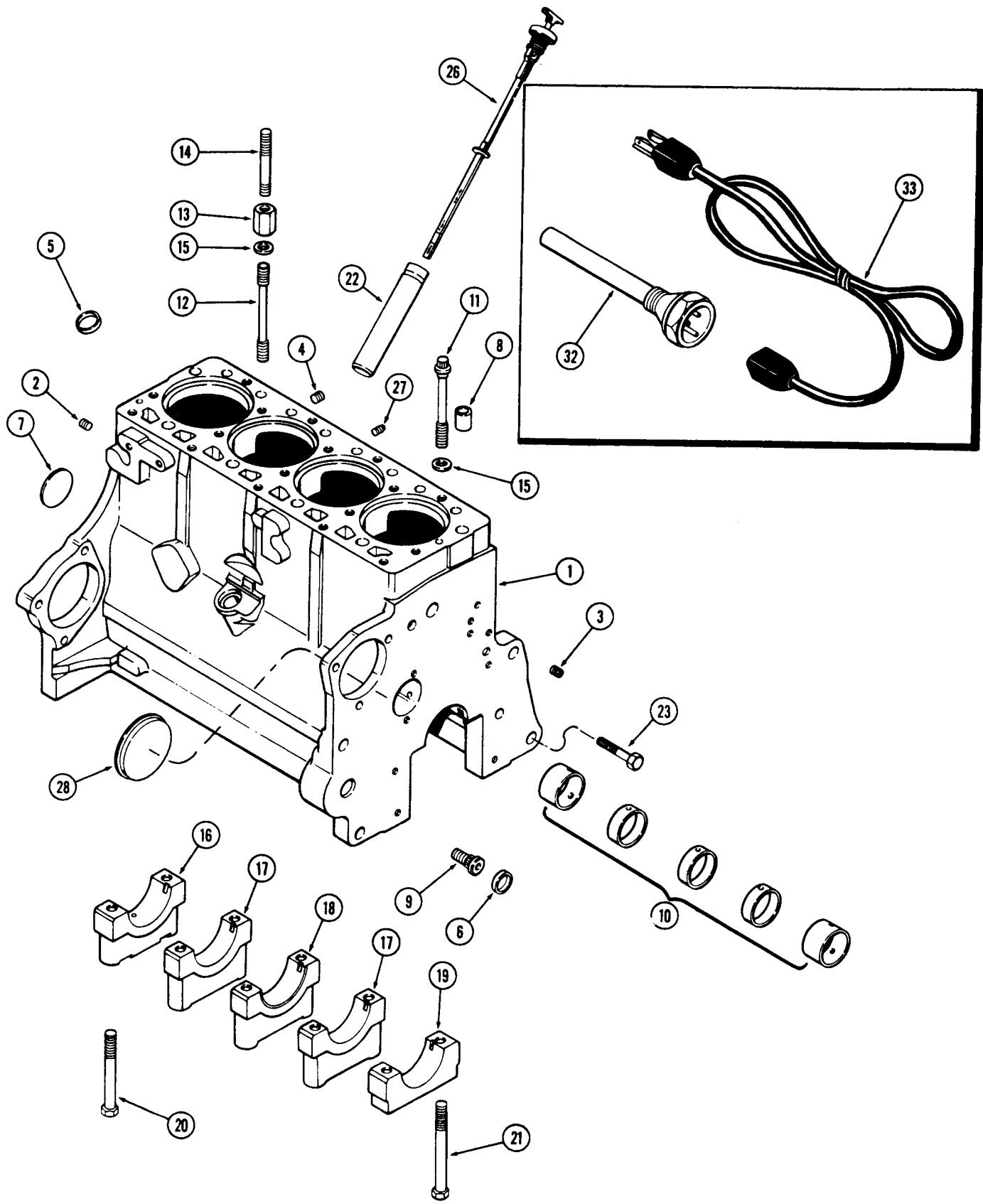
**VALVE MECHANISM**  
**207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 51149	ARM ASSY. - rocker, left hand, w/adj. screw .....	4
2	A 51148	ARM ASSY. - rocker, right hand, w/adj. screw .....	4
3	A 38181	SHAFT - rocker arm .....	2
4	G 48501	SPRING - rocker arm shaft .....	4
5	A 36615	BRACKET - rear, rocker arm shaft .....	1
6	G 49067	BOLT - rear bracket (drilled) .....	1
7	G 2101	BRACKET - center .....	1
8	A 51084	BRACKET - intermediate .....	2
9	G 2100	BRACKET - front .....	1
10	13- 656	BOLT - bracket (3/8 x 2-1/2" N.C. hex.) .....	4
11	A 30058	WASHER - bracket bolt (3/8 x 7/8 x 1/8") .....	5
12	G 47079	ROD - push .....	8
13	G 47077	LIFTER - push rod .....	8
18	NSS	VALVE - intake (Order Ref. 35) .....	4
19	G 2068	GUIDE - intake valve (3-1/4" long)(See Ref. 36) .....	4
20	NSS	VALVE - exhaust (Order Ref. 32) .....	4
21	A 39268	INSERT - exhaust valve seat (See Ref. 33) .....	4
22	G 2069	GUIDE - exhaust valve (3-1/8" long)(See Ref. 34) .....	4
23	G 49065	SEAT - valve spring .....	8
24	A 30025	SPRING - valve .....	8
25	NSS	RETAINER - valve spring (Order Ref. 37) .....	3
26	G 46851	SEAL - valve stem (rubber) .....	8
27	A 30004	LOCK - retainer (See Ref. 38) .....	16
32	A 41727	VALVE KIT - exhaust (Set of 4) .....	1
33	A 43048	INSERT KIT - exhaust valve seat (Set of 4) .....	1
34	G 11946	GUIDE KIT - exhaust valve (Set of 4) .....	1
35	A 41726	VALVE KIT - intake (Set of 4) .....	1
36	G 11945	GUIDE KIT - intake valve (Set of 4) .....	1
37	G 11927	RETAINER KIT - valve springs (Set of 4 w/locks) .....	2
38	G 11929	LOCK KIT - retainer (Set of 4) .....	4



**CAMSHAFT  
207 DIESEL ENGINE**

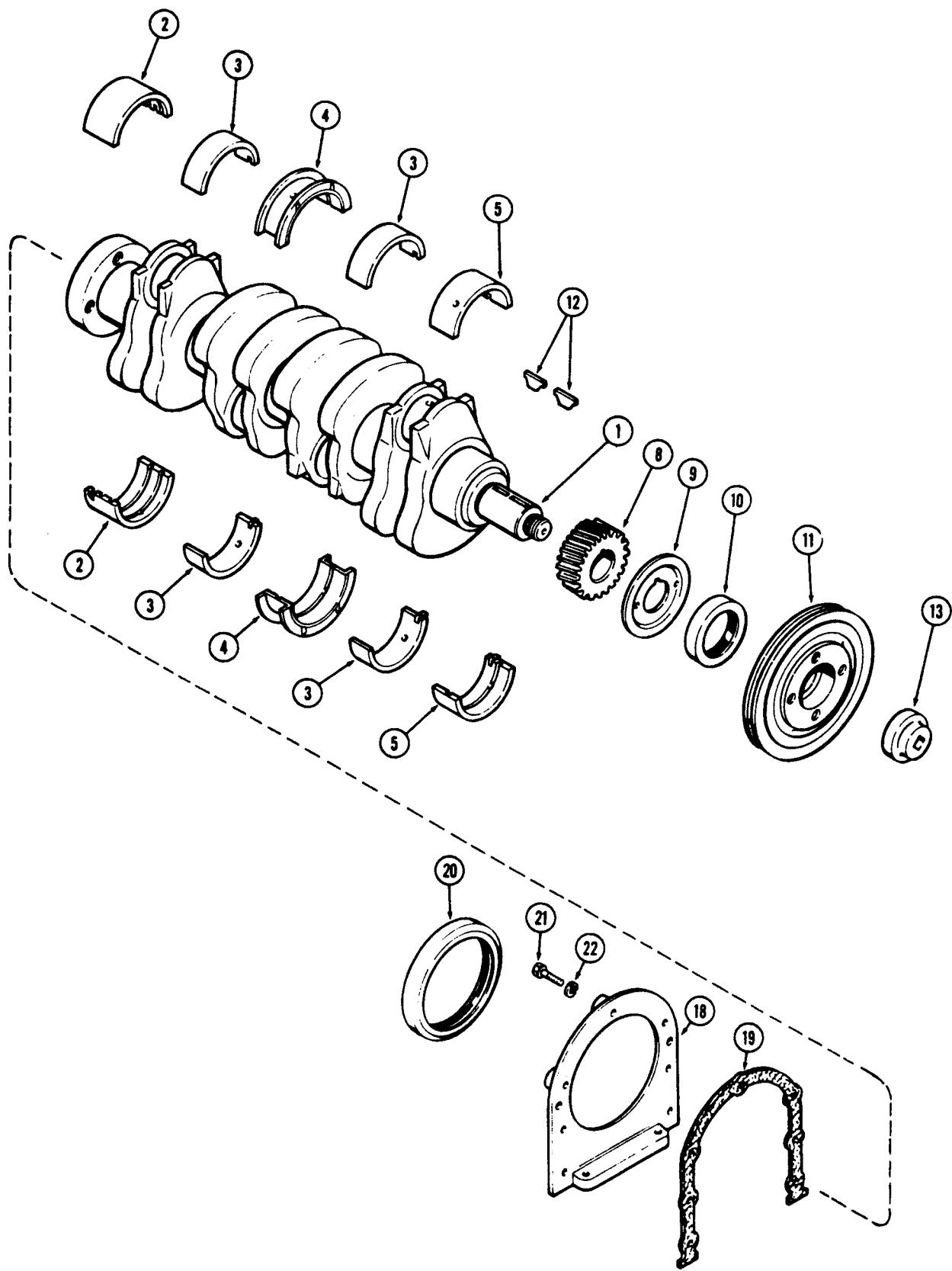
REF.	PART NO.	DESCRIPTION	REQ'D
1	A 39013	CAMSHAFT .....	1
	A 42746	BUSHING SET - camshaft .....	1
3	NSS	BUSHING - front & rear (1-1/4" wide) .....	2
4	NSS	BUSHING - intermediate (1/2" wide) .....	3
5	A 29290	PLATE - thrust, camshaft .....	1
6	A 30056	SCREW - thrust plate .....	2
7	193- 9	WASHER - 5/16" ext. skpf .....	2
8	A 38931	GEAR - camshaft .....	1
9	A 29438	WASHER - tab, gear nut lock .....	1
10	A 30063	NUT - gear to crankshaft .....	1
11	126- 12	KEY - gear to crankshaft (#6 Woodruff) .....	1



## CYLINDER BLOCK

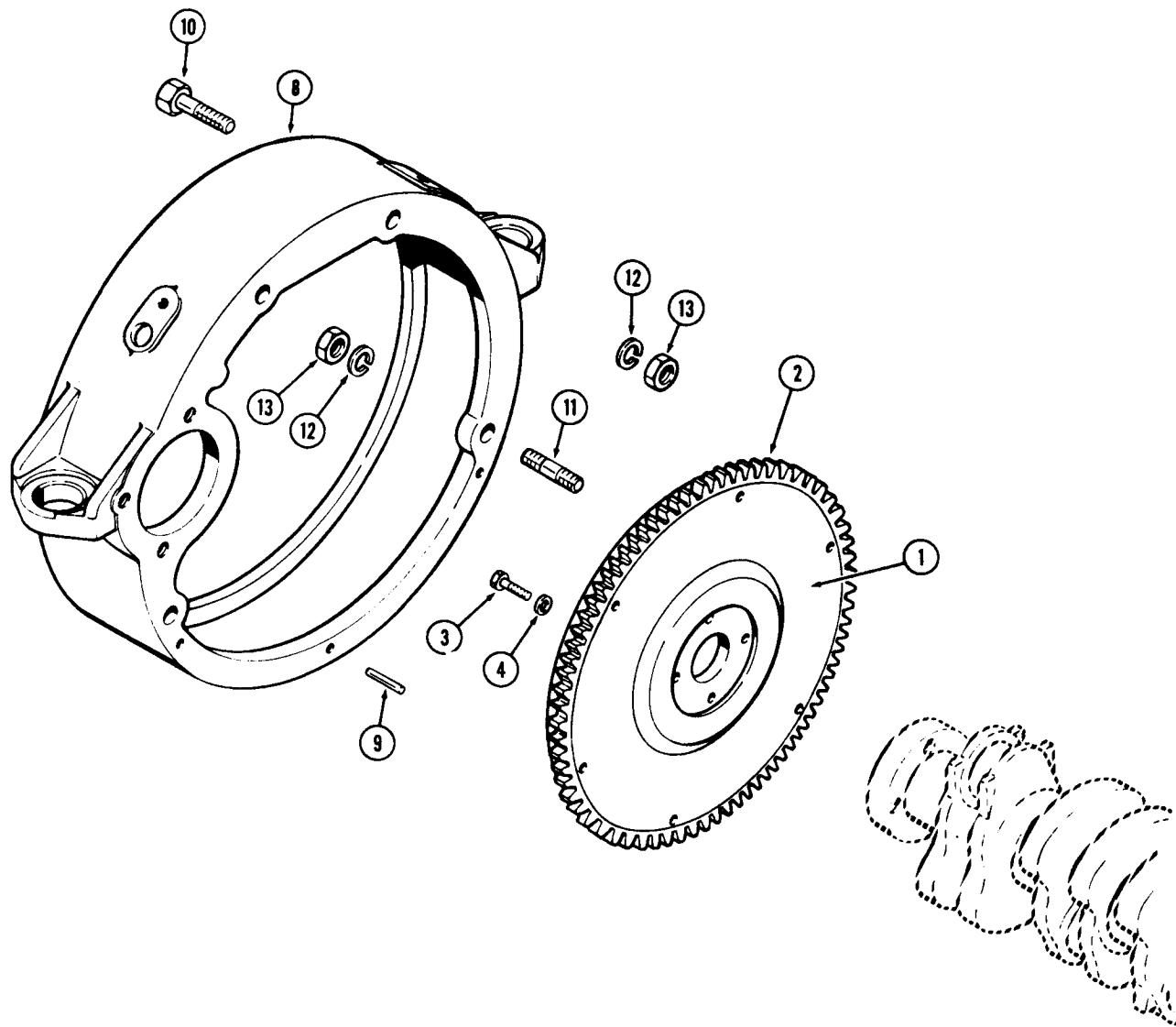
### 207 DIESEL ENGINE

REF.	PART NO.	DESCRIPTION	REQ'D
	A 46037	BLOCK ASSY. - short (Casting No. A136813)(Rpl. A46009) (Incl. stripped block, piston assy., conn. rods & brgs., crankshaft & brgs., camshaft, oil pump & timing gears) .....	1
1	A 44702	BLOCK ASSY. - stripped (Casting No. A136813)(Rpl. A46010) .....	1
2	221- 1841	PLUG - (1/4" P.T., sckt. hd.) .....	2
3	G 49070	PLUG - (1/4" P.T., drilled) .....	1
4	221- 1032	PLUG - (3/8" P.T., sckt. hd.) .....	1
5	A 38534	PLUG - tach. drive hole (1-1/16" cup type) .....	1
6	41- 1016	PLUG - adapter hole (1" cup type) .....	1
7	A 39241	PLUG - camshaft hole (2-1/8" exp.) .....	1
8	G 49608	RING - dowel, head locating .....	2
9	A 37206	ADAPTER - oil filter .....	1
10	A 42746	BUSHING SET - camshaft .....	1
11	A 39047	BOLT - cyl. head (1/2 x 3-1/2" N.C., 12 pt. hd.) .....	4
11	A 39048	BOLT - cyl. head (1/2 x 5-1/8" N.C., 12 pt. hd.) .....	11
11	A 39049	BOLT - cyl. head (1/2 x 5-5/8" N.C., 12 pt. hd.) .....	2
12	A 36902	STUD - cyl. head (1/2" N.C. x 5-5/8") .....	2
13	A 51114	NUT - cyl. head studs (1/2" N.C. & 3/8" N.C.) .....	2
14	A 51271	STUD - cyl. head cover (3/8" N.C. x 3-3/4") .....	2
15	A 39046	WASHER - 1/2 x 7/8 x 1/8" .....	19
16	G 38385	CAP - main bearing, rear (Replaces A51057) .....	1
17	G 2128	CAP - main bearing, intermediate (Replaces A51055) .....	2
18	G 2127	CAP - main bearing, center (Replaces A51056) .....	1
19	G 2126	CAP - main bearing, front (Replaces A51054) .....	1
20	26- 872	BOLT - bearing caps (1/2 x 4-1/2" N.C. hex.) .....	8
21	26- 882	BOLT - front bearing cap (1/2 x 5-1/8" N.C. hex.) .....	2
22	A 37149	TUBE - oil filler & dipstick .....	1
23	A 38303	BOLT - front support (5/8 x 3-3/16" N.C. hex.) (Not used this application) .....	1
26	A 39936	DIPSTICK - oil level (Turn-Tite type) .....	1
27	221- 662	PLUG - drain, cyl. block (1/4" P.T., sq. hd.) .....	1
28	A 29268	COVER - auxiliary drive opening (3-1/2" cup type plug) .....	1
<b>BLOCK HEATER</b>			
32	A 44815	HEATER ASSY. - block .....	1
33	A 44814	CORD - heater (12" long) .....	1



**CRANKSHAFT**  
**207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 51917	CRANKSHAFT .....	1
2	A 36495	LINER KIT - main brg., rear (Std.)(Set of 2) .....	1
2	A 36496	LINER KIT - main brg., rear (-.002")(Set of 2) .....	1
2	A 36497	LINER KIT - main brg., rear (-.010")(Set of 2) .....	1
2	A 36498	LINER KIT - main brg., rear (-.020")(Set of 2) .....	1
2	A 36499	LINER KIT - main brg., rear (-.030")(Set of 2) .....	1
3	A 36485	LINER KIT - main brg., intermediate (Std.)(Set of 2) .....	2
3	A 36486	LINER KIT - main brg., intermediate (-.002") (Set of 2) .....	2
3	A 36487	LINER KIT - main brg., intermediate (-.010")(Set of 2) .....	2
3	A 36488	LINER KIT - main brg., intermediate (-.020")(Set of 2) .....	2
3	A 36489	LINER KIT - main brg., intermediate (-.030")(Set of 2) .....	2
4	A 36490	LINER KIT - main brg., center (Std.)(Set of 2) .....	1
4	A 36491	LINER KIT - main brg., center (-.002")(Set of 2) .....	1
4	A 36492	LINER KIT - main brg., center (-.010")(Set of 2) .....	1
4	A 36493	LINER KIT - main brg., center (-.020")(Set of 2) .....	1
4	A 36494	LINER KIT - main brg., center (-.030")(Set of 2) .....	1
5	A 36480	LINER KIT - main brg., front (Std.)(Set of 2) .....	1
5	A 36481	LINER KIT - main brg., front (-.002")(Set of 2) .....	1
5	A 36482	LINER KIT - main brg., front (-.010")(Set of 2) .....	1
5	A 36483	LINER KIT - main brg., front (-.020")(Set of 2) .....	1
5	A 36484	LINER KIT - main brg., front (-.030")(Set of 2) .....	1
8	A 39288	GEAR - crankshaft .....	1
9	A 29259	SLINGER - oil .....	1
10	A 39110	SEAL - oil, front (2 x 3 x 1/2") .....	1
11	A 50962	PULLEY - fan drive .....	1
12	126- 216	KEY - pulley & gear (Hi-Pro) .....	2
13	A 35673	NUT - pulley retaining .....	1
18	A 38390	RETAINER - rear oil seal .....	1
19	A 39188	GASKET - retainer .....	1
20	A 51339	SEAL - oil, rear (4 x 5 x 1/2") .....	1
21	26- 412	BOLT - retainer (1/4 x 3/4" N.C. hex.) .....	4
21	26- 416	BOLT - retainer (1/4 x 1" N.C. hex.) .....	3
22	92- 4	WASHER - 1/4" lock .....	7

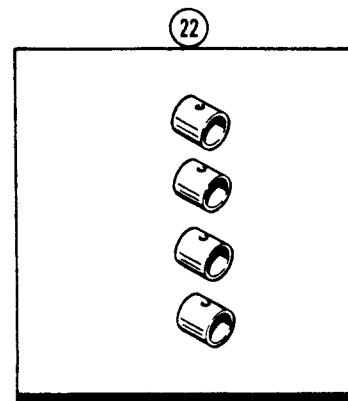
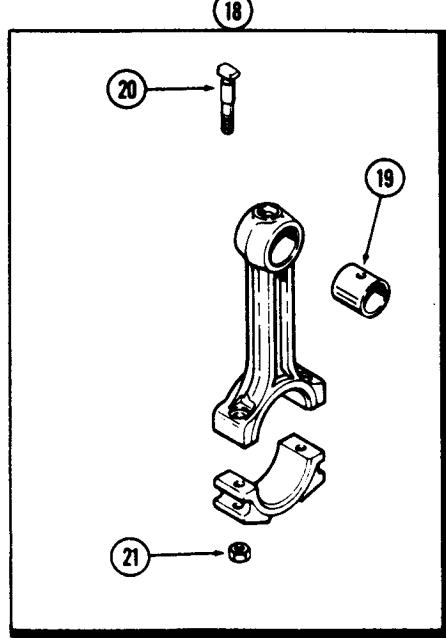
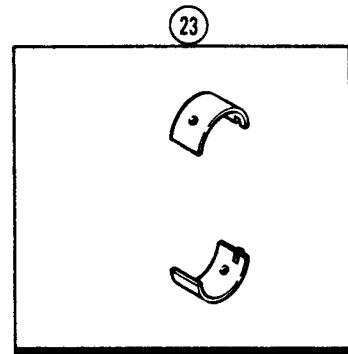
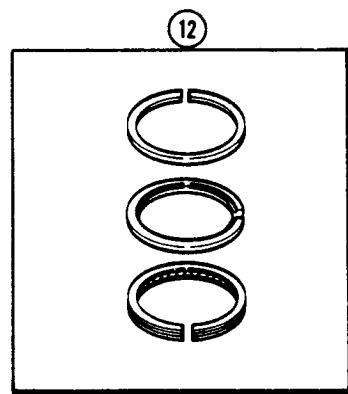
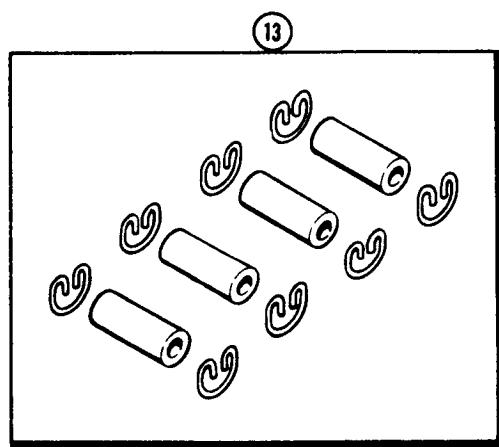
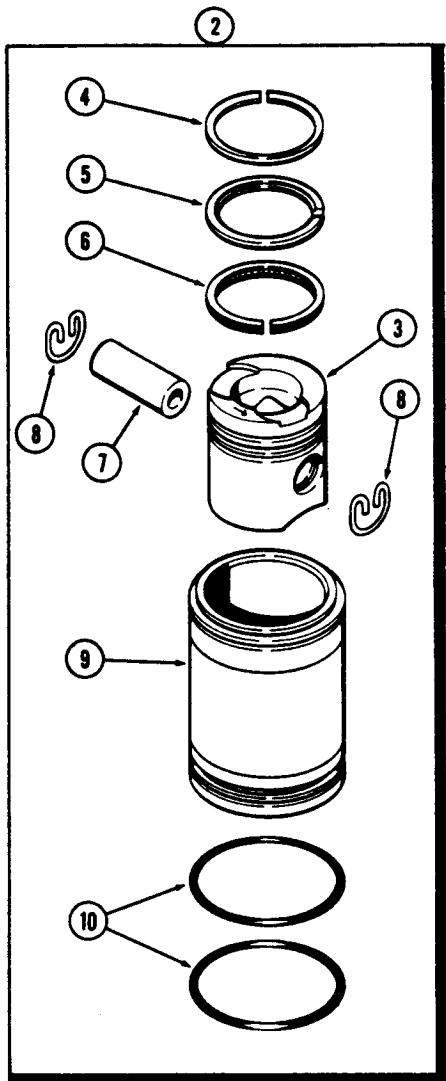


**MODEL 450 CRAWLER TRACTOR**

25

**FLYWHEEL AND HOUSING  
207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 39123	FLYWHEEL ASSY .....	1
2	G 11710	GEAR - ring, starter .....	1
3	121- 300	BOLT - flywheel to crankshaft (7/16 x 1-1/8" N.F. hex.) .....	4
4	A 30013	WASHER - flywheel bolt (7/16 x 3/4 x 1/16") .....	4
8	A 150569	HOUSING - flywheel (Replaces A36596) .....	1
9	138- 65	PIN - roll (1/8 x 1-1/2") .....	1
10	A 30135	BOLT - housing to engine (5/8 x 2-1/4" N.F. hex.) .....	2
11	A 29363	STUD - housing to engine (5/8" N.F. x 2-1/4") .....	2
12	193- 14	WASHER - 5/8" ext. skpf. .....	4
13	25- 1110	NUT - 5/8" N.F. hex. .....	4

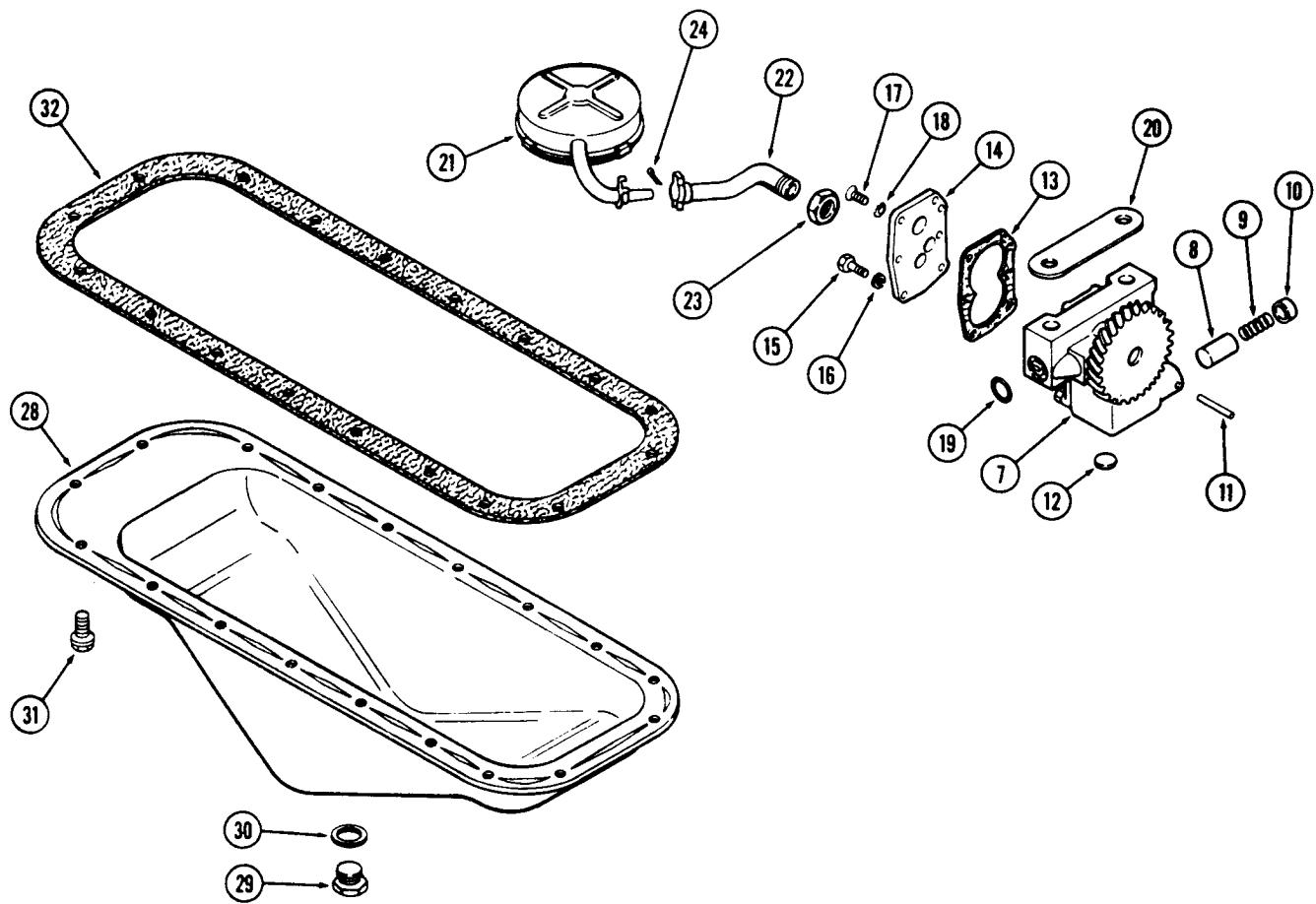
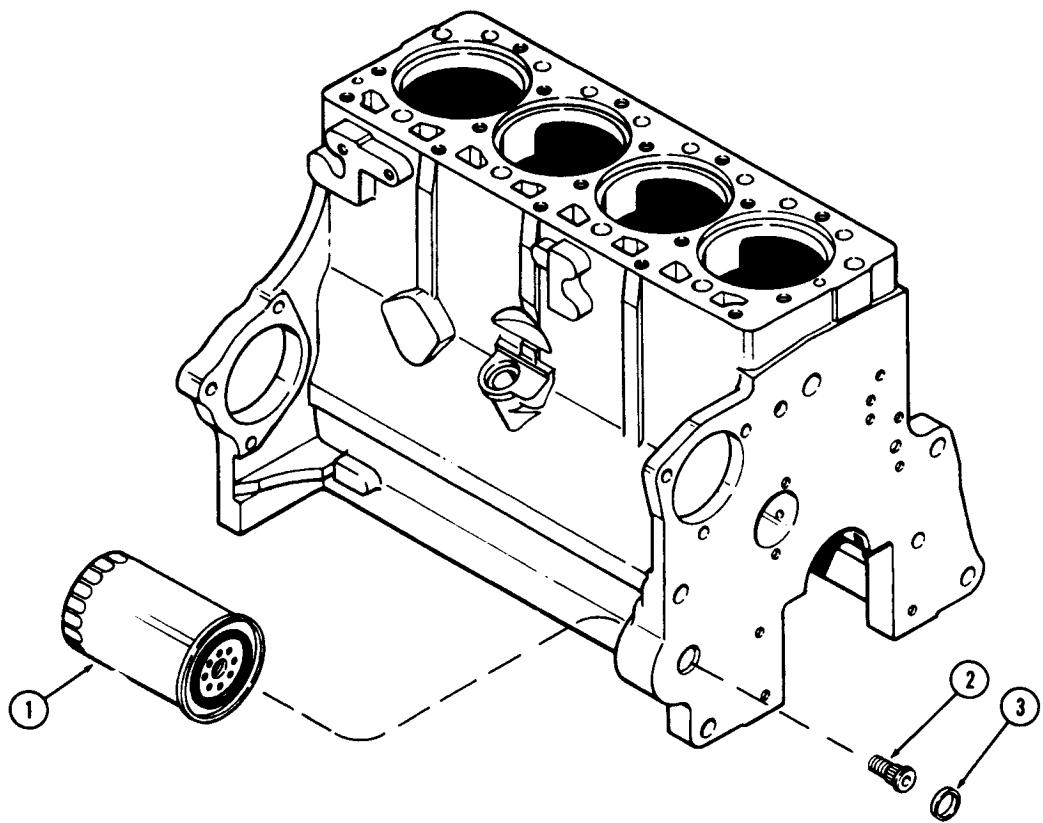


**PISTONS**  
**207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
	A 46014	PISTON ASSY. - (Set of 4) .....	1
2	A 46013	PISTON ASSY. - (Set of 1) .....	4
3	A 51911	PISTON .....	1
4	NSS	RING - compression, 1st groove (Order Ref. 12) .....	1
5	NSS	RING - compression, 2nd groove (Order Ref. 12) .....	1
6	NSS	RING - oil control, 3rd groove (Order Ref. 12) .....	1
7	NSS	PIN - piston (Order Ref. 13) .....	1
8	G 46702	RING - piston pin retaining .....	2
9	A 136474	SLEEVE - piston (cyl. liner) .....	1
10	A 51916	O-RING - sleeve .....	2
	A 46016	RING SET - piston re-ring (Set of 4) .....	1
12	A 46015	RING SET - piston re-ring (Set of 1) .....	4
13	A 35771	PIN SET - piston (Set of 4 pins & 8 rings) .....	1

**CONNECTING RODS**

18	A 51913	ROD ASSY. - connecting .....	4
19	NSS	BUSHING - piston pin (Order Ref. 22) .....	1
20	A 51914	BOLT - conn. rod cap .....	2
21	A 51904	NUT - conn. rod bolt .....	2
22	A 44083	BUSHING SET - piston pin (Set of 4) .....	1
23	A 50975	LINER KIT - conn. rod brg. (Std.)(Set of 2) .....	4
23	A 50976	LINER KIT - conn. rod brg. (-.002")(Set of 2) .....	4
23	A 50977	LINER KIT - conn. rod brg. (-.010")(Set of 2) .....	4
23	A 50978	LINER KIT - conn. rod brg. (-.020")(Set of 2) .....	4
23	A 50979	LINER KIT - conn. rod brg. (-.030")(Set of 2) .....	4



## OIL FILTER 207 DIESEL ENGINE

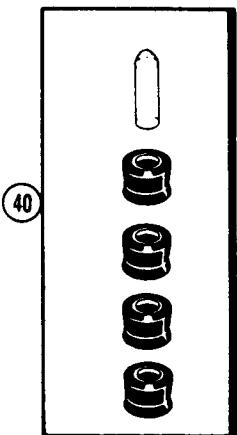
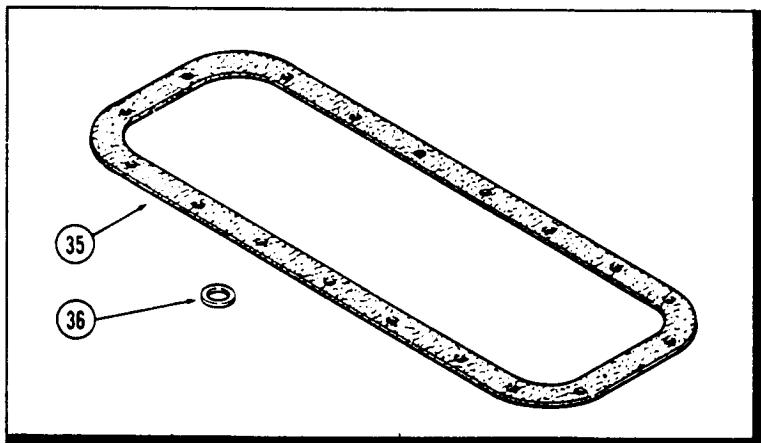
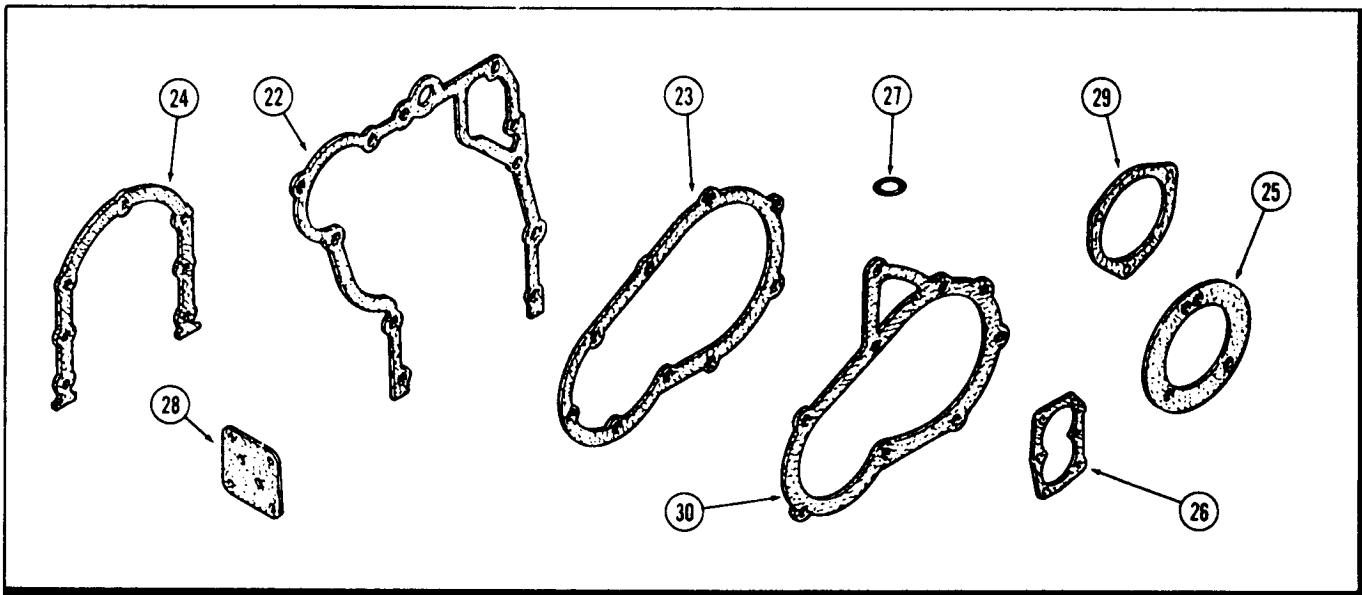
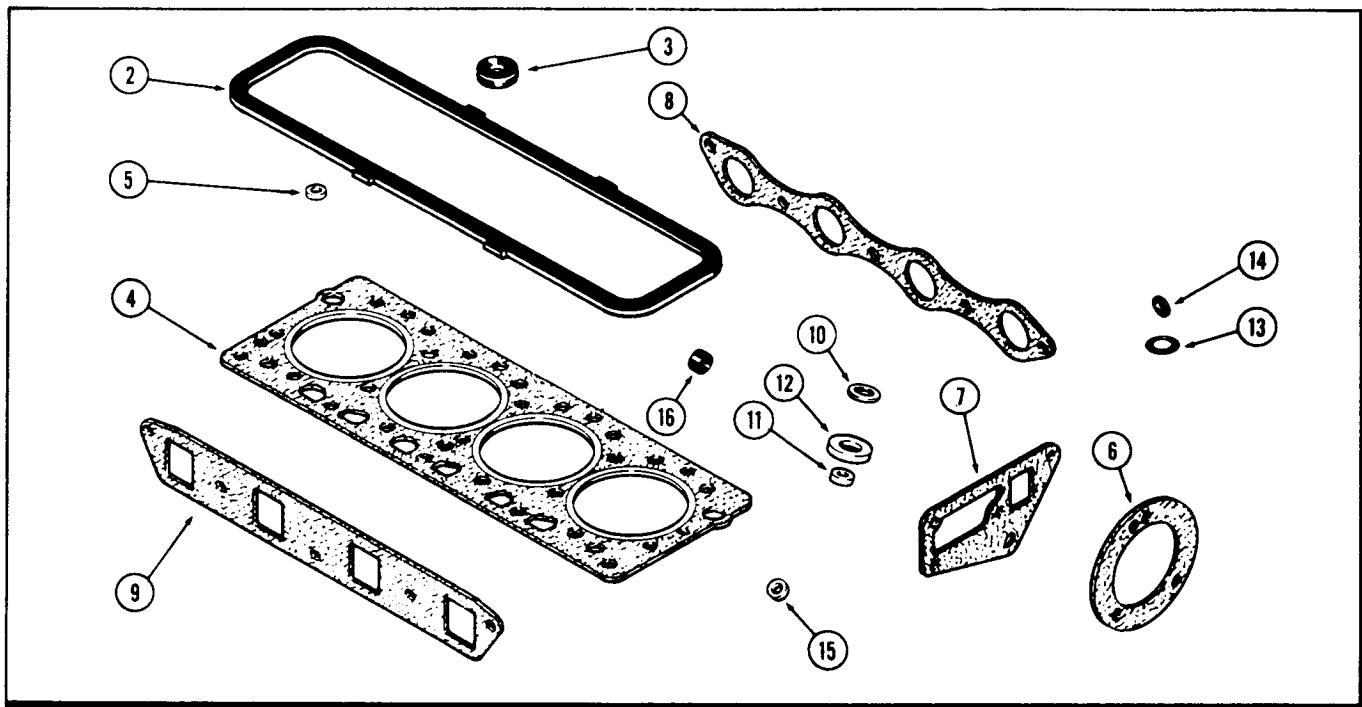
REF.	PART NO.	DESCRIPTION	REQ'D
1	A 146696	FILTER - engine oil (Replaces A37189)	1
2	A 37206	ADAPTER - filter to block	1
3	41- 1016	PLUG - adapter hole (1" cup type)	1

## OIL PUMP

7	A 38372	PUMP ASSY. - engine oil	1
8	A 29279	VALVE - relief	1
9	G 48500	SPRING - relief valve	1
10	A 29260	RETAINER - relief valve spring	1
11	138- 62	PIN - roll (1/8 x 1-1/8")	1
12	A 39321	PLUG - body (1/2" cup type)	1
13	G 46852	GASKET - pump cover	1
14	NSS	COVER - pump body	1
15	13- 420	BOLT - 1/4 x 1-1/4" N.C. hex.	1
15	13- 412	BOLT - 1/4 x 3/4" N.C. hex.	3
16	92- 4	WASHER - 1/4" lock	4
17	73- 410	SCREW - 1/4 x 5/8" N.C. std. flat hd.	2
18	193- 52	WASHER - 1/4" ext. skpf	2
19	A 27365	O-RING - oil port (3/4 x 15/16 x 3/32")	1
20	G 11337	SHIM - pump to brg. cap (.002")	UAR
20	G 11338	SHIM - pump to brg. cap (.005")	UAR
21	A 39037	FLOAT ASSY.	1
22	A 39035	PIPE - suction	1
23	223- 207	NUT - lock, pipe to pump	1
24	132- 50	PIN - cotter, 1/8 x 1-1/4"	1

## OIL PAN

28	A 36782	PAN ASSY. - oil	1
29	A 140222	PLUG - drain (Replaces A14280)	1
30	A 58608	GASKET - drain plug	1
31	193- 514	BOLT ASSY. - oil pan	18
32	NSS	GASKET - oil pan (Order A44758, See Page 31)	1



**ENGINE GASKET KITS**  
**207 DIESEL ENGINE**  
**VALVE GRIND KIT**

REF.	PART NO.	DESCRIPTION	REQ'D
	A 43193	GASKET KIT - valve grind (See Note) .....	1
2	A 43030	GASKET - valve cover .....	1
3	A 142098	GROMMET - valve cover studs (rubber) .....	2
4	A 148745	GASKET - cylinder head .....	1
5	G 46851	SEAL - valve stem (rubber)(See Ref. 40) .....	8
6	A 38083	GASKET - water pump to body .....	1
7	A 38084	GASKET - water pump body to head .....	1
8	G 46872	GASKET - exhaust manifold .....	1
9	G 46871	GASKET - intake manifold .....	1
10	G 49407	WASHER - fuel inj. lines to pump .....	8
11	A 41402	SEAL - carbon stop, inj. nozzles .....	4
12	A 41403	WASHER - seat, inj. nozzles .....	4
13	F 62075	O-RING - water pump body (3/4 x 1 x 1/8") .....	1
14	A 27891	O-RING - manifold studs (3/8 x 9/16 x 3/32") .....	3
15	G 49068	GASKET - inj. nozzle seat (not used this application) .....	4
16	222- 101	SLEEVE - 3/16" O.D. (not used this application) .....	4
16	222- 103	SLEEVE - 5/16" O.D. (not used this application) .....	4

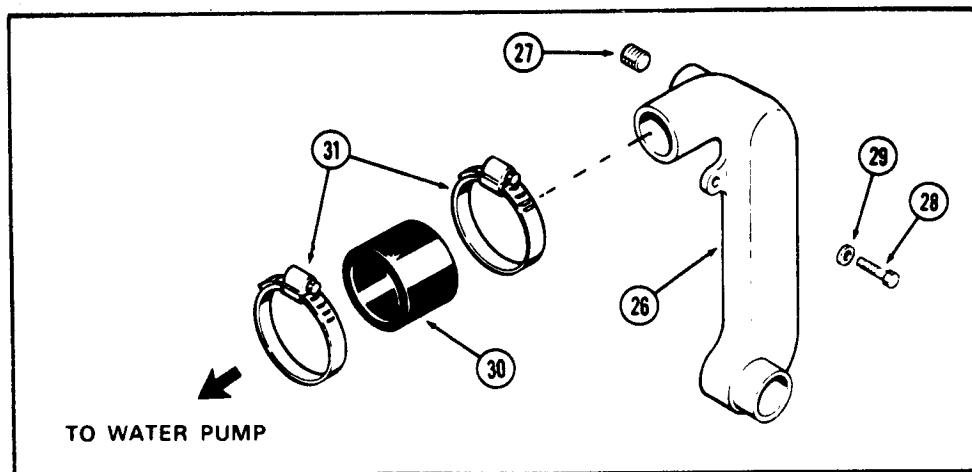
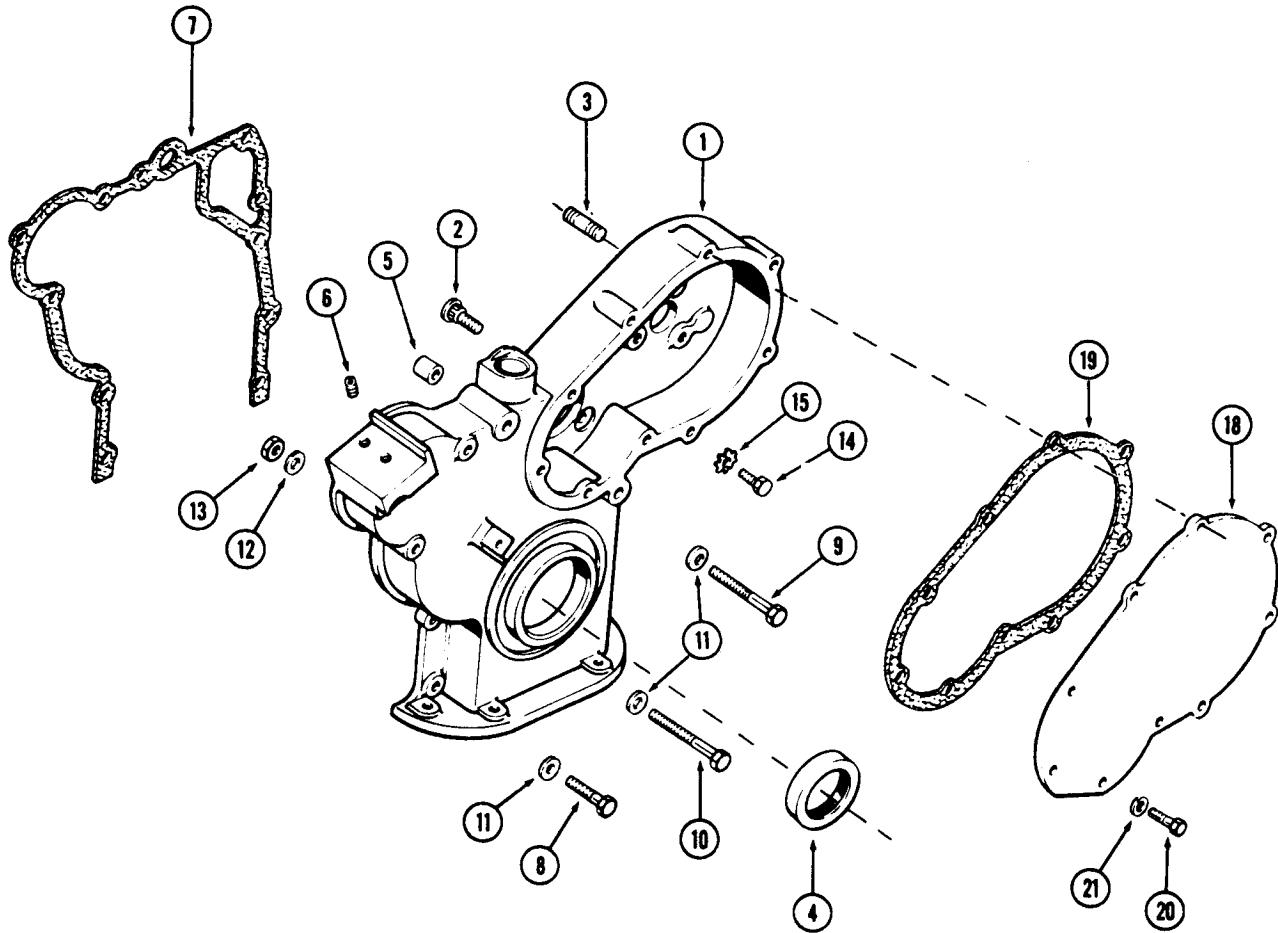
**CYLINDER BLOCK KIT**

	A 43198	GASKET KIT - cylinder (See Note) .....	1
22	A 51529	GASKET - timing gear cover .....	1
23	A 39925	GASKET - inj. pump drive cover .....	1
24	A 39188	GASKET - rear oil seal retainer .....	1
25	A 38083	GASKET - water pump .....	1
26	G 46852	GASKET - oil pump cover .....	1
27	F 62075	O-RING - water pump body to cover (3/4 x 1 x 1/8") .....	1
28	G 46854	GASKET - (not used this application) .....	1
29	A 30042	GASKET - (not used this application) .....	1
30	G 46859	GASKET - (not used this application) .....	1

**OIL PAN KIT**

	A 44758	GASKET KIT - oil pan (See Note) .....	1
35	NSS	GASKET - oil pan .....	1
36	A 58608	GASKET - drain plug (3/4 x 1 x 1/16" nylon) .....	1
36	A 34827	GASKET - drain plug (7/8 x 1-1/8 x 3/64" copper) .....	1
40	M 20611	SEAL KIT - valves (Incl. 4 seals & installation sleeve) .....	UAR

NOTE: FOR COMPLETE ENGINE OVERHAUL ORDER 1-A43193, 1-A43198  
AND 1-A44758

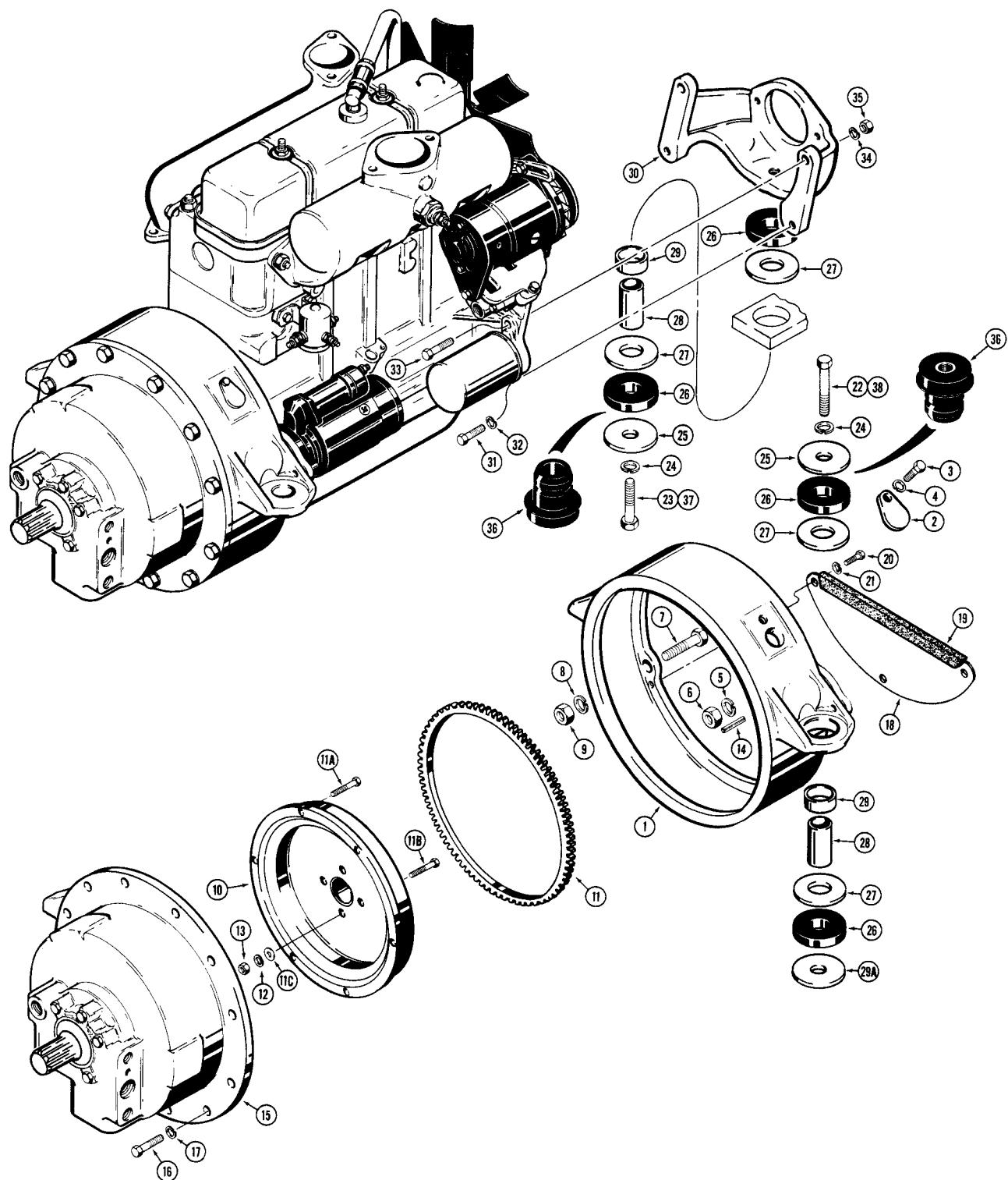


**TIMING GEAR COVER  
207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 51981	COVER ASSY. - timing gears .....	1
2	A 51649	STUD - cover .....	2
3	G 11204	STUD - pump mounting (3/8" N.C. x 1-7/16") .....	3
4	A 39110	SEAL - oil, crankshaft, front (2 x 3 x 1/2") .....	1
5	A 29442	DOWEL - cover locating (9/16 x 3/8 x 5/8") .....	2
6	178- 821	PLUG - cover (3/8 x 3/8" N.C. sckt. hd.) .....	2
7	A 51529	GASKET - cover to block .....	1
8	13- 620	BOLT - cover (3/8 x 1-1/4" N.C. hex.) .....	3
8	13- 624	BOLT - cover (3/8 x 1-1/2" N.C. hex.) .....	1
9	13- 648	BOLT - cover (3/8 x 3" N.C. hex.) .....	1
9	13- 644	BOLT - cover (3/8 x 2-3/4" N.C. hex.) .....	1
10	13- 652	BOLT - cover (3/8 x 3-1/4" N.C. hex.) .....	3
11	A 50820	WASHER - 3/8 x 3/4 x 1/8" .....	9
11	95- 6	WASHER - 3/8 x 1 x 1/16" .....	1
12	195- 25	WASHER - 3/8 x 13/16 x 1/16" .....	3
13	25- 106	NUT - 3/8" N.C. hex. .....	3
14	13- 614	BOLT - cover (inside)(3/8 x 7/8" N.C. hex.) .....	2
15	193- 10	WASHER - 3/8" ext. skpf. .....	2
18	A 51908	COVER - injection pump gears .....	1
19	A 39925	GASKET - cover .....	1
20	13- 616	BOLT - cover (3/8 x 1" N.C. hex.) .....	7
21	A 50820	WASHER - 3/8 x 3/4 x 1/8" .....	7

**USED PRIOR TO ENG SER NO 2828095**

26	A 51907	TUBE - water .....	1
27	221- 843	PLUG - water tube (3/8" P.T., sckt. hd.) .....	1
28	13- 624	BOLT - tube (3/8 x 1-1/2" N.C. hex.) .....	2
29	A 50820	WASHER - 3/8 x 3/4 x 1/8" .....	2
30	A 7249	HOSE - tube to water pump (2" I.D. x 2") .....	1
31	214- 260	CLAMP - hose (1-13/16" to 2-3/4") .....	2

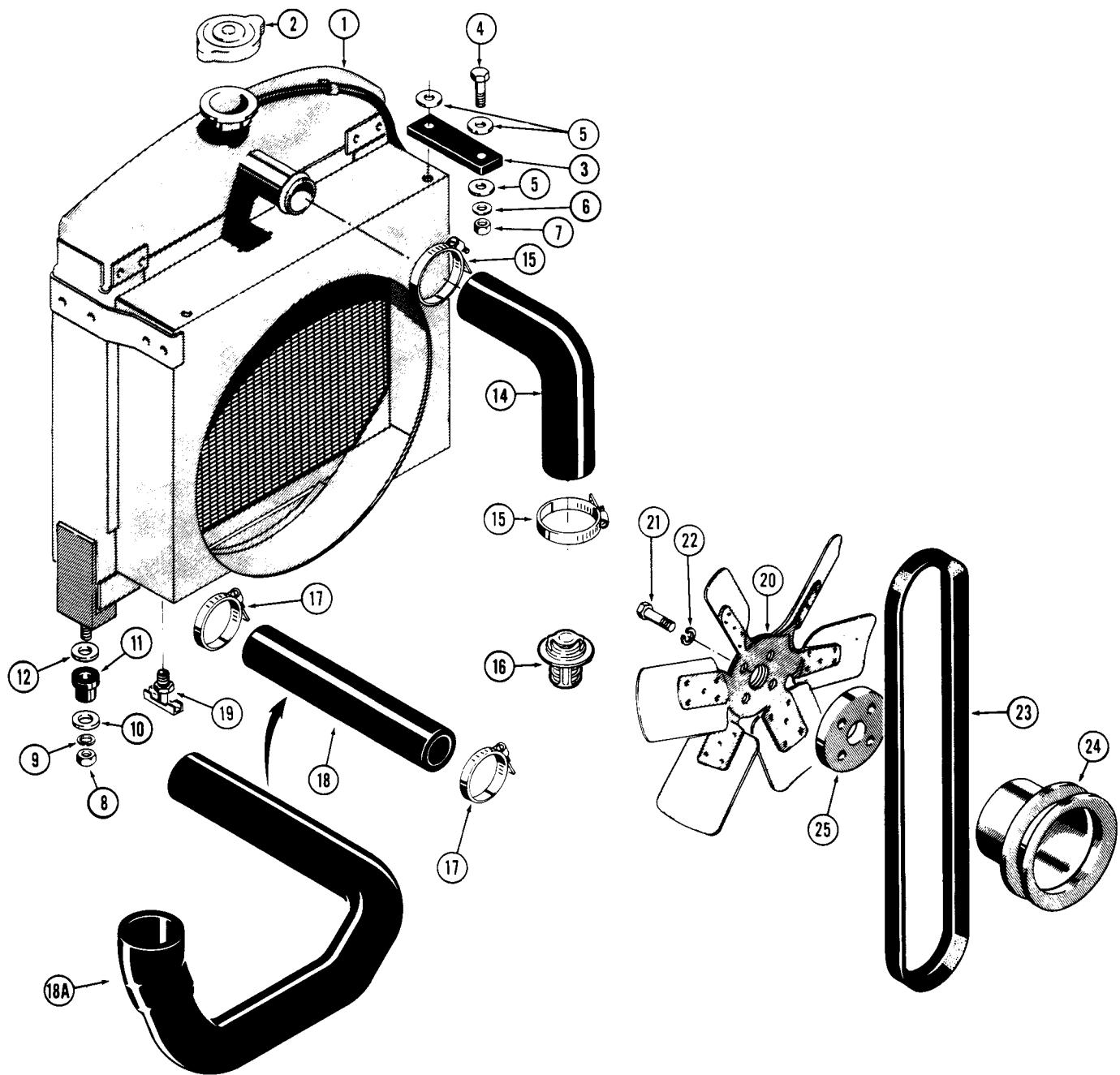


## ENGINE, FLYWHEEL AND TORQUE CONVERTER MOUNTING

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 36596	HOUSING - flywheel .....	1
2	A 29068	COVER - timing hole .....	2
3	13- 48	HHCS - 1/4" - 20 NC x 1/2"	2
4	92- 4	WASHER - lock, 1/4"	2
5	92- 10	WASHER - lock, 5/8"	2
6	25- 1110	NUT - hex , 5/8" - 18 NF	2
7	A 30135	BOLT - ground body .....	2
8	92- 10	WASHER - lock, 5/8"	2
9	25- 1110	NUT - hex , 5/8" - 18 NF	2
	A 39123	FLYWHEEL ASSEMBLY - D52422 converters .....	1
10	NSS	FLYWHEEL .....	1
11	G 11710	RING GEAR - flywheel .....	1
11A	28- 520	HHCS - 5/16" - 24 NF x 1-1/4"	6
11B	121- 300	HHCS - 7/16" - 20 NF x 1-1/8"	4
11C	A 30013	WASHER - special .....	4
12	92- 7	WASHER - lock, 7/16"	4
13	25- 117	NUT - hex , 7/16" - 20 NF	4
14	138- 63	PIN - roll, 1/8" x 1-1/4"	1
15	D 52422	TORQUE CONVERTER - parts list page 91 R42395	1
16	13- 618	HHCS - 3/8" - 16 NC x 1-1/8"	12
17	92- 6	WASHER - lock, 3/8"	12
18	D 36893	COVER - flywheel housing .....	1
19	D 36892	SEAL - dust .....	1
20	13- 412	HHCS - 1/4" - 20 NC x 3/4"	3
21	92- 4	WASHER - lock, 1/4"	3
22	13- 1060	HHCS - 5/8" - 11 NC x 3-3/4"	2
23	13- 1056	HHCS - 5/8" - 11 NC x 3-1/2"	1
24	92- 10	WASHER - lock, 5/8"	3
25	D 35009	WASHER - special, 5/8"	3
26	R 31034	WASHER - special .....	6
27	R 31035	WASHER - special .....	6
28	R 18586	SPACER - mount .....	3
29	D 35010	BUSHING - rubber mount .....	3
29A	D 35232	SPACER - torque converter mounting .....	2
30	D 35017	SUPPORT - engine, front .....	1
31	13- 1032	HHCS - 5/8" - 11 NC x 2"	2
32	92- 10	WASHER - lock, 5/8"	2
33	R 33936	BOLT - ground body, 5/8" - 11 NC x 2-1/2"	2
34	92- 10	WASHER - lock, 5/8"	2
35	25- 1010	NUT - hex , 5/8" - 11 NC	2

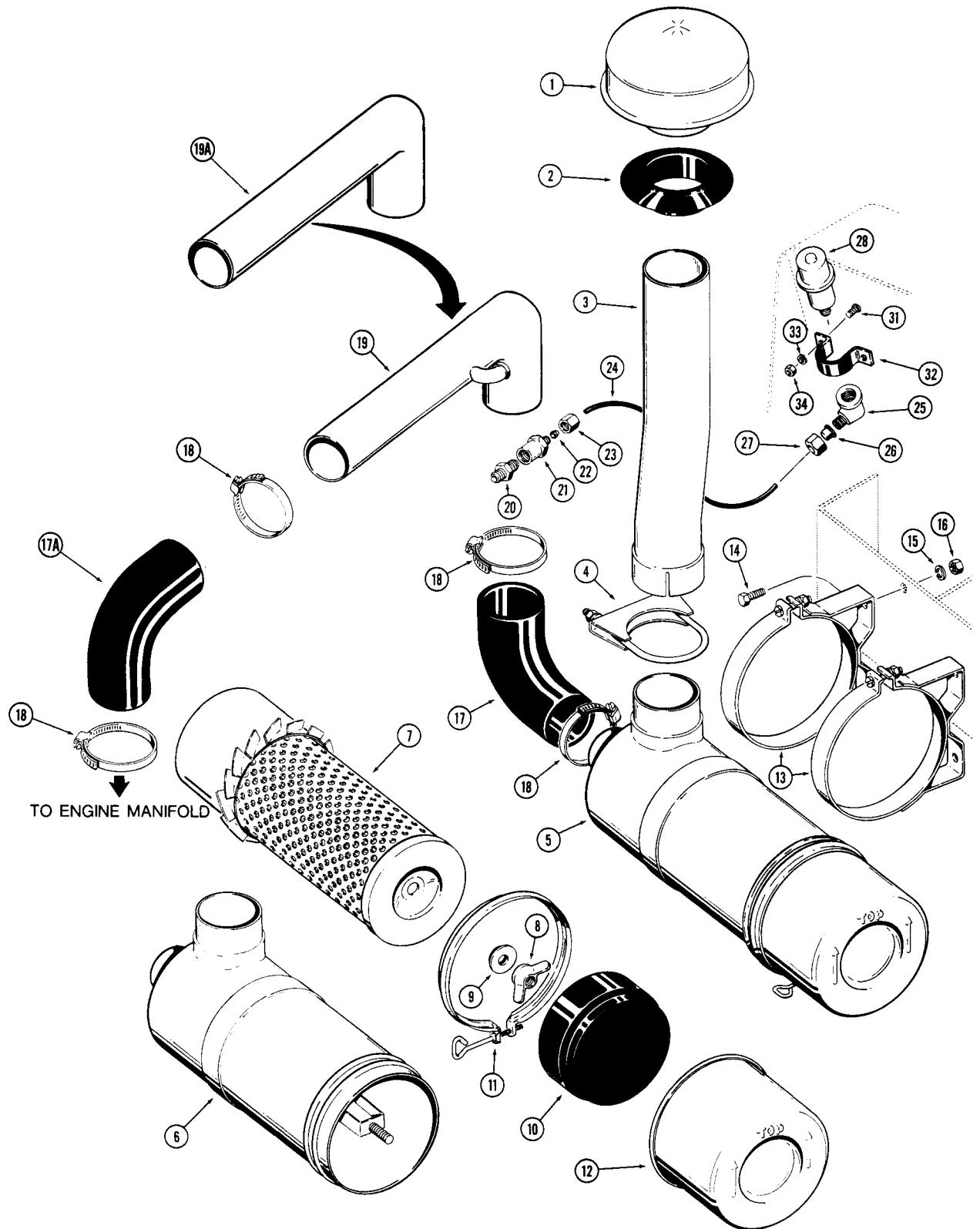
## ENGINE MOUNT KIT - SERVICE OPTION

	R 40564	KIT - engine mount and instructions .....	1
36	R 39761	CUSHION - rubber .....	3
37	13- 1040	HHCS - 5/8" - 11 NC x 2-1/2"	1
38	13- 1044	HHCS - 5/8" - 11 NC x 2-3/4"	2



## RADIATOR, FAN AND HOSES

REF.	PART NO.	DESCRIPTION	REQ'D.
	R 29725	RADIATOR ASSEMBLY - standard on all models .....	1
1	NSS	RADIATOR - cooling .....	1
2	D 25826	CAP - radiator, 7 P.S.I. (48 K Pa) .....	1
	R 29761	RADIATOR ASSEMBLY - antisand blast, optional .....	1
1	NSS	RADIATOR - cooling .....	1
2	D 25826	CAP - radiator, 7 P.S.I. (48 K Pa) .....	1
3	D 35108	STRAP - mounting, radiator .....	2
4	13- 620	HHCS - 3/8" - 16 NC x 1-1/4"	4
5	195- 28	WASHER - plain, 3/8"	6
6	195- 25	WASHER - plain, 3/8"	2
7	131- 179	NUT - hex self lock, 3/8" - 16 NC .....	4
8	25- 107	NUT - hex , 7/16" - 14 NC .....	2
9	92- 7	WASHER - lock, 7/16" .....	2
10	195- 32	WASHER - plain, 7/16" .....	2
11	L 13142	MOUNT - rubber .....	2
12	195- 36	WASHER - plain, 1/2" .....	2
13		RESERVED	
14	R 30401	HOSE - radiator inlet .....	1
15	214- 260	CLAMP - hose .....	2
16	A 57641	THERMOSTAT - cooling .....	1
17	214- 258	CLAMP - hose .....	2
18	D 49499	HOSE - lower, Before Tractor Sn. 3064021 (1-3/4" I.D. x 5-3/4" long) (44 mm x 146 mm) .....	1
18A	R 36874	HOSE - lower, Tractor Sn. 3064021 and after .....	1
19	217- 92	VALVE - drain .....	1
20	D 34717	FAN - suction, standard on all models except Loader Models - optional for Loader Models .....	1
20	D 34718	FAN - pusher, standard on Loader Models, optional for all others .....	1
20	R 38707	FAN - pusher, 7 blades (Not shown) .....	1
21	26- 528	HHCS - 5/16" - 18 NC x 1-3/4" (grade 8) .....	4
22	92- 5	WASHER - lock, 5/16" .....	4
23	R 32782	BELT - fan .....	1
24	G 11339	PULLEY - water pump and fan .....	1
25	A 37191	SPACER - fan hub .....	1

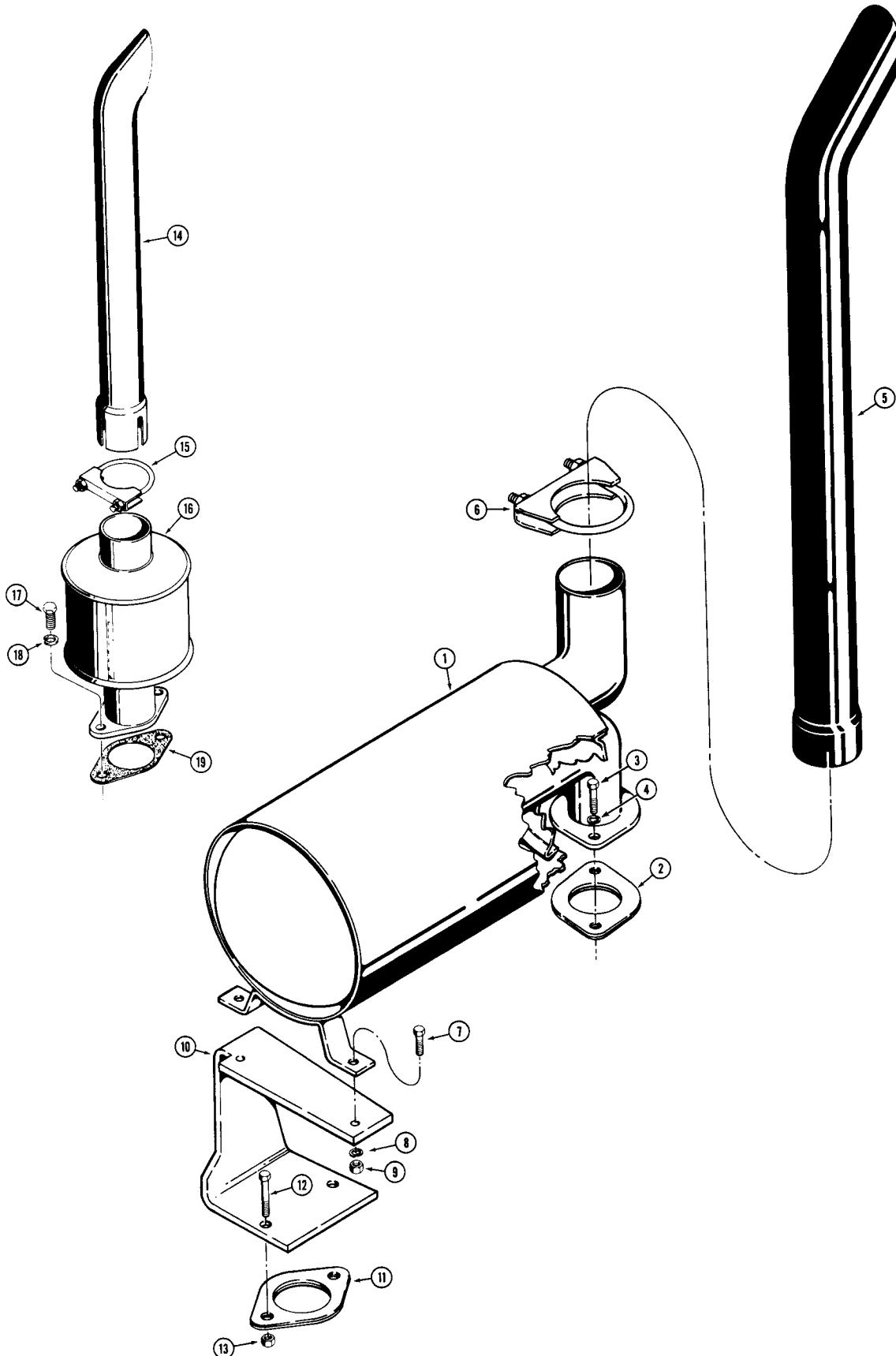


## MODEL 450 CRAWLER TRACTOR

39

## DRY TYPE AIR CLEANER

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 61276	CAP - inlet, air cleaner .....	1
2	R 14780	GROMMET - air cleaner stack.....	1
3	D 43674	STACK - air cleaner extension .....	1
4	A 13240	CLAMP - stack to air cleaner.....	1
5	F 84514	AIR CLEANER - dry type .....	1
6	NSS	BODY - air cleaner .....	1
7	F 84998	ELEMENT - air cleaner.....	1
8	F 91761	NUT - wing .....	1
9	D 37976	GASKET - wing nut .....	1
10	F 22312	BAFFLE - air cleaner .....	1
11	F 84999	CLAMP - air cleaner.....	1
12	F 91760	CUP - air cleaner.....	1
13	L 11247	BAND - air cleaner mounting .....	2
14	13- 512	HHCS - 5/16" - 18 NC x 3/4"	4
15	92- 5	WASHER - lock, 5/16" .....	4
16	25- 105	NUT - hex, 5/16" - 18 NC .....	4
17	A 14924	ELBOW - 90°, hose.....	1
17A	A 14944	ELBOW - hose, 90°.....	1
18	214- 260	CLAMP - hose.....	4
19	R 30384	TUBE - air cleaner to manifold, before tractor sn. 3064021 .....	1
19A	R 38720	TUBE - air cleaner to manifold, tractor sn. 3064021 and after .....	1
20	D 36264	NIPPLE - filtered .....	1
	D 35091	FITTING - straight, female (if used) .....	1
21	NSS	BODY.....	1
22	D 37176	SLEEVE - compression .....	1
23	D 37362	NUT - compression .....	1
24	D 35275	TUBE - air cleaner to vacuum indicator .....	1
	222- 5390	FITTING - 90°.....	1-2
25	NSS	BODY.....	1
26	NSS	SLEEVE - compression .....	1
27	NSS	NUT - compression .....	1
28	D 47217	INDICATOR - vacuum pressure .....	1
29		RESERVED	
30		RESERVED	
31	173- 202	FHCS - 1/4" - 20 NC x 3/4"	2
32	R 33808	CLAMP - indicator .....	1
33	92- 8	WASHER - lock, 1/4" .....	2
34	25- 108	NUT - hex , 1/4" - 20 NC.....	2
35	341- 1	SEALANT - Pliobond Rubber, 5 oz. tube .....	1



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**MODEL 450 CRAWLER TRACTOR**

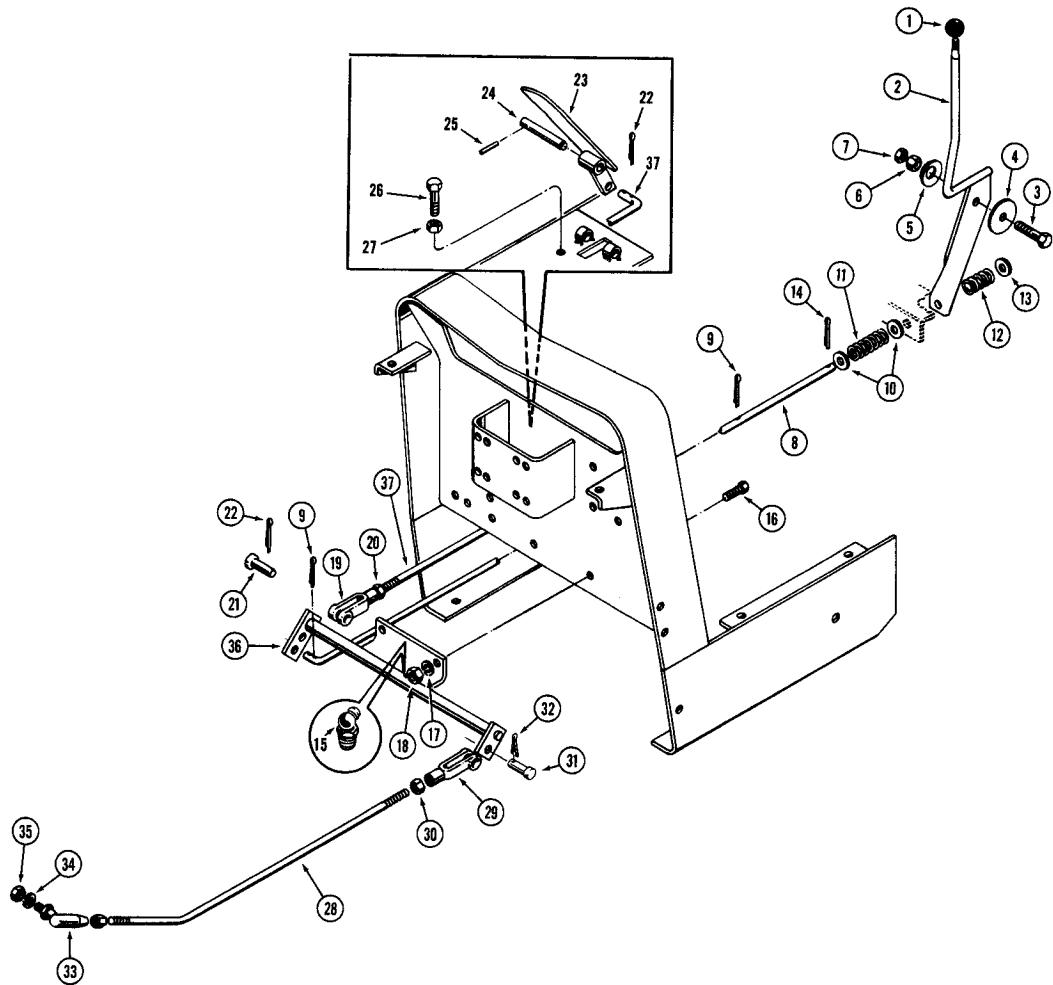
41

**MUFFLER - HORIZONTAL STYLE**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 25522	MUFFLER - exhaust, horizontal .....	1
2	G 46853	GASKET - manifold outlet.....	1
3	13- 616	HHCS - 3/8" - 16 NC x 1" .....	2
4	92- 6	WASHER - lock, 3/8" .....	2
5	D 33503	PIPE - exhaust.....	1
6	A 13240	CLAMP ASSEMBLY - muffler to pipe.....	1
7	13- 512	HHCS - 5/16" - 18 NC x 3/4" .....	2
8	92- 5	WASHER - lock, 5/16" .....	2
9	25- 105	NUT - hex., 5/16" - 18 NC.....	2
10	R 34556	BRACKET - muffler mounting .....	1
11	G 46853	GASKET - manifold to bracket .....	1
12	13- 624	HHCS - 3/8" - 16 NC x 1-1/2" .....	2
13	131- 903	NUT - hex , 3/8" - 16 NC Seez-Pruf.....	2

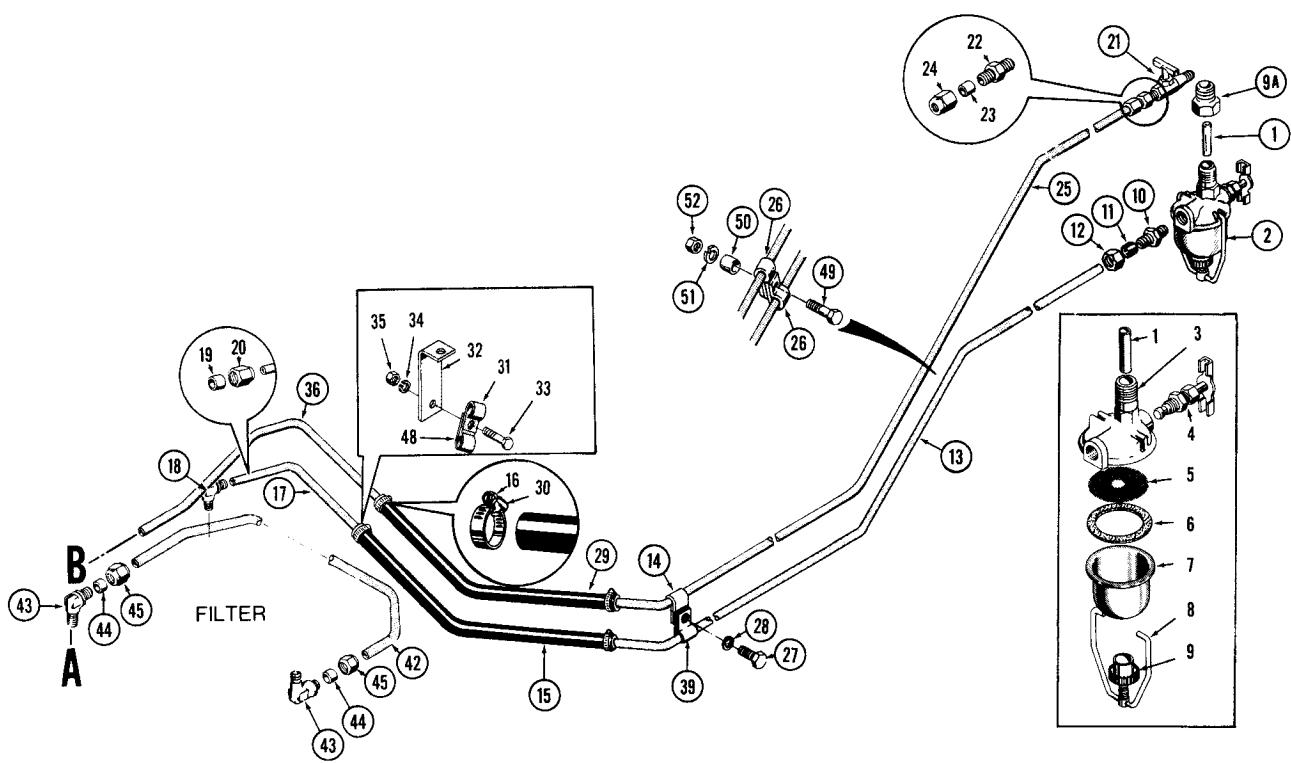
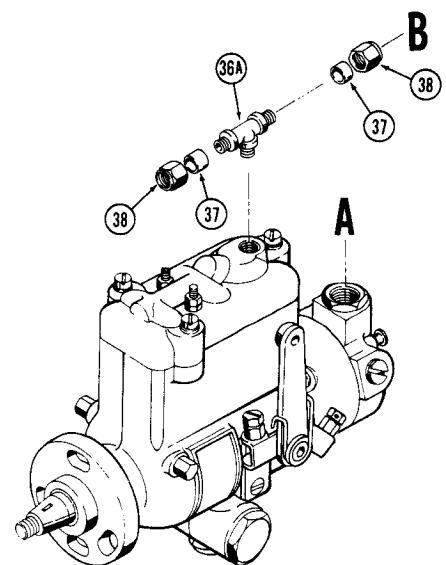
**MUFFLER - VERTICAL STYLE**

14	D 33503	PIPE - exhaust.....	1
15	A 13240	CLAMP ASSEMBLY .....	1
16	R 38891	MUFFLER .....	1
17	13- 616	HHCS - 3/8" - 16 NC x 1" .....	2
18	92- 6	WASHER - lock, 3/8" .....	2
19	G 46853	GASKET .....	1



## THROTTLE CONTROL LINKAGE

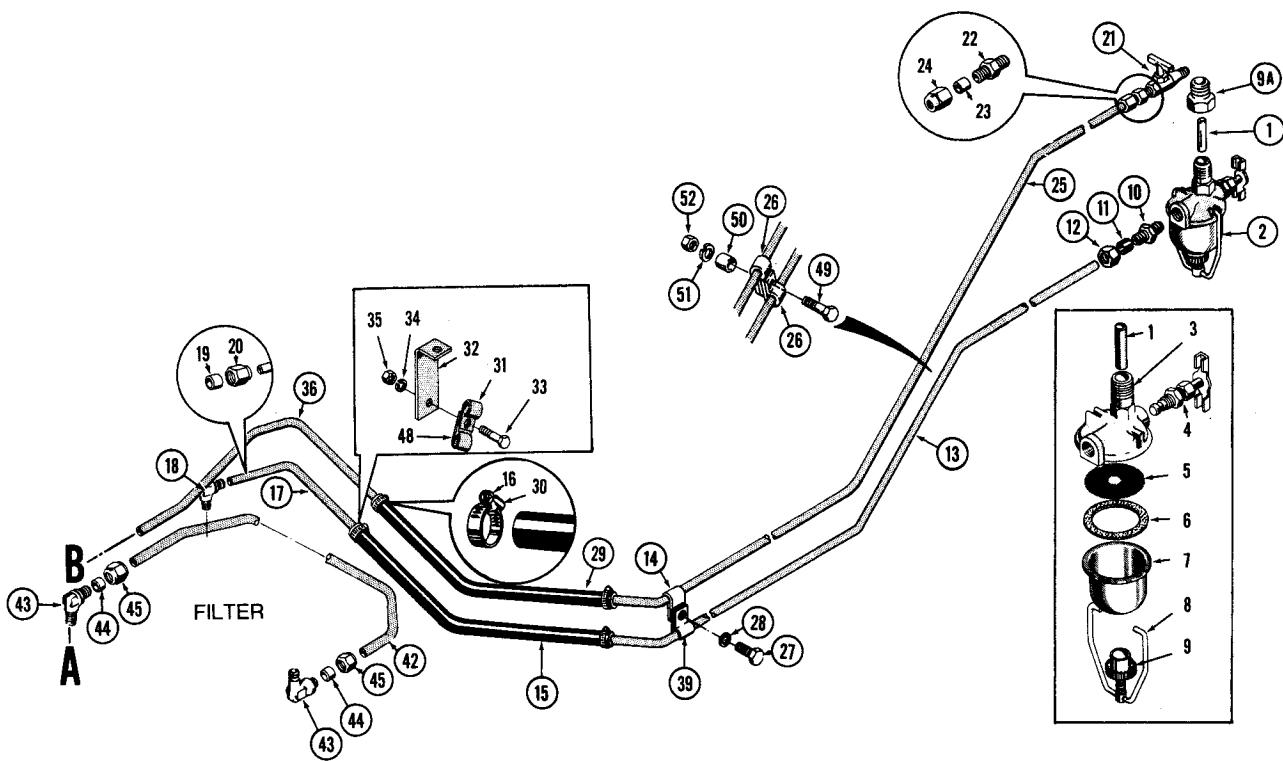
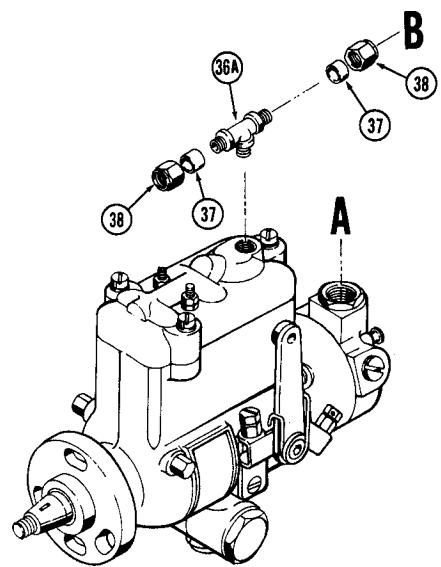
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 49996	KNOB.....	1
2	D 50237	THROTTLE - hand .....	1
3	14- 828	HHCS - 1/2" - 20 NF x 1-3/4"	1
4	R 15071	DISC - friction .....	1
5	R 14771	WASHER - Belleville .....	1
6	25- 118	NUT - hex, 1/2" - 20 NF .....	1
7	25- 158	NUT - hex lock, 1/2" - 20 NF .....	1
8	D 35415	ROD - control .....	1
9	132- 24	PIN - cotter, 3/32" x 1/2" .....	3
10	95- 5	WASHER - plain .....	2
11	A 8767	SPRING - pedal return .....	1
12	A 7827	SPRING - control rod .....	1
13	95- 5	WASHER - plain .....	1
14	132- 24	PIN - cotter, 3/32" x 1/2" .....	1
15	219- 46	FITTING - grease, 67-1/2°, 5/16" drive .....	1
16	13- 620	HHCS - 3/8" - 16 NC x 1-1/4" .....	2
17	92- 6	WASHER - lock, 3/8" .....	2
18	25- 106	NUT - hex., 3/8" - 16 NC .....	2
19	213- 3	ROD END - foot throttle rod .....	1
20	25- 115	NUT - hex , 5/16" - 24 NF .....	1
21	141- 3	PIN - clevis, 5/16"	1
22	132- 24	PIN - cotter, 3/32" x 1/2" .....	3
23	D 35403	THROTTLE - foot .....	1
24	R 17364	SHAFT - foot throttle retaining .....	1
25	135- 737	PIN - foot throttle retaining shaft .....	1
26	13- 832	HHCS - 1/2" - 13 NC x 2" .....	1
27	25- 148	NUT - lock hex., 1/2" - 13 NC .....	1
28	D 35400	ROD - throttle .....	1
29	213- 2	ROD END - throttle rod .....	1
30	25- 114	NUT - hex , 1/4" - 28 NF .....	2
31	141- 2	PIN - clevis, 1/4" .....	1
32	132- 5	PIN - cotter, 1/16" x 1/2" .....	1
33	A 10329	BALL JOINT - adjustable .....	1
34	92- 4	WASHER - lock, 1/4" .....	1
35	25- 114	NUT - hex, 1/4" - 28 NF .....	1
36	D 35402	SHAFT - pivot, foot throttle .....	1
37	D 35399	ROD - foot throttle .....	1



## FUEL LINES AND STRAINER

REF.	PART NO.	DESCRIPTION	REQ'D.
	R 25288	FUEL STRAINER ASSEMBLY - complete .....	1
1	R 25287	TUBE - inlet .....	1
2	41931	FUEL STRAINER .....	1
3	41932	COVER - strainer .....	1
4	A 11200	VALVE - shut-off .....	1
5	A 11211	SCREEN - strainer .....	1
6	A 11208	GASKET - bowl .....	1
7	41933	BOWL - metal (if used) .....	1
7	A 11209	BOWL - glass (if used) .....	1
8	A 11212	BAIL - bowl .....	1
9	A 11210	NUT - cup, bail .....	1
9A	221- 89	BUSHING - reducer .....	1
10	222- 24	CONNECTOR - flex, male .....	1
11	222- 103	SLEEVE .....	1
12	222- 113	NUT .....	1
13	D 34994	TUBE - fuel line, rear .....	1
14	49851	CLAMP - D51736 tube .....	1
15	D 34989	HOSE - fuel line .....	1
16	214- 300	CLAMP - hose .....	2
17	D 34993	TUBE - fuel line, front .....	1
18	222- 45	FITTING - flex, male .....	1
19	222- 103	SLEEVE .....	1
20	222- 113	NUT .....	1
21	217- 94	VALVE - shut-off, screw type .....	1
22	222- 23	FITTING - flex, male .....	1
23	222- 102	SLEEVE - tube .....	1
24	222- 112	NUT - tube .....	1
25	D 51736	TUBE - return, rear .....	1
26	49832	CLAMP - tube .....	2
27	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	1
28	92- 6	WASHER - lock, 3/8" .....	1
29	D 51735	HOSE - fuel return .....	1
30	214- 300	CLAMP - hose .....	2
31	49851	CLAMP - tube .....	1
32	D 34990	BRACKET - tube support .....	1
33	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	1
34	92- 6	WASHER - lock, 3/8" .....	1
35	25- 106	NUT - hex , 3/8" - 16 NC .....	1
36	D 41913	TUBE - fuel return, front .....	1
36A	222- 72	TEE - male .....	1
37	222- 102	SLEEVE .....	2
38	222- 112	NUT .....	2
39	49859	CLAMP - tube .....	1
40		RESERVED	
41		RESERVED	
42	A 51784	TUBE - fuel line, filter to pump .....	1

(Continued on next page)

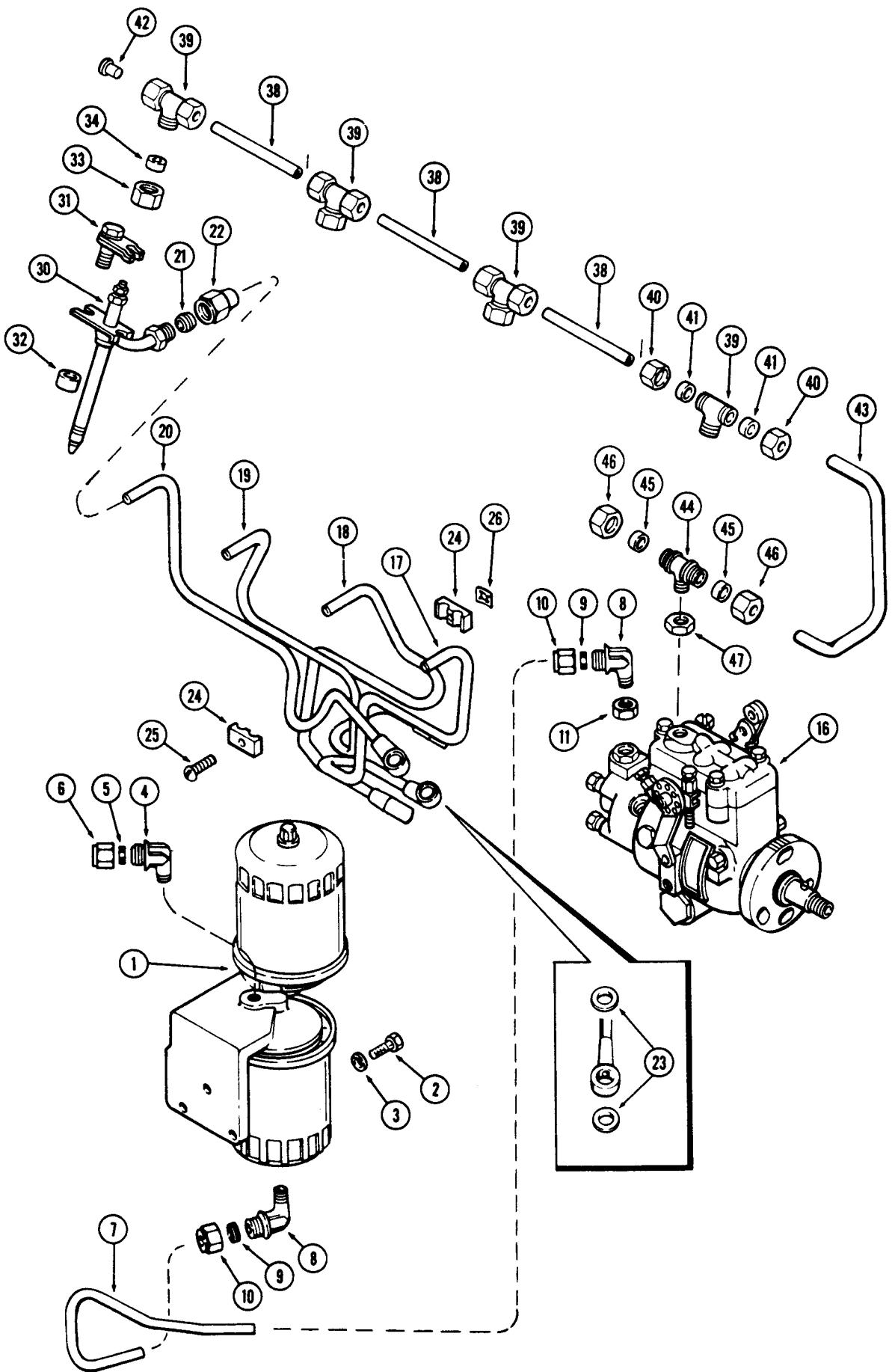


**MODEL 450 CRAWLER TRACTOR**

47

**FUEL LINES AND STRAINER**

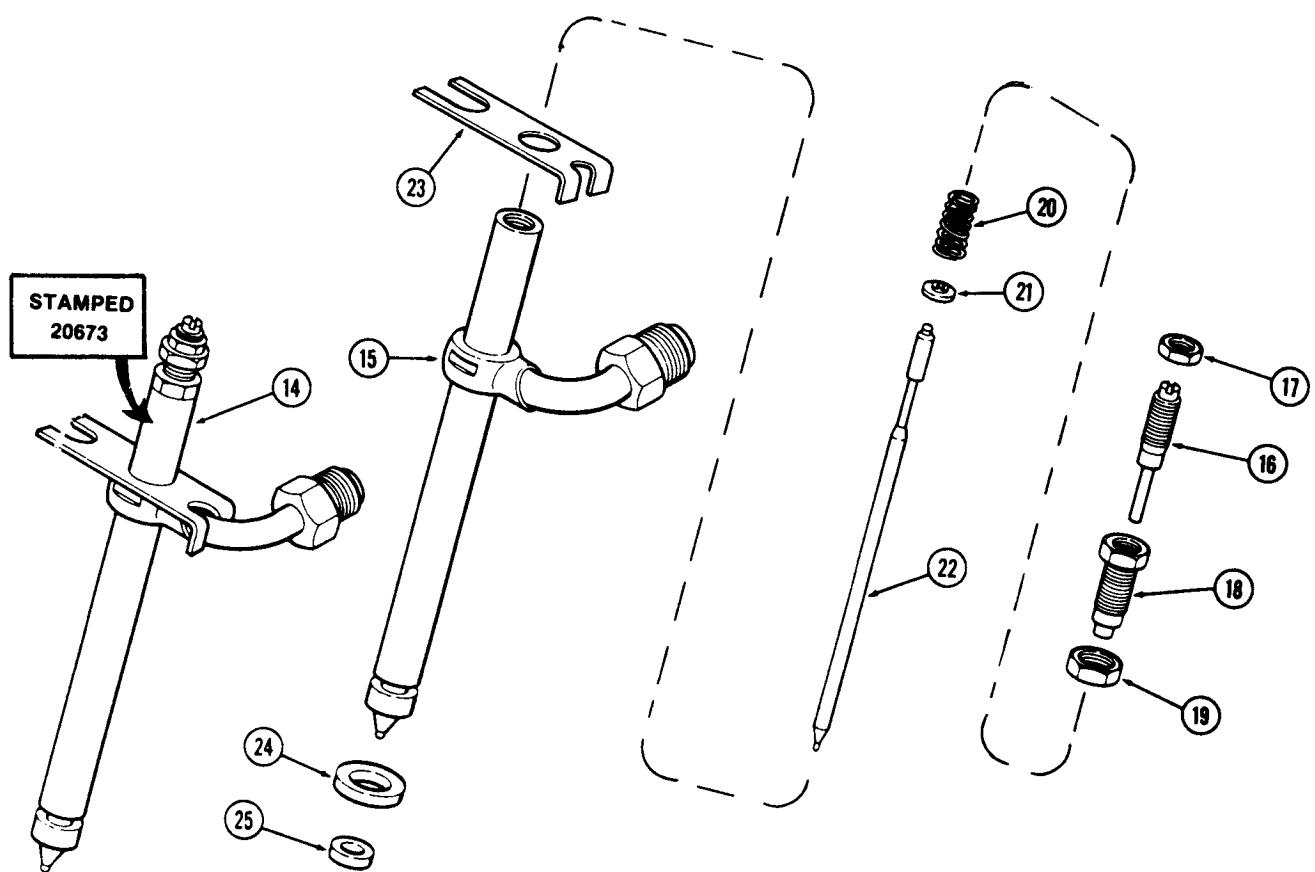
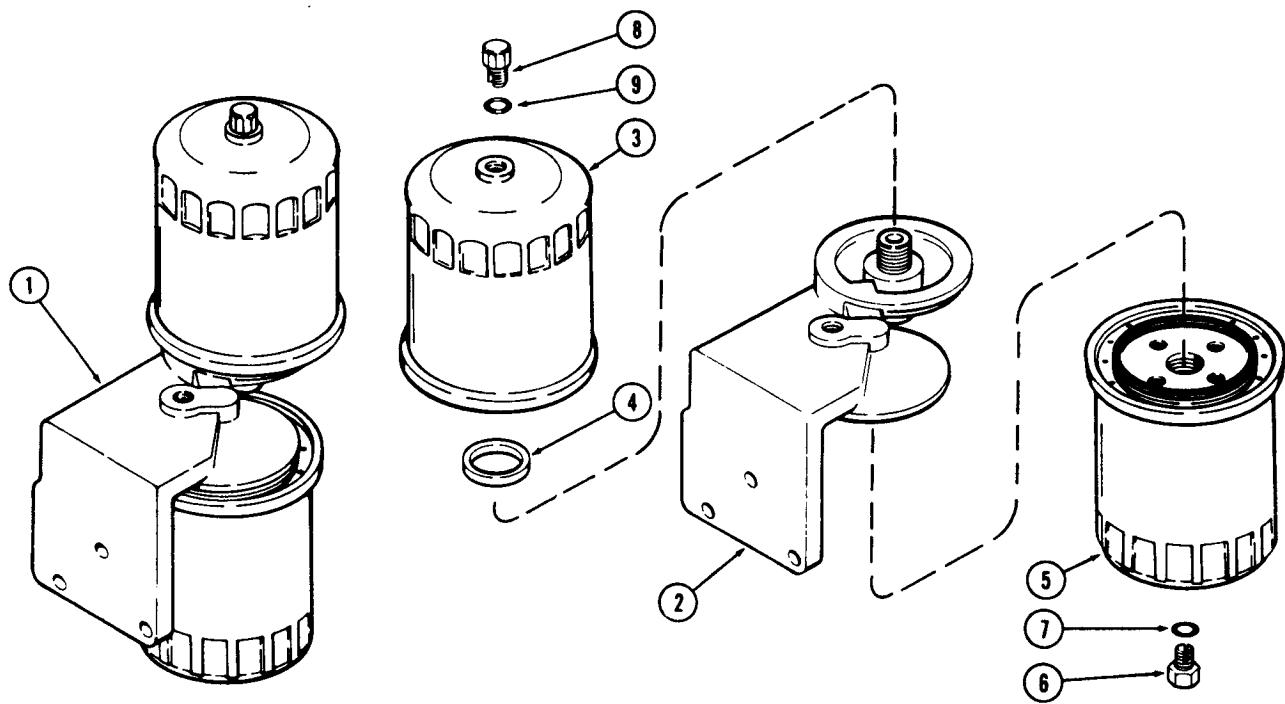
REF.	PART NO.	DESCRIPTION	REQ'D.
43	222- 47	FITTING - flex, male.....	2
44	222- 104	SLEEVE.....	1
45	222- 114	NUT .....	1
46		RESERVED .....	
47		RESERVED .....	
48	49859	CLAMP - tube .....	1
49	13- 856	HHCS - 1/2" - 13 NC x 3-1/2"	1
50	A 27328	SPACER - tube .....	1
51	92- 8	WASHER - lock, 1/2" .....	1
52	25- 108	NUT - hex, 1/2" - 13 NC .....	1



## FUEL INJECTION AND FILTER SYSTEM

### 207 DIESEL ENGINE

REF.	PART NO.	REF.	DESCRIPTION	REQ'D
1			FILTER ASSY. - fuel (See Page 51) .....	1
2	13-	514	BOLT - filter mounting (5/16 x 7/8" N.C. hex.) .....	3
3	92-	5	WASHER - 5/16" lock .....	3
4	222-	45	ELBOW ASSY. - fuel inlet .....	1
5	222-	103	SLEEVE - (for 5/16" tube) .....	1
6	222-	113	NUT - (for 5/16" tube) .....	1
7	A	51784	LINE - filter to pump .....	1
8	222-	47	ELBOW ASSY. .....	2
9	222-	104	SLEEVE - (for 3/8" tube) .....	1
10	222-	114	NUT - (for 3/8" tube) .....	1
11	A	38161	NUT - sealing (1/4" P.T.)(at inj. pump) .....	1
16		REF.	PUMP ASSY. - fuel injection (See Page 55) .....	1
17	A	41391	TUBE ASSY. - injection pump to No. 1 cylinder (Replaces A50980) (Incl. items 21, 22 & 23) .....	1
18	A	41392	TUBE ASSY. - injection pump to No. 2 cylinder (Replaces A50981)(Incl. items 21, 22 & 23) .....	1
19	A	41393	TUBE ASSY. - injection pump to No. 3 cylinder (Replaces A50982)(Incl. items 21, 22 & 23) .....	1
20	A	41394	TUBE ASSY. - injection pump to No. 4 cylinder (Replaces A50983)(Incl. items 21, 22 & 23) .....	1
21	A	37850	SLEEVE - injection tube .....	1
22	A	37851	NUT - injection tube .....	1
23	G	49407	WASHER - connector screws .....	1
24	A	58709	CLAMP - fuel injection lines .....	4
25	173-	107	SCREW - clamp (#10 x 1" rd. hd.) .....	2
26	131-	612	NUT - #10 Tinnerman .....	2
30		REF.	NOZZLE ASSY. - injector (See Page 51) .....	4
31	A	37837	CLAMP ASSY. - injector nozzle .....	4
32	A	37839	SPACER - nozzle clamp .....	4
33	A	58961	NUT - tee to injector nozzle .....	4
34	A	58962	GROMMET - nut to tee .....	4
38	A	38644	TUBE - fuel leak-off .....	3
39	A	58960	TEE - nozzle & leak-off lines junction .....	4
40	222-	112	NUT - (For 1/4" tube) .....	8
41	222-	102	SLEEVE - (For 1/4" tube) .....	8
42	47-	47	PLUG - tee (rear) .....	1
43	A	142906	TUBE - fuel leak-off (to pump)(Rpl. A51658) .....	1
44	222-	72	TEE ASSY. - fuel leak-off line (at pump) .....	1
45	222-	102	SLEEVE - (for 1/4" tube) .....	2
46	22-	112	NUT - (for 1/4" tube) .....	2
47	A	38160	NUT - sealing (1/8" P.T.)(at pump) .....	1



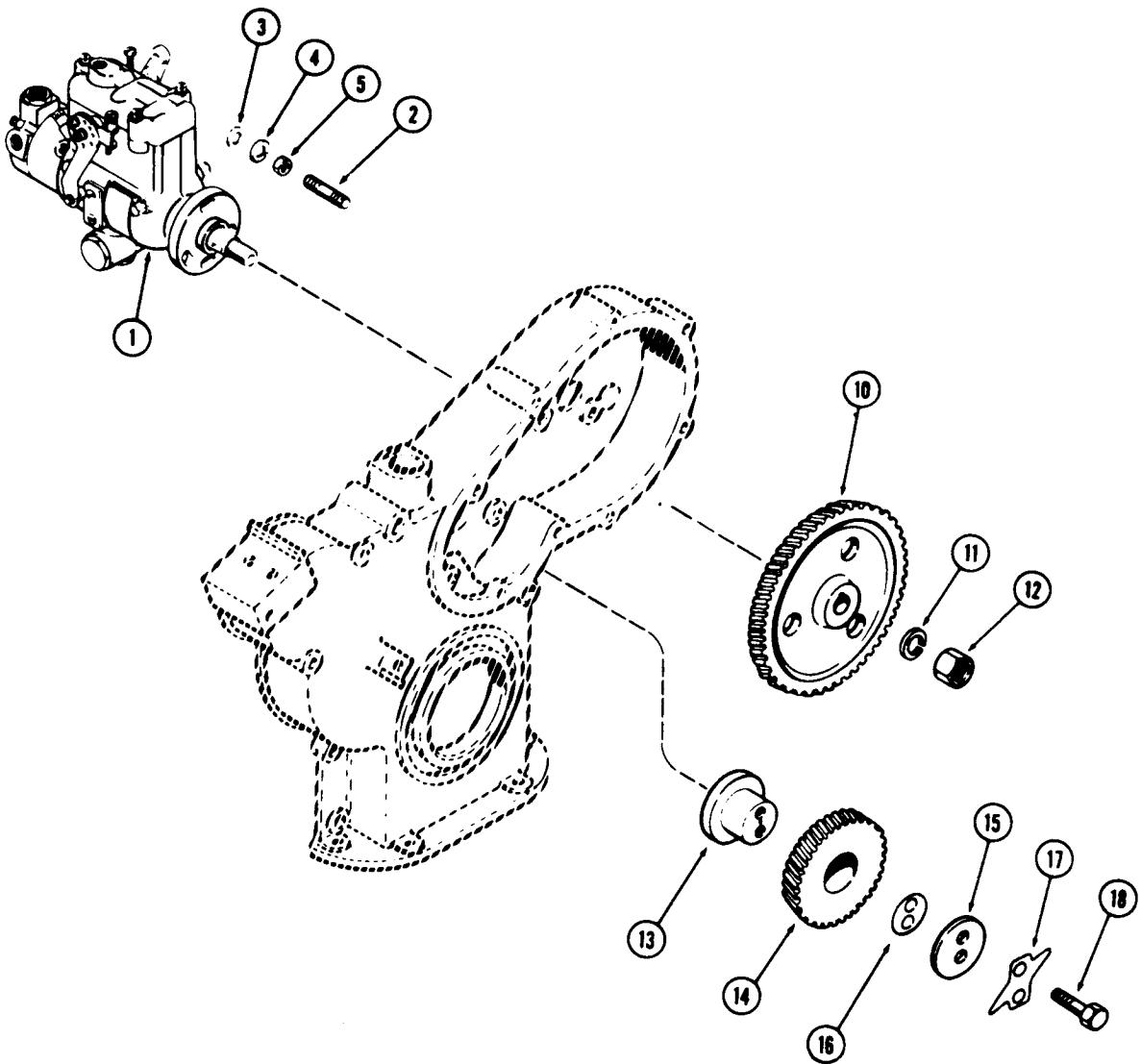
## FUEL FILTER 207 DIESEL ENGINE

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 51739	FILTER ASSY. - fuel .....	1
2	A 51738	HEAD - filter base .....	1
3	A 39867	FILTER ASSY. - secondary (15/16" threads) .....	1
4	A 42315	GASKET - filter to head (15/16 x 1-1/4 x 1/4 ") .....	1
5	A 39868	FILTER ASSY. - primary (13/16" threads) .....	1
6	G 49080	PLUG - drain, primary filter (3/8" N.F. 12 pt. hd. nylon) .....	1
7	218- 5002	O-RING - drain plug (5/16 x 7/16 x 1/16") .....	1
8	218- 5152	PLUG ASSY. - drain, secondary filter (3/8" N.F. hex. hd., metal) .....	1
9	218- 5002	O-RING - drain plug (5/16 x 7/16 x 1/16") .....	1

## INJECTOR NOZZLES

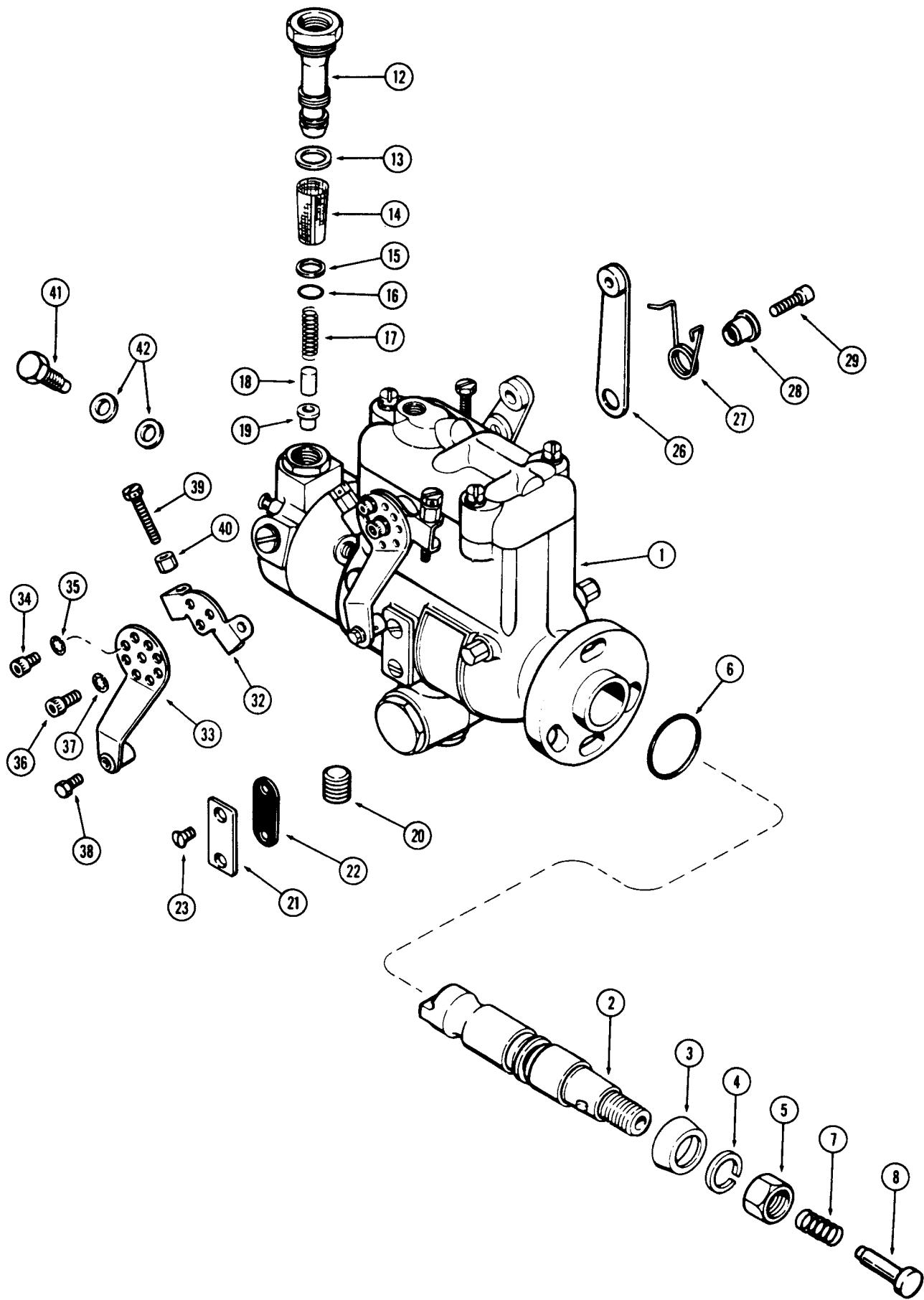
14	A 140828	NOZZLE ASSY. - injector (Rpl. A140827)(See Note) (Supplier's No. 20673 stamped on body) (color code white & yellow band) .....	4
15	NSS	BODY - nozzle .....	1
16	A 43599	SCREW - lift adjusting .....	1
17	A 43602	NUT - lock, lift adjusting screw .....	1
18	A 43600	SCREW - pressure adjusting .....	1
19	A 42424	NUT - lock, pressure adjusting screw .....	1
20	A 43733	SPRING - pressure adj. (9/16" free length) .....	1
21	A 44369	SEAT - pressure adjusting spring .....	1
22	NSS	VALVE - nozzle .....	1
23	A 43506	PLATE - nozzle holder .....	1
24	A 41403	WASHER - nozzle body .....	1
25	A 41402	SEAL - carbon stop .....	1

NOTE: WHENEVER NOZZLE IS REMOVED FROM HEAD WASHER (A41403)  
& SEAL (A41402) MUST BE REPLACED BEFORE NOZZLE IS INSTALLED  
BACK IN HEAD



## INJECTION PUMP DRIVE 207 DIESEL ENGINE

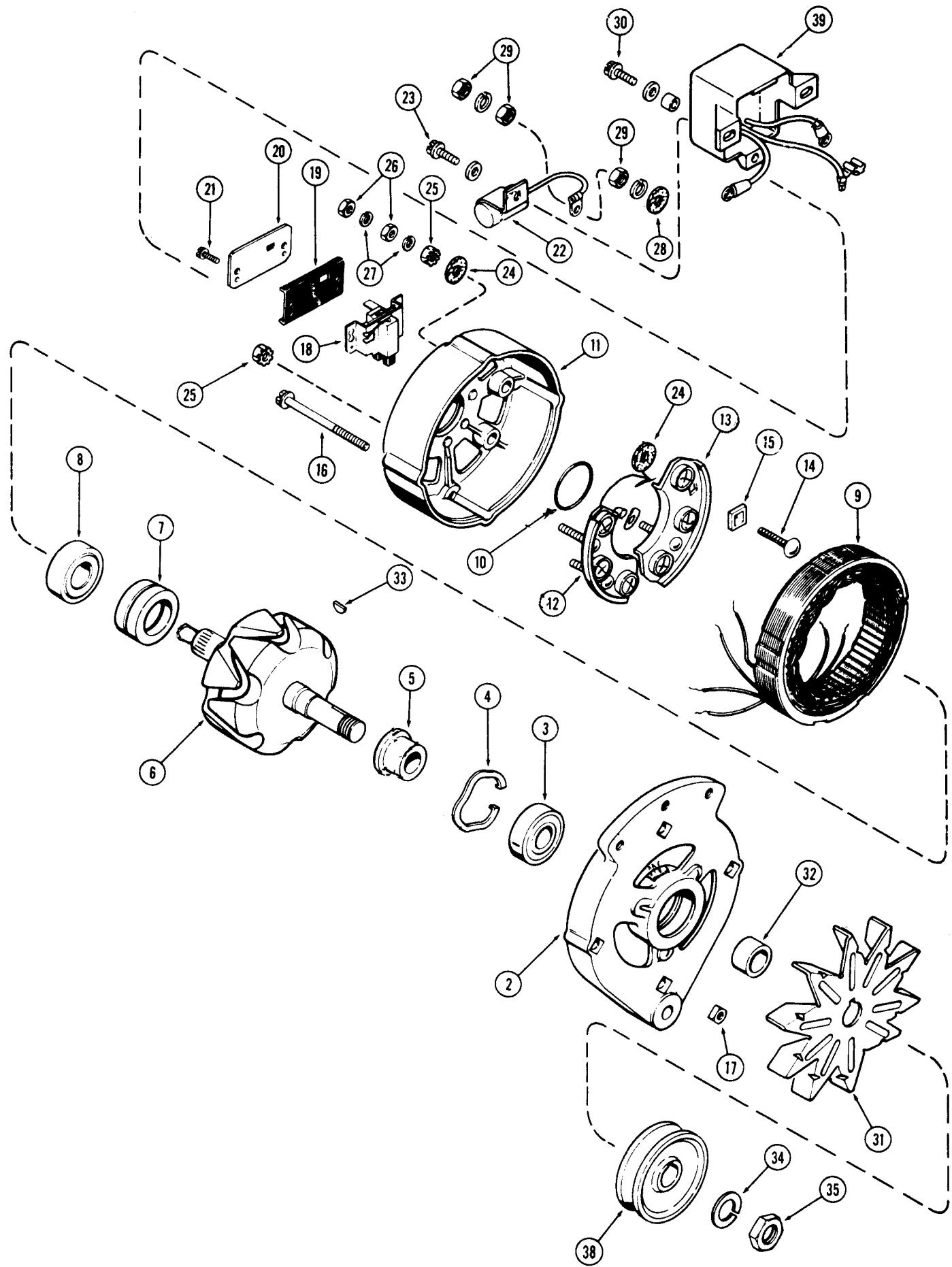
REF.	PART NO.	REF.	DESCRIPTION	REQ'D
1			PUMP ASSY. - fuel injection (See Page 55) .....	1
2	G 11204		STUD - pump mounting (3/8" N.C. x 1-7/16") .....	3
3	A 30043		WASHER - mtg. studs (3/8 x 7/8 x 1/8") .....	3
4	92- 6		WASHER - 3/8" lock .....	3
5	25- 106		NUT - 3/8" N.C. hex. ....	3
10	G 2076		GEAR - drive, injection pump .....	1
11	192- 24		WASHER - 9/16" lock .....	1
12	25- 159		NUT - 9/16" N.F. hex., jam .....	1
13	G 11726		HUB - idler gear .....	1
14	G 11852		GEAR ASSY. - idler, w/bushing .....	1
15	G 11732		PLATE - thrust, idler gear .....	1
16	G 11728		SHIM - idler gear (.005") .....	UAR
16	G 11729		SHIM - idler gear (.006") .....	UAR
16	G 11730		SHIM - idler gear (.007") .....	UAR
16	G 11731		SHIM - idler gear (.009") .....	UAR
17	G 11746		PLATE - lock, idler gear .....	1
18	13- 632		BOLT - 3/8 x 2" N.C. hex. ....	2



# INJECTION PUMP

## 207 DIESEL ENGINE

REF.	PART NO.	DESCRIPTION	REQ'D
1	A 148070	PUMP ASSY. - fuel injection (Rpl. A136239) (H.M.S. No. DBGFCC431-59AJ)	1
2	A 44710	SHAFT ASSY. - drive, w/pin	1
3	R 14711	SEAL - drive shaft	1
4	192- 24	WASHER - 9/16" lock	1
5	25- 119	NUT - 9/16" N.F. hex., jam	1
6	74244	SEAL - pilot tube	1
7	G 48502	SPRING - thrust, pump shaft (1-3/16" free length)	1
8	A 44653	PLUNGER - thrust spring	1
12	A 43869	SLEEVE - end plate	1
13	73666	SEAL - end plate sleeve	1
14	A 43870	FILTER - element	1
15	A 43871	SEAL - element (3/8 x 1/2 x 1/16")	1
16	A 28090	SEAL - sleeve (5/16 x 7/16 x 1/16")	1
17	A 43867	SPRING - regulating (5/8" free length)	1
18	73621	PISTON - regulating	1
19	A 43868	SEAL - regulating piston (rubber)	1
20	221- 1841	PLUG - end plate (1/4" P.T., hex. sckt. hd.)	1
21	73452	COVER - timing window	1
22	73453	GASKET - timing window cover	1
23	73514	SCREW - timing window cover	2
26	G 45338	ARM - throttle	1
27	G 48505	SPRING - throttle arm	1
28	G 49621	RETAINER - throttle arm spring	1
29	165- 124	SCREW - throttle arm	1
32	G 45337	ARM - shut-off	1
33	NSS	LEVER - shut-off	1
34	165- 1	SCREW - position, shut-off arm	1
35	193- 91	WASHER - position screw	1
36	165- 30	SCREW - retaining, shut-off arm	1
37	193- 99	WASHER - retaining screw	1
38	163- 7	SCREW - pivot	1
39	G 49088	SCREW - high idle adjusting	2
40	73651	NUT - lock, high idle adj. screw	2
41	73613	SCREW - connector, injection tubes	4
42	G 49407	WASHER - connector screw	8

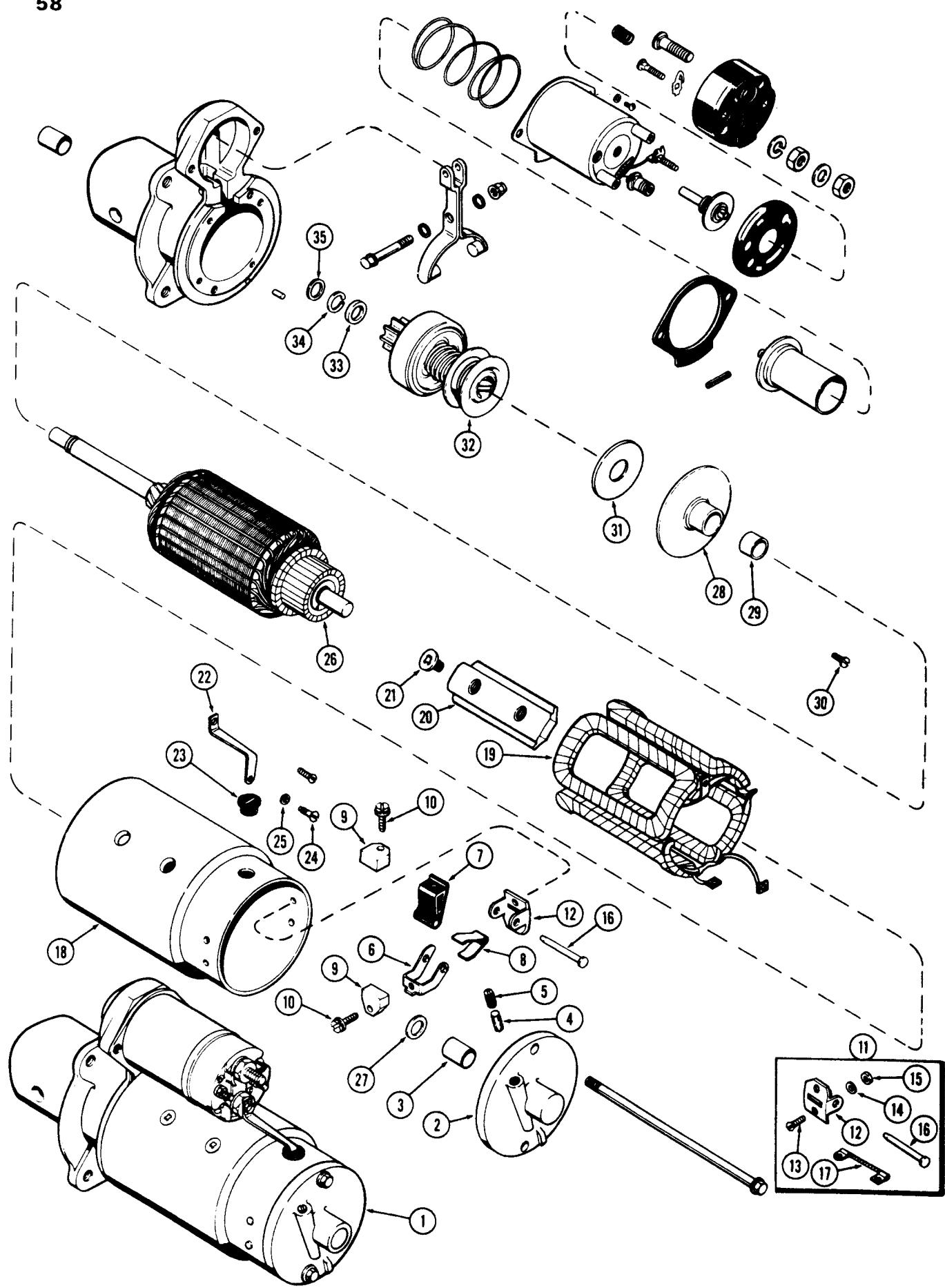


## MODEL 450 CRAWLER TRACTOR

57

**R30818 ALTERNATOR  
207 DIESEL ENGINE**

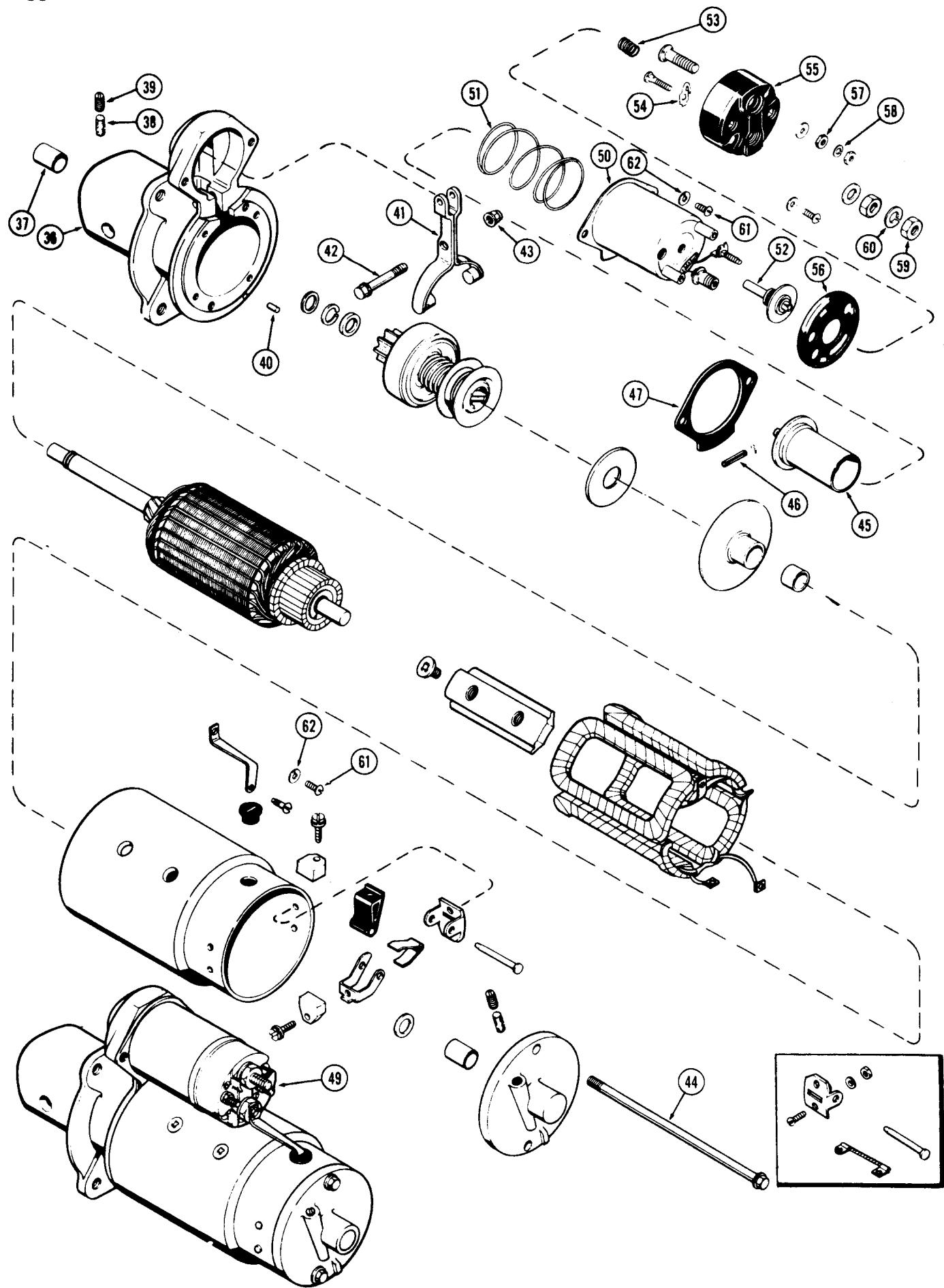
REF.	PART NO.	DESCRIPTION	REQ'D
	R 30818	ALTERNATOR ASSY .....	1
2	A 43397	HOUSING - front .....	1
3	A 43404	BEARING - front (5/8 x 1-5/8 x 1/2") .....	1
4	A 43394	RETAINER - front bearing .....	1
5	A 41052	SLEEVE - bearing .....	1
6	A 44425	ROTOR .....	1
7	A 44587	RING - slip .....	1
8	A 43403	BEARING - rear (3/8 x 1-3/16 x 3/8") .....	1
9	A 44764	STATOR .....	1
10	A 27342	RETAINER - rear bearing (1-1/8 x 1-3/8 x 1/8") .....	1
11	A 44765	HOUSING - rear .....	1
12	A 44767	DIODE ASSY. - negative (w/2 plate studs) .....	1
13	A 44768	DIODE ASSY. - positive (w/1 plate stud) .....	1
14	A 41436	STUD - positive plate (#10-24 x 1-1/2" Carr. Hd.) .....	1
15	A 41041	INSULATOR - positive plate stud .....	1
16	A 44423	STUD - thru (#10-32 x 2-7/8" spec. hd.) .....	4
17	129- 77	NUT - thru bolt (#10-32 sq.) .....	4
18	A 43401	BRUSH & HOLDER ASSY. .....	1
19	A 44769	SHIELD - dirt .....	1
20	A 43399	COVER - brush holder .....	1
21	182- 519	SCREW - cover (#4-40 x 3/16" slt. hd., brass) .....	2
22	A 44770	CAPACITOR - (condenser) .....	1
23	A 44787	SCREW - capacitor (#10-32 x 3/8" hex. std. hd.) .....	1
24	A 44763	WASHER - insulating (3/16 x 3/4 x 1/16") .....	2
25	A 41060	NUT - lock, w/skpf. washer (#10-24 hex. hd.) .....	2
26	129- 101	NUT - diode terminals (1/4" N.C. hex.) .....	2
27	192- 19	WASHER - 1/4" lock .....	2
28	A 41038	WASHER - insulating (3/16 x 3/4 x 1/16") .....	2
29	129- 17	NUT - drive terminal (#10-24 hex.) .....	3
30	187- 1090	SCREW - regulator mtg. (#10-24 x 5/8" std. hex. hd.) .....	3
31	A 43409	FAN .....	1
32	A 43405	SPACER - fan (5/8 x 7/8 x 7/16") .....	1
33	126- 111	KEY - pulley (#5 Woodruff) .....	1
34	192- 25	WASHER - 5/8" lock .....	1
35	A 41035	NUT - 5/8" N.F. hex. .....	1
38	A 44678	PULLEY - alternator .....	1
39	A 44772	REGULATOR ASSY. - voltage .....	1



**R29870 STARTER  
207 DIESEL ENGINE**

REF.	PART NO.	DESCRIPTION	REQ'D
1	R 29870	STARTER ASSY. - (Delco #1109149)	1
2	A 25304	FRAME ASSY. - commutator end	1
3	A 45152	BUSHING - (9/16 x 11/16 x 3/4")	1
4	A 41979	WICK - oiler	1
5	221- 1041	PLUG - oil wick hole (1/8" P.T., sltd. hd.)	1
6	A 40217	HOLDER - brush (grounded)	2
7	R 15027	HOLDER - brush (insulated)	2
8	A 25359	SPRING - brush pressure	2
9	A 25356	BRUSH	4
10	D 32481	SCREW - brush (#8-32 x 13/16 sltd. hd. w/skpf. washer)	4
11	A 25379	SUPPORT KIT - brush holder	2
12	NSS	SUPPORT	1
13	173- 212	SCREW - supt. to frame (#10-24 x 1/2" rd. hd.)	2
14	192- 18	WASHER - #10 lock	2
15	129- 17	NUT - #10-24 hex.	2
16	R 15035	PIN - brush holder	1
17	A 42494	LEAD - brush ground	1
18	NSS	FRAME - starter body	1
19	A 25548	COIL ASSY. - field	1
20	A 25391	SHOE - pole	4
21	74- 612	SCREW - pole shoes (3/8 x 5/8" N.F. flat hd.)	8
22	A 40225	CONNECTOR - field to solenoid	1
23	A 41980	GROMMET - connector insulating (in frame)	1
24	173- 221	SCREW - connector to coil (#10-32 x 7/16" rd. hd.)	1
25	192- 18	WASHER - #10 lock	1
26	A 25547	ARMATURE	1
27	A 41917	WASHER - thrust (at comm. end)	1
28	A 40215	PLATE ASSY. - center bearing	1
29	R 15038	BUSHING - center brg. (3/4 x 13/16 x 3/4")	4
30	A 41959	SCREW - center brg. to drive hsg.	4
31	R 15043	WASHER - thrust, center bearing	1
32	A 45565	DRIVE ASSY	1
33	R 15049	COLLAR - drive stop	1
34	R 15048	RING - snap, stop collar retaining	1
35	A 25385	WASHER - thrust (drive end)	1

CONTINUED ON PAGE 59B

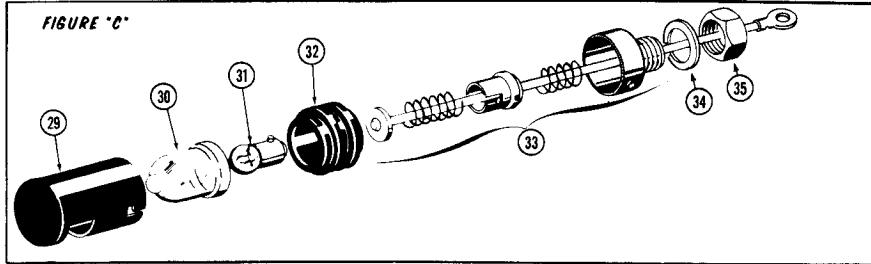


## R29870 STARTER 207 DIESEL ENGINE

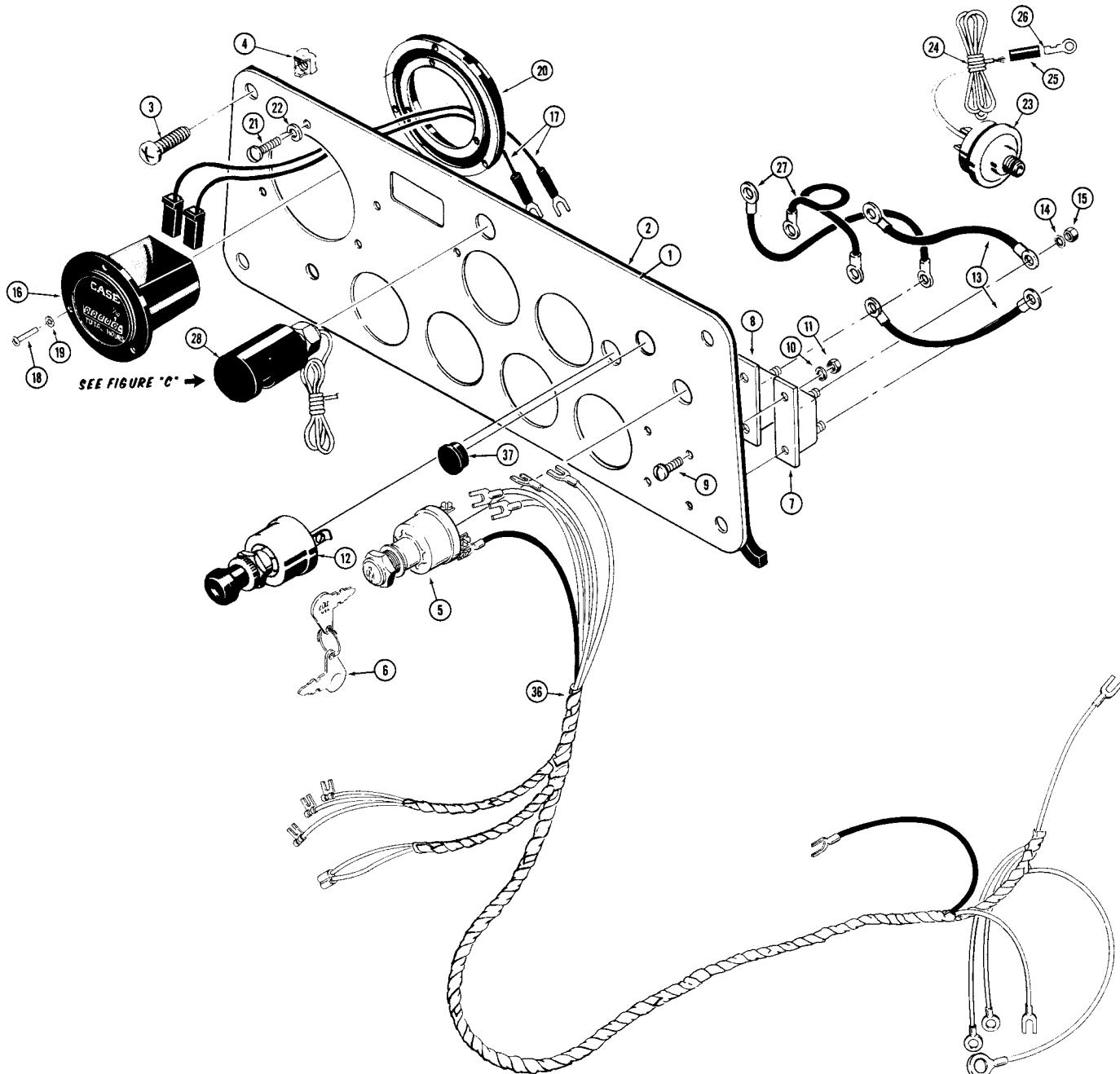
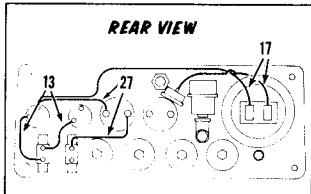
REF.	PART NO.	DESCRIPTION	REQ'D
	R 29870	STARTER ASSY. - (continued from Page 59)	1
36	A 44495	HOUSING ASSY. - drive end	1
37	A 25387	BUSHING - drive hsg. (1/2 x 5/8 x 13/16")	1
38	R 15023	WICK - oiler	1
39	221- 1041	PLUG - oil wick hole (1/8" P.T. sltd. hd.)	1
40	R 15041	PIN - locating, drive hsg. (3/16 x 5/16")	1
41	A 40220	LEVER - drive shift	1
42	A 40520	PIVOT - shift lever	1
43	131- 4	NUT - pivot (5/16" N.C. hex.)	1
44	A 25552	BOLT - thru	2
45	A 40218	PLUNGER - solenoid	1
46	138- 93	PIN - plunger to shift lever (3/16 x 13/16" roll)	1
47	A 40222	BOOT - plunger protection	1
49	G 44891	SOLENOID ASSY. - (See Note)	1
50	NSS	CASE ASSY	1
51	A 40221	SPRING - plunger return	1
52	A 42061	CONTACT ASSY	1
53	A 42059	SPRING - contact return	1
54	A 42060	BLADE - contact	1
55	NSS	COVER - solenoid contact & terminal	1
56	NSS	GASKET - cover to solenoid	1
57	129- 16	NUT - #8-32 hex	2
58	192- 16	WASHER - #8 lock	2
59	129- 143	NUT - 3/8" N.C. hex.	2
60	192- 21	WASHER - 3/8" lock	1
61	A 42023	SCREW - solenoid & connector (1/4 x 1/2" N.C., rd. hd.)	3
62	192- 19	WASHER - 1/4" lock	3

NOTE: SEE DELCO-REMY DEALER FOR PARTS ILLUSTRATED BUT NOT LISTED

FIGURE "C"

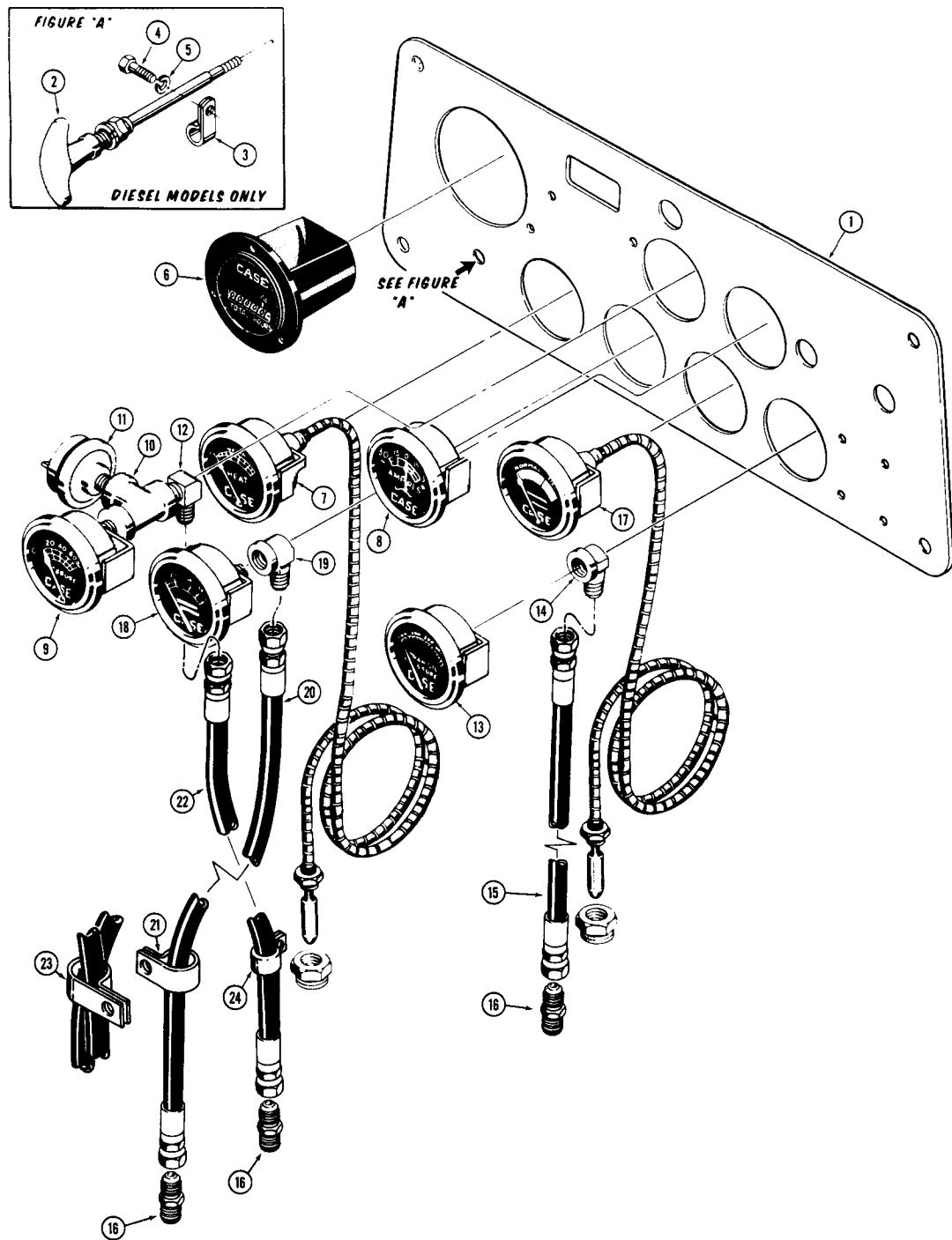


REAR VIEW



## INSTRUMENT PANEL, WIRING AND DASH LIGHT

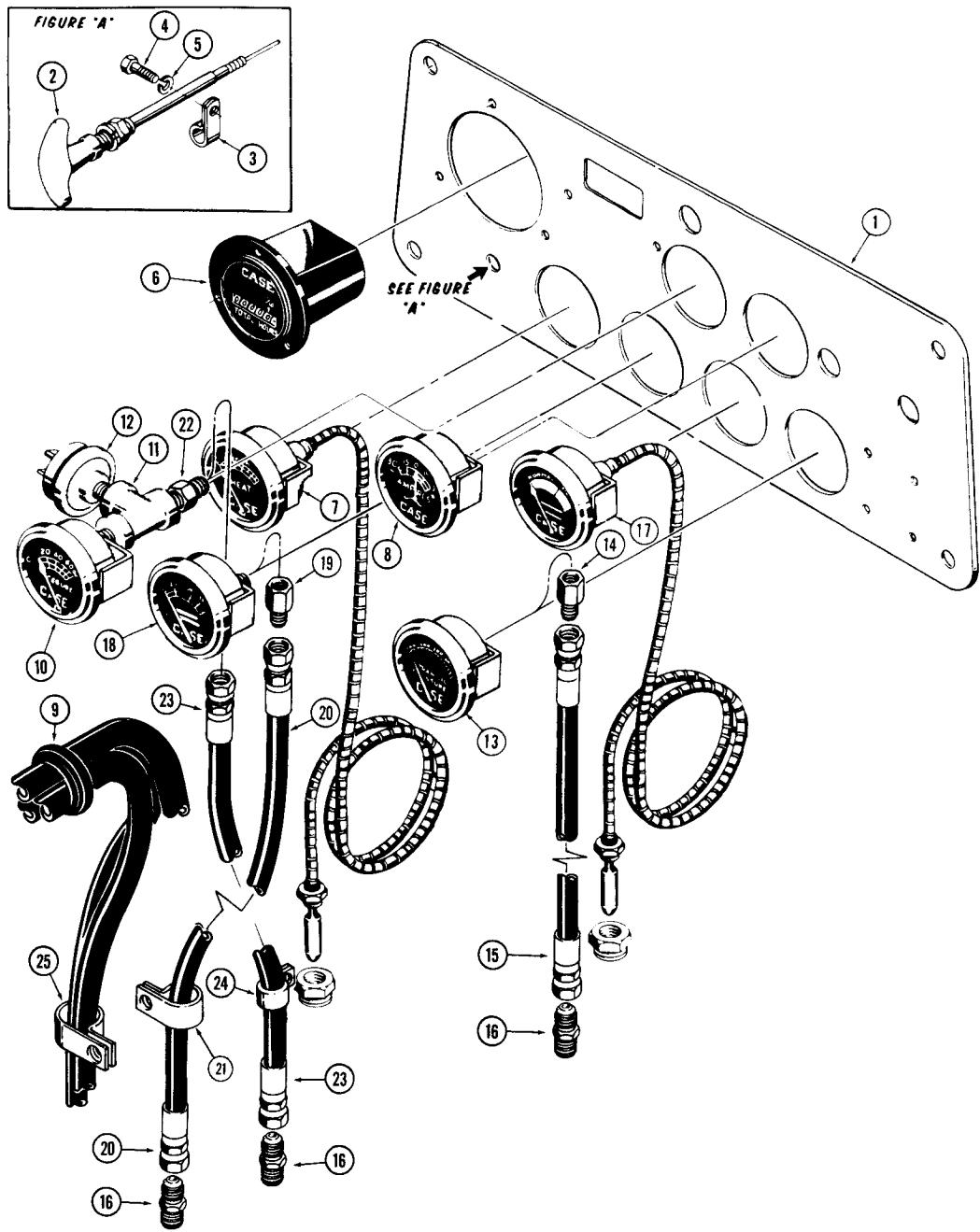
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 43660	PANEL - instrument, pre-heater models .....	1
1	R 36922	PANEL - instrument, ether injection models .....	1
2	R 26191	GASKET - panel, if used .....	1
3	174- 212	RHMS - 5/16" - 24 NF x 3/4", plated.....	4
4	131- 139	NUT - Special, 5/16" - 24 NF .....	4
5	D 35092	SWITCH - ignition .....	1
6	D 36822	KEY - switch (set of two).....	1
7	A 22877	CIRCUIT BREAKER - 40 amp .....	1
8	D 37203	CIRCUIT BREAKER - 15 amp .....	1
9	173- 203	RHMS - No. 6 - 32 NC x 1/2" .....	4
10	192- 15	WASHER - lock, No. 6.....	4
11	129- 15	NUT - hex, No. 6 - 32 NC.....	4
12	D 35065	SWITCH - light .....	1
13	A 11768	WIRE - jumper, circuit breaker to ignition switch and light switch .....	2
14	193- 6	WASHER - lock, internal shakeproof, No. 10.....	4
15	129- 37	NUT - hex, No. 10 - 32 NF .....	4
16	R 24646	HOURMETER - engine.....	1
17	D 39285	WIRE - lead, 36" (914 mm) .....	2
	D 39284	PACKET - hardware.....	1
18	173- 203	RHMS - No. 6 - 32 NC x 1/2" .....	3
19	19- 24	WASHER - lock, internal shakeproof, No. 6.....	3
20	D 35079	DAMPENER - vibration .....	1
21	173- 203	RHMS - No. 6 - 32 NC x 1/2" .....	3
22	192- 15	WASHER - lock, No. 6.....	3
23	D 28798	SWITCH - pressure assembly .....	1
24	D 28797	WIRE - pressure switch .....	1
25	223- 80	SLEEVE - wire .....	1
26	223- 50	TERMINAL - wire .....	1
27	G 44017	WIRE - jumper, circuit breaker to ammeter and ammeter to ignition switch .....	2
28	D 33212	LAMP - dash .....	1
29	R 22237	COVER - dash light .....	1
30	R 22232	LENS - dash light .....	1
31	71421	BULB - lamp, No. 67 .....	1
32	NSS	MOUNT - rubber .....	1
33	NSS	BASE ASSEMBLY - lamp .....	1
34	193- 34	WASHER - lock, shakeproof, 5/8" .....	1
35	25- 1510	NUT - hex , lock, 5/8" - 18 NC .....	1
36	REF.	HARNESS - see page 69 for proper harness .....	1
37	353- 407	PLUG - button, 25/32" dia.....	1



## INSTRUMENTS AND FUEL SHUT-OFF

## DOZER AND DRAWBAR MODELS

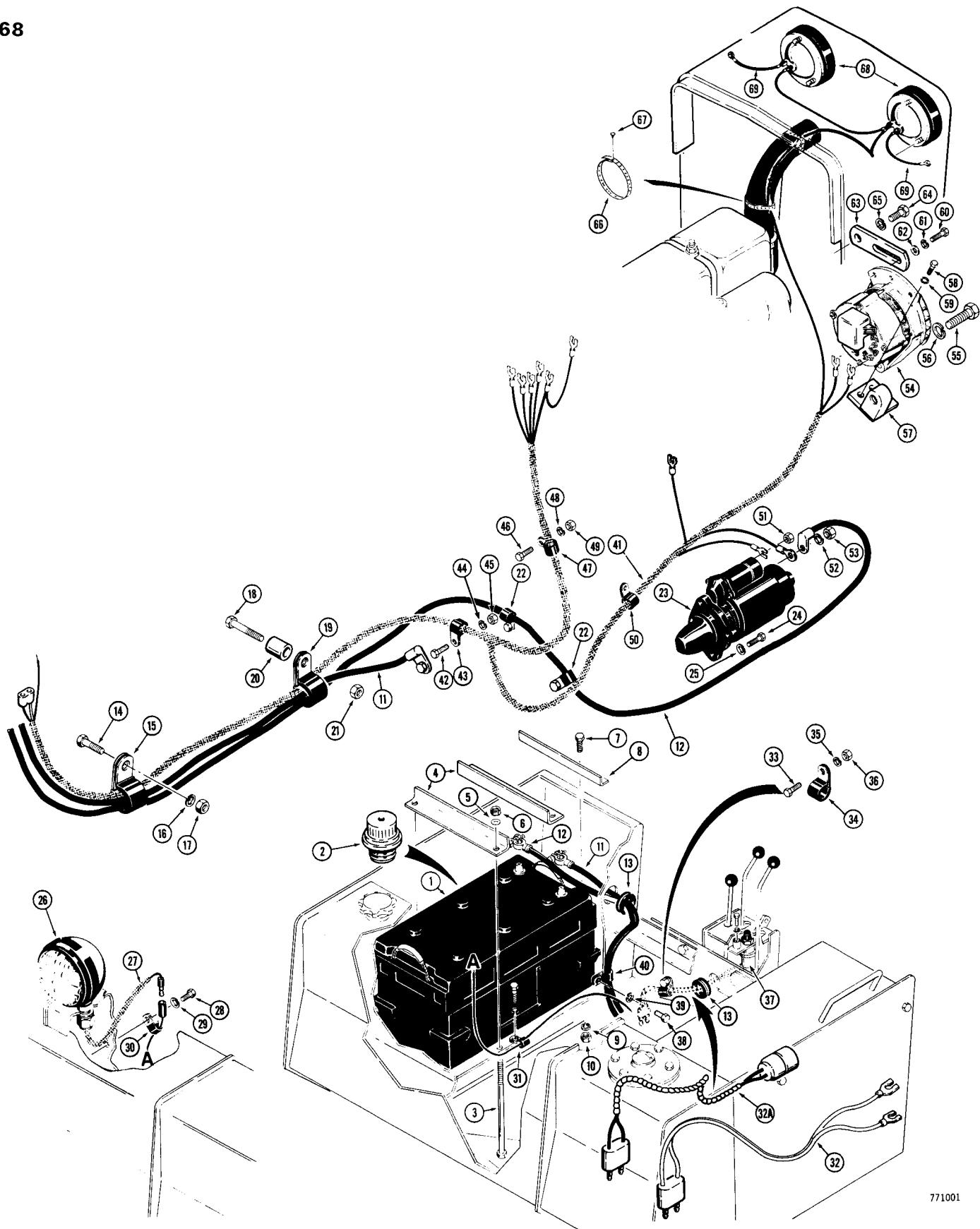
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 43660	PANEL - instrument .....	1
2	R 30305	CONTROL - engine shut-off .....	1
3	49859	CLAMP - engine shut-off .....	1
4	13- 48	HHCS - 1/4" - 20 NC x 1/2" .....	1
5	92- 4	WASHER - lock, 1/4" .....	1
6	REF.	HOURMETER - see page 63 .....	1
7	D 22768	GAUGE - heat indicator, engine .....	1
8	R 18748	GAUGE - ammeter .....	1
9	D 22853	GAUGE - engine oil pressure .....	1
10	217- 10	FITTING - tee, 1/8" NPT .....	1
11	REF.	SWITCH - pressure, parts list page 63 .....	1
12	218- 481	FITTING - male, 90° .....	1
13	D 29570	GAUGE - transmission oil pressure .....	1
14	218- 511	FITTING - female, 90° .....	1
15	D 95111	HOSE - transmission to oil pressure gauge .....	1
16	218- 441	FITTING - male, straight, D95112 and D95115 hose .....	3
17	D 44500	GAUGE - converter temperature .....	1
18	R 15953	GAUGE - converter oil pressure .....	1
19	218- 511	FITTING - female, 90° .....	1
20	D 95112	HOSE - torque converter to oil pressure gauge .....	1
21	D 20302	CLAMP - D95112 hose, converter temperature line and engine temperature line .....	1
22	D 95115	HOSE - engine to oil pressure gauge .....	1
23	R 14668	CLAMP - hose, D95111 and D95115 hose .....	1
24	49838	CLAMP - hose, engine oil pressure .....	1



## INSTRUMENTS AND FUEL SHUT-OFF

## LOADER MODELS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 43660	PANEL - instrument .....	1
2	R 30306	CONTROL - engine shut-off .....	1
3	49859	CLAMP - engine shut-off control .....	1
4	13- 48	HHCS - 1/4" - 20 NC x 1/2" .....	1
5	92- 4	WASHER - lock, 1/4" .....	1
6	REF.	HOURMETER - see page 63 .....	1
7	10839	GAUGE - heat indicator, engine .....	1
8	R 18748	GAUGE - ammeter .....	1
9	D 35078	GROMMET - rubber .....	1
10	D 22853	GAUGE - engine oil pressure .....	1
11	217- 10	FITTING - tee, 1/8" NPT .....	1
12	REF.	SWITCH - pressure, parts list page 63 .....	1
13	D 29570	GAUGE - transmission oil pressure .....	1
14	218- 461	FITTING - straight .....	1
15	D 95114	HOSE - transmission to pressure gauge .....	1
16	218- 441	FITTING - male, use on D95114, D95116 and D95117 hose .....	3
17	D 44005	GAUGE - converter temperature .....	1
18	R 15953	GAUGE - converter oil pressure .....	1
19	218- 461	FITTING - straight .....	1
20	D 95116	HOSE - torque converter to pressure gauge .....	1
21	D 20302	CLAMP - converter temperature line, engine temperature line and converter pressure hose .....	1
22	218- 441	FITTING - straight .....	1
23	D 95117	HOSE - engine to oil pressure gauge .....	1
24	49838	CLAMP - D95117 hose .....	1
25	R 14668	CLAMP - D95117 and D95114 hose .....	1



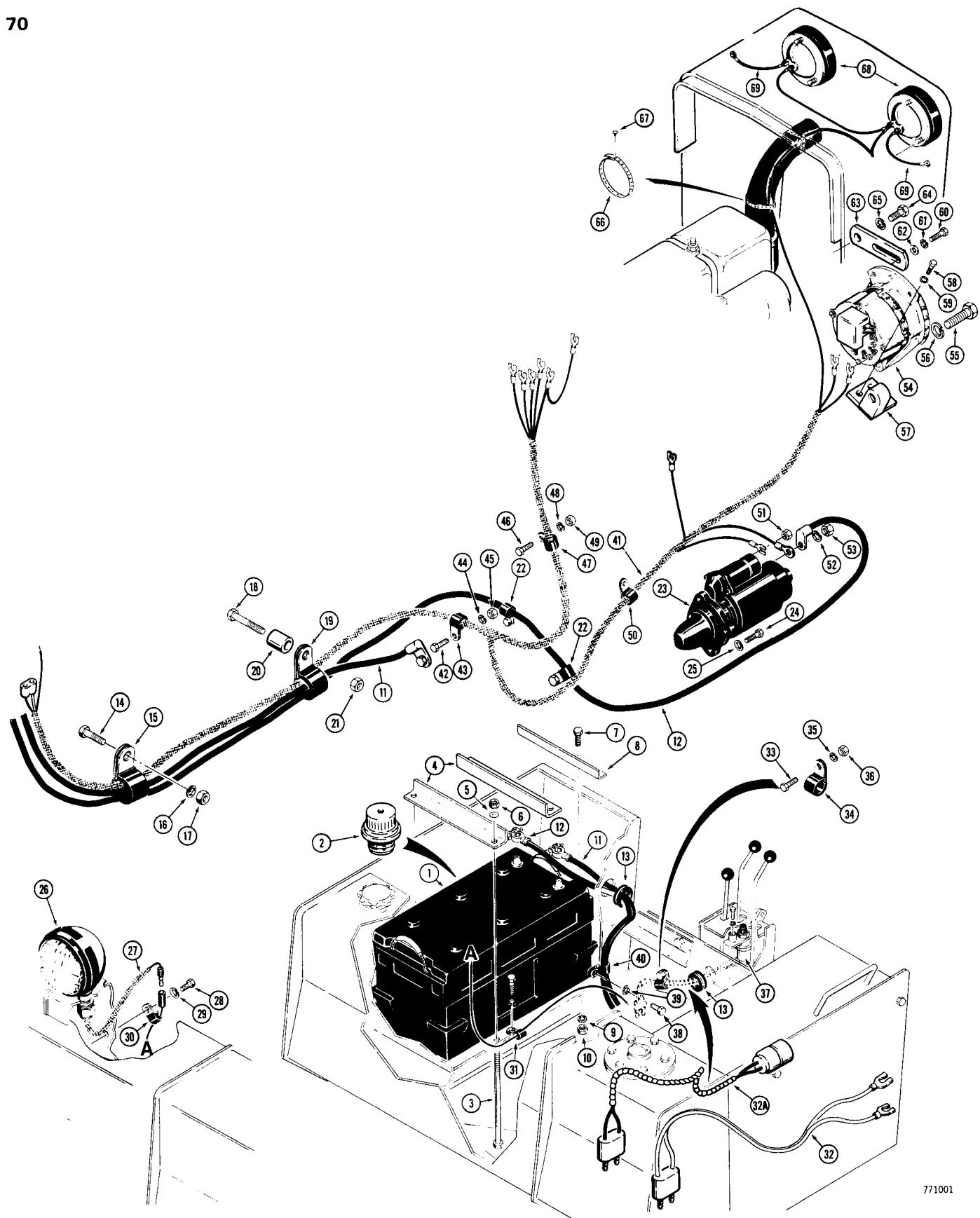
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## ELECTRICAL SYSTEM

REF.	PART NO.	DESCRIPTION	REQ'D.
1	*D 44178	BATTERY - 12 volt, dry charge (Service Replacement).....	1
2	R 30819	CAP - battery, non spill .....	6
3	13- 5160	HHCS - 5/16" - 18 NC x 10"	4
4	R 39653	HOLDDOWN - battery.....	2
5	195- 21	WASHER - flat, 5/16" .....	4
6	131- 4	NUT - hex, self lock, 5/16" - 18 NC .....	4
7	13- 614	HHCS - 3/8" - 16 NC x 7/8"	2
8	D 44203	RETAINER - battery, angle .....	1
9	92- 6	WASHER - lock, 3/8" .....	2
10	25- 106	NUT - hex, 3/8" - 16 NC .....	2
11	R 40379	CABLE - battery, negative.....	1
12	D 51992	CABLE - battery, positive .....	1
13	D 35078	GROMMET - battery cable and starter wire.....	2
14	13- 824	HHCS - 1/2" - 13 NC x 1-1/2"	1
15	49799	CLAMP - cable and harness .....	1
16	92- 8	WASHER - lock, 1/2" .....	1
17	25- 108	NUT - hex, 1/2" - 13 NC .....	1
18	13- 648	HHCS - 3/8" - 16 NC x 3"	1
19	49891	CLAMP - cables and harness .....	1
20	A 27328	SPACER - clamp.....	1
21	131- 352	NUT - hex, self lock, 3/8"	1
22	49838	CLAMP - cable .....	2
23	R 29870	MOTOR - starter, Delco-Remy No. 1109149, parts list pages 59 and 61 ..	1
24	13- 632	HHCS - 3/8" - 16 NC x 2"	3
25	92- 6	WASHER - lock, 3/8" .....	3
26	D 34934	LIGHT - tail, parts list page 73.....	1
27	D 34933	LOOM - wire .....	1
28	14- 68	HHCS - 3/8" - 24 NF x 1/2"	1
29	92- 6	WASHER - lock, 3/8" .....	1
30	49853	CLAMP - tail light wire .....	1
31	49832	CLAMP - tail light wire .....	1
32A	R 40436	WIRE - plug in connections, without backup alarm .....	1
32A	R 40831	WIRE - plug in connections, with backup alarm .....	1
33	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	1
34	49832	CLAMP - starter wire .....	1
35	92- 8	WASHER - lock, 1/2" .....	1
36	25- 108	NUT - hex, 1/2" - 13 NC .....	1
37	D 34924	SWITCH - starter, use R40432 switch and R40436 or R40831 wire.....	1
37	R 40432	SWITCH - starter, uses R40436 or R40831 wire .....	1
38	14- 68	HHCS - 3/8" - 24 NF x 1/2"	1
39	92- 6	WASHER - lock, 3/8" .....	1
40	D 34980	CLAMP - battery cable .....	1
41	R 30382	HARNESS - electrical, pre-heater models.....	1
41	R 36927	HARNESS - electrical, ether injector models .....	1
42	13- 620	HHCS - 3/8" - 16 NC x 1-1/4"	1
43	D 20302	CLAMP - harness .....	1
44	92- 6	WASHER - lock, 3/8" .....	1
45	25- 106	NUT - hex, 3/8" - 16 NC .....	1

\*NOTE: D44178 battery has standard caps which are to be replaced with non spill caps from old battery (if used) or order R30819 caps.

(Continued on next page)

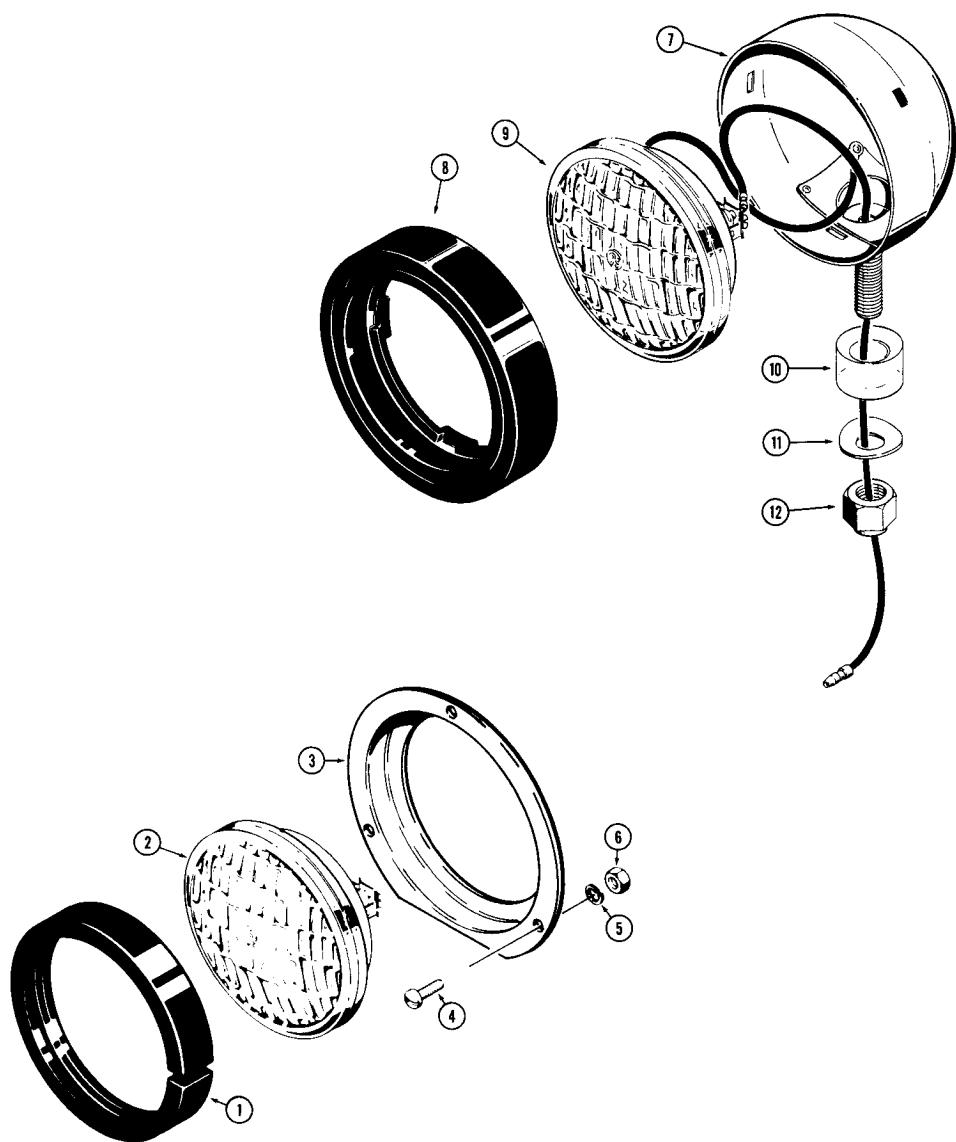


**MODEL 450 CRAWLER TRACTOR**

71

**ELECTRICAL SYSTEM**

REF.	PART NO.	DESCRIPTION	REQ'D.
46	13- 512	HHCS - 5/16" - 18 NC x 3/4"	1
47	D 20302	CLAMP - harness	1
48	92- 5	WASHER - lock, 5/16"	1
49	25- 105	NUT - hex, 5/16" - 18 NC	1
50	49854	CLAMP - harness	1
51	193- 1002	NUT AND WASHER - No. 8 - 32 NC, plated	1
52	192- 21	WASHER - lock, 3/8"	1
53	129- 143	NUT - hex lock, 3/8" - 16 NC, plated	1
54	R 30818	ALTERNATOR - 12 volt Motorola No. 8AR2026F, parts list page 57	1
55	13- 836	HHCS - 1/2" - 13 NC x 2-1/4"	1
56	92- 8	WASHER - lock, 1/2"	1
57	R 30381	BRACKET - mounting, alternator	1
58	13- 614	HHCS - 3/8" - 16 NC x 7/8"	2
59	92- 6	WASHER - lock, 3/8"	2
60	13- 516	HHCS - 5/16" - 18 NC x 1"	1
61	92- 5	WASHER - lock, 5/16"	1
62	195- 21	WASHER - flat, 5/16"	1
63	R 29597	STRAP - adjusting, alternator	1
64	13- 636	HHCS - 3/8" - 16 NC x 2-1/4"	1
65	192- 20	WASHER - lock, 3/8"	1
66	D 41076	STRAP - wire, headlight	2
67	D 41075	STUD - strap	2
68	REF.	LIGHT - head, see page 73 for lights	2
69	A 11768	WIRE - jumper	1-2

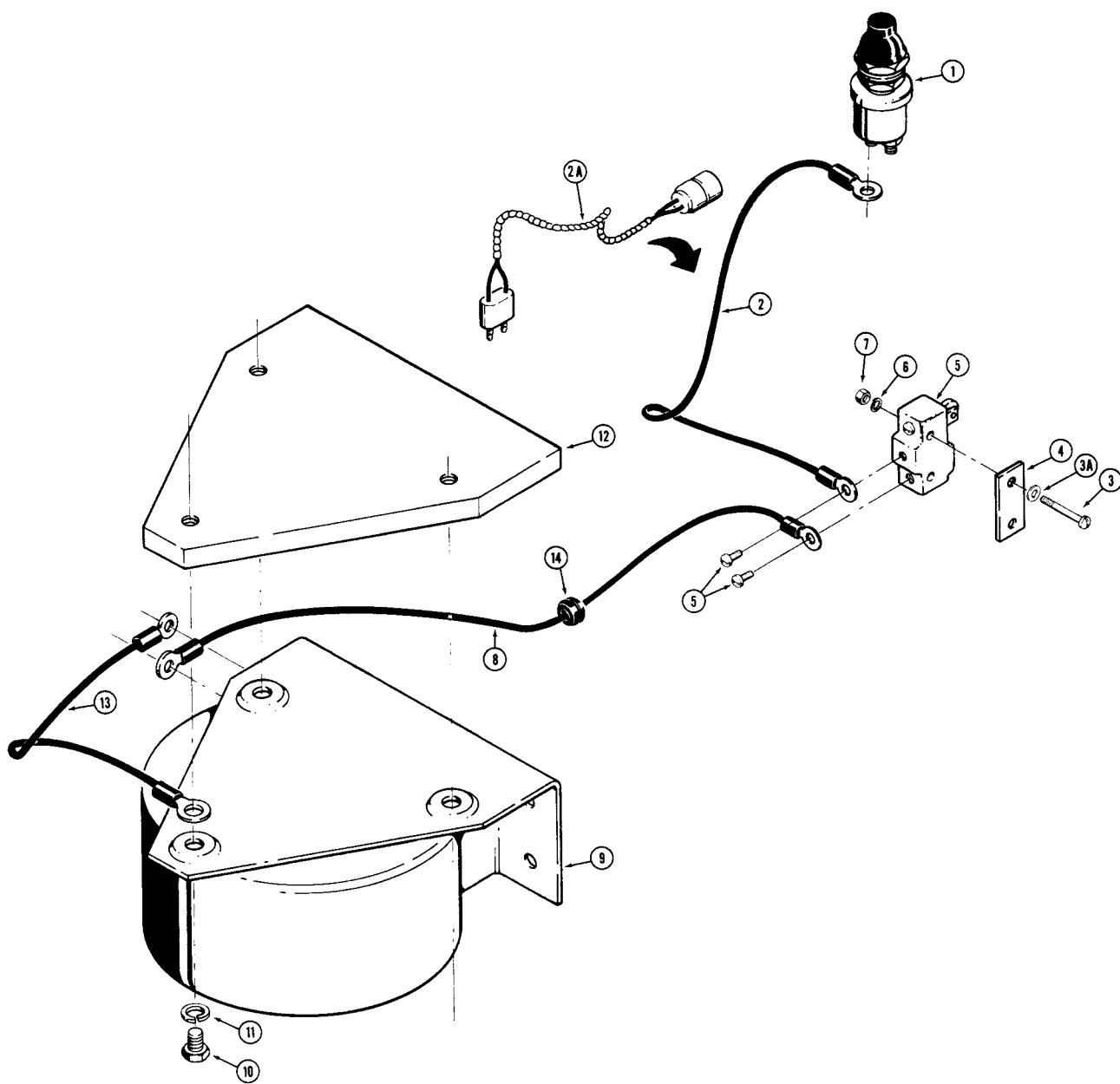


**HEADLIGHT**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 57287	SEAL - light (Rubber retainer).....	2
2	D 33182	LAMP - sealed unit.....	2
3	D 57288	RETAINER - light .....	2
4	192- 516	SCREW - machine, pan head, No. 10 - 24 NC x 1/2".....	6
5	192- 18	WASHER - lock, No. 10 Plated.....	6
6	129- 17	NUT - hex , No. 10 - 24 NC Plated .....	6

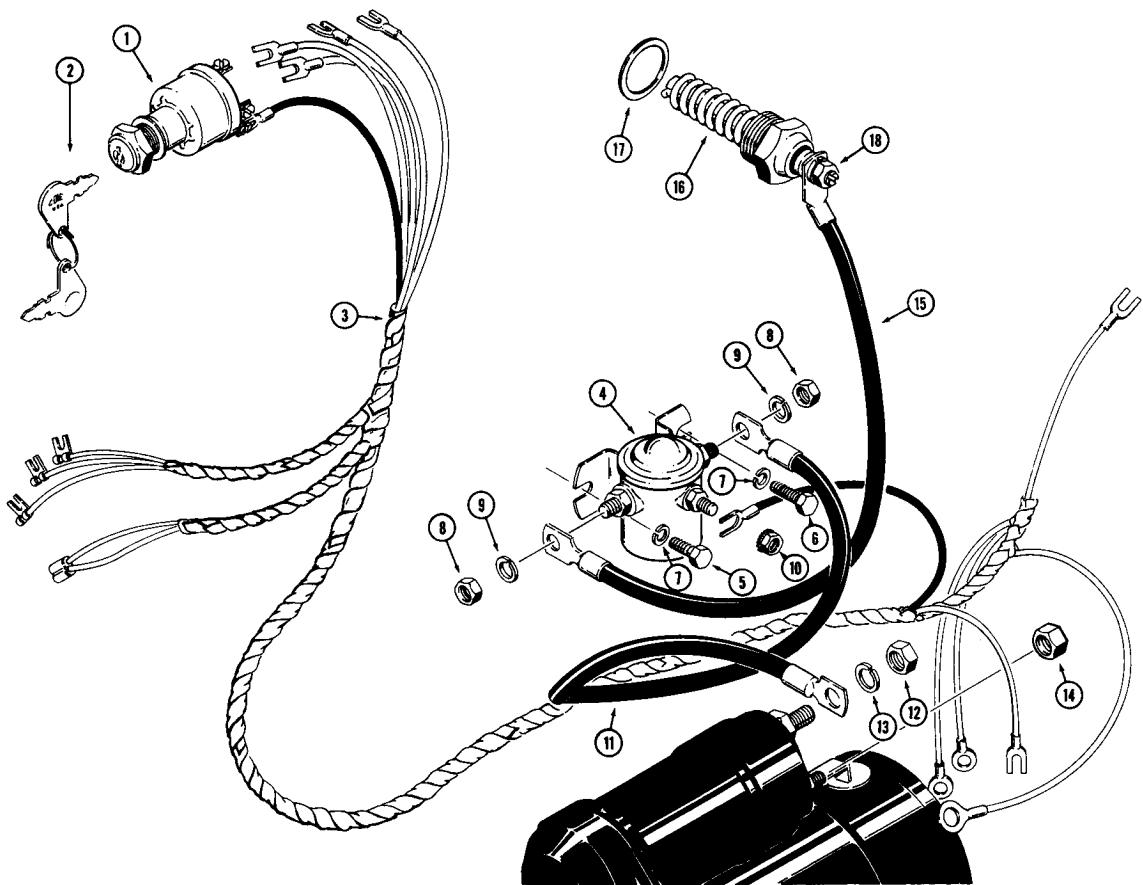
**TAILLIGHT ASSEMBLY**

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 34934	TAILLIGHT ASSEMBLY.....	1
7	NSS	SHELL - lamp .....	1
8	A 25213	RETAINER - lamp, rubber.....	1
9	A 24572	LAMP - sealed unit.....	1
10	D 37048	BUSHING - pivot .....	1
11	D 37049	WASHER - special.....	1
12	131- 9	NUT - hex self lock, 1/2" - 13 NF .....	1



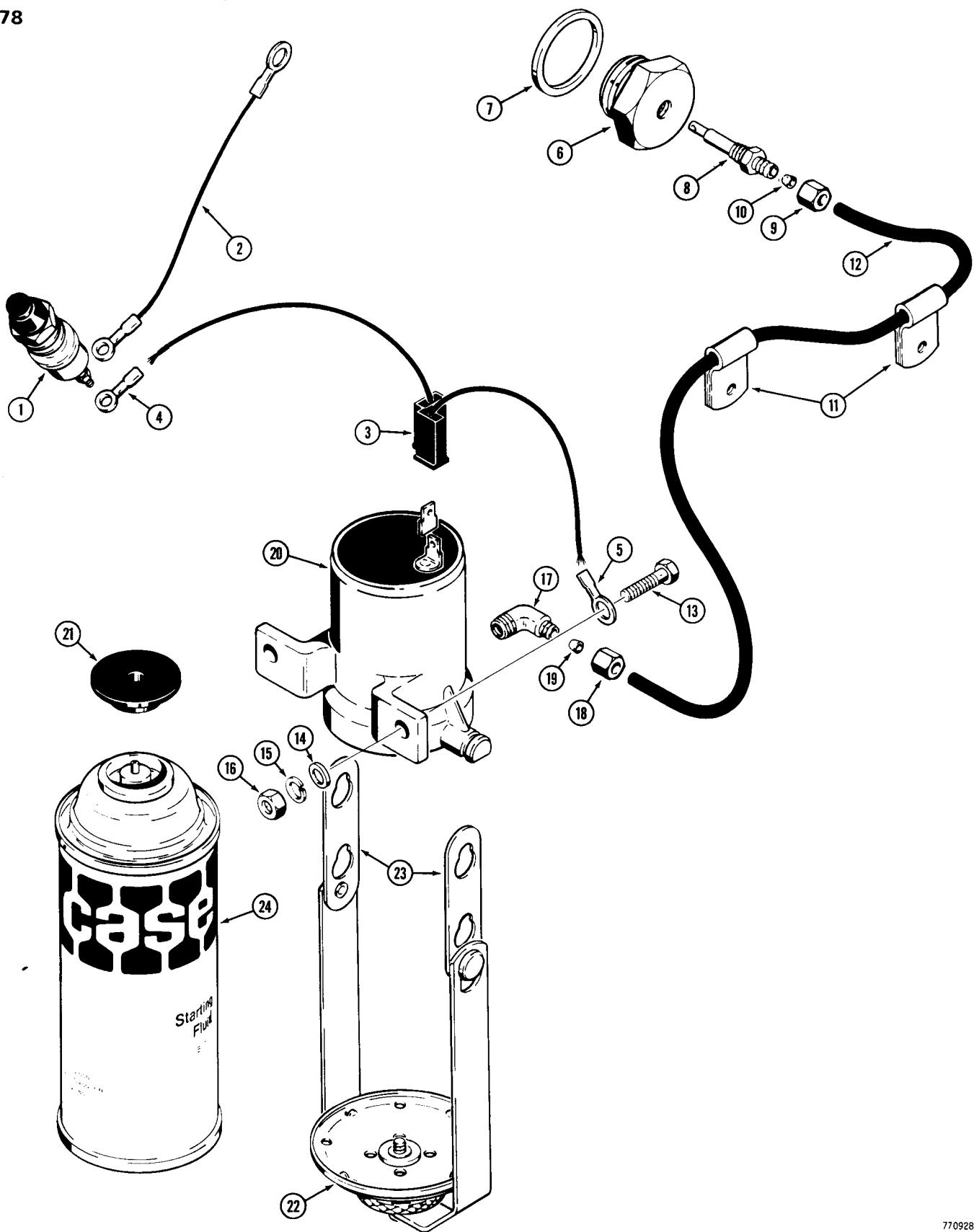
## BACKUP ALARM

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 34924	SWITCH - starter, button uses spade connections .....	1
1	R 40432	SWITCH - starter, button uses plug in connections.....	1
2	R 34959	WIRE - D34924 switch .....	1
2A	R 40831	WIRE - R40432 Switch.....	1
3	169- 143	SCREW - fillister head, slotted, No. 6 - 32 NC x 1 - 1/2"	2
3A	195- 7	WASHER - flat, No. 6 .....	2
4	R 31181	SPACER plate.....	UAR
5	L 54683	SWITCH - backup alarm .....	1
6	193- 89	WASHER - lock, No. 6.....	2
7	129- 15	Nut - hex, No. 6 - 32 NC.....	2
8	R 39289	WIRE - switch to alarm .....	1
9	S 223033	ALARM - backup .....	1
10	13- 48	HHCS - 1/4" - 20 NC x 1/2"	3
11	92- 4	WASHER - lock, 1/4" .....	3
12	R 31184	PLATE - mounting, alarm .....	1
13	R 34956	WIRE - ground, alarm .....	1
14	R 39516	GROMMET .....	1



## ENGINE PRE-HEATER

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 35092	SWITCH AND KEY - electrical .....	1
1	D 35092	SWITCH - ignition .....	1
2	D 36822	KEY - switch (Set of two) .....	1
3	R 30382	MAIN WIRING HARNESS .....	1
4	A 39079	SOLENOID - manifold heater .....	1
5	113- 1	HHCS - 1/4" - 20 NC x 1/2" plated .....	1
6	113- 3	HHCS - 1/4" - 20 NC x 3/4" plated .....	1
7	193- 60	WASHER - lock, 1/4" plated .....	2
8	129- 162	NUT - hex, 5/16" - 24 NF, plated .....	2
9	192- 20	WASHER - lock, 5/16" plated .....	2
10	193- 1000	NUT - keps, No. 10 plated .....	2
11	R 29755	CABLE - starter to solenoid .....	1
12	129- 143	NUT - hex. lock 3/8" - 16 NC plated .....	1
13	192- 21	WASHER - lock, 3/8" .....	1
14	193- 1002	NUT - keps, No. 8 - 32 NC plated .....	1
15	D 51989	WIRE - solenoid to heater plug .....	1
16	A 37775	PLUG - heater, manifold .....	1
17	A 20916	GASKET - heater plug .....	1
18	129- 101	NUT - terminal 1/4" - 10 NC .....	1

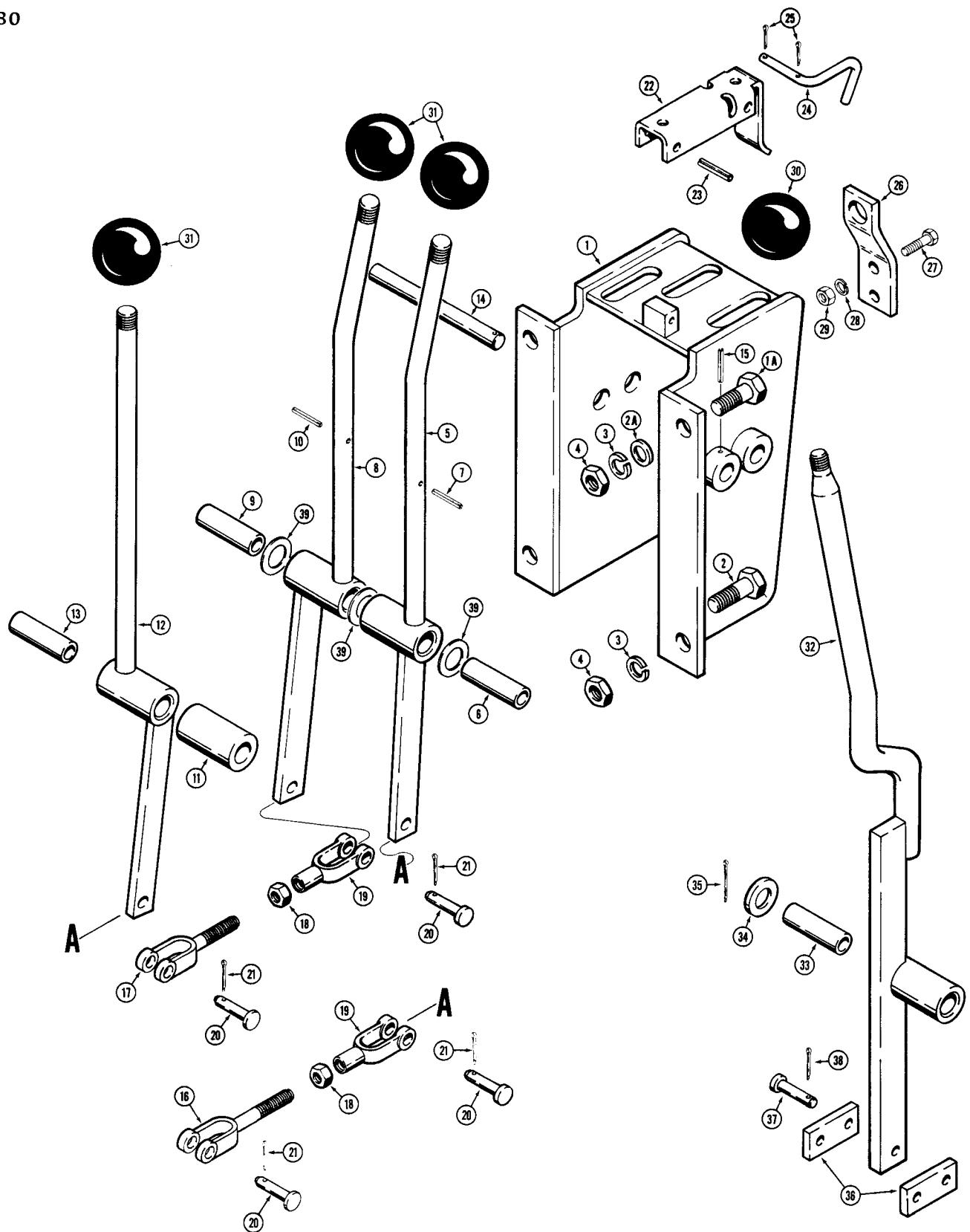


## MODEL 450 CRAWLER TRACTOR

79

## COLD START AID (ETHER INJECTION)

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 34924	SWITCH - push button .....	1
2	F 21342	WIRE - jumper .....	1
3	R 29794	CABLE - switch to solenoid .....	1
4	223- 325	TERMINAL - eyelet, No. 10 .....	1
5	223- 326	TERMINAL - eyelet, 5/16" .....	1
6	L 10283	PLUG - manifold .....	1
7	A 20916	GASKET - plug .....	1
	R 36920	INJECTOR - ether .....	1
8	NSS	BODY .....	1
9	222- 110	NUT - compression .....	1
10	222- 100	SLEEVE - compression .....	1
11	D 43839	CLAMP - tube .....	2
12	D 35275	TUBE - nylon .....	1
13	13- 516	HHCS - 5/16" - 18 NC x 1" .....	2
14	195- 21	WASHER - flat, 5/16" .....	2
15	92- 5	WASHER - lock, 5/16" .....	2
16	25- 105	NUT - hex, 5/16" - 18 NC .....	2
	A 143381	SOLENOID - ether injection .....	1
17	222- 615	FITTING - 90° .....	1
18	222- 110	NUT - compression .....	1
19	222- 100	SLEEVE - compression .....	1
20	NSS	SOLENOID .....	1
21	R 30786	GASKET - can .....	1
22	R 30785	BAIL - can .....	1
23	R 30812	LINK - bail extension .....	2
24	B 17072	CAN - ether, 16 oz .....	1

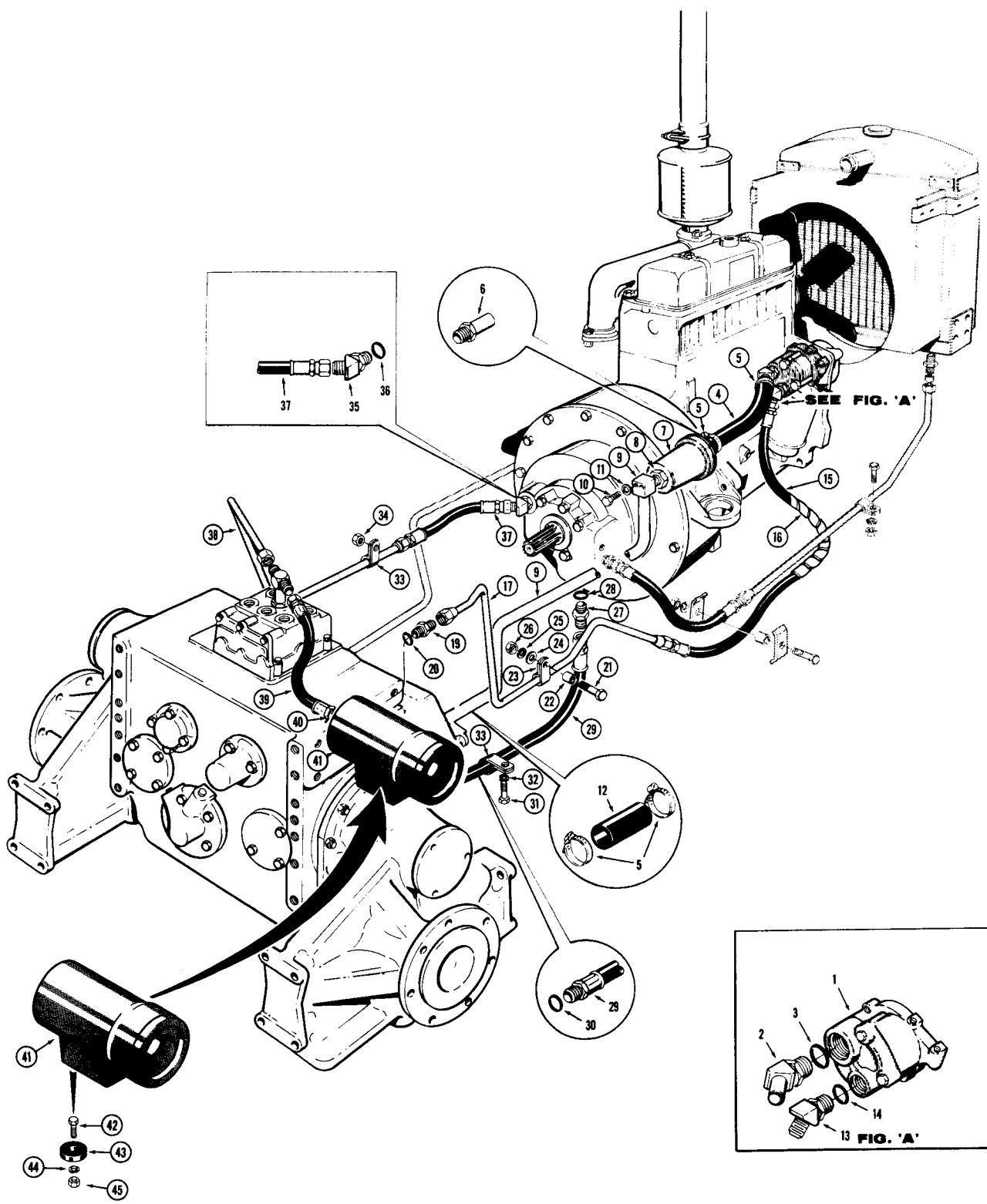


## MODEL 450 CRAWLER TRACTOR

81

## TRANSMISSION CONTROL TOWER

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 31299	TOWER - transmission control levers.....	1
1A	13- 824	HHCS - 1/2" - 13 NC x 1-1/2"	2
2	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	2
2A	195- 33	WASHER - flat, 1/2"	2
3	92- 8	WASHER - lock, 1/2"	4
4	25- 108	NUT - hex, 1/2" - 13 NC .....	4
5	R 31307	LEVER - control, R.H. track .....	1
6	R 26338	BUSHING - control lever.....	1
7	138- 96	PIN - roll, 3/16" dia. x 1"	1
8	R 31306	LEVER - control, L.H. track.....	1
9	R 26338	BUSHING - control lever.....	1
10	138- 96	PIN - roll, 3/16" dia. x 1"	1
11	D 34880	SPACER - control lever .....	1
12	D 50240	LEVER - control, forward and reverse .....	1
13	R 26338	BUSHING - control lever.....	1
14	D 34898	SHAFT - control levers .....	2
15	138- 98	PIN - roll, 3/16" - 1-1/4"	2
16	G 10928	YOKE END - control rod, R.H. and L.H. rear .....	2
17	D 34885	YOKE END - control rod, center .....	1
18	25- 115	NUT - hex, 5/16" - 24 NF.....	3
19	213- 3	YOKE - adjustable, 5/16" - 24 NF.....	3
20	141- 3	PIN - clevis, 5/16"	6
21	132- 24	PIN - cotter, 3/32" x 1/2"	6
22	R 31303	COVER - switch .....	1
23	138- 137	PIN - roll, 1/4" x 3/8"	1
24	R 31454	LOCK - neutral start, safety.....	1
25	132- 5	PIN - cotter, 1/16" x 1/2"	2
26	R 31304	BRACKET - mounting, starter switch .....	1
27	13- 512	HHCS - 5/16" - 18 NC x 3/4"	2
28	92- 5	WASHER - lock, 5/16"	2
29	25- 106	NUT - hex, 5/16" - 18 NC .....	2
30	70213	KNOB.....	1
31	D 49996	KNOB.....	3
32	D 48019	LEVER - control, two speed .....	1
33	R 26338	BUSHING - control lever.....	1
34	195- 41	WASHER - plain, 5/8"	1
35	132- 69	PIN - cotter, 5/32" x 1"	1
36	R 22755	LINK - two speed control lever to transmission.....	2
37	141- 4	PIN - clevis, 3/8"	2
38	132- 25	PIN - cotter, 3/32" x 5/8"	2
39	A 7915	SHIM.....	UAR



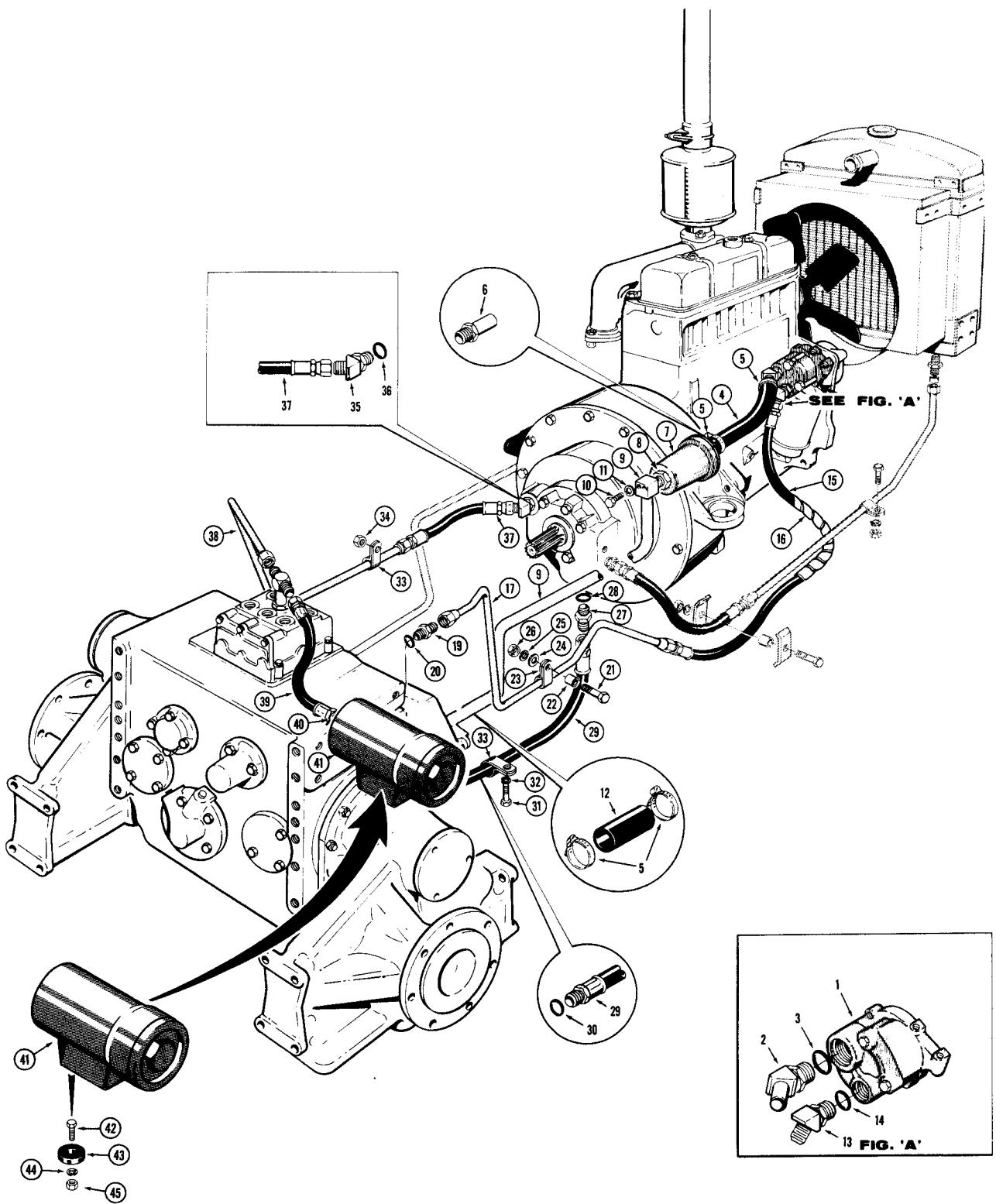
# MODEL 450 CRAWLER TRACTOR

83

## CRAWLER HYDRAULIC CIRCUITS

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>PUMP TO TORQUE CONVERTER AND FILTER</b>			
1	D 35016	PUMP - torque converter, parts list page 93 .....	1
2	D 35138	FITTING - special, 45° .....	1
3	218- 5010	O-RING .....	1
4	D 33365	HOSE - pump to filter .....	1
5	214- 257	CLAMP - hose .....	4
6	D 35137	FITTING - hose stem .....	1
7	D 35144	FILTER - hydraulic oil, parts list page 89 .....	1
8	221- 239	NIPPLE - 1" NPT x 2" .....	1
9	D 35149	TUBE - suction, transmission .....	1
10	13- 616	HHCS - 3/8" - 16 NC x 1" .....	2
11	92- 6	WASHER - lock, 3/8" .....	2
12	R 13911	HOSE - suction, transmission, rear .....	1
13	218- 5149	FITTING - 45°, adjustable .....	1
14	218- 5008	O-RING .....	1
15	D 35136	HOSE - 38" (965 mm) long .....	1
16	R 12586	WRAP - hose .....	1
17	D 35151	TUBE - pump to filter .....	1
18		RESERVED	
19	218- 5063	FITTING - straight, male .....	1
20	218- 5008	O-RING .....	1
21	13- 824	HHCS - 1/2" - 13 NC x 1-1/2" .....	1
22	D 34003	SPACER - clamp, Loader Models only .....	1
23	R 26169	CLAMP - tube, vibration dampener .....	1
24	95- 8	WASHER - flat, 1/2" .....	1
25	92- 8	WASHER - lock, 1/2" .....	1
26	25- 108	NUT - hex, 1/2" - 13 NC .....	1

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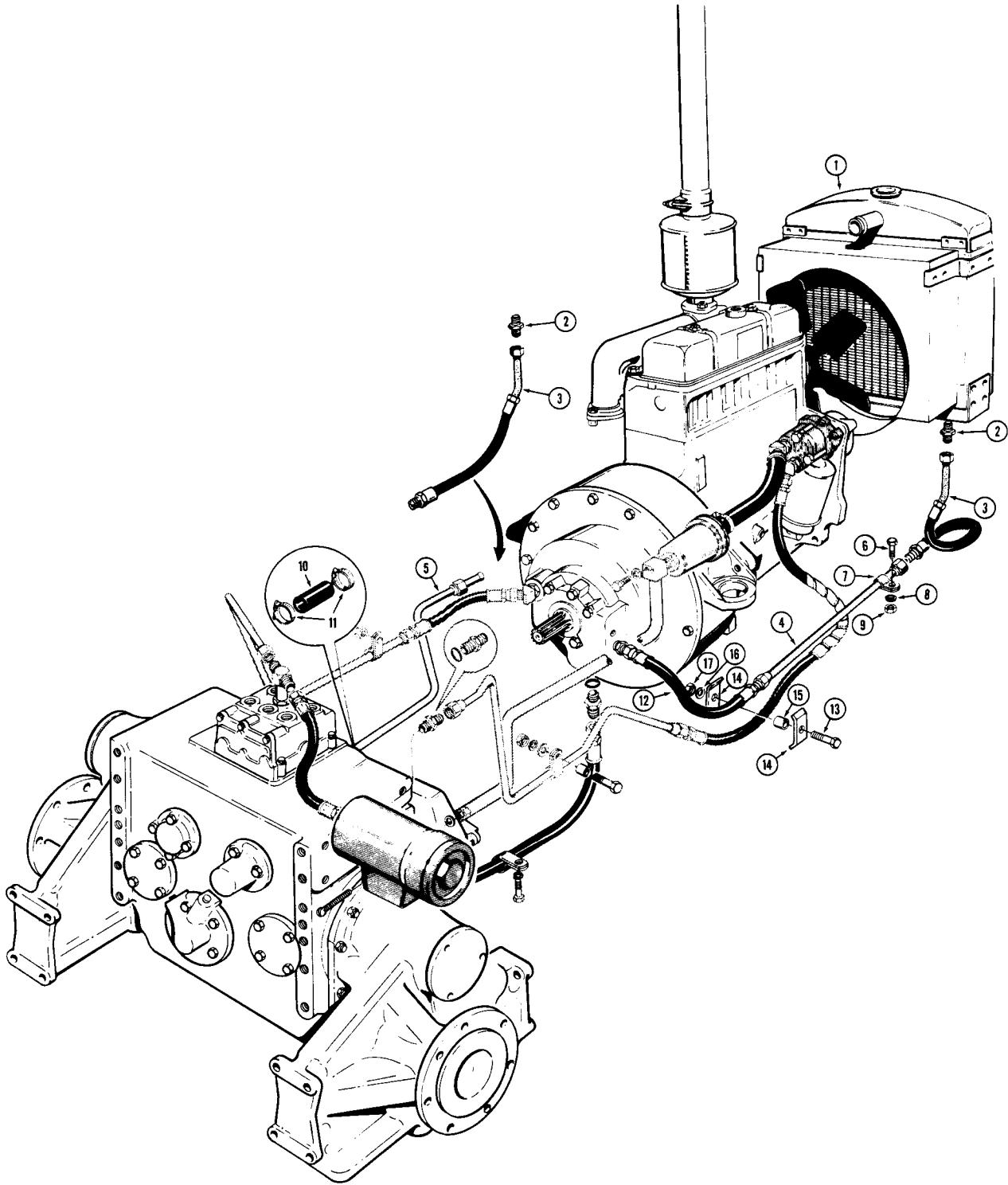


**MODEL 450 CRAWLER TRACTOR**

85

**CRAWLER HYDRAULIC CIRCUITS**

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>TORQUE CONVERTER TO TRANSMISSION</b>			
27	218- 5062	FITTING - straight, male .....	1
28	218- 5007	O-RING .....	1
29	D 38702	HOSE - 33" (838 mm) long .....	1
30	218- 5006	SEAL - O-ring .....	1
31	13- 58	HHCS - 5/16" - 18 NC x 1/2" .....	1
32	92- 5	WASHER - lock, 5/16" .....	1
33	49885	CLAMP - hose .....	2
34	25- 146	NUT - hex, self lock, 3/8" - 16 NC .....	1
35	218- 5137	FITTING - 45°, male .....	1
36	218- 5007	O-RING .....	1
37	D 38533	HOSE - 11-3/4" (299 mm) long .....	1
38	D 38529	TUBE - at transmission control valve .....	1
39	D 45617	HOSE - 17" (432 mm) long .....	1
40	218- 5006	O-RING .....	1
41	REF.	FILTER - oil, see page 89 .....	1
42	13- 616	HHCS - 3/8" - 16 NC x 1", without rubber mount .....	4
42	13- 620	HHCS - 3/8" - 16 NC x 1-1/2", with rubber mount .....	4
43	D 40406	MOUNT - rubber, D46132 filter .....	4
44	92- 6	WASHER - lock, 3/8", if used .....	4
45	25- 106	NUT - hex , 3/8" - 16 NC, without D40406 mount .....	4
45	131- 354	NUT - hex self lock, 3/8" - 16 NC, with D40406 mount .....	4

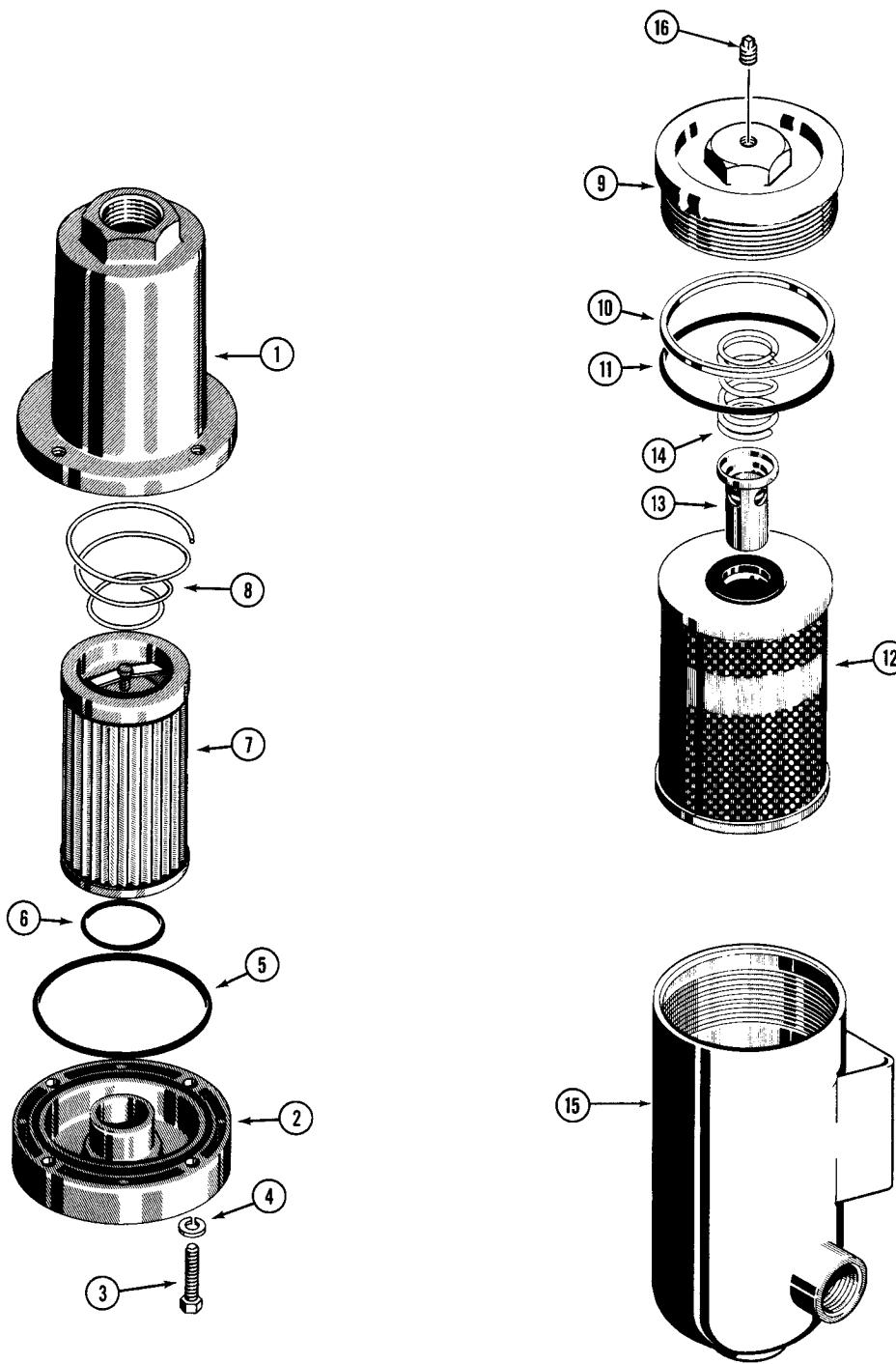


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## CRAWLER HYDRAULIC CIRCUIT

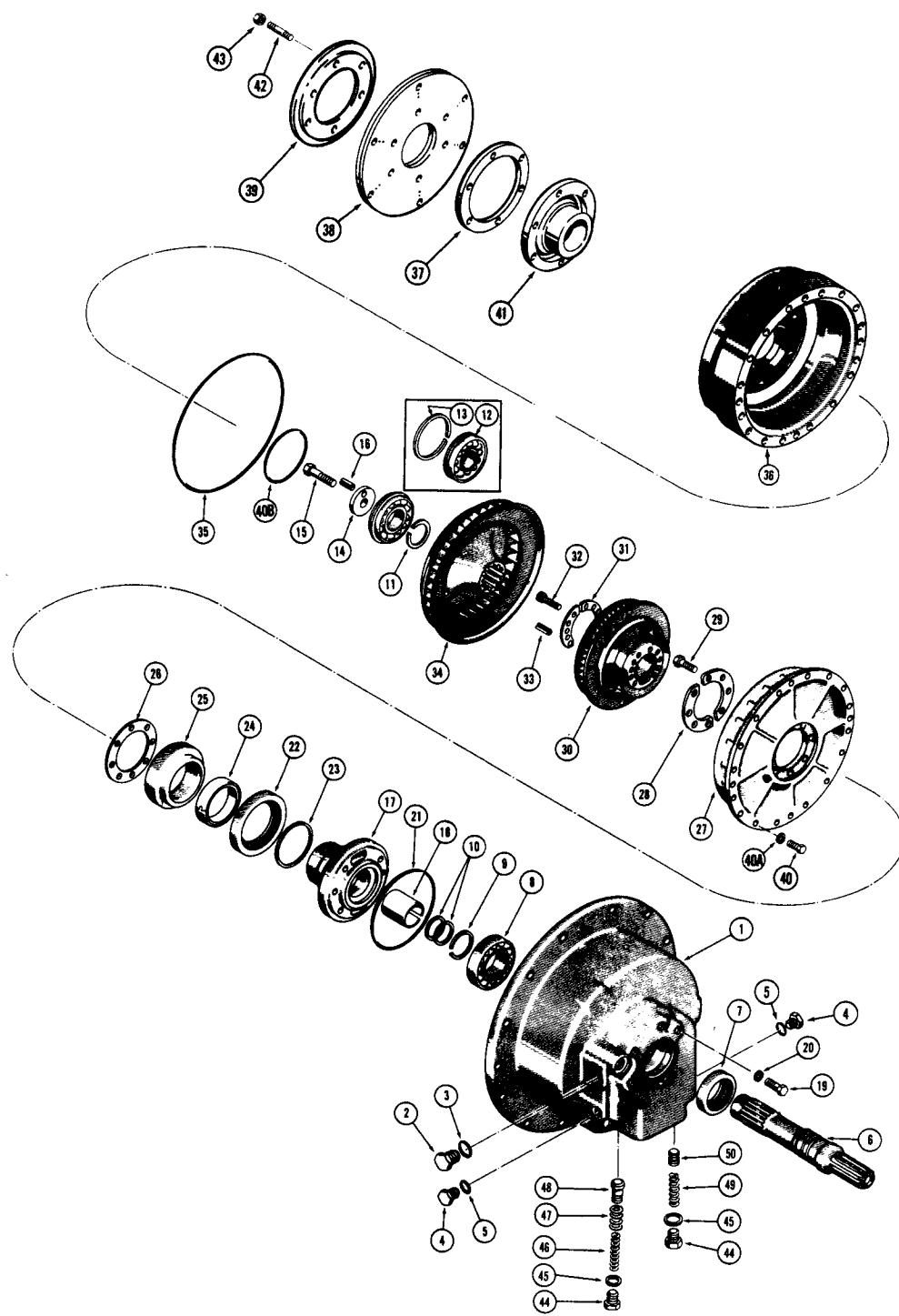
## COOLING SYSTEM

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	RADIATOR - cooling, see page 37 for radiators .....	1
2	218- 444	FITTING - straight, male .....	2
3	R 24230	HOSE - at oil cooler, 13" (330 mm) long .....	2
4	R 24231	TUBE - converter to oil cooler, R.H..	1
5	R 24232	TUBE - oil cooler to sump, L.H. ....	1
6	13- 516	HHCS - 5/16" - 18 NC x 1"	3
7	49885	CLAMP - tube (2 L.H. and 1 R.H.) .....	3
8	92- 5	WASHER - lock, 5/16" .....	3
9	25- 105	NUT - hex, 5/16" - 18 NC .....	3
10	R 24723	HOSE - 5/8" (16 mm) I.D. x 3" long .....	1
11	214- 253	CLAMP - hose .....	2
12	D 38533	HOSE - 11-3/4" (294 mm) long .....	1
13	13- 528	HHCS - 5/16" - 18 NC x 1-3/4"	1
14	D 33316	CLAMP - hose .....	2
15	D 33554	SPACER - clamp .....	1
16	92- 5	WASHER - lock, 5/16" .....	1
17	25- 105	NUT - hex, 5/16" - 18 NC .....	1



## TRANSMISSION OIL FILTERS

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>D35144 TRANSMISSION OIL FILTER</b>			
1	D 35144	FILTER - transmission oil, suction line .....	1
1	D 37033	HOUSING - filter .....	1
2	D 37034	HEAD - filter .....	1
3	13- 424	HHCS - 1/4" - 20 NC x 1-1/2" .....	4
4	92- 4	WASHER - lock, 1/4" .....	4
5	D 21006	O-RING - housing .....	1
6	A 27577	O-RING - element .....	1
7	D 37035	ELEMENT - filter .....	1
8	D 37036	SPRING - element .....	1
<b>D46132 TRANSMISSION OIL FILTER</b>			
9	D 46132	FILTER - transmission oil, pressure line .....	1
9	D 31214	CAP - filter .....	1
	A 65854	ELEMENT KIT - filter .....	1
10	G 32176	RING - backup .....	1
11	A 27507	O-RING .....	1
12	NSS	ELEMENT - filter .....	1
13	D 37207	VALVE - relief .....	1
14	D 31212	SPRING - retaining .....	1
15	D 46130	BODY - filter .....	1
<b>G102080 TRANSMISSION OIL FILTER</b>			
9	G 102080	FILTER - transmission oil, pressure line .....	1
9	A 60765	CAP - filter .....	1
	A 60765	ELEMENT KIT - filter .....	1
10	G 32176	RING - backup .....	1
11	A 27507	O-RING .....	1
12		ELEMENT - filter .....	1
13	D 37207	VALVE - relief .....	1
14	D 31212	SPRING - retaining .....	1
15	G 102079	BODY - filter .....	1
16	221- 1011	PLUG - hex head, 1/8" NPT .....	1



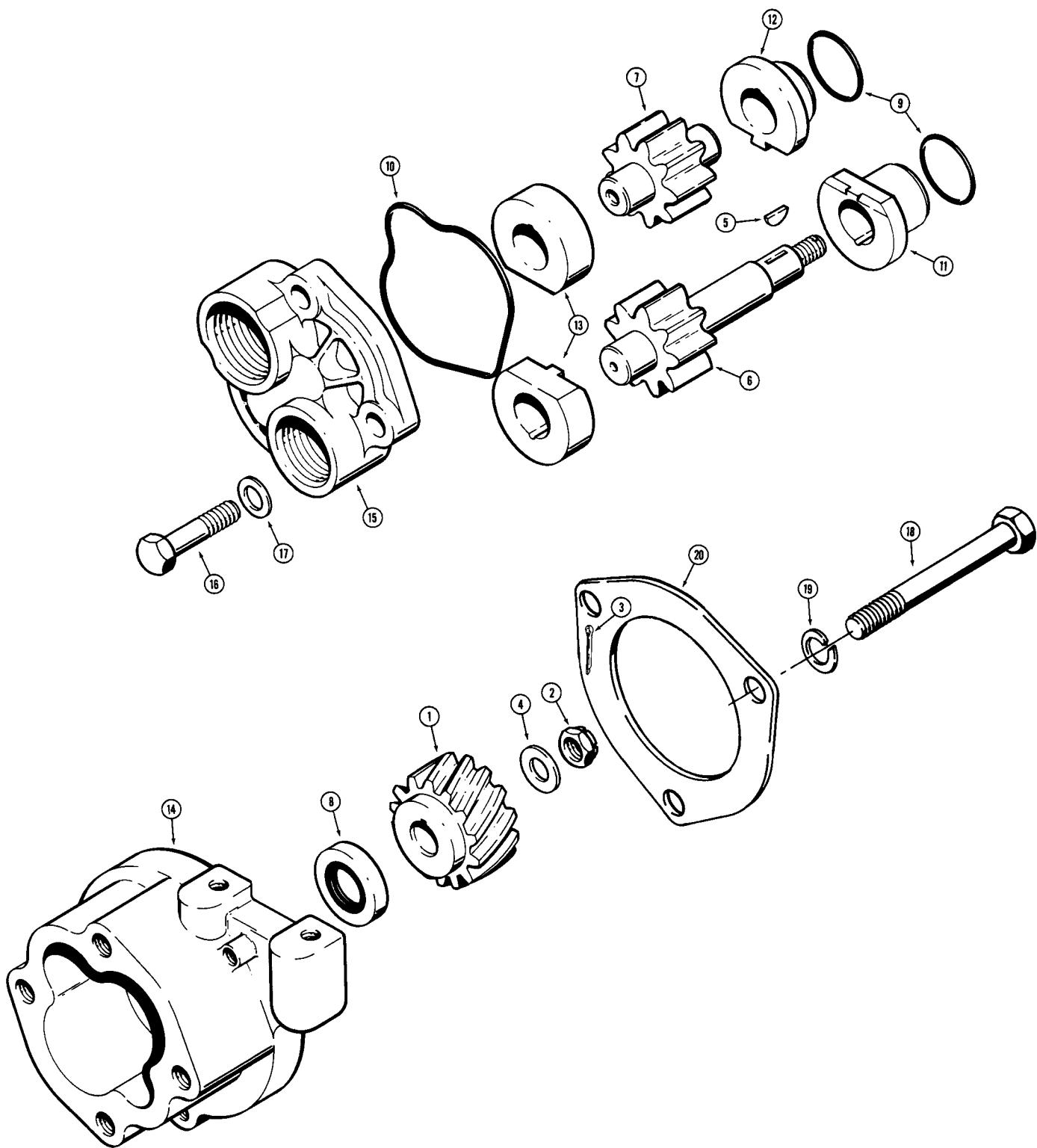
# MODEL 450 CRAWLER TRACTOR

91

## D52422 TORQUE CONVERTER

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 52422	TORQUE CONVERTER - Twin Disc X-209547-F Spec N61896 . . . . .	1
1	D 37028	HOUSING - converter . . . . .	1
2	218- 5156	PLUG - converter housing (Upper) . . . . .	1
3	218- 5006	O-RING. . . . .	1
4	218- 5154	PLUG - converter housing (Lower) . . . . .	2
5	218- 5004	O-RING. . . . .	1
6	D 37026	SHAFT - output . . . . .	1
7	D 51517	SEAL - oil, output shaft. . . . .	1
8	B 18274	BEARING - ball, output shaft (Rear) . . . . .	1
9	A 27085	SNAP RING - bearing retaining . . . . .	1
10	D 37021	RING - piston . . . . .	2
11	A 27085	SNAP RING - shaft retaining . . . . .	1
12	G 13606	BEARING - ball, output shaft (Front) . . . . .	1
13	NSS	SNAP RING. . . . .	1
14	D 37015	PLATE - shaft retaining . . . . .	1
15	14- 828	HHCS - 1/2" - 20 NF x 1-3/4" . . . . .	1
16	138- 130	PIN - roll . . . . .	1
17	D 39288	CARRIER GUIDE AND SLEEVE ASSEMBLY . . . . .	1
18	D 37027	BUSHING - split . . . . .	1
19	13- 632	HHCS - 3/8" - 16 NC x 2" . . . . .	1
20	D 32117	WASHER - special . . . . .	1
21	A 27384	O-RING - carrier guide . . . . .	1
22	D 73740	SEAL - oil, carrier guide. . . . .	1
23	A 36273	RING - piston . . . . .	1
24	A 36272	BUSHING - bronze, steel backed. . . . .	1
25	D 37009	CARRIER - bushing . . . . .	1
26	D 37010	GASKET - impeller hub . . . . .	1
27	D 36825	IMPELLER. . . . .	1
28	D 37017	PLATE - clamp . . . . .	2
29	13- 514	HHCS - 5/16" - 18 NC x 7/8" . . . . .	8
30	D 36835	GUIDE - converter . . . . .	1
31	A 36278	PLATE - clamp . . . . .	2
32	166- 24	SCREW - ferry, 5/16" - 18 NC x 3/4" . . . . .	6
33	138- 224	PIN - roll . . . . .	4
34	D 78379	TURBINE . . . . .	1
35	D 37020	GASKET - ring . . . . .	1
36	D 52481	HOUSING - rotating . . . . .	1
37	D 52482	SHIM - flex plate . . . . .	3
38	D 52483	PLATE - flex . . . . .	1
39	D 52484	WASHER - special, support . . . . .	1
40	13- 514	HHCS - 5/16" - 18 NC x 7/8" . . . . .	18
40A	A 22873	WASHER - special. . . . .	18
40B	G 15457	O-RING - flywheel pilot. . . . .	1
41	D 37016	PILOT - flywheel. . . . .	1
42	D 73739	STUD - flywheel pilot retaining . . . . .	6
43	25- 116	NUT - hex, 3/8" - 24 NF . . . . .	6
44	D 32013	PLUG - relief valve . . . . .	2
45	D 32119	WASHER - copper. . . . .	2
46	*D 72856	SPRING - inner converter Sn. 3E501 and after. . . . .	1
47	*D 72857	SPRING - outer . . . . .	1
48	D 37018	PISTON - relief valve . . . . .	1
49	D 37012	SPRING - relief valve . . . . .	1
50	D 32014	PISTON - relief valve . . . . .	1

\*NOTE: Converters before Sn 3E501, spring (Items 46 and 47) must be serviced as sets.

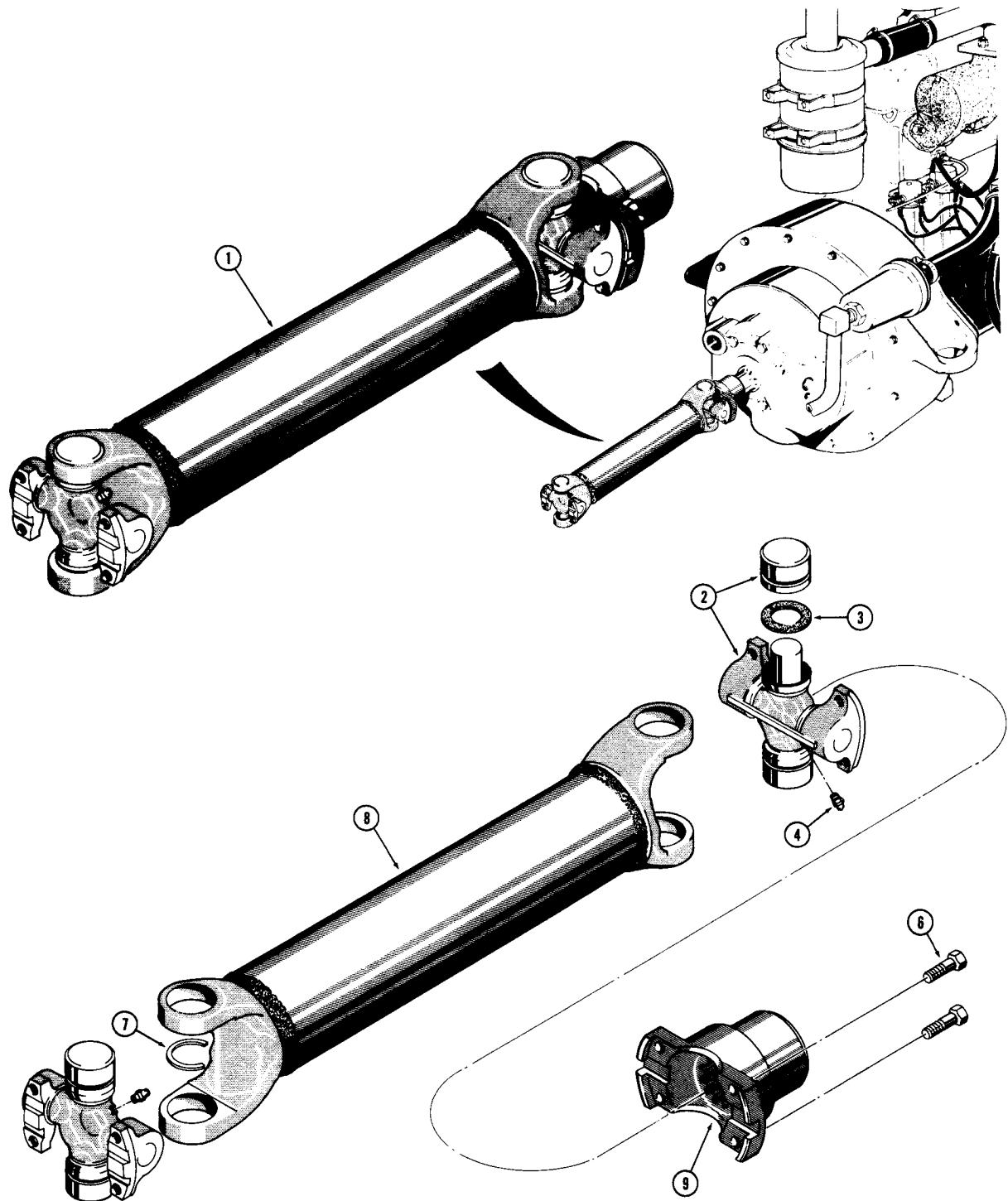


## MODEL 450 CRAWLER TRACTOR

93

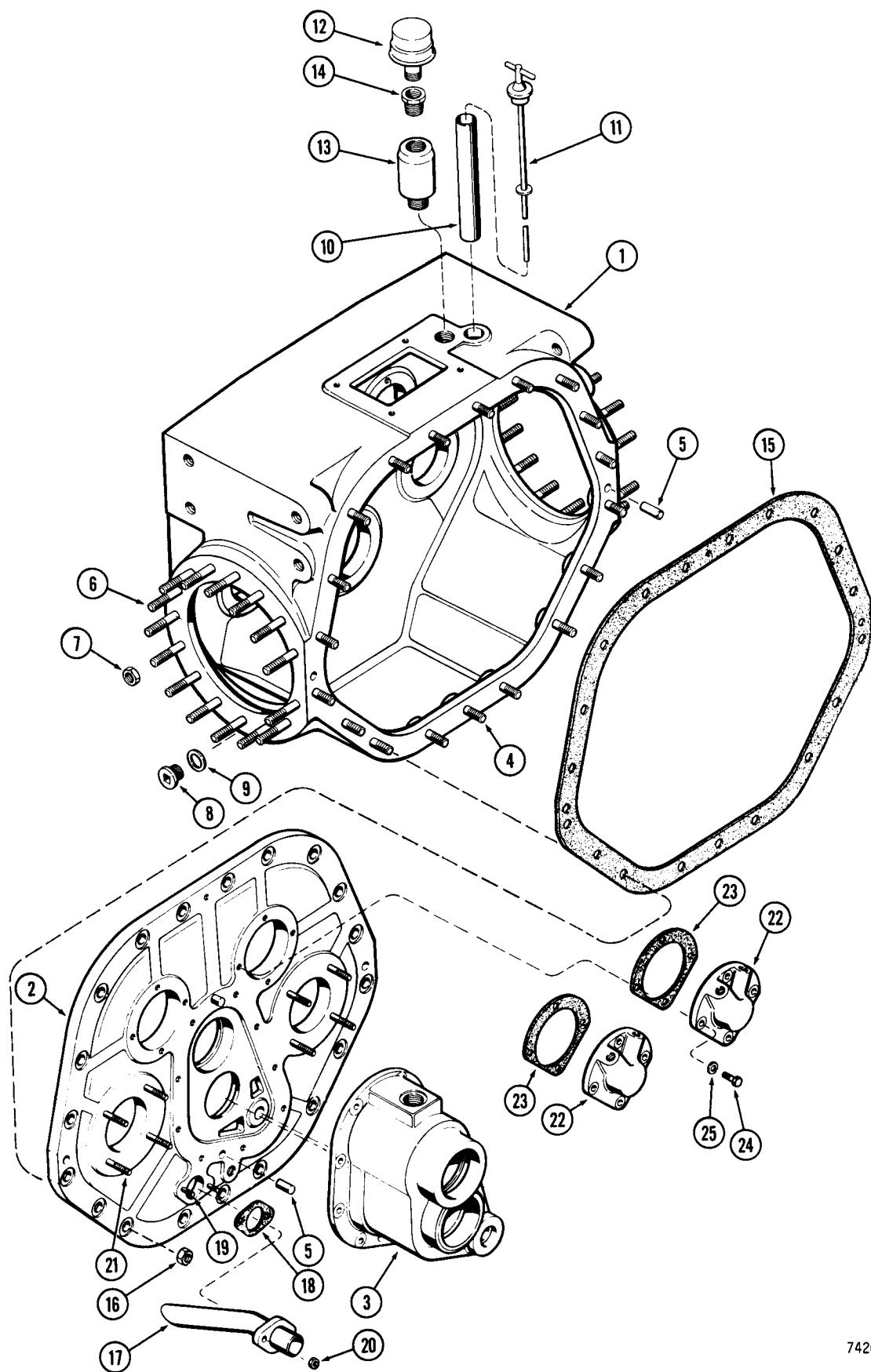
## TORQUE CONVERTER PUMP AND MOUNTING

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 35016	PUMP - torque converter, complete .....	1
1	A 25594	GEAR - pinion.....	1
2	F 18390	NUT - special .....	1
3	132- 5	PIN - cotter .....	1
4	195- 25	WASHER - plain.....	1
5	126- 109	KEY - Woodruff .....	1
	D 37157	SET - gear, drive and driven .....	1
6	NSS	GEAR - drive .....	1
7	NSS	GEAR - driven .....	1
	D 37172	KIT - seal repair.....	1
8	A 50421	SEAL - shaft.....	1
9	A 35958	SEAL - O-ring, bearing.....	2
10	D 37173	SEAL - O-ring, body .....	1
11	D 37174	BEARING - drive gear front.....	1
12	A 35955	BEARING - idler gear front .....	1
13	D 37175	BEARING - rear .....	2
14	D 37046	BODY - pump .....	1
15	D 37047	COVER - pump .....	1
16	13- 624	HHCS - 3/8" - 16 NC x 1-1/2" .....	4
17	195- 2028	WASHER - flat, 3/8" .....	4
18	13- 652	HHCS - 3/8" - 16 NC x 3-1/4" .....	3
19	92- 6	WASHER - lock, 3/8" .....	3
20	A 30042	GASKET - pump to engine .....	1



## DRIVE SHAFT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 35013	DRIVE SHAFT AND UNIVERSAL ASSEMBLY - complete .....	1
	D 73652	SPIDER AND BEARING ASSEMBLY.....	2
2	NSS	SPIDER AND BEARINGS .....	1
3	31719	WASHER - cork .....	4
4	219- 20	FITTING - straight, grease 1/4" NPT .....	1
5		RESERVED	
6	A 14723	BOLT - special .....	4
7	D 37041	RING - snap .....	2
8	D 37037	TUBE - drive shaft .....	1
9	D 37038	YOKE - drive shaft .....	1

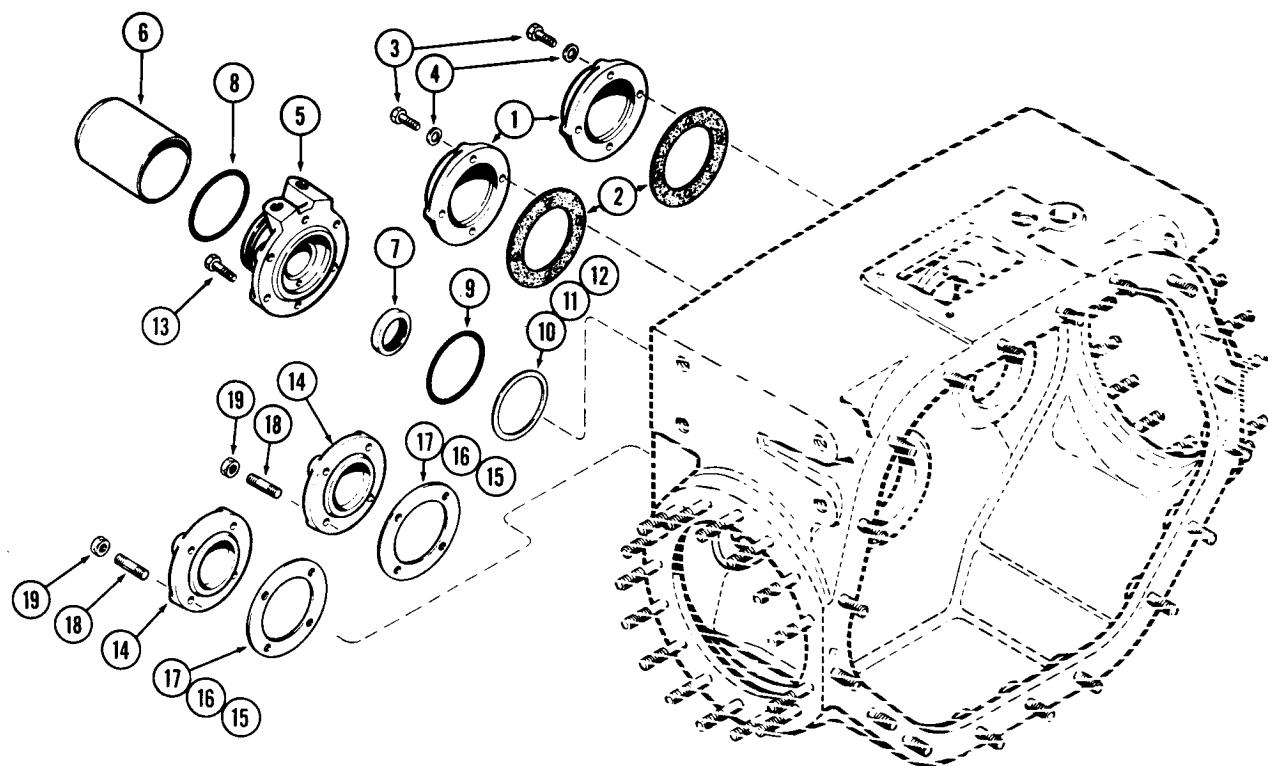


# MODEL 450 CRAWLER TRACTOR

97

## TRANSMISSION HOUSING AND FRONT COVERS

REF.	PART NO.	DESCRIPTION	REQ'D.
	A 54115	TRANSMISSION - Loader Models before Transmission Sn 2791407, see pages 97 thru 121 for complete transmission .....	1
	A 51924	TRANSMISSION - Loader models transmission Sn. 2791408 and after, see pages 97 thru 121 for complete transmission .....	1
	A 54116	TRANSMISSION - Dozer and Drawbar Models before Transmission Sn. 2791294, see pages 97 thru 121 for complete transmission .....	1
	A 51925	TRANSMISSION - Dozer and Drawbar Models transmission Sn. 2791295 and after, see pages 97 thru 121 for complete transmission .....	1
	A 50467	HOUSING ASSEMBLY - Used transmission Sn. 2661238 thru 2791294 ..	1
	G 35206	HOUSING ASSEMBLY - Used transmission Sn. 2791295 and after ..	1
1	NSS	HOUSING - transmission .....	1
2	NSS	COVER - housing, front. ....	1
3	NSS	HOUSING - two speed shift, parts list page 101.....	1
4	A 50249	STUD - 9/16" - 12 NC x 2-3/8" .....	19
5	A 50247	PIN - 1/2" x 1-1/4" .....	4
6	G 102017	STUD - 1/2" NC x 3" .....	28-30
7	131- 156	NUT - hex self lock, 1/2" x 13 NC .....	28-30
8	R 14777	PLUG - drain, transmission .....	1
9	A 58613	WASHER - drain plug .....	1
10	A 50018	TUBE - oil level gauge .....	1
11	A 50225	DIPSTICK - oil level gauge .....	1
12	A 27173	BREATHER ASSEMBLY - transmission .....	1
13	A 50116	BAFFLE - breather .....	1
14	221- 58	BUSHING - reducer, 3/4" to 1/4" .....	1
15	G 35334	GASKET - front cover to housing.....	1
16	131- 735	NUT - hex self lock, 9/16" x 12 NC .....	19
17	A 50110	TUBE - oil suction.....	1
18	A 50109	GASKET - tube .....	1
19	A 50362	STUD - 3/8" - 16 NC x 1-3/8".....	2
20	25- 106	NUT - hex, 3/8" - 16 NC .....	2
21	G 102126	STUD - 1/2" - 13 NC x 2-1/8".....	8
22	A 50057	COVER - oil inlet, uses 13-618.....	2
22	G 102244	COVER - oil inlet, uses 13-620.....	2
23	A 50056	GASKET - front inlet cover .....	2
24	13- 618	HHCS - 3/8" - 16 NC x 1-1/4", A50057 cover.....	8
24	13- 620	HHCS - 3/8" - 16 NC x 1-1/4", G102244.....	8
25	A 22317	WASHER - mounting bolt, copper.....	8

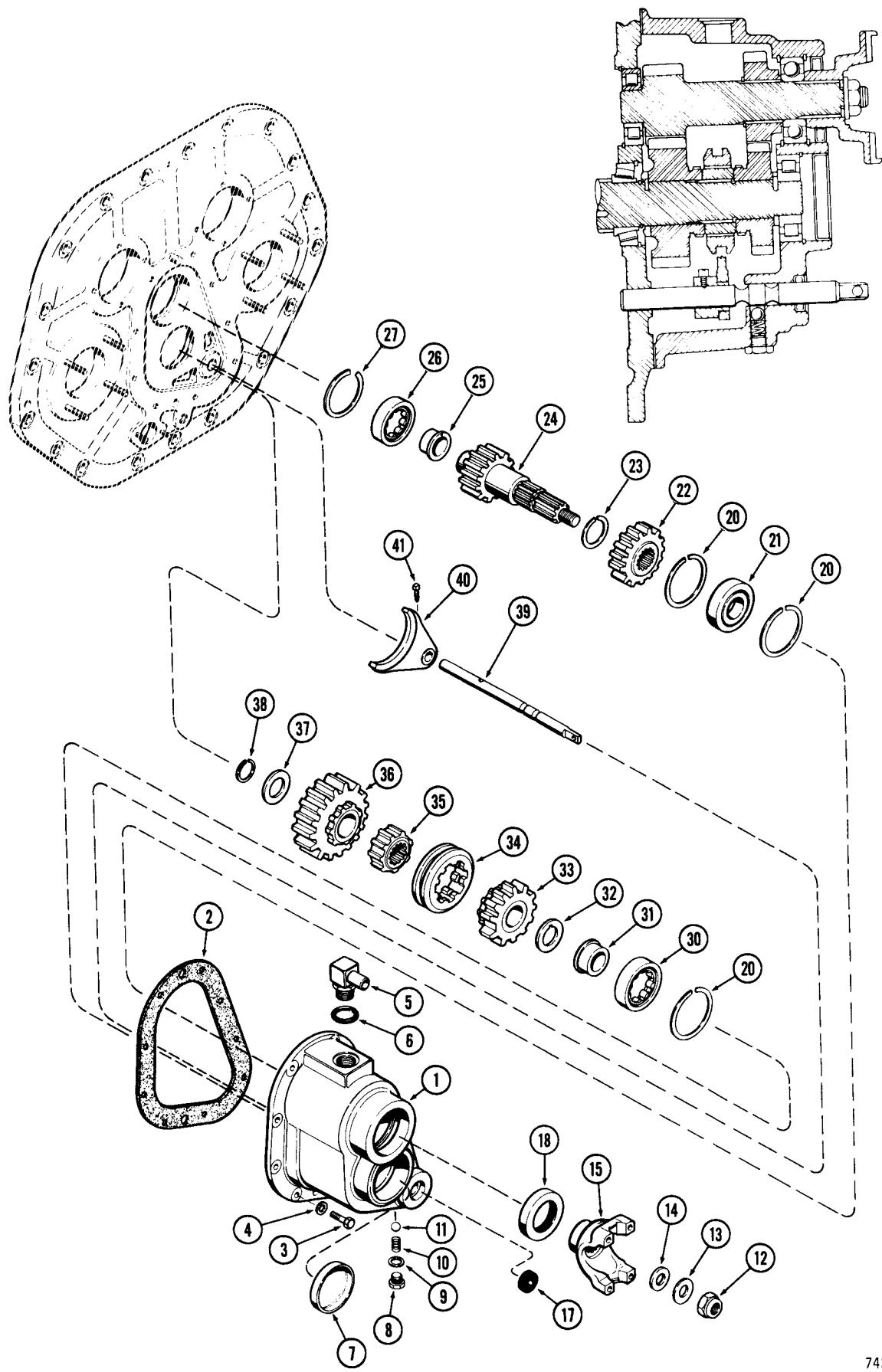


**MODEL 450 CRAWLER TRACTOR**

99

**TRANSMISSION HOUSING REAR COVERS**

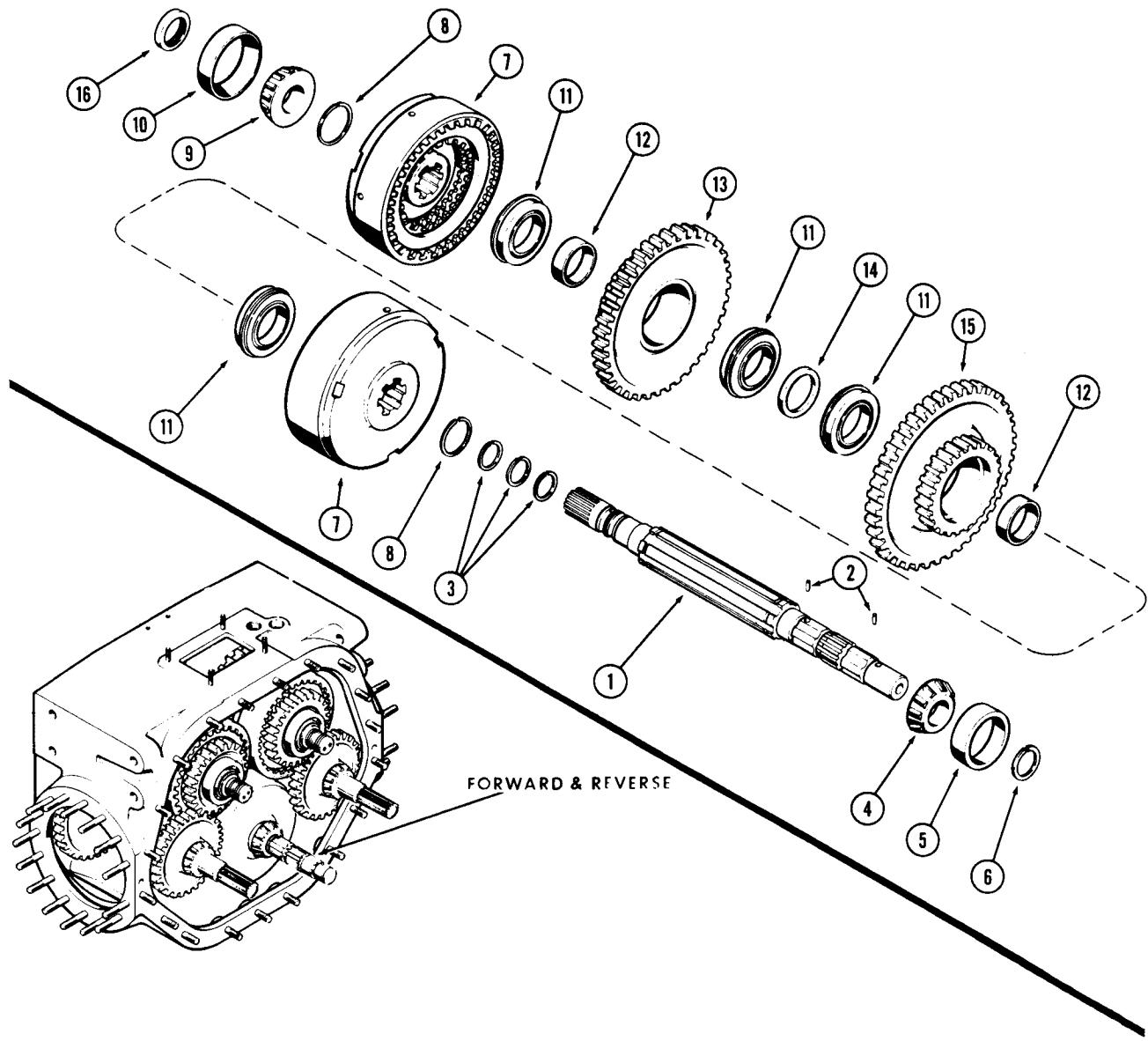
REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 50060	COVER - clutch shafts .....	2
2	A 50058	GASKET - clutch covers .....	2
3	13- 624	HHCS - 3/8" - 16 NC x 1-1/2" .....	8
4	A 22317	WASHER - copper .....	8
5	A 50578	COVER - forward-reverse and PTO shaft, uses 13-616 bolts .....	1
5	G 102243	COVER - forward-reverse and PTO shaft, uses 13-618 and 13-632 bolts .....	1
6	A 54111	COVER - PTO shaft .....	1
7	A 54107	SEAL - oil, PTO shaft.....	1
8	A 28318	O-RING - winch models only.....	1
9	A 50055	RING - cover sealing, rubber.....	1
10	A 50053	SHIM - .003" (.076 mm) .....	UAR
11	40590	SHIM - .005" (.127 mm) .....	UAR
12	40591	SHIM - .010" (2.54 mm) .....	UAR
13	13- 616	HHCS - 3/8" - 16 NC x 1", A50578 cover .....	6
13	13- 618	HHCS - 3/8" - 16 NC x 1-1/8", G102243 cover.....	5
13	13- 632	HHCS - 3/8" - 16 NC x 2", G102243 cover .....	1
14	A 50271	COVER - pinion shafts .....	2
15	A 50348	SHIM - .003" (.076 mm) .....	UAR
16	A 50272	SHIM - .005" (.127 mm) .....	UAR
17	A 50347	SHIM - .010" (2.54 mm) .....	UAR
18	G 102128	STUD - 3/8" - 16 NC x 1-1/2".....	8
19	25- 106	NUT - hex , 3/8" - 16 NC.....	8



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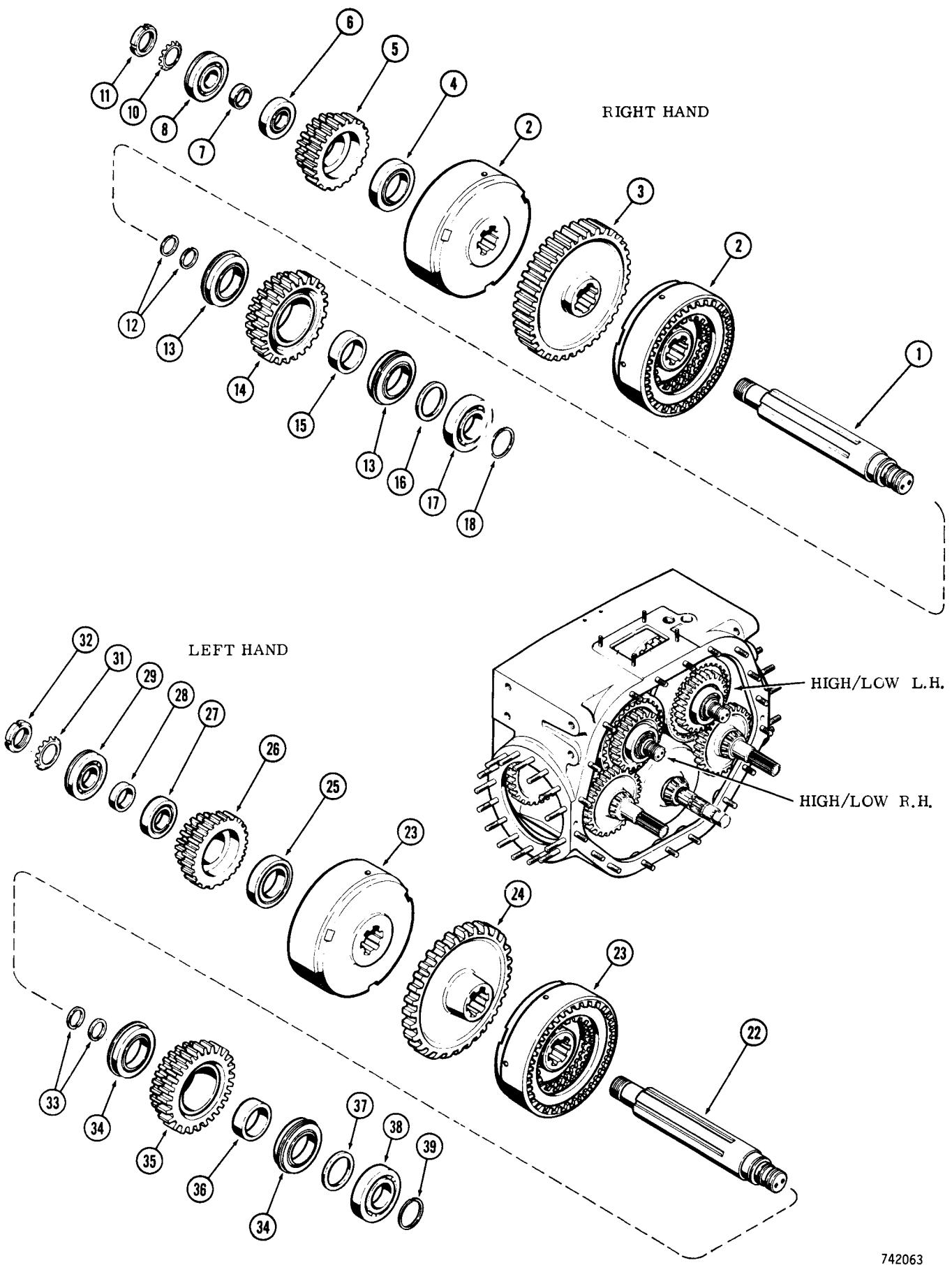
## TRANSMISSION MECHANICAL RANGE SHIFT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	NSS	HOUSING - two speed shift, see page 97 for ordering.....	1
2	A 50269	GASKET - shift housing to front cover .....	1
3	166- 46	SCREW - ferry head, 12 point, 3/8" - 16 NC x 1-1/4" .....	9
4	A 22317	WASHER - copper .....	9
5	217- 363	FITTING - 90°, adjustable .....	1
6	218- 5008	O-RING .....	1
7	A 50268	PLUG - special .....	1
8	A 50094	SCREW - range selector detent cap .....	1
9	A 50093	WASHER - detent cap screw .....	1
10	A 50092	SPRING - selector detent .....	1
11	211- 13	BALL - steel, 1/2" dia.....	1
12	131- 37	NUT - hex self lock, 3/4" - 16 NF .....	1
13	32601	WASHER - flange retaining.....	1
14	34395	WASHER - flange seal .....	1
15	A 50581	FLANGE - universal .....	1
16		RESERVED	
17	A 50421	SEAL - oil, selector shaft .....	1
18	A 50420	SEAL - oil, range housing .....	1
19		RESERVED	
20	R 13804	RING - snap, bearing retainer .....	3
21	A 26537	BEARING - ball, drive gear shaft front .....	1
22	A 51927	GEAR - driver, input shaft (25 teeth) A51924 and 51925 Transmission ..	1
22	A 50515	GEAR - driver, input shaft, A54116 and A54115 transmission.....	1
23	R 15364	RING - snap, driver gear .....	1
24	A 50365	SHAFT - range drive gear .....	1
25	A 50077	RING - inner, roller bearing .....	1
26	A 50255	BEARING - roller, outer ring & rollers .....	1
27	A 27417	RING - snap, roller bearing retainer .....	1
28		RESERVED	
29		RESERVED	
30	A 50258	BEARING ASSEMBLY - roller .....	1
31	A 50332	RING - inner, roller bearing .....	1
32	A 50333	WASHER - thrust, range gear .....	1
33	A 51928	GEAR - clutch, 20 and 32 teeth, A51924 and A51925 Transmission .....	1
33	A 50516	GEAR - A54116 and A54115 transmission .....	1
34	A 51806	SLEEVE - range selector .....	1
35	A 50502	COLLAR - range selector .....	1
36	A 50517	GEAR - rear driven shift range .....	1
37	A 50071	WASHER - thrust, rear driven gear .....	1
38	A 26946	RING - snap, rear driven gear retainer .....	1
39	A 51886	SHAFT - range selector .....	1
40	A 51469	FORK - range selector shaft .....	1
41	A 7044	SCREW - retaining, selector fork .....	1
42	R 10831	WIRE - tie (Not shown) .....	1



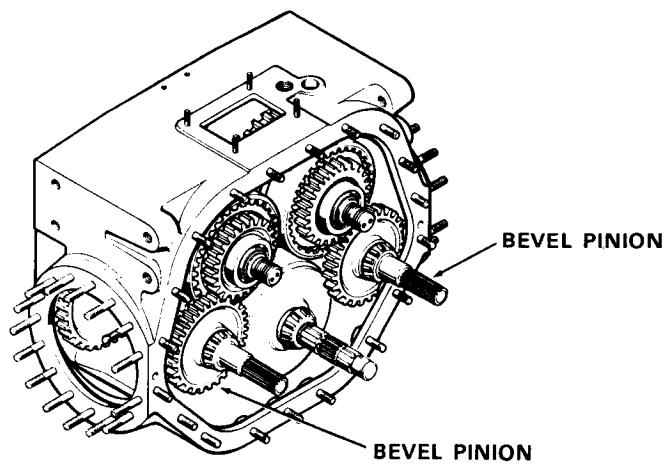
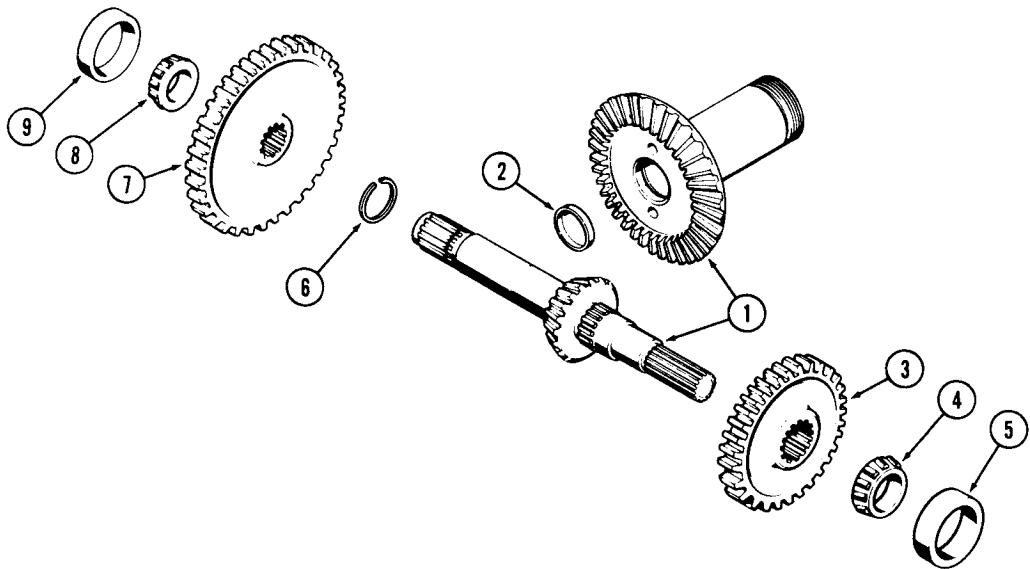
## TRANSMISSION FORWARD-REVERSE CLUTCH AND P.T.O. SHAFT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 54108	SHAFT ASSY. - forward and reverse clutch and constant running P.T.O. ....	1
1A	211- 7	BALL - steel, 1/4" dia. (Not shown) .....	1
1B	211- 11	BALL - steel, 1-3/8" dia. (Not shown) .....	1
2	138- 68	PIN - roll, 5/32" x 7/16" .....	2
3	A 51841	RING - seal, clutch shaft oil collector .....	3
4	A 30076	CONE - bearing .....	1
5	G 15202	CUP - bearing .....	1
6	R 20786	RING - snap, front bearing retaining .....	1
7	REF.	CLUTCH ASSEMBLY - forward and reverse, parts list page 109B. ....	2
8	A 50046	RING - snap, clutch retaining .....	2
9	A 50048	CONE - bearing, clutch shaft, rear .....	1
10	A 27138	CUP - bearing, clutch shaft, rear .....	1
11	40027	BEARING ASSEMBLY - clutch .....	4
12	A 50293	SPACER - clutch bearings .....	2
13	A 50506	GEAR - drive, forward clutch .....	1
14	A 50034	SPACER - drive gears .....	1
15	A 50505	GEAR - drive, reverse clutch .....	1
16	A 54107	SEAL - oil, P.T.O. shaft .....	1



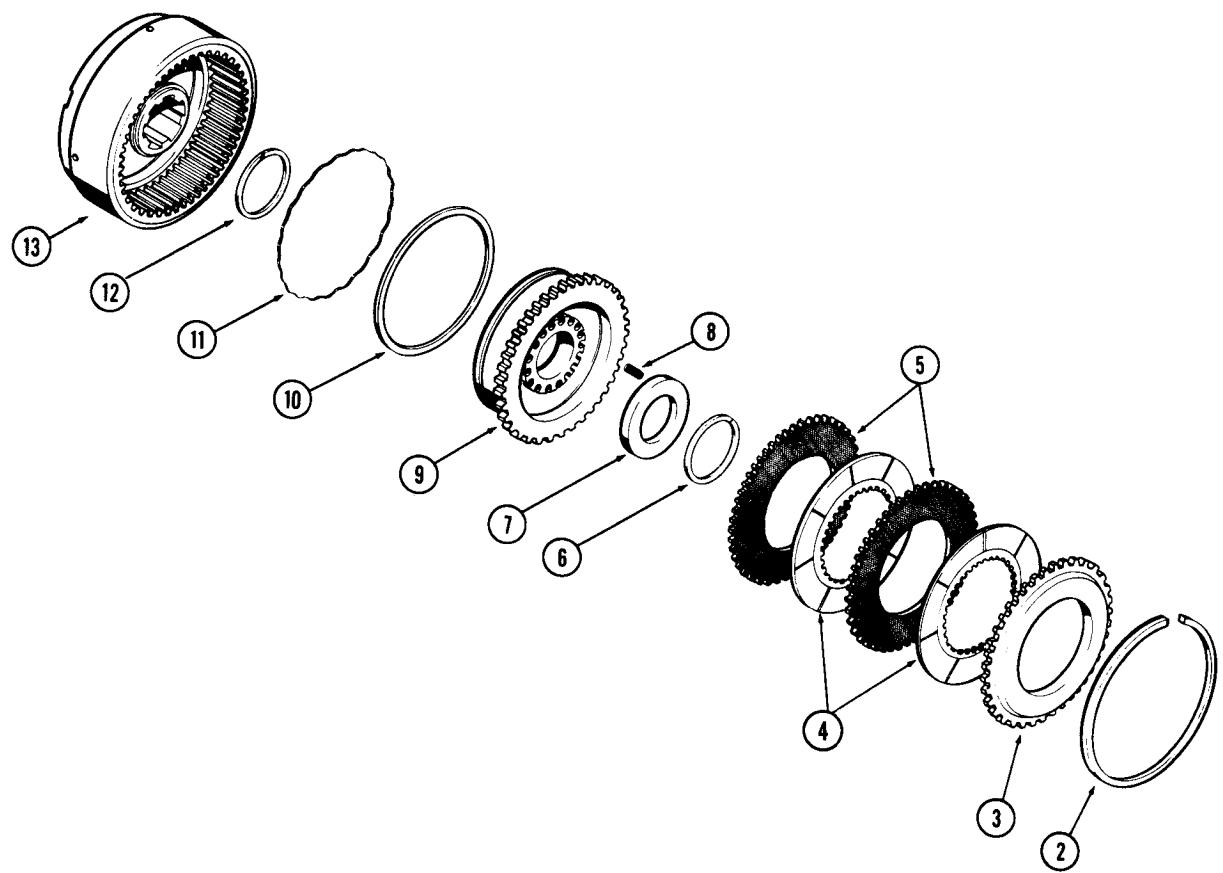
## TRANSMISSION HIGH AND LOW CLUTCH SHAFTS

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>R.H. CLUTCH AND SHAFT</b>			
1	A 50521	SHAFT ASSY.....	1
1A	211- 7	BALL - steel, 1/4" (Not shown) .....	1
2	REF.	CLUTCH ASSEMBLY - high/low, parts list page 109 .....	2
3	A 50508	GEAR - drive .....	1
4	G 10418	BEARING - ball, low clutch gear, inner .....	1
5	A 50574	GEAR - drive, low clutch .....	1
6	40025	BEARING - ball, low clutch gear, outer .....	1
7	A 50036	SPACER - low clutch drive gear bearing .....	1
8	40031	BEARING ASSEMBLY - clutch shaft, rear .....	1
9		RESERVED	
10	192- 307	WASHER - lock .....	1
11	131- 1007	NUT - hex, self lock .....	1
13	40027	BEARING ASSEMBLY - high clutch gear .....	2
14	A 50509	GEAR - drive, high clutch .....	1
15	A 50035	SPACER - high clutch gear bearings .....	1
16	A 50034	SPACER - front clutch shaft bearing .....	1
17	B 18274	BEARING - ball, front.....	1
18	A 50033	RING - snap.....	1
19		RESERVED	
20		RESERVED	
<b>L.H. CLUTCH AND SHAFT</b>			
21	A 50521	SHAFT ASSEMBLY .....	1
22	211- 7	BALL - steel, 1/4" (Not shown) .....	1
23	REF.	CLUTCH ASSEMBLY - high/low, parts list page 109 .....	2
24	A 50511	GEAR - drive .....	1
25	G 10418	BEARING - ball, low clutch gear, inner .....	1
26	A 50574	GEAR - drive, low clutch .....	1
27	40025	BEARING - ball, low clutch gear, outer .....	1
28	A 50036	SPACER - low clutch drive gear bearing .....	1
29	40031	BEARING ASSEMBLY - clutch shaft, rear .....	1
30		RESERVED	
31	192- 307	WASHER - lock .....	1
32	131- 1007	NUT - hex, self lock .....	1
33	A 50389	RING - seal .....	2
34	40027	BEARING ASSEMBLY - high clutch gear .....	2
35	A 50509	GEAR - drive, high clutch .....	1
36	A 50035	SPACER - high clutch gear bearings .....	1
37	A 50034	SPACER - front clutch shaft bearing .....	1
38	B 18274	BEARING - ball, front.....	1
39	A 50033	RING - snap.....	1



## TRANSMISSION BEVEL PINION AND SHAFT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 50275	PINION AND GEAR SET - matched.....	2
2	A 50099	PLUG - special .....	2
3	A 50512	GEAR - drive, high clutch (A51924 and A51925 Transmission).....	2
3	A 51930	GEAR - drive, high clutch (A51924 and A51925 Transmission).....	2
4	A 31264	CONE - pinion shaft front bearing.....	2
5	F 62007	CUP - pinion shaft front bearing .....	2
6	A 27085	RING - snap, low clutch driven gear retaining.....	2
7	A 50575	GEAR - driven, low clutch .....	2
8	A 26719	CONE - high-low clutch rear bearing .....	2
9	A 50264	CUP - high-low clutch rear bearing.....	2



**MODEL 450 CRAWLER TRACTOR**

109

**TRANSMISSION HIGH AND LOW SPEED CLUTCH**

REF.	PART NO.	DESCRIPTION	REQ'D.
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**For Identification: Items 4 and 5 have 3/32" (2.29 mm) Steel Core**

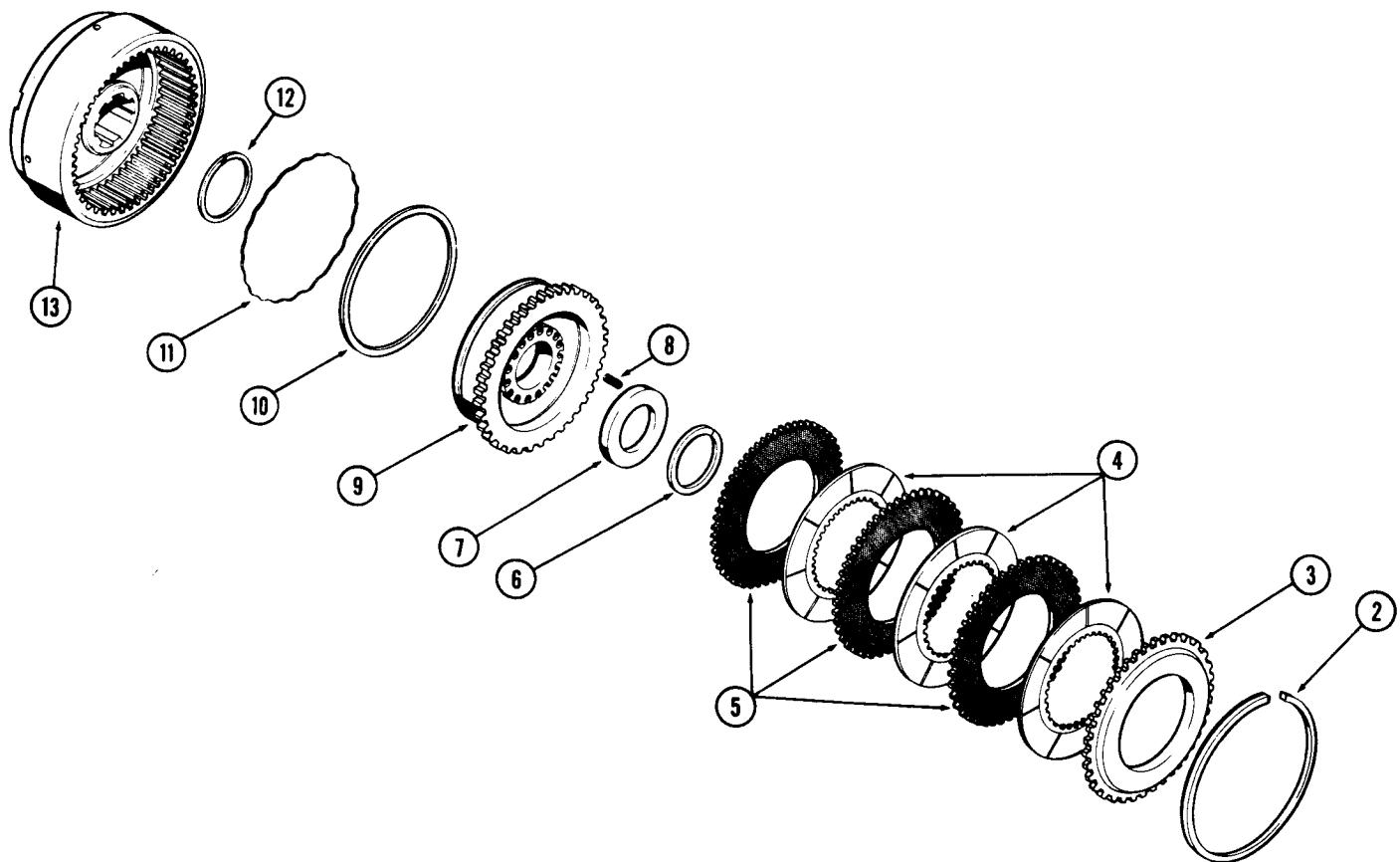
1	A 50412	CLUTCH ASSEMBLY .....	4
2	30785	RING - snap .....	1
3	A 50030	PLATE - clutch backing.....	1
4	*A 50029	DISC - sintered, internal teeth .....	1
5	*A 50028	DISC - steel, external teeth .....	2
6	A 27233	RING - snap, spring retainer .....	2
7	R 11016	RETAINER - clutch spring .....	1
8	A 51825	SPRING - clutch .....	1
9	A 50571	PISTON - clutch, aluminum .....	18
10	A 50414	RING - sealing, piston .....	1
11	A 50416	EXPANDER - piston ring .....	1
12	A 50415	RING - sealing, drum hub .....	1
13	A 50288	DRUM - clutch .....	1

REF.	PART NO.	DESCRIPTION	REQ'D.
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**For Identification: Items 4 and 5 have 1/8" (3.05 mm) Steel Core**

1	G 102375	CLUTCH ASSEMBLY .....	4
2	30785	RING - snap .....	1
3	A 50030	PLATE - clutch backing.....	1
4	G 102354	DISC - sintered, internal teeth .....	3
5	G 101711	DISC - steel, external teeth .....	3
6	A 27233	RING - snap, spring retainer .....	1
7	R 11016	RETAINER - clutch spring .....	1
8	A 51825	SPRING - clutch .....	1
9	A 50571	PISTON - clutch, aluminum .....	18
10	A 50414	RING - sealing, piston .....	1
11	A 50416	EXPANDER - piston ring .....	1
12	A 50415	RING - sealing, drum hub .....	1
13	A 50290	DRUM - clutch .....	1

**\*NOTE:** A50029 and A50028 may be serviced as sets with G102354 and G101711. Never mix A50029 or A50028 with G102354 or G101711.



## TRANSMISSION FORWARD AND REVERSE CLUTCHES

REF.	PART NO.	DESCRIPTION	REQ'D.
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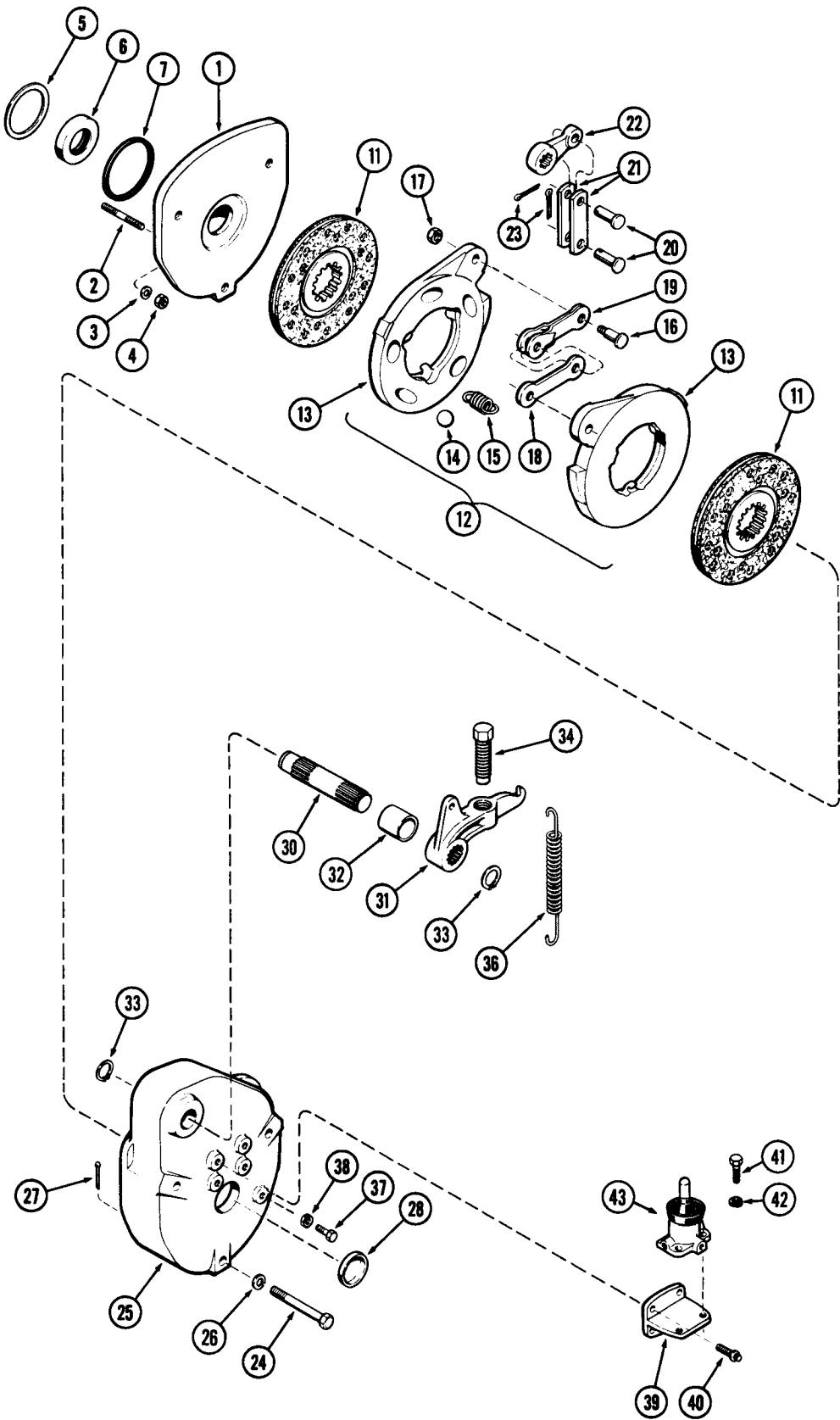
**For Identification: Items 4 and 5 have 3/32" (2.29 mm) Steel Core**

1	A 50411	CLUTCH ASSEMBLY .....	2
2	30785	RING - snap .....	1
3	A 50030	PLATE - clutch backing .....	1
4	*A 50029	DISC - sintered, internal teeth .....	3
5	*A 50028	DISC - steel, external teeth .....	3
6	A 27233	RING - snap, spring retainer .....	1
7	R 11016	RETAINER - clutch spring .....	1
8	A 51825	SPRING - clutch .....	18
9	A 50571	PISTON - clutch, aluminum .....	1
10	A 50414	RING - sealing, piston .....	1
11	A 50416	EXPANDER - piston ring .....	1
12	A 50415	RING - sealing, drum hub .....	1
13	A 50288	DRUM - clutch .....	1

**For Identification: Items 4 and 5 have 1/8" (3.05 mm) Steel Core**

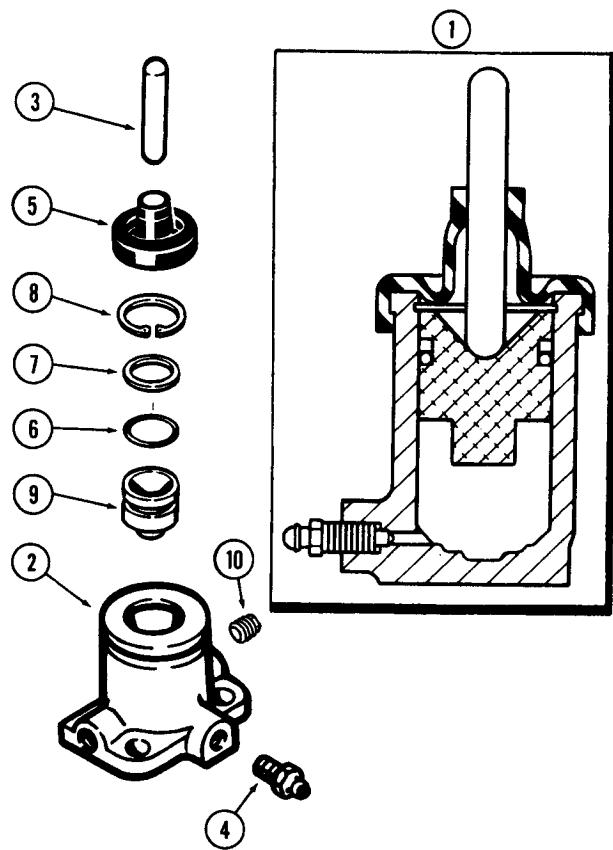
1	G 102376	CLUTCH ASSEMBLY .....	2
2	30785	RING - snap .....	1
3	A 50030	PLATE - clutch backing .....	1
4	G 102354	DISC - sintered, internal teeth .....	3
5	G 101711	DISC - steel, external teeth .....	3
6	A 27233	RING - snap, spring retainer .....	1
7	R 11016	RETAINER - clutch spring .....	1
8	A 51825	SPRING - clutch .....	18
9	A 50571	PISTON - clutch, aluminum .....	1
10	A 50414	RING - sealing, piston .....	1
11	A 50416	EXPANDER - piston ring .....	1
12	A 50415	RING - sealing, drum hub .....	1
13	A 50290	DRUM - clutch .....	1

\*NOTE: A50029 and A50028 may be serviced as sets with G102354 and G101711. Never mix A50029 or A50028 with G102354 or G101711.



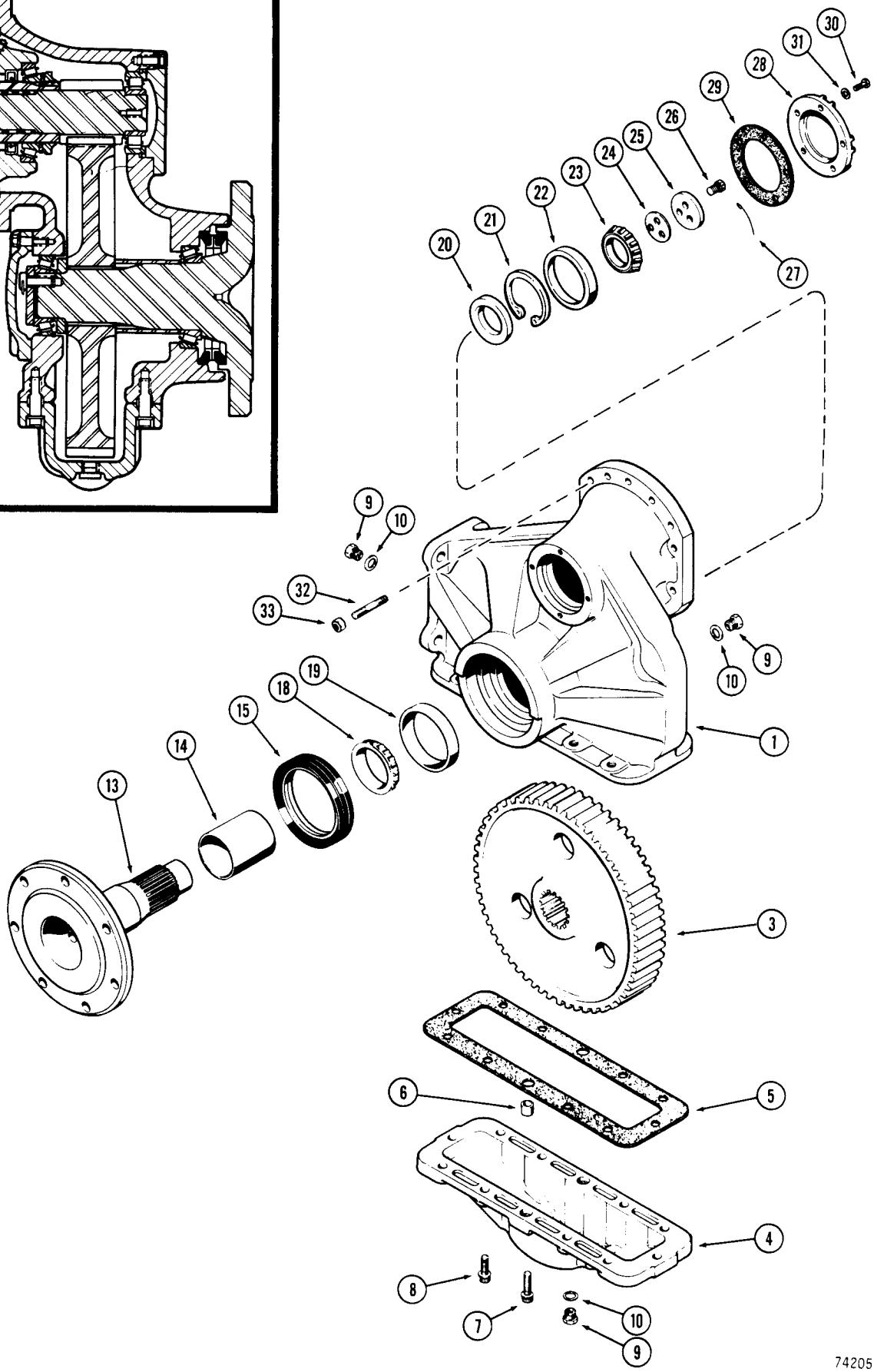
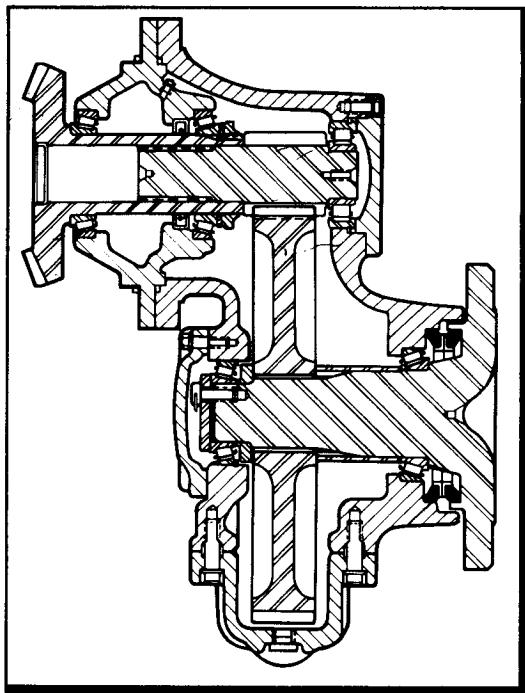
## TRANSMISSION HYDRAULIC BRAKES

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 50184	PLATE - mounting, L.H. and R.H. brake.....	2
2	G 102126	STUD - 1/2" - 13 NC x 2-1/8".....	8
3	92- 8	WASHER - lock, 1/2" .....	8
4	25- 108	NUT - hex, 1/2" - 13 NC .....	8
5	A 50061	SHIM - .003" (.076 mm) .....	UAR
5	A 50062	SHIM - .005" (.127 mm) .....	UAR
5	A 50063	SHIM - .010" (2.54 mm) .....	UAR
6	A 50418	SEAL - oil, pinion shaft .....	2
7	A 50055	RING - seal, brake plate .....	2
8		RESERVED	
9		RESERVED	
10		RESERVED	
11	G 100318	DISC - double, Bonded .....	4
12	R 18531	ACTUATOR ASSEMBLY - brake.....	2
13	NSS	PLATE - actuator, brake .....	2
14	211- 19	BALL - 7/8" dia. steel .....	5
15	A 30897	SPRING - actuator extension .....	3
16	A 30898	STUD - brake link.....	2
17	25- 155	NUT - hex., lock, 5/16" - 24 NF .....	2
18	R 18533	LINK - single rib, actuator .....	1
19	F 77868	LINK - yoke, actuating link .....	1
20	R 15370	PIN - link, brake pull .....	4
21	R 15369	LINK - brake pull .....	4
22	R 15372	LEVER - brake link pull .....	2
23	132- 26	PIN - cotter, 3/32" x 3/4" .....	4
24	13- 856	HHCS - 1/2" - 13 NC x 3-1/2" .....	6
25	A 50206	COVER - brake, R.H. .....	1
25	A 50207	COVER - brake, L.H. .....	1
26	92- 8	WASHER - lock, 1/2" .....	6
27	R 14605	PIN - cleaner, brake housing drain hole .....	4
28	A 34125	PLUG - 1-3/4" cup type.....	2
29		RESERVED	
30	A 50514	SHAFT - brake actuating.....	2
31	A 50393	LEVER - adjusting, brake.....	2
32	A 50392	SPACER - brake shaft .....	2
33	B 18208	RING - snap, brake shaft retaining .....	4
34	A 50395	BOLT - special, 3/4" - 16 NF x 2-3/4" .....	2
35		RESERVED	
36	A 50589	SPRING - return, brake lever.....	2
37	13- 626	HHCS - 3/8" - 16 NC x 1-1/2" .....	2
38	25- 106	NUT - hex, lock, 3/8" - 16 NC .....	2
39	A 50119	BRACKET - brake cylinder mounting .....	2
40	166- 45	SCREW - 3/8" - 16 NC x 2", 12 pt. head .....	8
41	13- 412	HHCS - 1/4" - 20 NC x 3/4" .....	4
42	92- 4	WASHER - lock, 1/4" .....	4
43	REF.	CYLINDER ASSEMBLY - brake, parts list page 113 .....	2



## TRANSMISSION HYDRAULIC BRAKE CYLINDERS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 50557	CYLINDER ASSEMBLY .....	2
2	NSS	BODY - brake cylinder .....	1
3	A 41489	ROD - push, brake cylinder .....	1
4	A 41491	SCREW - bleeder, cylinder .....	1
	A 42875	SEAL KIT - brake cylinder repair .....	1
5	A 41490	BOOT - dust, push rod .....	1
6	NSS	O-RING - piston .....	1
7	NSS	RING - piston .....	1
8	A 30975	RING - snap, piston retaining .....	1
9	A 42874	PISTON - cylinder .....	1
10	222- 1062	PLUG - hex head, 7/16" - 14 NC .....	2

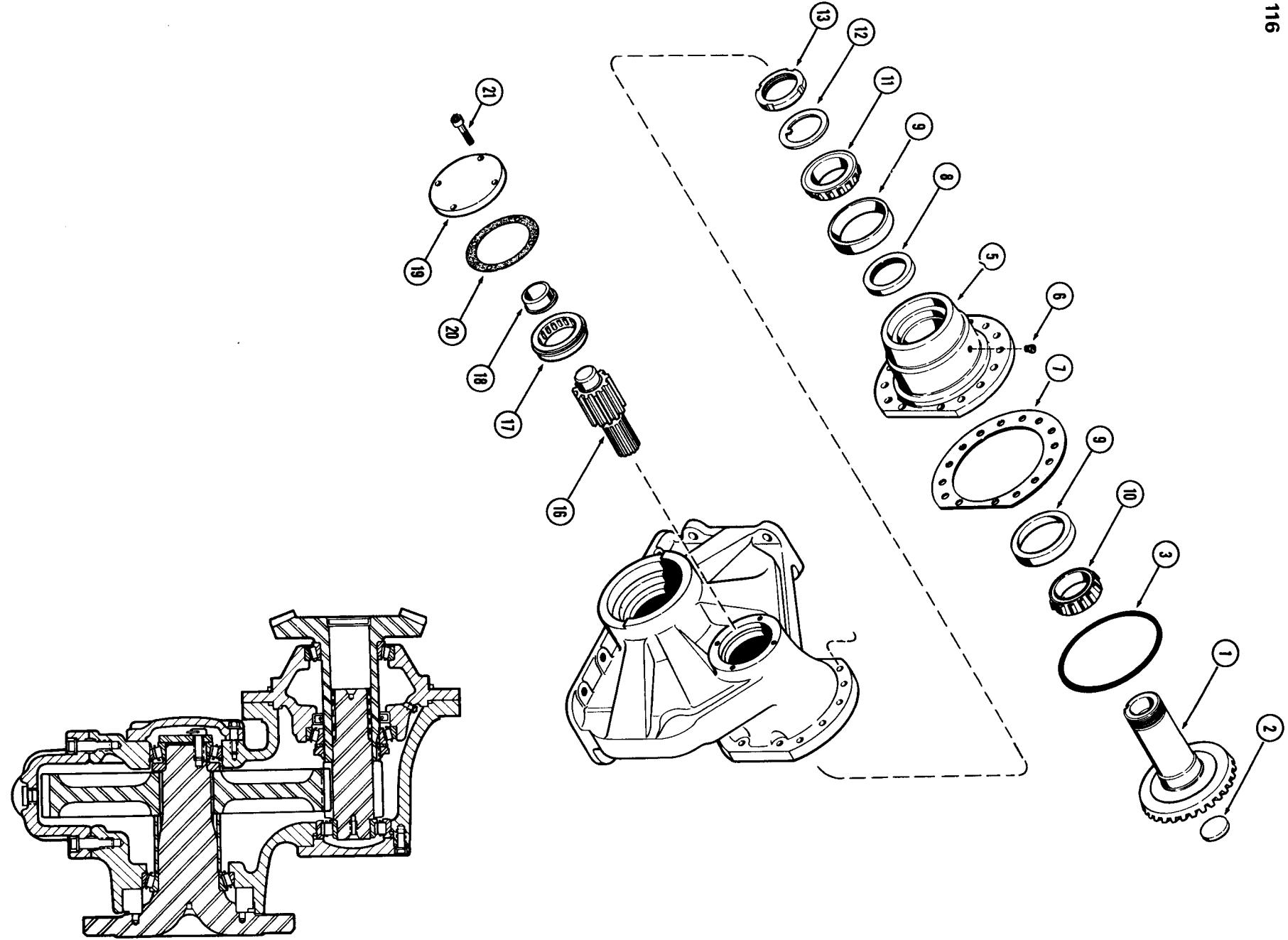


## TRANSMISSION FINAL DRIVE AND HOUSING

## 50" (1270 mm) AND 52" (1321 mm) GAUGE MODELS

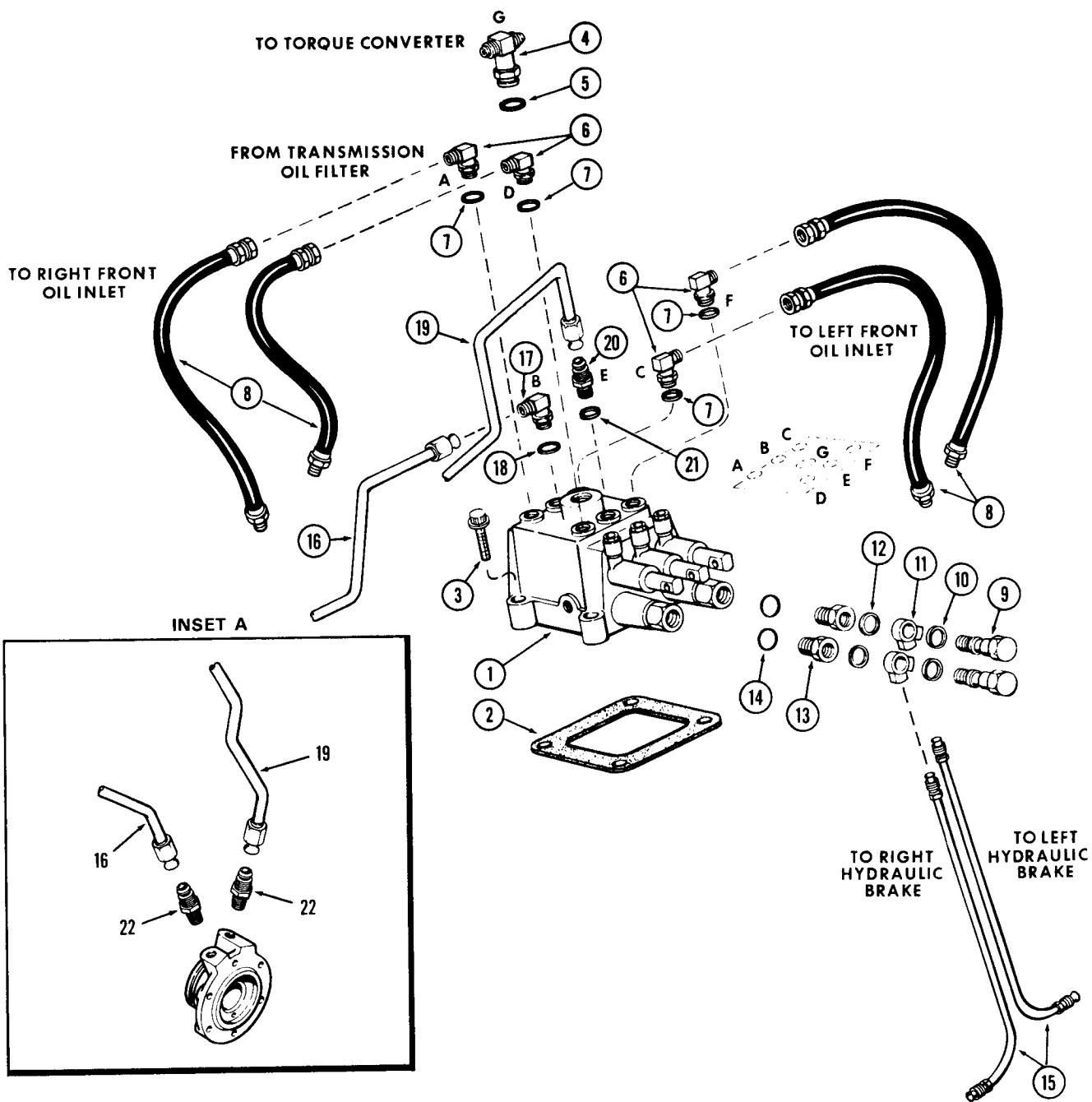
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101520	FINAL DRIVE - R.H., loader .....	1
	G 101518	FINAL DRIVE - R.H., dozer .....	1
	G 101521	FINAL DRIVE - L.H., loader .....	1
	G 101519	FINAL DRIVE - L.H., dozer .....	1
1	A 50564	HOUSING - G101520 drive .....	1
1	A 50563	HOUSING - G101519 drive .....	1
1	A 50565	HOUSING - G101521 drive .....	1
1	A 50562	HOUSING - G101518 drive .....	1
2		RESERVED	
3	* A 50214	GEAR - 2-21/32" (68 mm) spline I.D. ....	1
3	G 101531	GEAR - 3-5/64" (78 mm) spline I.D. ....	1
4	A 136860	COVER - drop, final drive .....	1
5	A 50218	GASKET - drop cover .....	1
6	A 50011	SLEEVE - dowel, drop cover locating .....	2
7	166- 88	SCREW - ferry head, 12 pt, 1/2" - 13 NC x 1-3/4"	1
8	166- 86	SCREW - ferry head, 12 pt, 1/2" - 13 NC x 1-1/4" .....	10
9	A 50014	PLUG - housing .....	3
10	A 58608	GASKET - felt, use G10141 .....	3
11	G 102141	WASHER - copper .....	1
12		RESERVED	
13	* A 51737	SHAFT - 2-13/64" (56 mm) spline O.D. ....	1
13	G 101530	SHAFT - 3-15/64" (82 mm) spline O.D. <i>G105733 3 5/64</i> .....	1
14	A 50566	SLEEVE - output shaft .....	1
15	A 50567	SEAL KIT - oil, final drive shaft .....	1
16		RESERVED	
17		RESERVED	
18	A 50100	CONE - bearing, outer .....	1
19	A 27146	CUP - bearing, outer .....	1
20	A 50215	SPACER - output shaft .....	1
21	A 30504	RING - snap .....	1
22	A 50179	CUP - bearing, inner .....	1
23	G 10414	CONE - bearing, inner .....	1
24	A 50216	SHIM - .005" (.127 mm) .....	UAR
24	A 50224	SHIM - .007" (.178 mm) .....	UAR
25	G 102108	PLATE - retainer .....	1
26	A 31107	BOLT - special, 1/2" - 13 NC x 1-1/4" .....	3
27	R 10831	WIRE - lock .....	1
28	A 50140	COVER - output shaft .....	1
29	A 50139	GASKET - cover .....	1
30	13- 620	HHCS - 3/8" - 16 NC x 1-1/4" .....	5
31	92- 6	WASHER - lock, 3/8" .....	6
32	A 50021	STUD - 1/2" - 13 NC x 3" .....	28-30
33	131- 156	NUT - hex self lock, 1/2" - 13 NC .....	28-30

\*NOTE: A50214 and A51737 may be replaced as sets with G101531 and G101530.



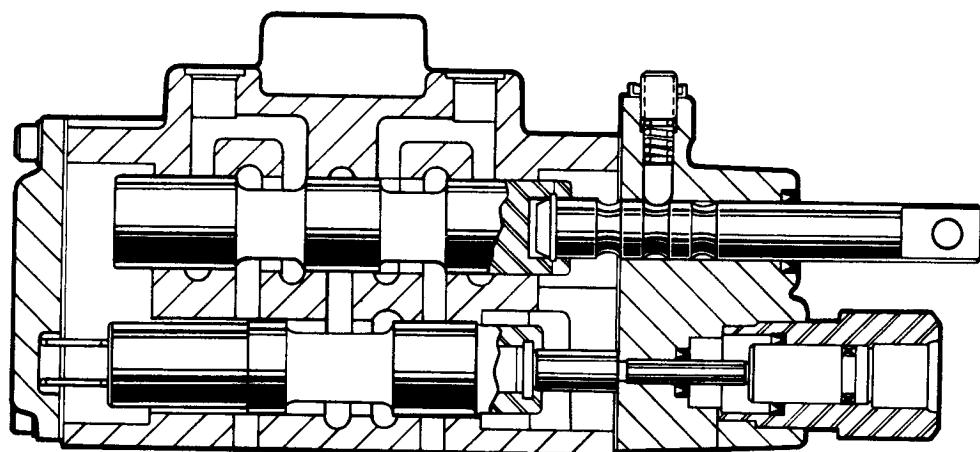
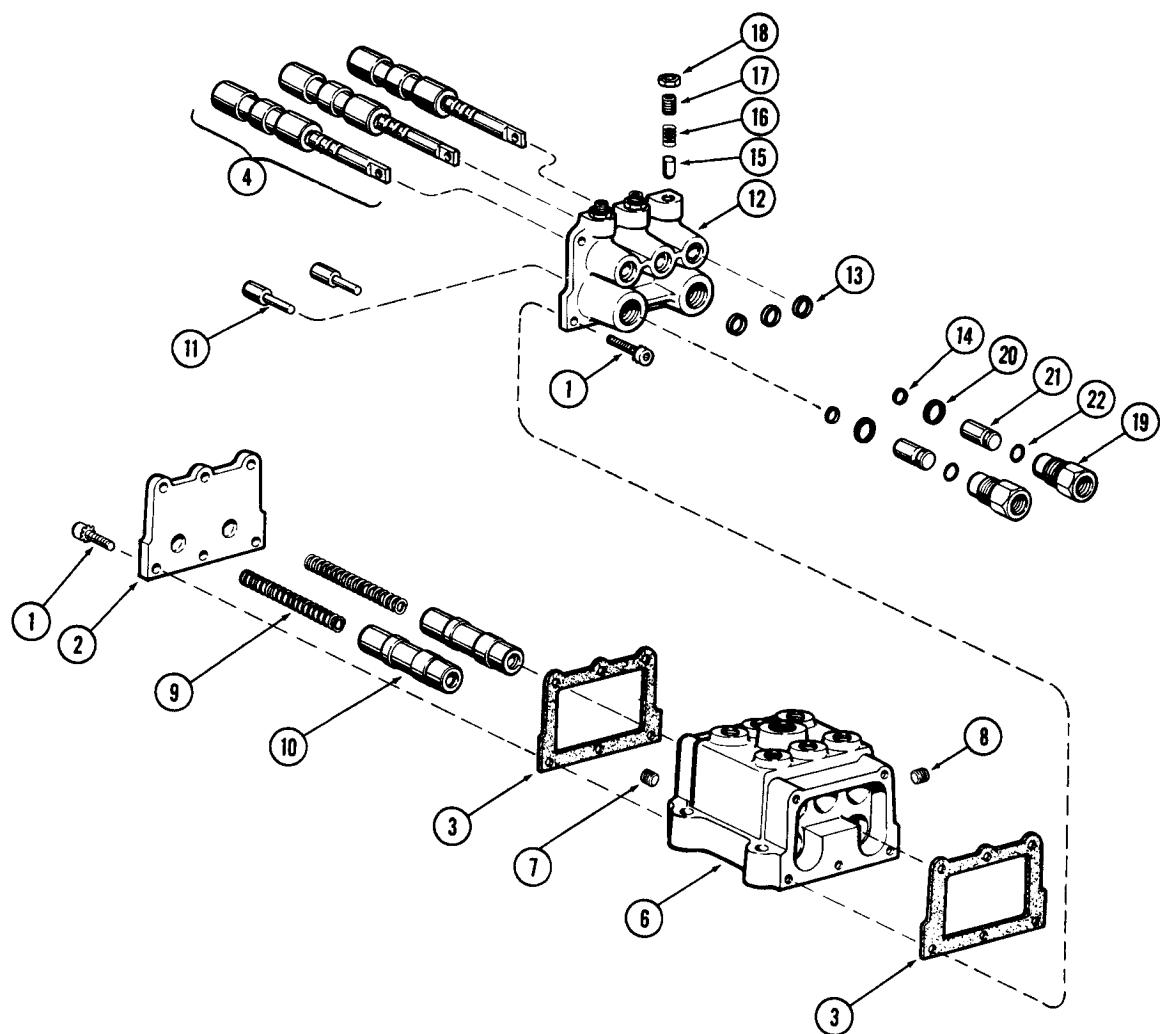
## TRANSMISSION PINION AND SHAFT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	NSS	GEAR - pinion, see page 107.....	2
2	A 50099	PLUG - special .....	2
3	A 50108	RING - seal, final drive .....	2
4		RESERVED	
5	A 50193	CARRIER - pinion gear.....	2
6	A 50096	VALVE - relief, pressure.....	2
7	A 50199	SHIM - .003" (.076 mm) .....	UAR
7	A 50198	SHIM - .005" (.127 mm) .....	UAR
8	A 50419	SEAL - oil, carrier .....	2
9	F 9803	CUP - bearing, inner and outer .....	4
10	F 9804	CONE - bearing, inner .....	2
11	A 50197	CONE - bearing, outer .....	2
12	A 50103	WASHER - keyed, bearing retaining .....	2
13	A 50167	NUT - lock, pinion gear .....	2
14		RESERVED	
15		RESERVED	
16	A 50143	SHAFT - pinion.....	2
17	A 50145	BEARING ASSEMBLY .....	2
18	A 50144	BEARING - pinion shaft, inner race .....	2
19	A 50345	COVER - pinion shaft .....	2
20	A 50346	GASKET - cover .....	2
21	61- 612	SCREW - hex socket head, 3/8" - 16 NC x 3/4" .....	6



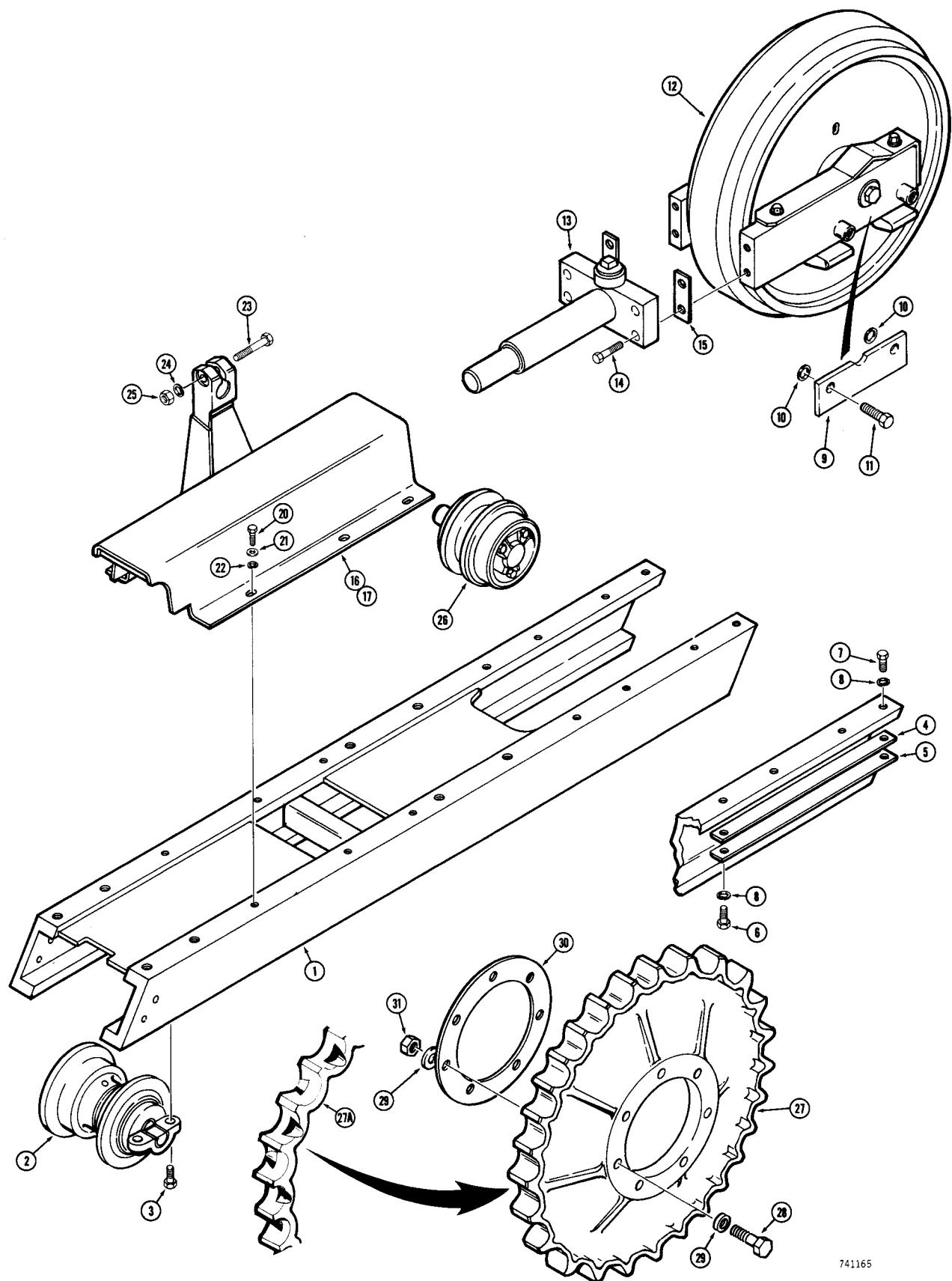
## TRANSMISSION HYDRAULIC LINES

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 20724	VALVE ASSEMBLY - control, parts list page 121 .....	1
2	A 50113	GASKET - valve to transmission case .....	2
3	166- 49	SCREW - 3/8" - 16 NC x 2", 12 pt. head .....	4
4	A 50356	TEE - adjustable .....	1
5	218- 5007	O-RING .....	1
6	218- 5105	FITTING - 90°, adjustable .....	4
7	218- 5005	O-RING .....	1
8	A 50295	HOSE - 19-1/2" long (495 mm).....	4
9	A 12864	BOLT - connection, brake tube.....	2
10	33261	GASKET - fitting, outer .....	2
11	33263	FITTING - brake line hydraulic .....	2
12	33260	GASKET - fitting, inner .....	2
13	72125	ADAPTER - brake tube fitting bolt .....	2
14	218- 5006	O-RING .....	2
15	A 50358	TUBE - valve to L.H. and R.H. brake cylinders .....	2
16	A 54112	TUBE - valve elbow to cover (Forward) .....	1
17	218- 5105	FITTING - 90°, adjustable .....	1
18	218- 5005	O-RING .....	1
19	A 50471	TUBE - valve connector to cover (Reverse) .....	1
20	218- 5057	FITTING - straight, male .....	1
21	218- 5005	O-RING .....	1
22	218- 443	FITTING - straight, male .....	2



## R20724 TRANSMISSION CONTROL VALVE

REF.	PART NO.	DESCRIPTION	REQ'D.
	R 20724	VALVE - control, transmission .....	1
1	193- 511	SCREW AND EXTERNAL TOOTH WASHER - hex. socket, 1/4" x 2-5/8" NF.....	11
2	R 21384	COVER - valve, rear .....	1
3	35665	GASKET - cover.....	2
4	71146	SPOOL ASSY - valve shift .....	3
5		RESERVED	
6	NSS	BODY - control valve.....	1
7	221- 42	PLUG - slotted, headless, 1/4" NPT .....	1
8	221- 849	PLUG - 1/8" NPT, hex socket head .....	2
9	71125	SPRING - brake valve .....	2
10	74916	SPOOL ASSY. - brake valve.....	2
11	71141	ROD - push, brake valve .....	2
	R 13941	COVER ASSEMBLY - valve front.....	1
12	NSS	COVER - valve .....	1
13	71121	SEAL - shaft.....	3
14	71133	SEAL - shaft.....	2
15	71120	DETENT - valve shift .....	3
16	71119	SPRING - detent .....	3
17	178- 655	SCREW - hex socket, 3/8" - 16 NC x 1/2" .....	3
18	131- 407	NUT - hex , 3/8" - 16 NC .....	3
19	A 50455	HOUSING - brake valve piston .....	2
20	71121	SEAL - housing .....	1
21	A 50457	PISTON - brake valve .....	2
22	71131	RING - quad .....	2



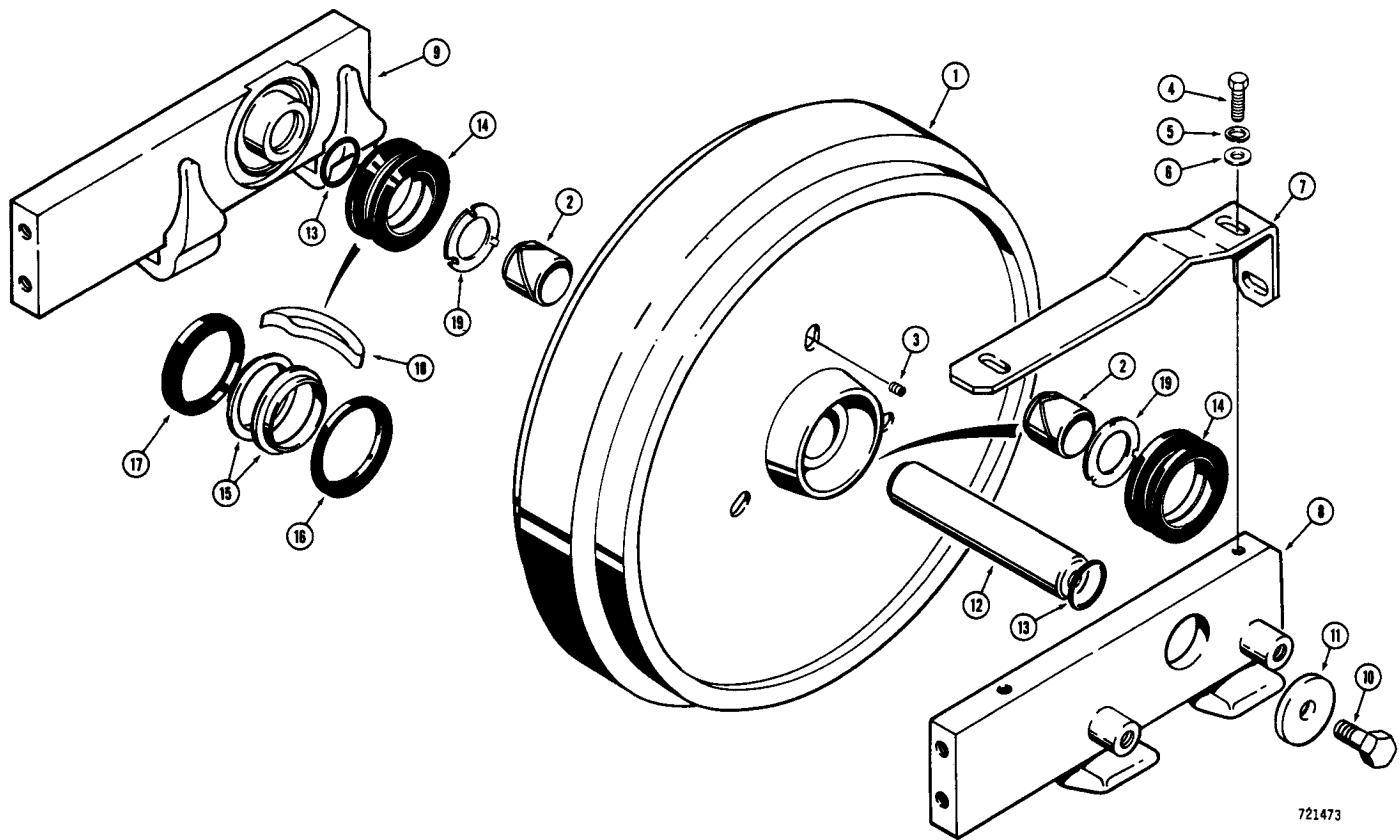
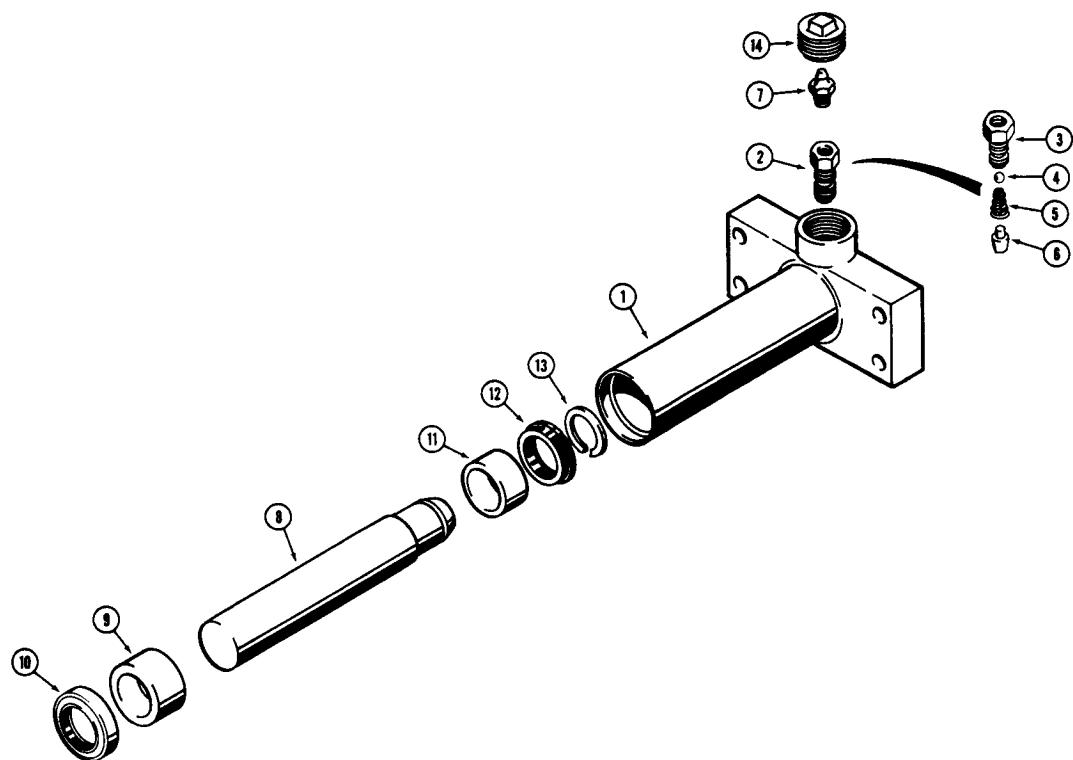
741165

# MODEL 450 CRAWLER TRACTOR

123

## TRACK FRAME AND RECOIL SYSTEM

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>USED BEFORE TRACTOR SN. 3062256</b>			
1	R 29682	FRAME - track (Drawbar and Loader Models) .....	2
1	R 29684	FRAME - track, L.H., (Angle Tilt Dozer Models) .....	1
1	R 29683	FRAME - track, R.H., (Angle Tilt Dozer Models) .....	1
1	R 29685	FRAME - track, L.H., (Angle Dozer Models) .....	1
1	R 29686	FRAME - track, R.H., (Angle Dozer Models) .....	1
<b>USED TRACTOR SN. 3062256 AND AFTER</b>			
1	R 36606	FRAME - track, (Drawbar and Loader Models) .....	2
1	R 36609	FRAME - track, L.H., (Angle Dozer Models) .....	1
1	R 36610	FRAME - track, R.H., (Angle Dozer Models) .....	1
1	R 36607	FRAME - track, R.H., (Angle Tilt Dozer Models) .....	1
1	R 36608	FRAME - track, L.H., (Angle Tilt Dozer Models) .....	1
<b>ALL MODELS</b>			
2	REF.	ROLLER - track, see page 127 and 129.....	10
3	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" .....	40
4	D 35290	SHIM - .0149" (.2734 mm) thick.....	UAR
5	D 35276	PLATE - wear, track channel.....	4
6	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" .....	4
7	13- 1024	HHCS - 5/8" - 11 NC x 1-1/2" .....	4
8	92- 10	WASHER - lock, 5/8" .....	8
9	D 35269	BAR - guide, idler .....	4
10	D 35268	SHIM - 1/32" (76 mm) thick .....	UAR
11	13- 1224	HHCS - 3/4" - 10 NC x 1-1/2" .....	8
12	REF.	IDLER WHEEL - complete, see page 125 .....	2
13	R 29709	ADJUSTER - track, hydraulic, parts list page 125 .....	2
14	13- 1040	HHCS - 5/8" - 11 NC x 2-1/2" .....	8
15	R 29690	SHIM - .032" (.813 mm) thick .....	UAR
16	R 29582	HOUSING - recoil and carrier roller bracket, includes spring (R.H.) <i>R43771</i>	
17	R 29581	HOUSING - recoil and carrier roller bracket, includes spring (L.H.) <i>R437712</i>	
18		RESERVED	
19		RESERVED	
20	13- 816	HHCS - 1/2" - 13 NC x 1" .....	12
21	195- 33	WASHER - flat, 1/2" .....	12
22	92- 8	WASHER - lock, 1/2" .....	12
23	13- 848	HHCS - 1/2" - 13 NC x 3" .....	2
24	92- 8	WASHER - lock, 1/2" .....	2
25	25- 108	NUT - hex , 1/2" - 13 NC .....	2
26	REF.	TRACK CARRIER ROLLER - see pages 127 and 129 .....	2
27	R 24569	SPROCKET - 50" (1270 mm) gauge models (Standard Service) .....	2
27	R 24570	SPROCKET - 52" (1321 mm) gauge models (Standard Service) .....	2
27A	R 32724	SPROCKET - 52" (1321 mm) gauge models (Service option) Relieved .....	2
27A	R 32765	SPROCKET - drive, 50" (1270 mm) gauge models (Service option) Relieved.....	
28	R 27954	BOLT - special .....	14
29	D 34666	WASHER - hardened .....	28
30	D 39530	SHIM - 1/32" (.76 mm) thick .....	UAR
31	131- 737	NUT - hex self lock, 3/4" - 10 NC .....	14



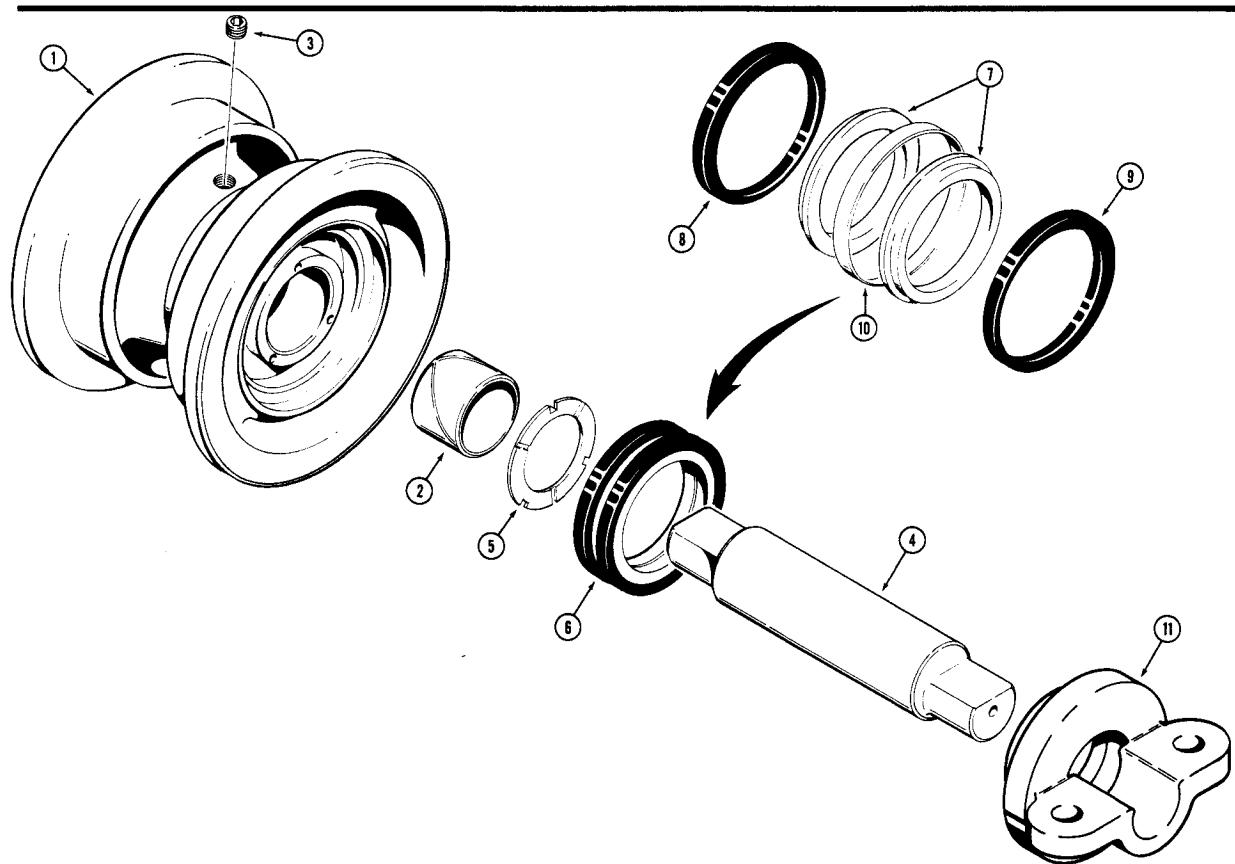
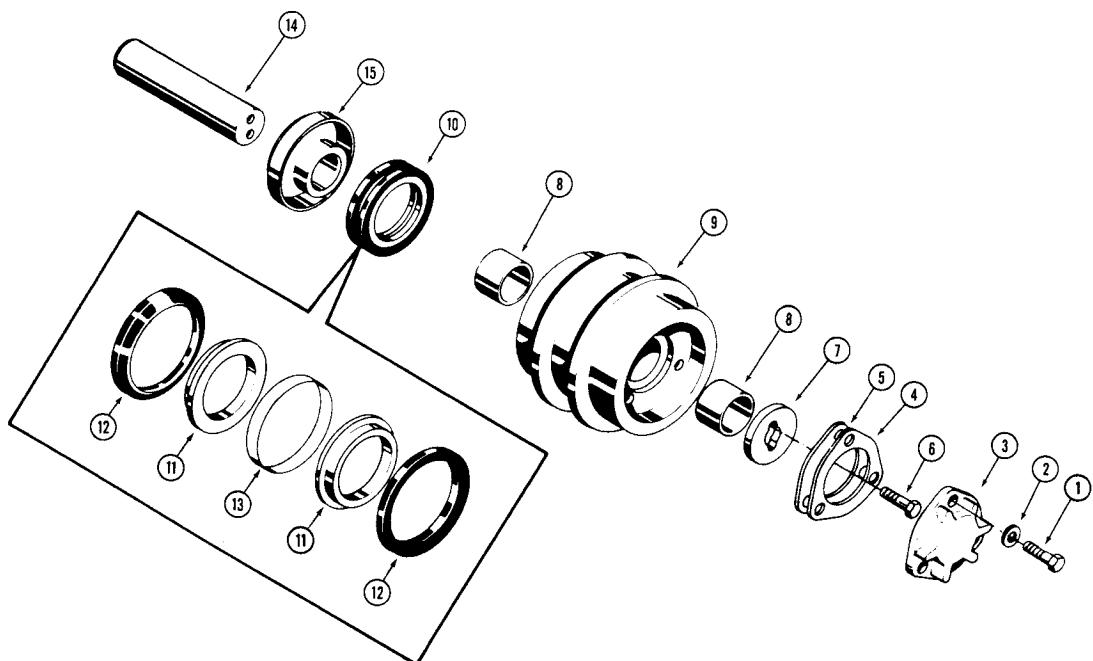
721473

## TRACK ADJUSTER

REF.	PART NO.		DESCRIPTION	REQ'D.
	R	29709	HYDRAULIC ADJUSTER - track .....	2
1	R	24561	TUBE - cylinder .....	1
2	D	35287	CHECK BALL ASSEMBLY - complete .....	1
3		NSS	BODY .....	1
4		NSS	BALL - check .....	1
5		NSS	SPRING - check ball .....	1
6		NSS	SEAT - body .....	1
7	219-	1	FITTING - grease, straight (1/8" NPT) .....	1
8	R	29669	PISTON - cylinder .....	1
9	D	35503	RING - rider .....	1
10	D	95144	WIPER - piston .....	1
11	D	37289	BEARING - back up .....	1
12	D	95382	PACKING - "U" cup .....	1
13	A	27085	RING - snap, piston .....	1
14	221-	29	PLUG - pipe .....	1

## IDLER WHEEL

REF.	PART NO.		DESCRIPTION	REQ'D.
	R	24625	IDLER WHEEL - complete, Before Sn. .....	2
	R	36629	IDLER WHEEL - complete .....	2
1	R	24626	HUB - idler wheel .....	1
2	R	24542	BUSHING - split .....	2
3	221-	841	PLUG - hex socket, 1/4" NPT .....	1
4	13-	816	HHCS - 1/2" - 13 NC x 1" .....	6
5	92-	6	WASHER - lock, 1/2" .....	6
6	R	24323	WASHER - special .....	6
7	R	24642	COVER - idler bracket .....	2
8	R	36614	BRACKET - R.H. .....	1
9	R	36613	BRACKET - L.H. .....	1
10	13-	1220	HHCS - 3/4" - 10 NC x 1-1/4" .....	2
11	D	21262	WASHER - special .....	2
12	R	24644	SHAFT - idler .....	1
13	A	7156	O-RING .....	2
14	R	39273	SEAL - face .....	2
15		NSS	BODY - seal, split .....	1
			KIT - repair .....	1
16		NSS	SEAL - rubber, inner .....	1
17		NSS	SEAL - rubber, outer .....	1
18		NSS	RETAINER - plastic .....	1
19	D	35266	WASHER - thrust .....	2



721427

**MODEL 450 CRAWLER TRACTOR**

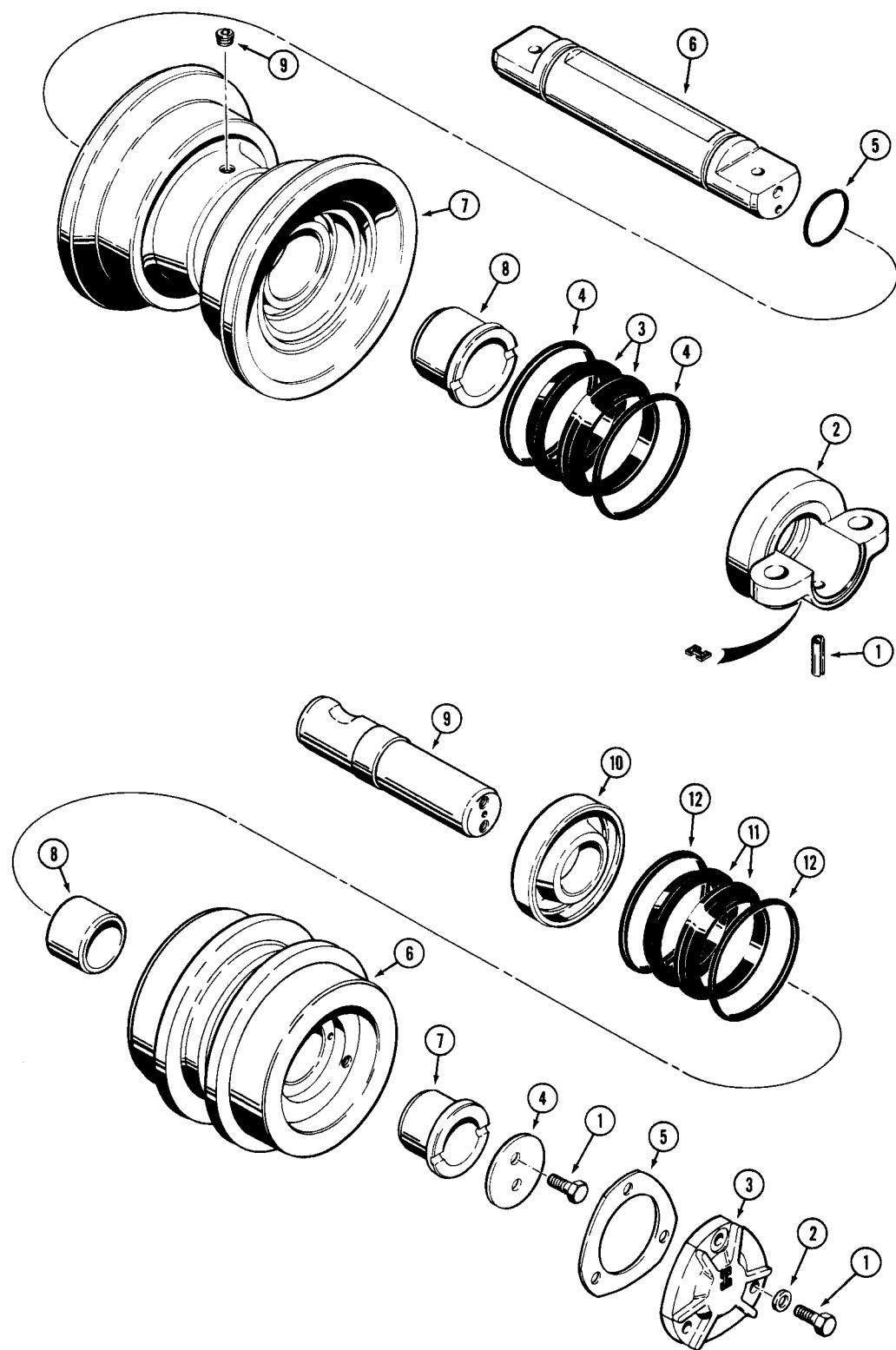
127

**D48684 TRACK CARRIER ROLLER****FOR IDENTIFICATION, SEE ITEM NO. 3 OF ILLUSTRATION**

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 48684	ROLLER - track carrier, face sealed .....	2
1	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	3
2	D 35288	WASHER - copper.....	1
3	R 29288	COVER - roller .....	1
4	D 30384	SHIM - .010" (.254 mm) Brown.....	UAR
5	D 30383	SHIM - .005" (.127 mm) Blue.....	UAR
6	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	2
7	D 30382	WASHER - thrust.....	1
8	D 46396	BUSHING - split .....	2
9	D 49945	HUB - roller .....	1
10	D 35267	SEAL - face .....	1
11	NSS	BODY - seal, split .....	1
	D 36826	KIT - repair .....	1
12	NSS	SEAL - rubber .....	2
13	NSS	RETAINER - plastic .....	1
14	D 49100	SHAFT - roller .....	1
15	D 35265	BUSHING - thrust .....	1

**R24547 TRACK ROLLER****FOR IDENTIFICATION - SEE ITEM 11 OF ILLUSTRATION**

REF.	PART NO.	DESCRIPTION	REQ'D.
	R 24547	ROLLER - track .....	10
1	R 24546	HUB - track roller .....	1
2	R 24542	BUSHING - split .....	2
3	221- 841	PLUG - pipe, allen head .....	1
4	R 24544	SHAFT - roller .....	1
5	D 35266	WASHER - thrust .....	2
6	D 35267	SEAL - face .....	2
7	NSS	BODY - seal .....	1
	D 36826	KIT - field repair .....	1
8	NSS	SEAL - rubber, inner .....	1
9	NSS	SEAL - rubber, outer .....	1
10	NSS	RETAINER - plastic .....	1
11	R 24545	CAP - roller cover and mounting .....	2



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## R33565 TRACK ROLLER

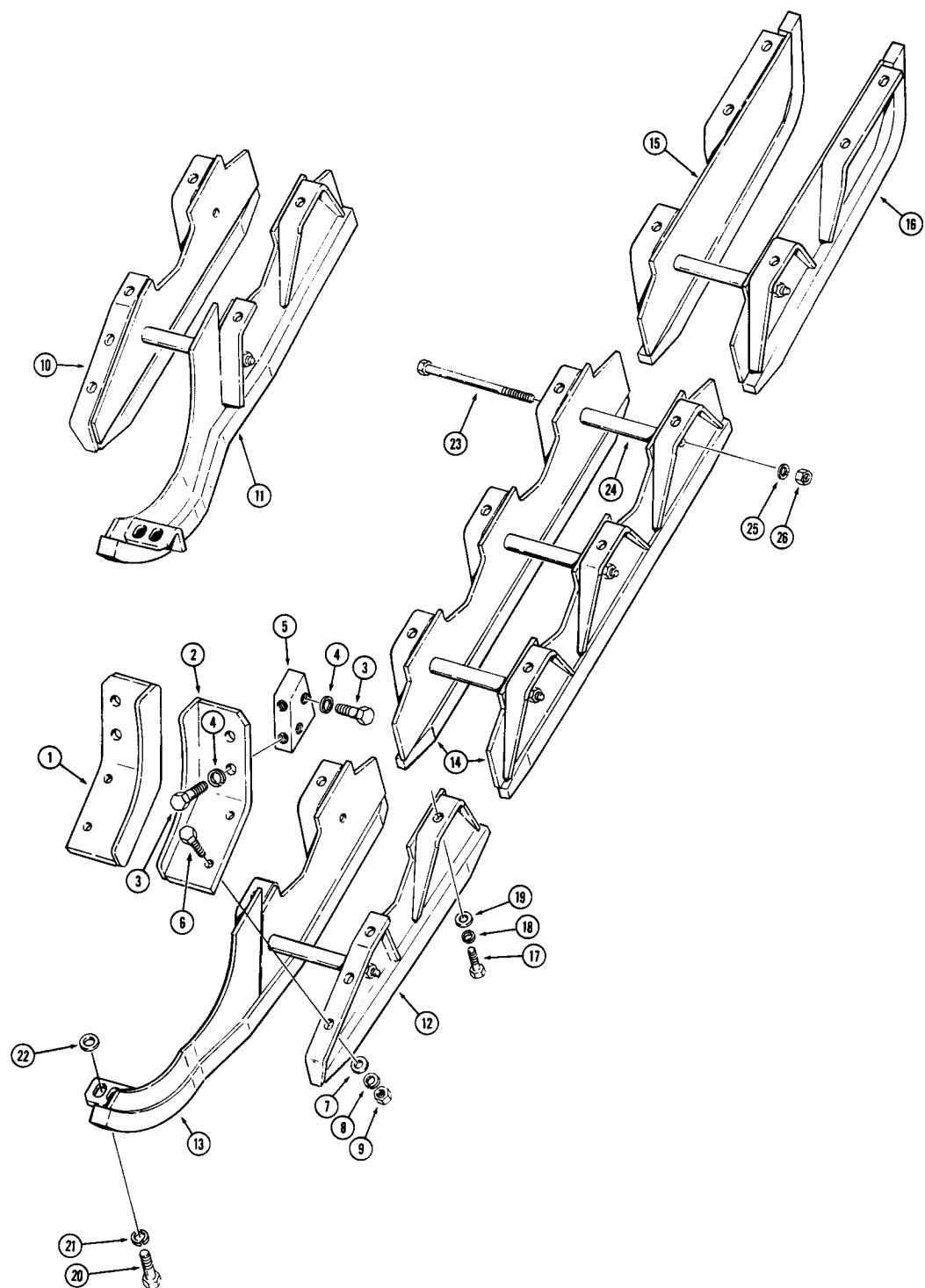
FOR IDENTIFICATION - SEE ITEM NO. 2 OF ILLUSTRATION

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 33565	ROLLER - track . . . . .	10
2	R 33570	PIN - cap retaining . . . . .	2
3	R 33568	CAP - end collar . . . . .	2
4	R 33564	SEAL - face . . . . .	2
5	NSS	SEAL - rubber . . . . .	2
6	NSS	RING - sealing . . . . .	2
7	A 7156	SEAL - O-ring . . . . .	2
8	R 33569	SHAFT - roller . . . . .	1
9	R 33567	HUB assembly - roller . . . . .	1
	NSS	HUB - roller . . . . .	1
	R 33556	BUSHING - roller . . . . .	2
	R 33557	PLUG - roller . . . . .	1

## R33965 TRACK CARRIER ROLLER

FOR IDENTIFICATION - SEE ITEM 3 OF ILLUSTRATION

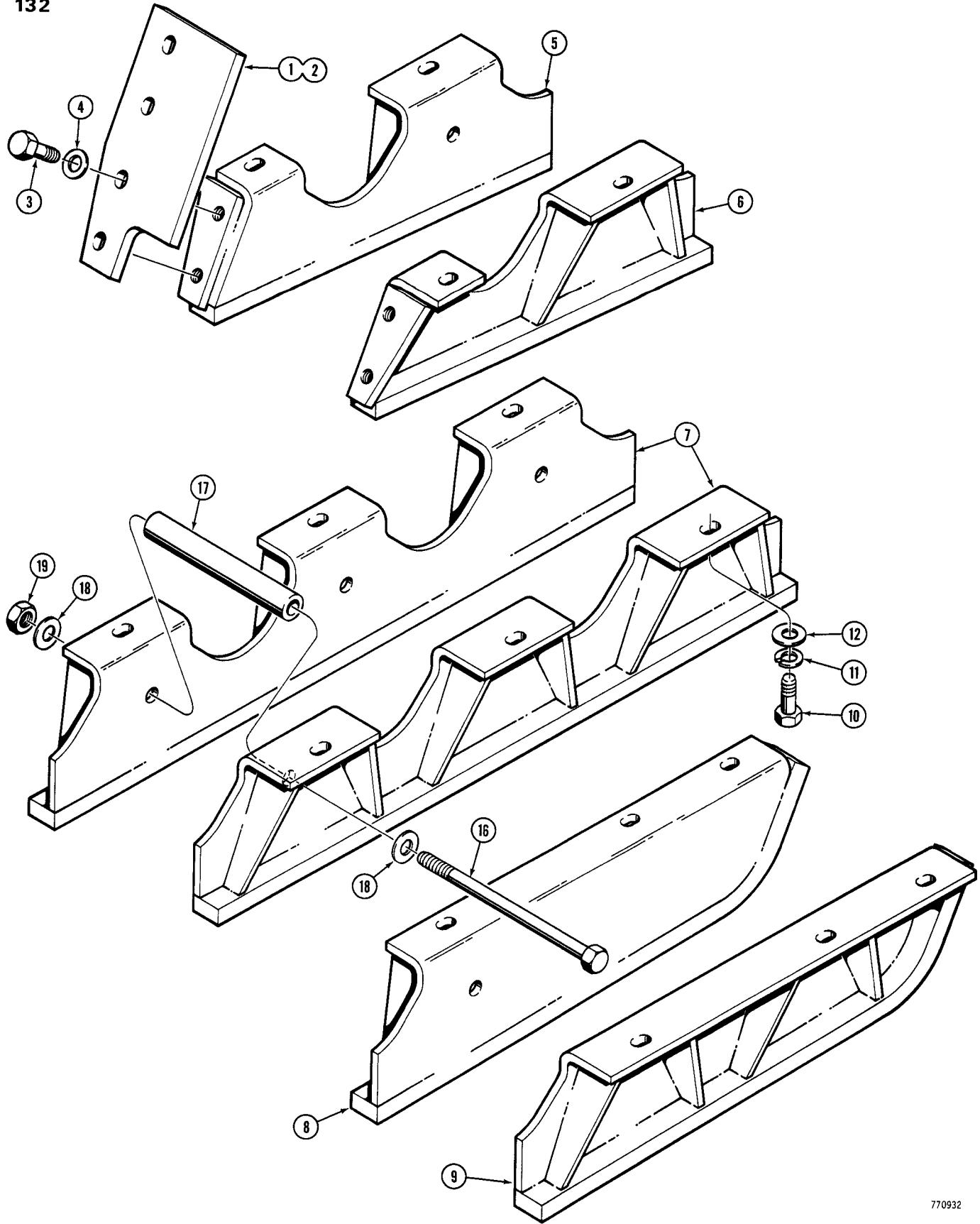
REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 33965	ROLLER - track carrier . . . . .	2
2	513- 704	HHCS - M10 x 1.5 x 20 grade 8.8 . . . . .	5
3	D 32117	WASHER - copper . . . . .	1
4	R 33959	CAP - roller . . . . .	1
5	R 33960	RETAINER - washer . . . . .	1
6	R 33964	GASKET - cap . . . . .	1
7	R 33967	HUB ASSEMBLY - roller . . . . .	1
8	NSS	HUB - roller . . . . .	1
9	R 33951	BUSHING - roller . . . . .	1
10	R 33958	BUSHING - roller . . . . .	1
11	R 33969	SHAFT ASSEMBLY - roller . . . . .	1
12	NSS	SHAFT - roller . . . . .	1
	R 33962	RETAINER - seal . . . . .	1
	R 33607	SEAL - face . . . . .	1
	NSS	SEAL - rubber . . . . .	2
	NSS	RING - sealing . . . . .	2



## TRACK GUIDES

## BEFORE TRACTOR SN. 3062256

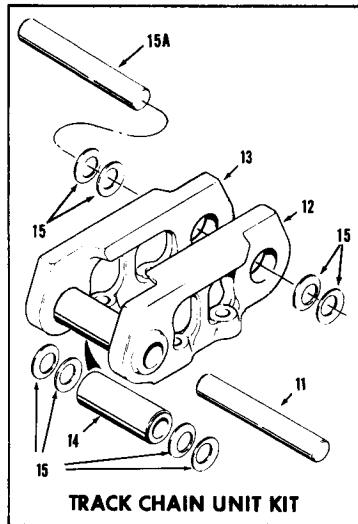
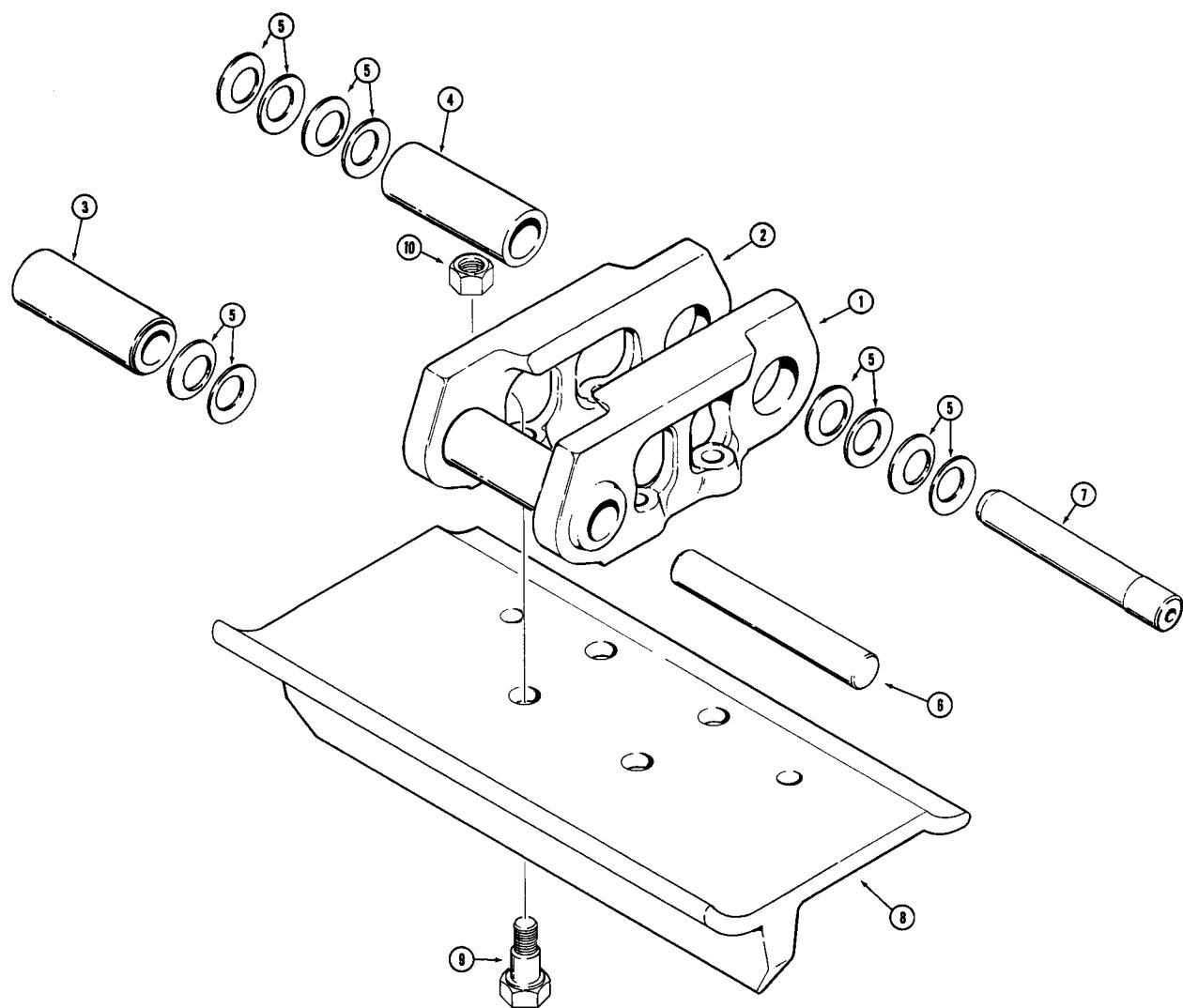
REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 24530	GUARD - sprocket, outer (L.H.) . . . . .	1
2	R 24531	GUARD - sprocket, outer (R.H.) . . . . .	1
3	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" . . . . .	8
4	92- 10	WASHER - lock, 5/8" . . . . .	8
5	D 39560	BLOCK - sprocket guard mounting . . . . .	2
6	13- 828	HHCS - 1/2" - 13 NC x 1-3/4" . . . . .	4
7	195- 33	WASHER - flat, 1/2" . . . . .	4
8	92- 8	WASHER - lock, 1/2" . . . . .	4
9	25- 108	NUT - hex, 1/2" - 13 NC . . . . .	4
10	R 24534	TRACK GUIDE - rear, outer, L.H. . . . .	1
11	R 24527	TRACK GUIDE - rear, inner, L.H. . . . .	1
12	R 24535	TRACK GUIDE - rear, outer, R.H. . . . .	1
13	R 24526	TRACK GUIDE - rear, inner, R.H. . . . .	1
14	D 35387	TRACK GUIDE - center . . . . .	4
15	R 24524	TRACK GUIDE - front, L.H. . . . .	2
16	R 24525	TRACK GUIDE - front, R.H. . . . .	2
17	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" . . . . .	32
18	92- 8	WASHER - lock, 1/2" . . . . .	32
19	195- 33	WASHER - flat, 1/2" . . . . .	32
20	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" . . . . .	2
21	92- 10	WASHER - lock, 5/8" . . . . .	2
22	195- 41	WASHER - flat, 5/8" . . . . .	2
23	15- 8148	HHCS - 1/2" - 13 NC x 9-1/4" . . . . .	10
24	R 24722	SPACER - track guide . . . . .	10
25	92- 8	WASHER - lock, 1/2" . . . . .	10
26	25- 108	NUT - hex , 1/2" - 13 NC . . . . .	10



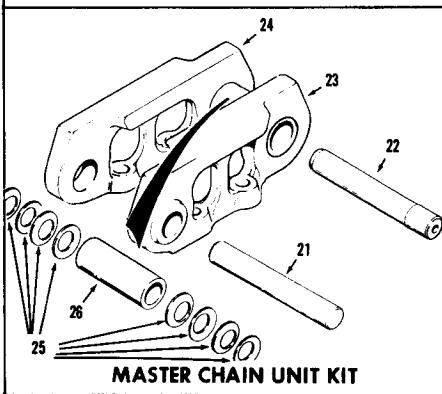
## TRACK GUIDES (ROCK GUARDS)

## TRACTOR SN. 3062256 AND AFTER

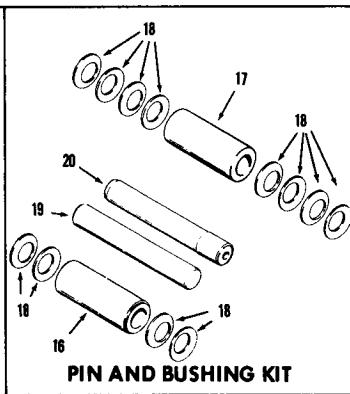
REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 36667	GUARD - sprocket, outer .....	2
2	R 36667	GUARD - sprocket, inner.....	2
3	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	16
4	R 24718	WASHER - hardened.....	16
5	R 36676	TRACK GUIDE - rear, L.H. ....	2
6	R 36677	TRACK GUIDE - rear, R.H. ....	2
7	R 36673	TRACK GUIDE - center .....	4
8	R 36674	TRACK GUIDE - front, L.H. ....	2
9	R 36675	TRACK GUIDE - front, R.H. ....	2
10	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	32
11	92- 8	WASHER - lock, 1/2" .....	32
12	195- 33	WASHER - flat, 1/2" .....	32
13		RESERVED	
14		RESERVED	
15		RESERVED	
16	15- 8136	HHCS - 1/2" - 13 NC x 8-1/2" .....	10
17	R 36665	SPACER - track guide .....	10
18	R 24718	WASHER - hardened.....	20
19	131- 654	NUT - hex self lock, 1/2" - 13 NC.....	10



TRACK CHAIN UNIT KIT



MASTER CHAIN UNIT KIT



PIN AND BUSHING KIT

730770

## TRACK CHAINS

REF.	PART NO.	DESCRIPTION	REQ'D.
	R 24571	CHAIN ASSEMBLY - 36 unit .....	2
1	R 24573	LINK - track chain, R.H. ....	36
2	R 24572	LINK - track chain, L.H. ....	36
3	R 24576	BUSHING - track, standard .....	35
4	R 24577	BUSHING - track, master .....	1
5	R 24694	WASHER - seal .....	148
6	R 24575	PIN - track, standard .....	35
7	R 24574	PIN - track, master .....	1
8	REF.	SHOE - track, see page 137 and 139 for options .....	72
9	R 24688	BOLT - special.....	288
10	R 24578	NUT - special.....	288

## TRACK CHAIN UNIT KIT

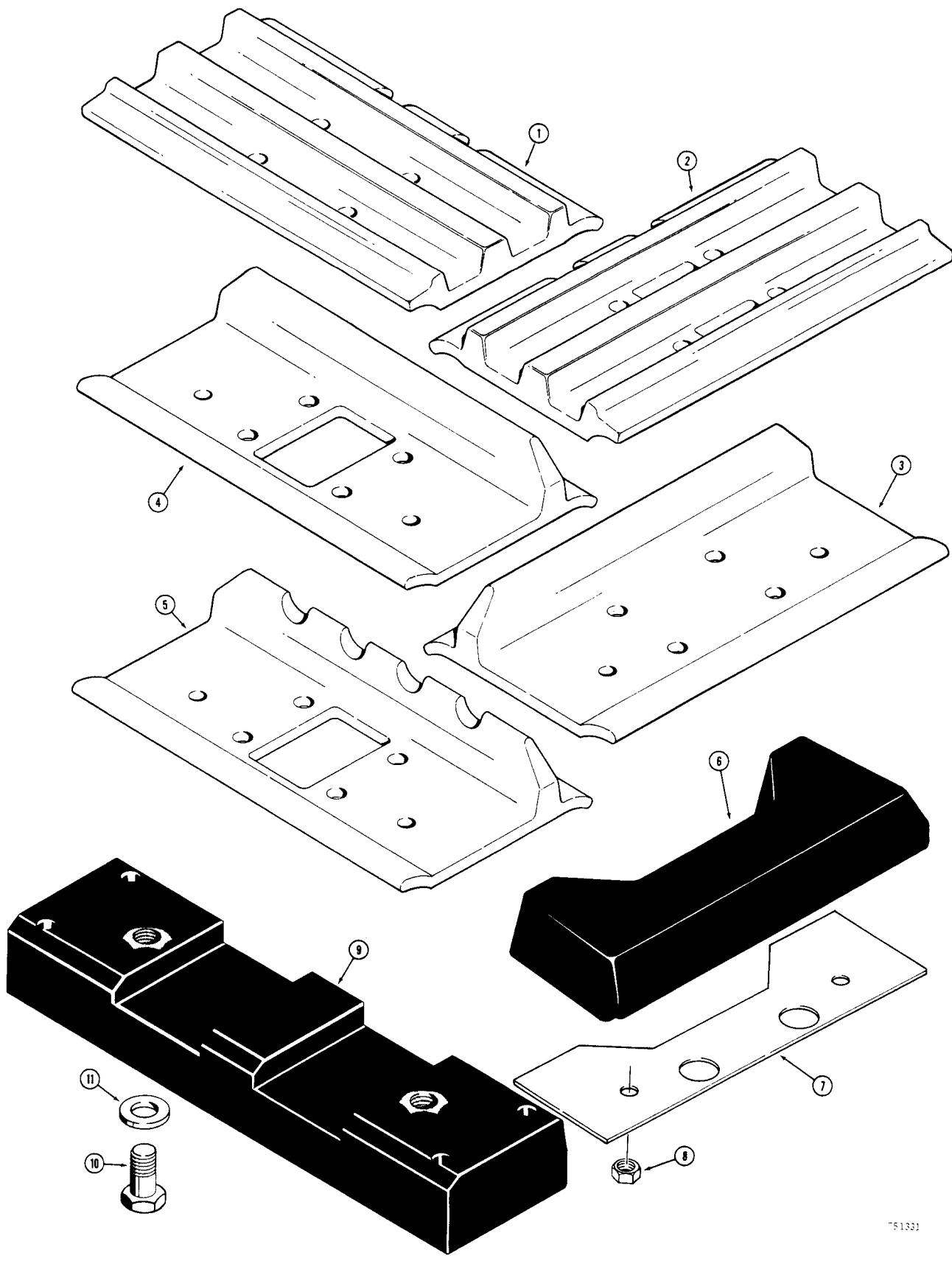
	R 24742	KIT - track chain unit .....	70
11	R 24575	PIN - track, standard .....	1
12	R 24573	LINK - track chain (R.H.).....	1
13	R 24572	LINK - track chain (L.H.).....	1
14	R 24576	BUSHING - track, standard .....	1
15	R 24694	WASHER - seal .....	8
15A	R 24616	PIN - track, standard, .003" (.076 mm) oversize.....	1

## PIN AND BUSHING KIT

	R 24743	KIT - pin and bushing .....	1
16	R 24576	BUSHING - track, standard .....	70
17	R 24577	BUSHING - track, master .....	2
18	R 24694	WASHER - seal .....	296
19	R 24616	PIN - track, .003" (.076 mm) oversize .....	70
20	R 24617	PIN - track, master, .003" (.076 mm) oversize .....	2

## MASTER CHAIN UNIT

	R 24741	KIT - master chain unit.....	2
21	R 24575	PIN - track, standard .....	1
22	R 24617	PIN - track, master, .003" (.076 mm) oversize .....	1
23	R 24573	LINK - track chain, R.H. ....	1
24	R 24572	LINK - track chain, L.H. ....	1
25	R 24694	WASHER - seal .....	8
26	R 24577	BUSHING - master .....	1



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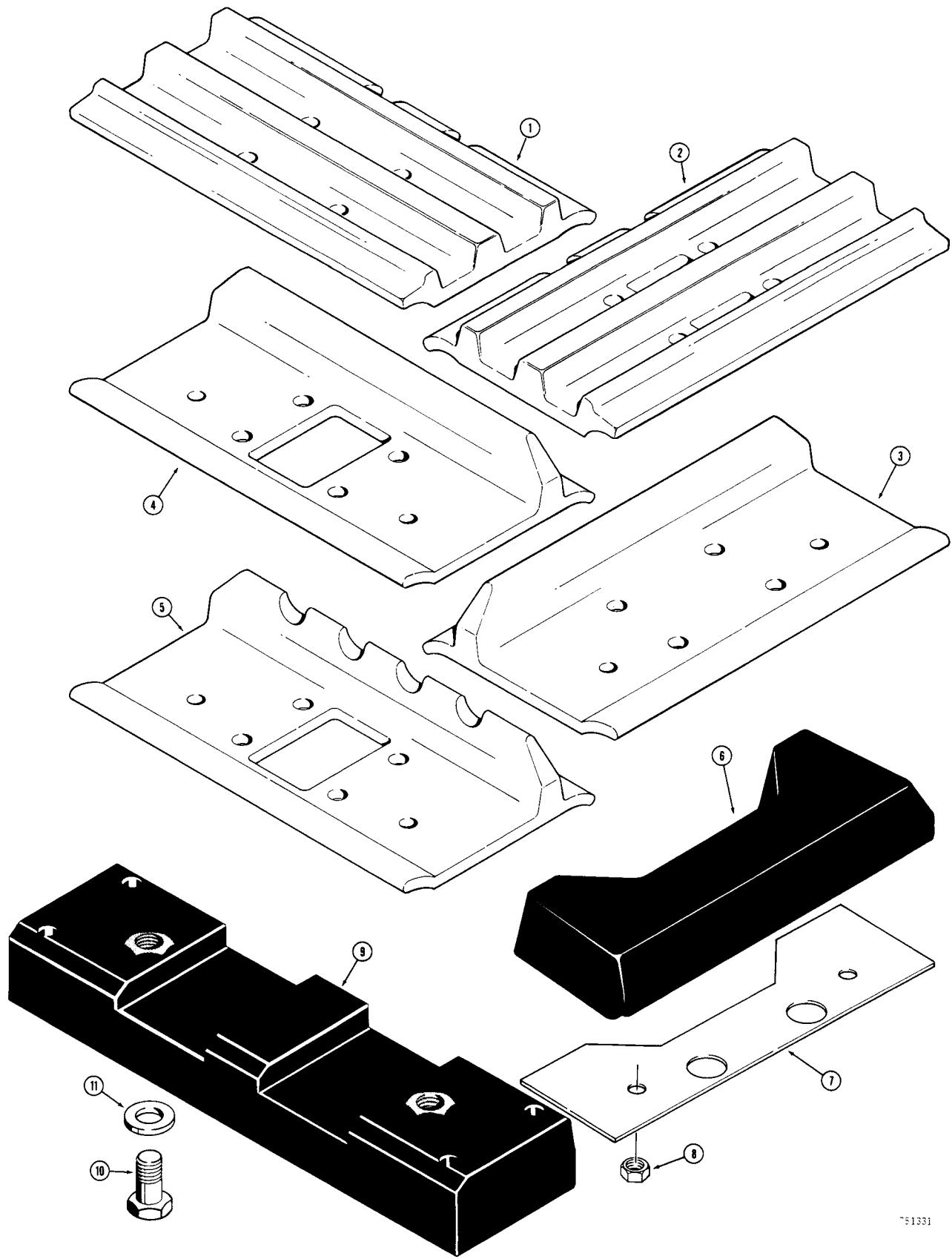
**MODEL 450 CRAWLER TRACTOR**

137

**TRACK SHOES (OVER LAPPIING)**

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>SEMI-GROUSER, CLOSED</b>			
1	R 24586	SHOE - track, 10" (254 mm) All models.....	72
1	R 24587	SHOE - track, 11" (279 mm) All models.....	72
1	R 24588	SHOE - track, 12" (304 mm) All models.....	72
1	R 24589	SHOE - track, 13" (331 mm) All models except Angle Tilt Dozer .....	72
1	R 24590	SHOE - track, 14" (356 mm) All models.....	72
1	R 24594	SHOE - track, 14" (356 mm) L.H., offset, All models except Angle Dozer .....	36
1	R 24595	SHOE - track, 14" (356 mm) R.H., offset, All models except Angle Dozer .....	36
1	R 24591	SHOE - track, 16" (406 mm) Drawbar and Angle Tilt Dozers .....	72
1	R 24592	SHOE - track, 18" (457 mm) Drawbar Models .....	72
1	R 24593	SHOE - track, 20" (508 mm) Drawbar Models .....	72
<b>SEMI-GROUSER, OPEN CENTER</b>			
2	R 24725	SHOE - track, 12" All models .....	72
2	R 24726	SHOE - track, 14" Drawbar and Angle Dozers .....	72
2	R 24727	SHOE - track, 16" (406 mm) Drawbar and Angle Tilt Dozers .....	72
<b>GROUSER, CLOSED</b>			
3	R 32889	SHOE - track, 12" (304 mm) All models.....	72
3	R 32892	SHOE - track, 14" (356 mm) Drawbar and Dozer Models .....	72
3	R 32890	SHOE - track, 1/4" (356 mm) L.H., offset, All models except Angle Dozer .....	36
3	R 32891	SHOE - track, 14" (356 mm) R.H., offset, All models except Angle Dozer .....	36
3	R 32893	SHOE - track, 16" (406 mm) Drawbar and Angle Tilt Dozers .....	72
3	R 32894	SHOE - track, 18" (457 mm) Drawbar Models .....	72
3	R 32895	SHOE - track, 20" (508 mm) Drawbar Models .....	72

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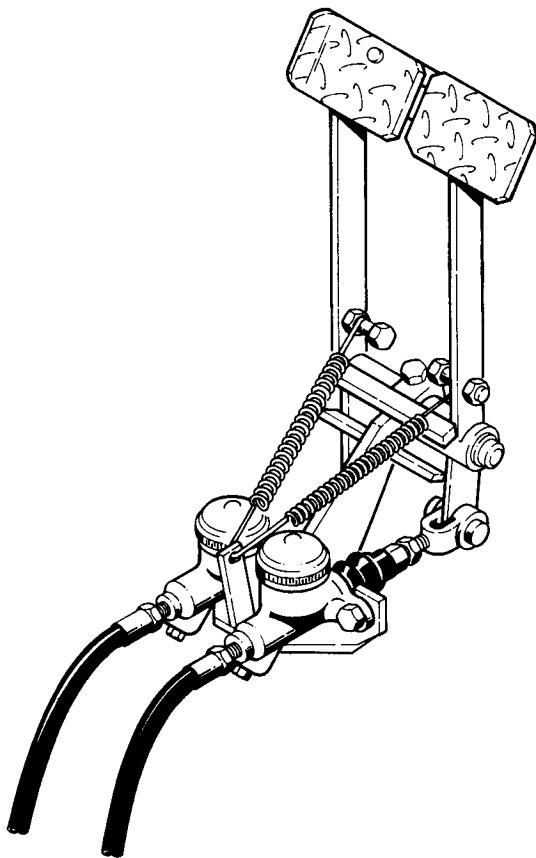
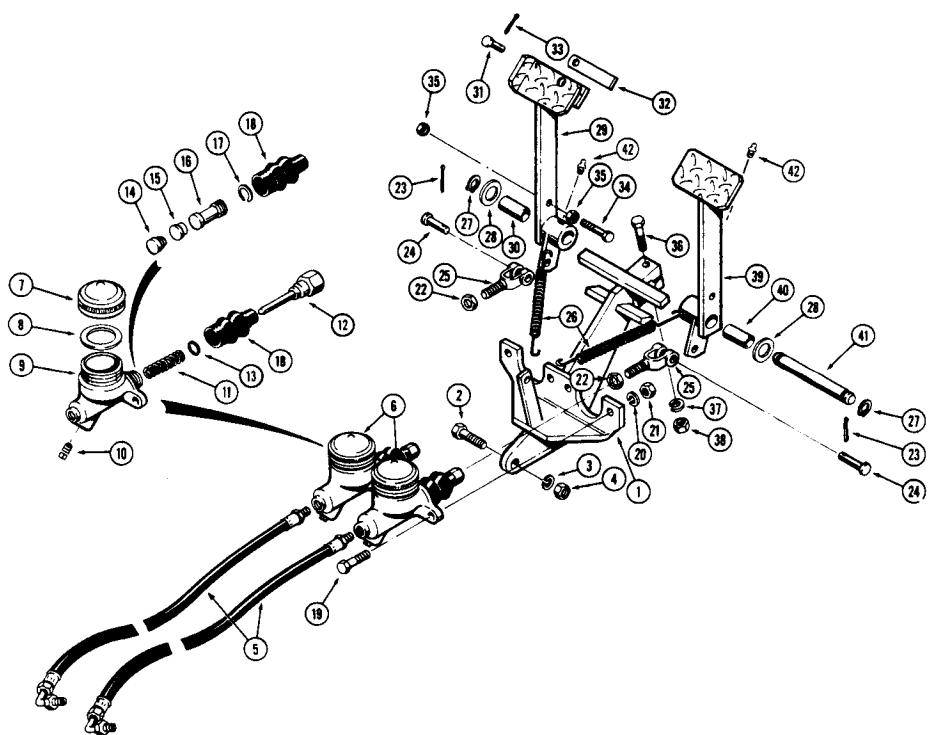


**MODEL 450 CRAWLER TRACTOR**

139

**TRACK SHOES (OVER LAPPING)**

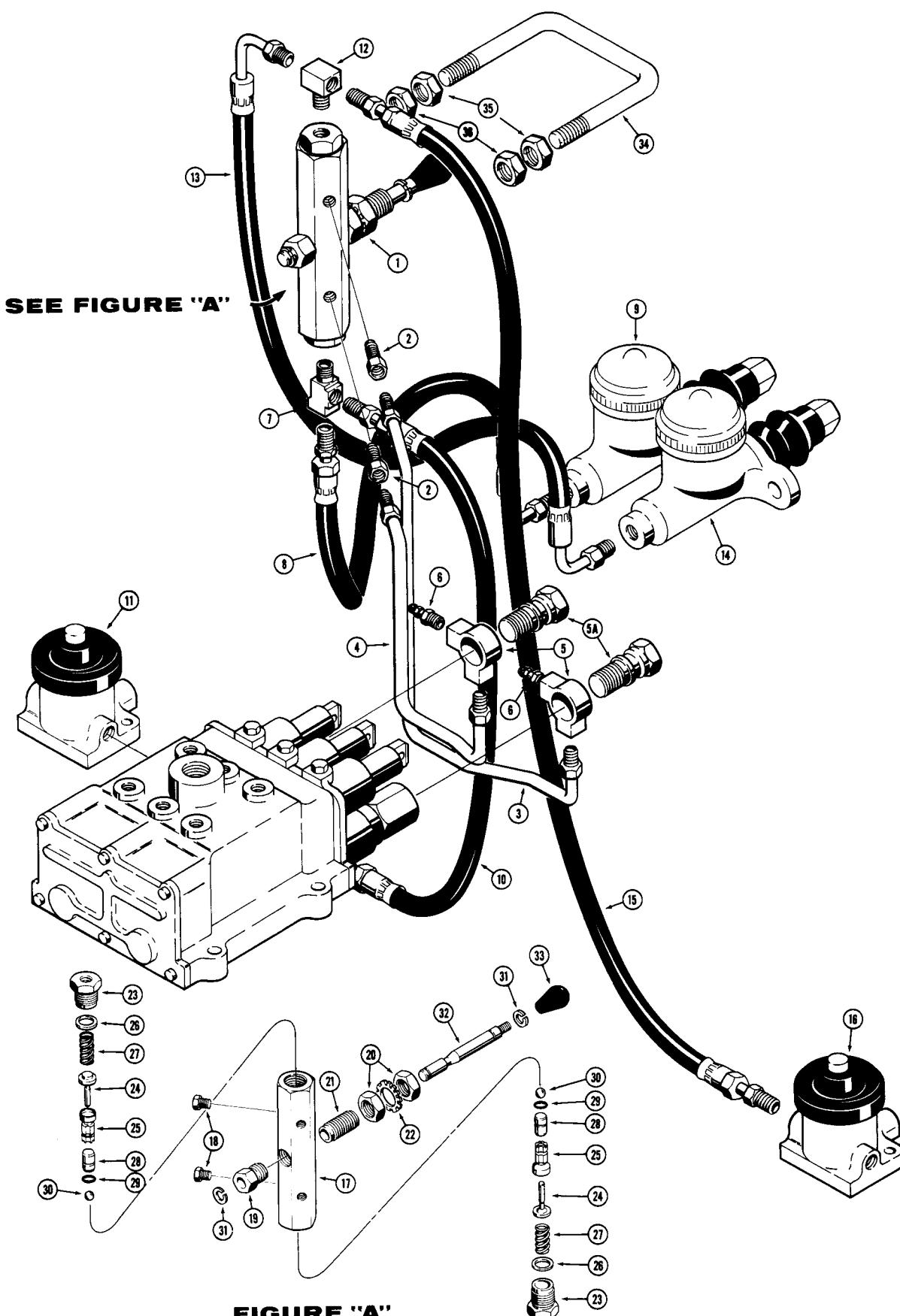
REF.	PART NO.	DESCRIPTION	REQ'D.
<b>GROUSER, OPEN CENTER</b>			
4	R 32896	SHOE - track, 12" (304 mm) All models.....	72
4	R 32899	SHOE - track, 14" (356 mm) Drawbar and Angle Dozer .....	72
4	R 32897	SHOE - track, 14" (356 mm) L.H., offset, All models except Angle Dozer .....	36
4	R 32898	SHOE - track, 14" (356 mm) R.H., offset, All models except Angle Dozer .....	36
4	R 32900	SHOE - track, 16" (406 mm) Drawbar and Angle Tilt Dozers .....	72
4	R 32901	SHOE - track, 18" (457 mm) Drawbar models.....	72
4	R 32902	SHOE - track, 20" (508 mm) Drawbar models.....	72
<b>GROUSER, ICE</b>			
5	R 24605	SHOE - track, 12" (304 mm) All models.....	72
5	R 24606	SHOE - track, 14" (356 mm) Drawbar and Angle Dozers.....	72
5	R 24607	SHOE - track, 16" (406 mm) Drawbar and Angle Tilt Dozers .....	72
<b>RUBBER TRACK SHOES</b>			
	D 13470	KIT - rubber track shoe (Used on R32889, R32890, R32891, R32892, R32896, R32897, R32898 and R32899 shoes only) Machinery Item .....	1
6	R 31222	SHOE - track, rubber .....	74
7	R 31214	SHIM .....	148
8	131- 367	NUT - hex, self lock, 1/2" x 20 NF .....	148
	R 5627	KIT - rubber track shoes (Used on R32893, R32894, R32895, R32900, R32901 and R32902 shoes only) Machinery Item .....	1
9	R 38862	SHOE - rubber .....	74
10	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" .....	148
11	D 43266	WASHER - hardened .....	148



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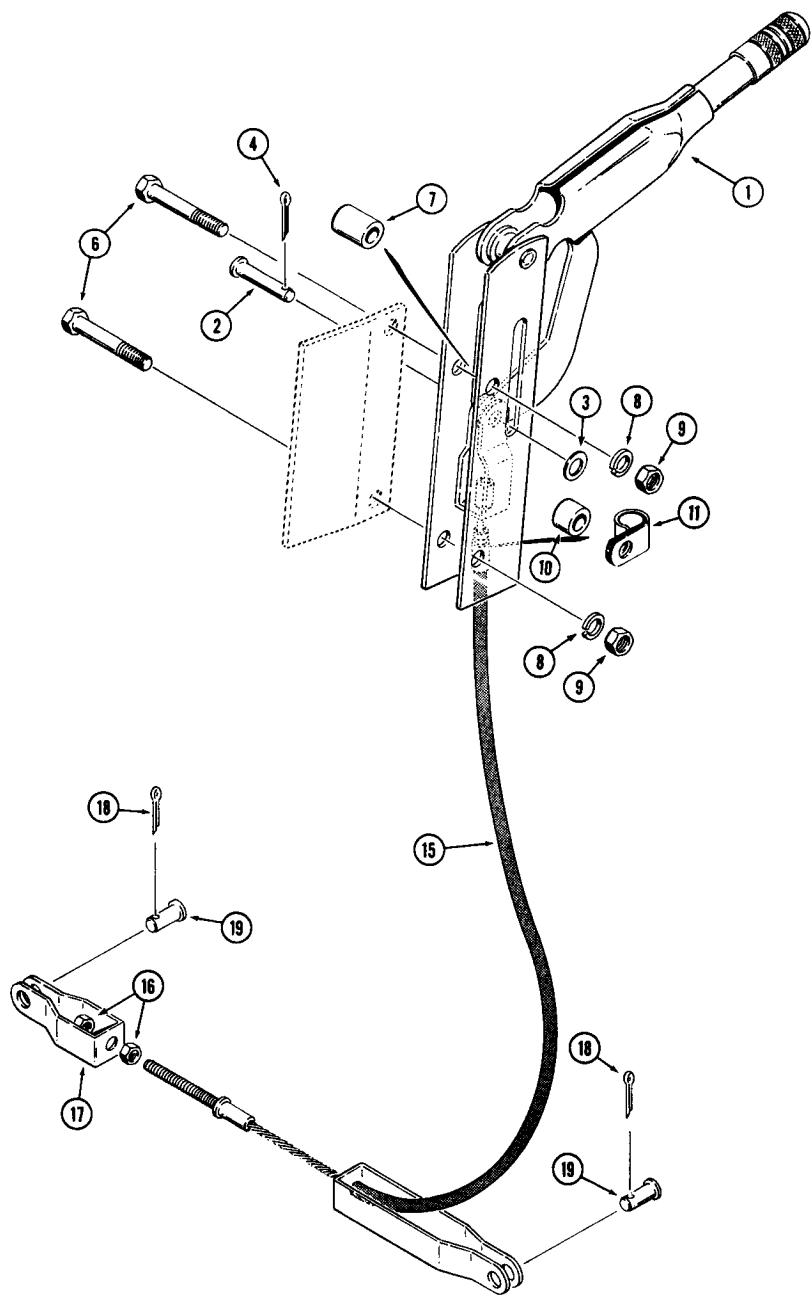
## BRAKE PEDALS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 31439	SUPPORT - brake mounting .....	1
2	13- 1028	HHCS - 5/8" - 11 NC x 1-3/4"	2
3	92- 10	WASHER - lock, 5/8"	2
4	25- 1010	NUT - hex, 5/8" - 11 NC .....	2
5	D 45396	HOSE - 16" (406 mm) long .....	2
6	D 39824	CYLINDER - master, brake .....	2
7	D 42448	CAP - filler .....	1
8	NSS	GASKET - cap .....	1
9	NSS	BODY - master cylinder .....	1
10	221- 11	PLUG - square head, 1/8" NPT .....	1
11	D 42444	SPRING - return .....	1
12	D 42446	ROD - push .....	1
	D 42442	KIT - rebuild, master cylinder .....	1
13	D 42445	O-RING .....	1
14	NSS	VALVE AND SEAT - master cylinder .....	1
15	NSS	CUP - master cylinder .....	1
16	NSS	PISTON - master cylinder .....	1
17	NSS	RING - retaining .....	1
18	D 42443	BOOT - master cylinder .....	1
19	13- 624	HHCS - 3/8" - 16 NC x 1-1/2"	4
20	92- 6	WASHER - lock, 3/8"	4
21	25- 106	NUT - hex, 3/8" - 16 NC .....	4
22	25- 157	NUT - hex, lock, 7/16" - 20 NF .....	2
23	132- 26	PIN - cotter, 3/32" dia. x 3/4"	2
24	141- 5	PIN - yoke .....	2
25	D 38620	YOKE - adjustable .....	2
26	R 33370	SPRING - pedal return .....	2
27	T 25683	RING - retaining .....	2
28	195- 45	WASHER - flat, 3/4"	2
29	D 48604	PEDAL - brake, L.H. .....	1
30	R 29752	BUSHING - pedal .....	1
31	141- 3	PIN - lock .....	1
32	D 42840	LOCK - brake pedal .....	1
33	132- 5	PIN - cotter, 1/16" dia. x 1/2"	1
34	13- 624	HHCS - 3/8" - 16 NC x 1-1/2"	2
35	25- 146	NUT - hex, lock, 3/8" - 16 NC .....	4
36	13- 836	HHCS - 1/2" - 13 NC x 2-1/4"	1
37	92- 8	WASHER - lock, 1/2"	1
38	25- 108	NUT - hex, 1/2" - 13 NC .....	1
39	D 48605	PEDAL - brake, R.H. .....	1
40	R 29752	BUSHING - pedal .....	1
41	D 34915	SHAFT - pedal .....	1
42	219- 1	FITTING - grease, straight, 1/8" NPT .....	2



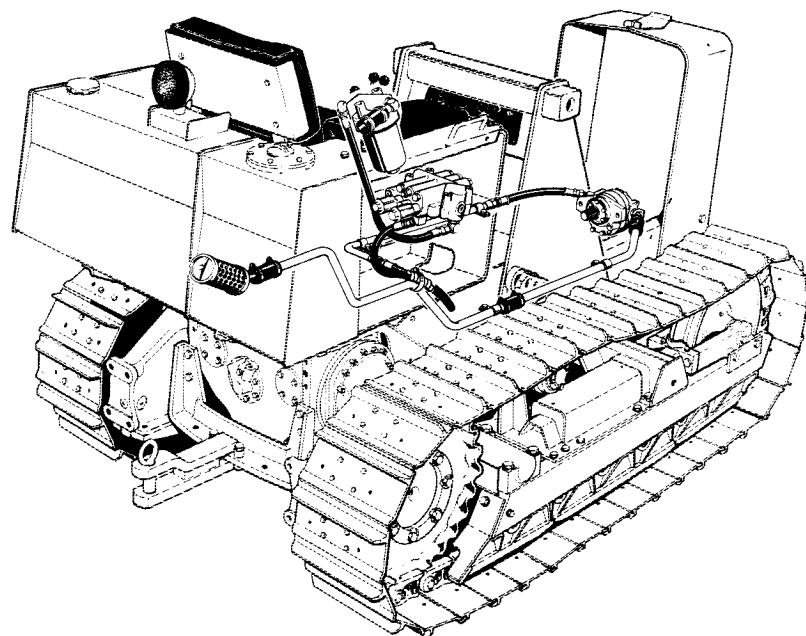
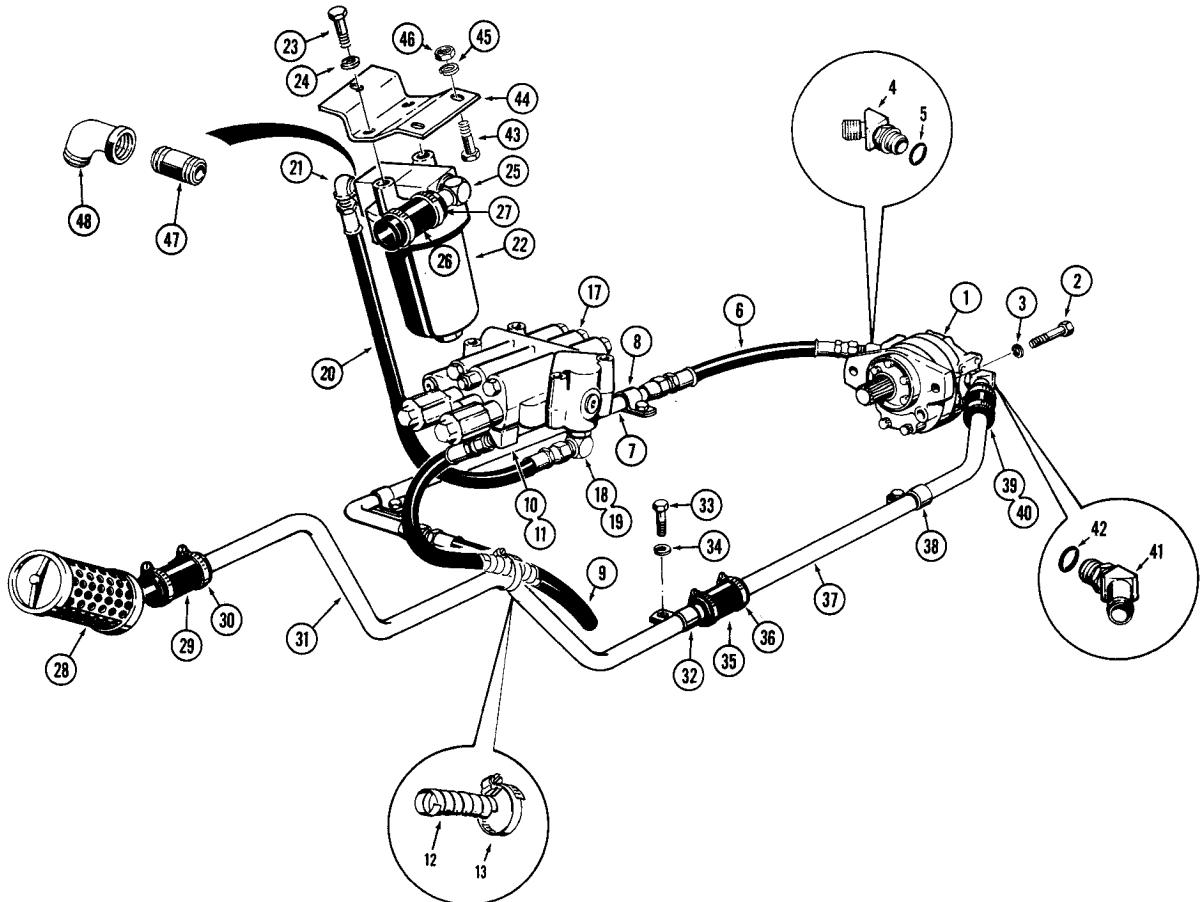
## DECLUTCH LOCKOUT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 49105	VALVE - lockout, clutch, parts list below .....	1
2	222- 1011	CONNECTOR - straight, male .....	2
3	D 49260	TUBE - to transmission valve, R.H. ....	1
4	D 49258	TUBE - to transmission valve, L.H. ....	1
5	D 49251	FITTING - special .....	2
5A	A 12864	BOLT - special .....	2
6	D 46258	PLUG - bleeder .....	2
7	222- 1075	TEE - male .....	1
8	D 49255	HOSE - L.H. 13-1/2" (343 mm) long .....	1
9	REF.	CYLINDER - master, L.H. brake, parts list page 141 .....	1
10	D 49256	HOSE - L.H., 20-5/16" (516 mm) long .....	1
11	REF.	CYLINDER - slave, L.H. brake, parts list page 113 .....	1
12	222- 1070	TEE - male .....	1
13	D 49254	HOSE - R.H., 22-13/32" (569 mm) long .....	1
14	REF.	CYLINDER - master, R.H. brake, parts list page 141 .....	1
15	D 49253	HOSE - R.H., 27-1/2" (699 mm) long .....	1
16	REF.	CYLINDER - slave, R.H. brake, parts list page 113 .....	1
	D 49105	VALVE - lockout, declutch .....	1
17	NSS	BODY - valve .....	1
18	221- 1849	PLUG - pipe, sq. socket head .....	2
19	D 50018	PLUG - push rod guide .....	1
20	129- 167	NUT - hex, 5/8" - 11 NC, plated .....	2
21	D 50017	ADAPTER - special, push rod .....	1
22	193- 14	WASHER - lock, stave .....	1
23	A 16672	PLUG - special, end .....	2
	R 29966	KIT - repair, valve .....	1
24	NSS	STEM - valve .....	2
25	NSS	VALVE .....	2
26	D 46277	GASKET - end plug .....	2
27	A 16674	SPRING - valve .....	2
28	D 50014	PISTON ASSEMBLY - valve .....	2
29	A 16679	O-RING .....	1
30	211- 100	BALL - valve .....	2
31	D 50016	RING - retaining .....	2
32	D 50013	ROD ASSEMBLY - push .....	1
33	D 50015	KNOB - push rod .....	1
	D 49115	GUARD ASSEMBLY - valve lever .....	1
34	NSS	GUARD - valve lever .....	1
35	131- 352	NUT - hex self lock, 3/8" - 16 NC .....	2
36	131- 352	NUT - hex self lock, 3/8" - 16 NC .....	2



## PARKING BRAKE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 40687 NSS	BRAKE LEVER - parking LEVER - parking brake	1 1
2	D 42458	PIN - clevis	1
3	95- 5	WASHER - flat, 5/16"	1
4	132- 26	PIN - cotter, 3/32" dia. x 3/4"	1
5		RESERVED	
6	26- 526	HHCS - 5/16" - 18 NC x 1-5/8", grade 8	2
7	D 40685	SPACER - lever	1
8	92- 5	WASHER - lock, 5/16"	2
9	25- 105	NUT - hex, 5/16" - 18 NC	2
10	D 30863	SPACER - clamp	1
11	D 40684	CLAMP - cable guide	1
12		RESERVED	
13		RESERVED	
14		RESERVED	
	D 44006	CABLE ASSEMBLY - brake, mounted with 5/16" dia. pins	1
15	NSS	CABLE - brake	1
16	129- 122	NUT - hex, 5/16" - 24 NF	1
16	129- 162	NUT - hex lock, 5/16" - 24 NF	1
17	D 43802	CLEVIS - cable	1
18	132- 26	PIN - cotter, 3/32" dia. x 3/4"	2
19	141- 2	PIN - cable yoke, 1/4" dia. x 3/4"	2



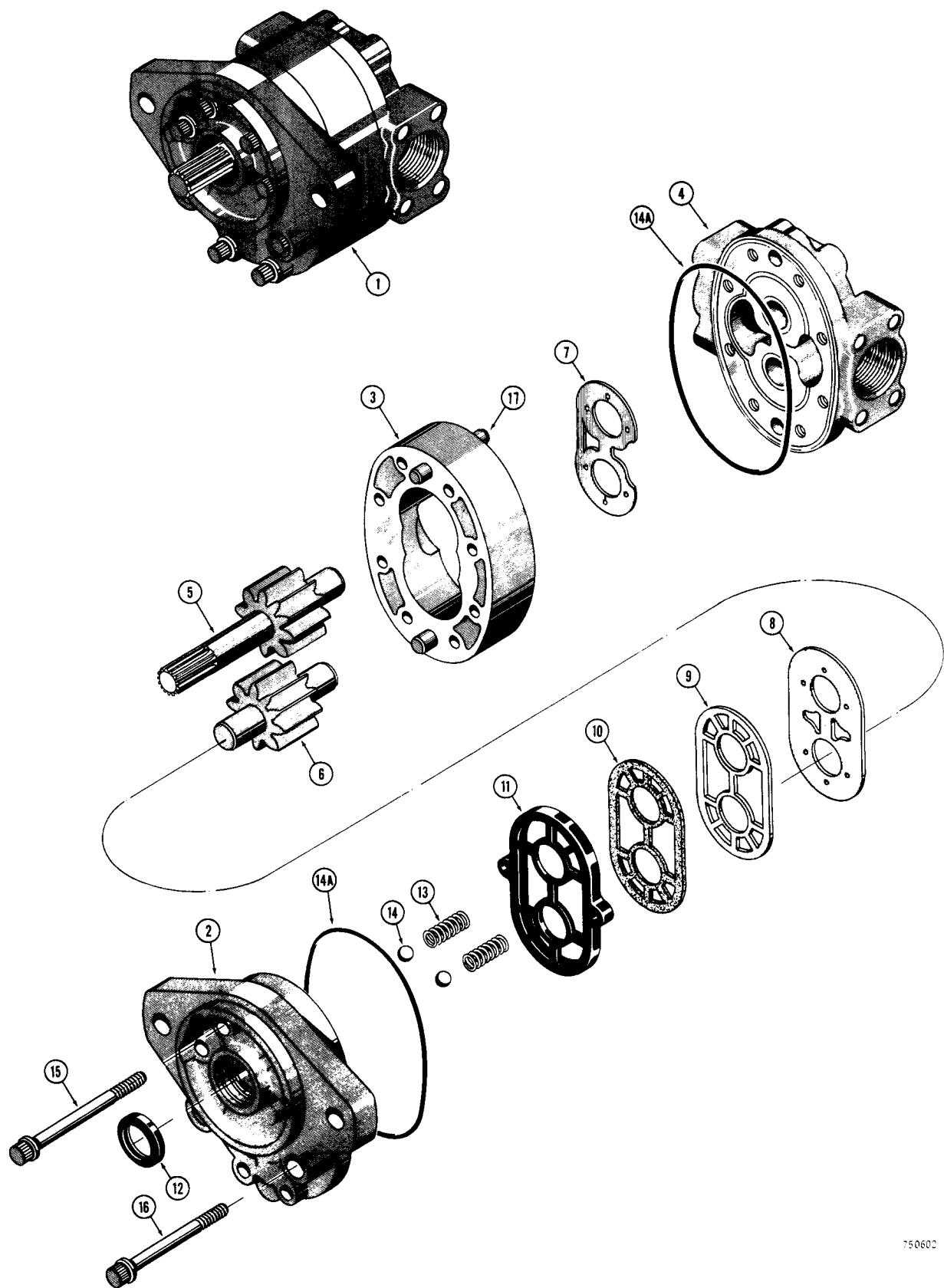
## EQUIPMENT HYDRAULIC CIRCUIT

## PUMP TO VALVE AND RESERVOIR

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 41390	PUMP - hydraulic, parts list page 149.....	1
2	13- 824	HHCS - 1/2" - 13 NC x 1-1/2"	2
3	92- 8	WASHER - lock, 1/2"	2
4	218- 5140	FITTING - male, 45° .....	1
5	218- 5010	O-RING .....	1
6	D 35040	HOSE - 15" (381 mm) long .....	1
7	D 35038	TUBE - pump to valve .....	1
8	R 14668	CLAMP - tube .....	2
9	D 37601	HOSE - 43" (1092 mm) long .....	1
10	218- 5138	FITTING - male, 45° .....	1
11	218- 5008	O-RING .....	1
12	R 12586	WRAP - hose .....	1
13	214- 260	CLAMP - hose .....	1
14		RESERVED	
15		RESERVED	
16		RESERVED	
17	REF.	VALVE - control, see pages 215 thru 219 for proper valve .....	1
18	218- 5124	FITTING - 90°, male .....	1
19	218- 5008	O-RING .....	1
20	D 35045	HOSE - 22" (559 mm) long .....	1
21	221- 416	FITTING - 90° .....	1
22	D 43567	FILTER - return line, parts list page 151 .....	1
23	13- 816	HHCS - 1/2" - 13 NC x 1"	2
24	92- 8	WASHER - lock, 1/2"	2
25	217- 136	STEM - hose .....	1
26	D 38435	HOSE - 3-1/2" (89 mm) long .....	1
27	214- 257	CLAMP - hose .....	2
28	D 33557	FILTER - suction line .....	1
29	R 13911	HOSE - connecting, suction line to pump .....	1
30	214- 257	CLAMP - hose .....	2
31	D 35044	TUBE - suction line .....	1
32	R 14098	CLAMP - tube .....	1
33	13- 510	HHCS - 5/16" - 18 NC x 5/8"	1
34	92- 5	WASHER - lock, 5/16" .....	1
35	R 13911	HOSE - suction line to pump .....	1
36	214- 257	CLAMP - hose .....	2
37	D 35020	TUBE - suction line .....	1
38	R 14098	CLAMP - tube .....	1
39	R 13911	HOSE - suction line to pump .....	1
40	214- 257	CLAMP - hose .....	2
41	217- 317	FITTING - male, 45° .....	1
42	218- 5011	O-RING .....	1

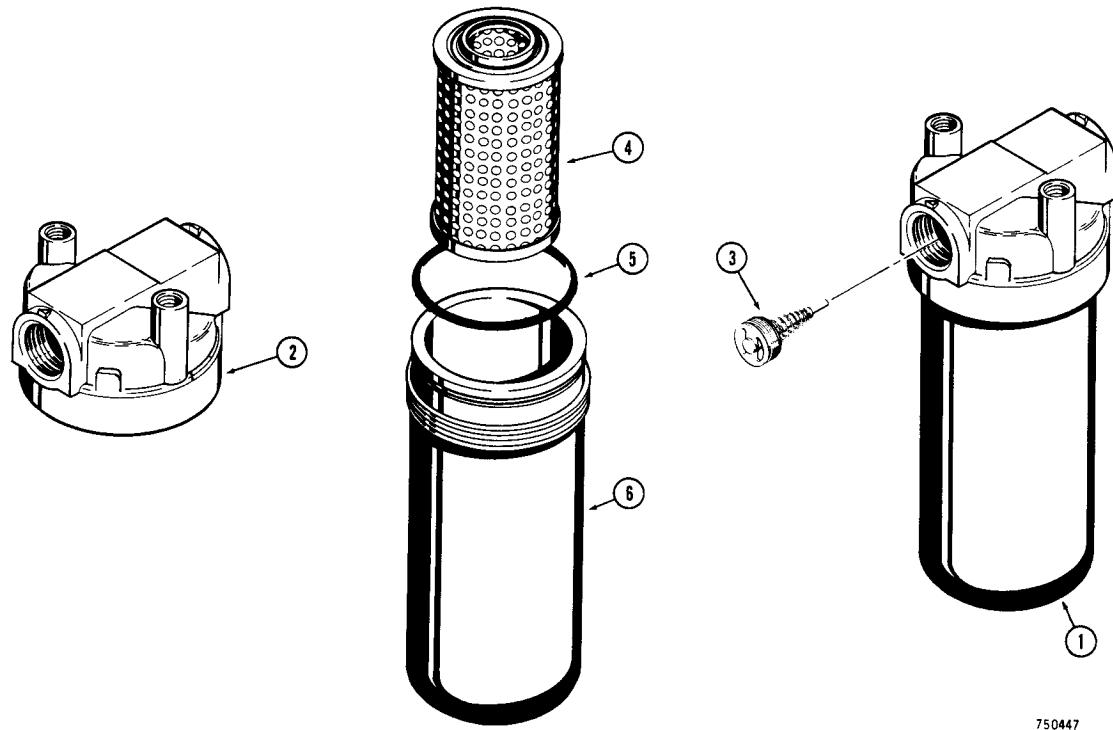
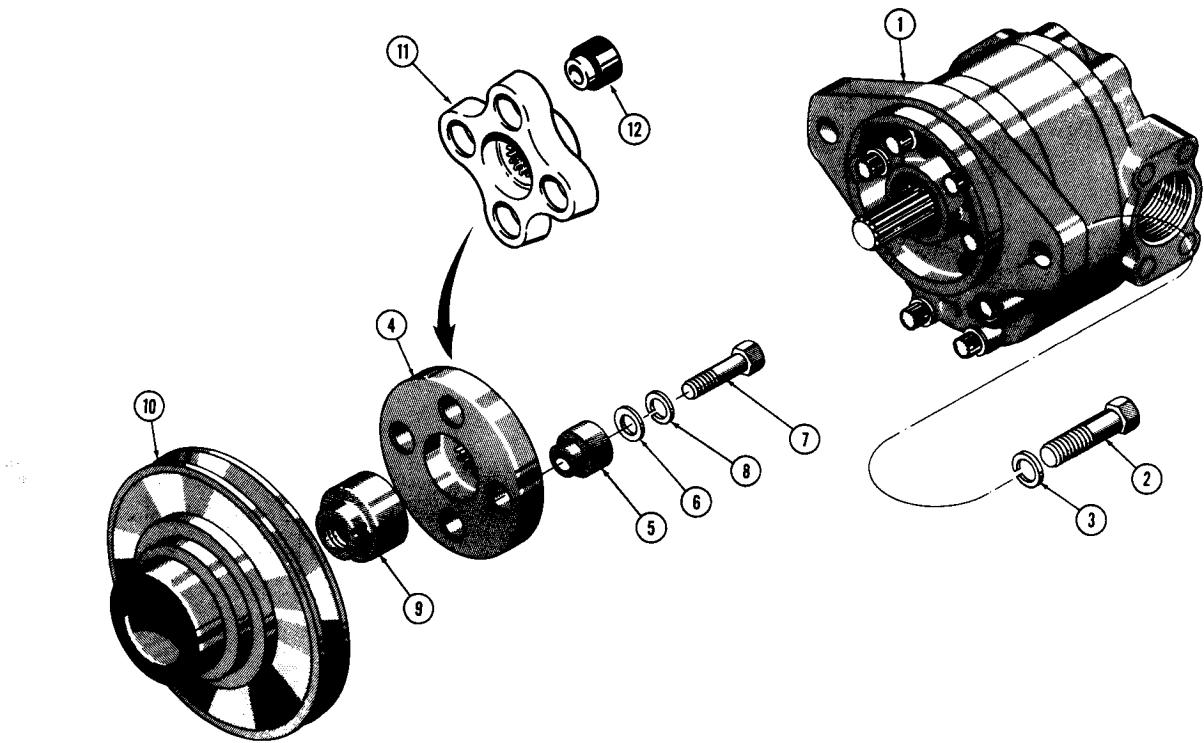
## USED ON MODELS WITH RETURN TO DIG FEATURE

43	13- 614	HHCS - 3/8" - 16 NC x 7/8"	3
44	D 44233	BRACKET - filter mounting .....	1
45	92- 6	WASHER - lock, 3/8"	3
46	25- 106	NUT - hex, 3/8" - 16 NC .....	3
47	221- 239	NIPPLE - male .....	1
48	221- 379	FITTING - 90° .....	1



## D41390 HYDRAULIC PUMP

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 41390	PUMP - hydraulic, Cessna No 24527-1AAC or 24504-LAN .....	1
2	D 48879	COVER - drive shaft end .....	1
3	D 49371	BODY - center .....	1
4	D 48883	COVER - port end .....	1
	D 52929	GEAR SET - drive and idler .....	1
5	NSS	GEAR AND SHAFT ASSEMBLY - drive .....	1
6	NSS	GEAR AND SHAFT ASSEMBLY - idler .....	1
	D 59656	KIT - pump rebuild .....	1
7	D 41322	PLATE - thrust .....	1
8	D 41321	DIAPHRAGM .....	1
9	H 260935	GASKET - protector .....	1
10	A 41244	GASKET - backup .....	1
11	D 48888	SEAL - diaphragm .....	1
12	A 25139	SEAL - shaft .....	1
13	D 31403	SPRING - ball retaining .....	2
14	211- 312	BALL - steel, 13/32" .....	2
14A	H 756221	SEAL - O-ring .....	2
15	166- 54	SCREW - Ferry Cap, 3/8" - 16 NC x 3-1/4" .....	4
16	166- 55	SCREW - Ferry Cap, 3/8" - 16 NC x 3-1/2" .....	4
17	D 49373	DOWEL - body .....	2



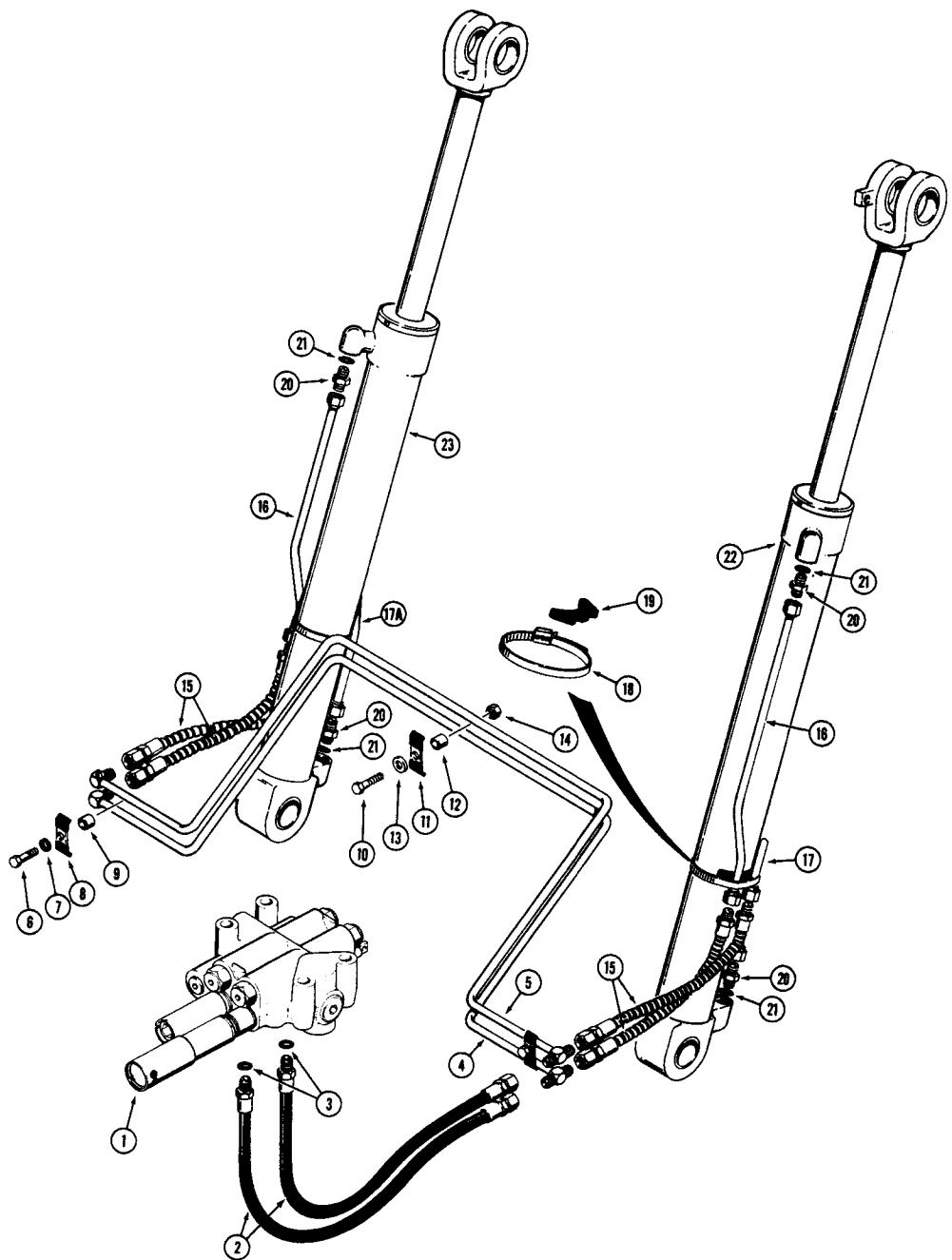
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## PUMP DRIVE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 41390	PUMP - hydraulic, parts list page 149.....	1
2	13- 824	HHCS - 1/2" - 13 NC x 1-1/2" .....	2
3	92- 8	WASHER - lock, 1/2" .....	2
4	A 35558	COUPLING - flexible, Use A51885 .....	1
5	G 36905	BLOCK AND BUSHING - flex. coupling .....	4
6	A 30013	WASHER - special .....	4
7	13- 724	HHCS - 7/16" - 14 NC x 1-1/2" .....	4
8	92- 7	WASHER - lock, 7/16" .....	4
9	A 35673	NUT - fan drive pulley .....	1
10	A 50962	PULLEY - fan and alternator drive .....	1
11	A 51885	COUPLING - flexible .....	1
12	A 45216	BLOCK AND BUSHING - flex coupling.....	4

## D43567 HYDRAULIC OIL FILTER

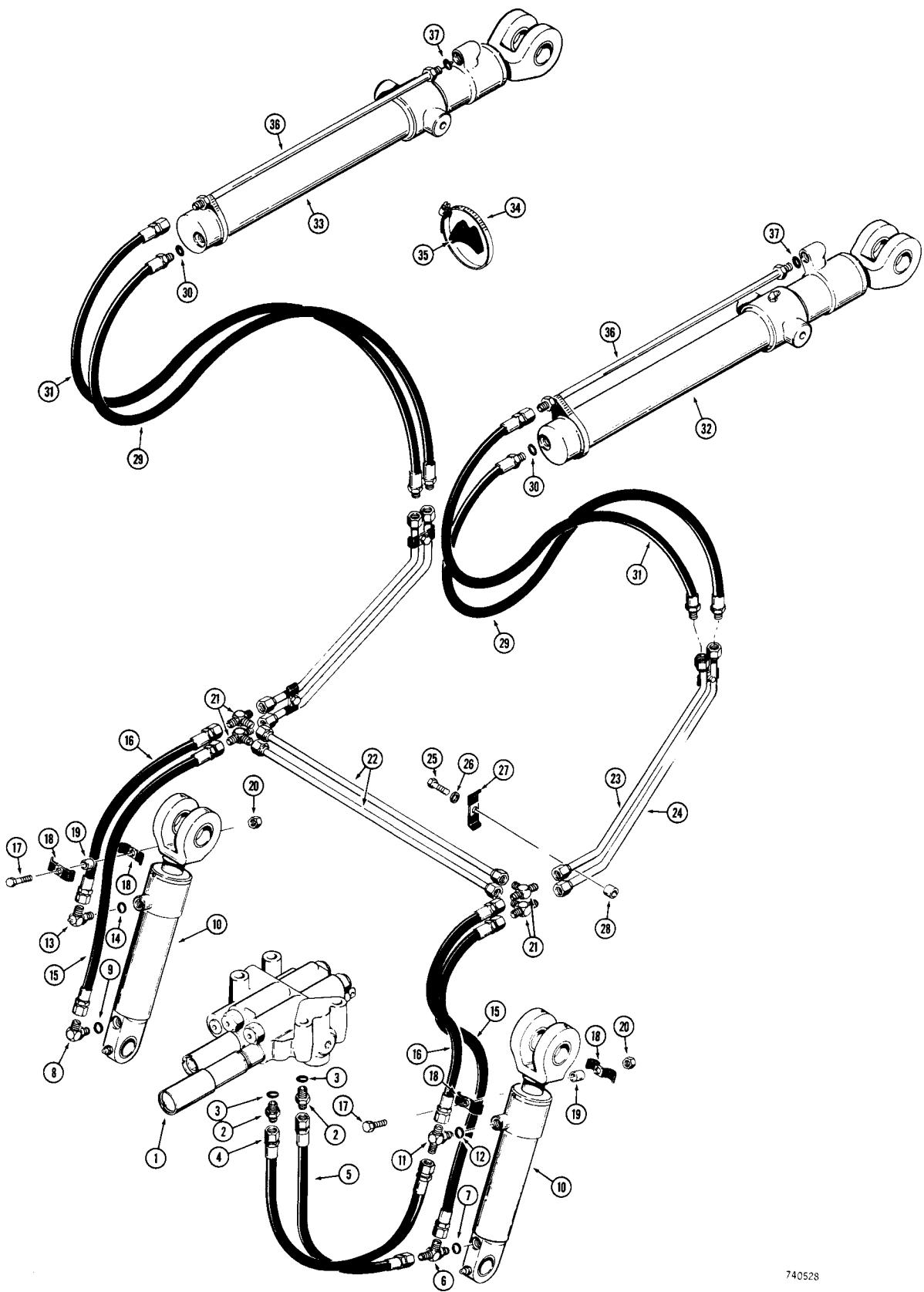
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 43567	FILTER - hydraulic oil .....	1
	D 61903	HEAD ASSEMBLY - filter .....	1
2	NSS	HEAD - filter .....	1
3	D 58199	VALVE - oil, bypass (25 PSI) .....	1
	D 43800	KIT - filter .....	1
4	NSS	ELEMENT - filter .....	1
5	A 27994	SEAL - O-ring .....	1
6	D 42439	HOUSING - filter .....	1



731480

## LOADER LIFT HYDRAULIC CIRCUIT

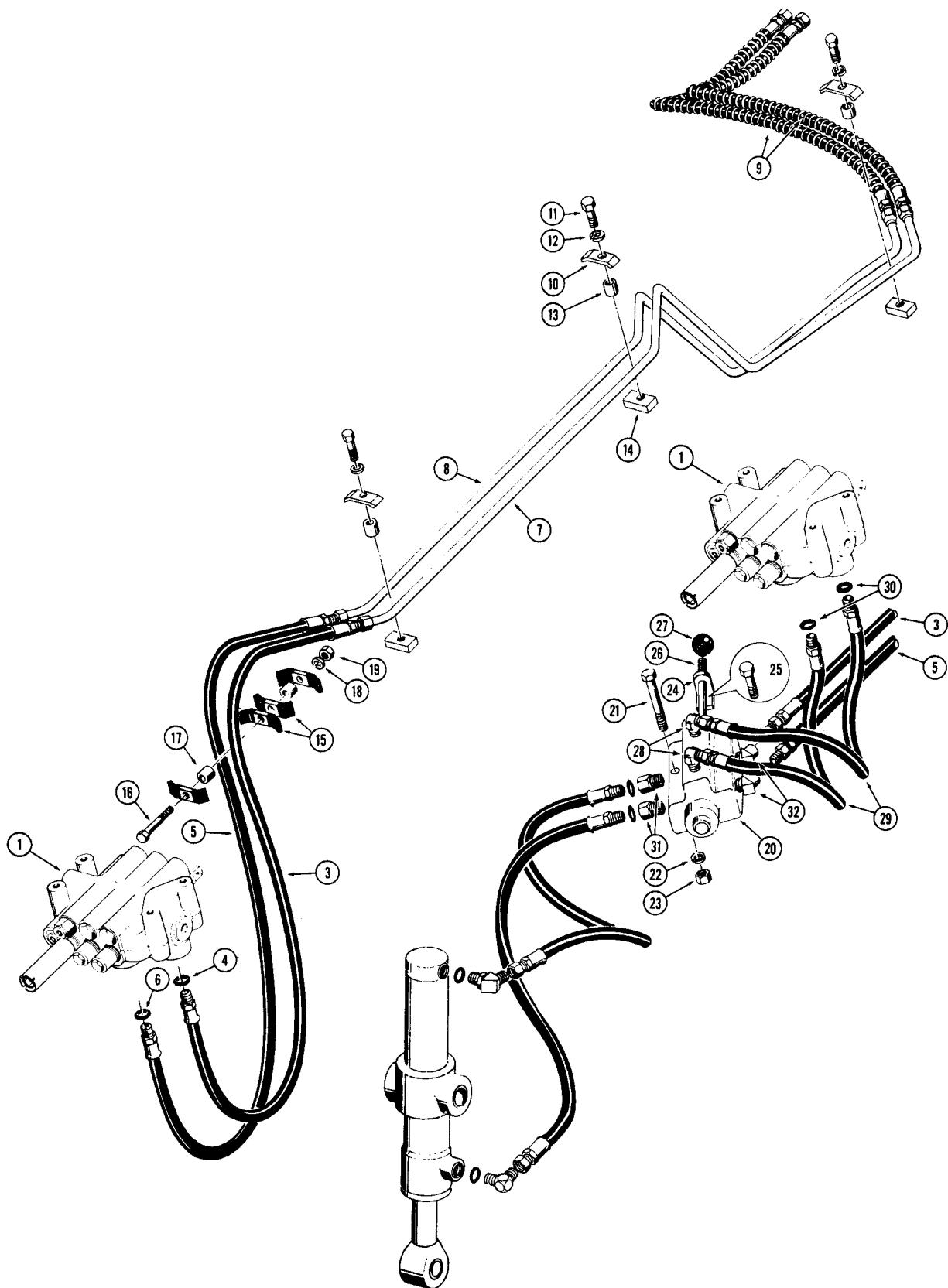
REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - loader control, see pages 215 thru 219 for proper valve .....	1
2	D 34782	HOSE - 20" (508 mm) long .....	2
3	218- 5007	O-RING .....	1
4	D 34774	TUBE - crossover, lift (Lower) .....	1
5	D 34830	TUBE - crossover, lift (Upper) .....	1
6	13- 520	HHCS - 5/16" - 18 NC x 1-1/4" .....	2
7	92- 5	WASHER - lock, 5/16" .....	2
8	R 17319	CLAMP - tube .....	2
9	D 33552	SPACER - clamp .....	2
10	13- 528	HHCS - 5/16" - 18 NC x 1-3/4" .....	1
11	R 17319	CLAMP - tube .....	1
12	D 33552	SPACER - clamp .....	1
13	195- 21	WASHER - flat, 5/16" .....	1
14	131- 4	NUT - hex self lock, 5/16" - 18 NC .....	1
15	D 34780	HOSE - 19" (473 mm) long .....	4
16	R 31355	TUBE - lift cylinder, rod end .....	2
17	R 31353	TUBE - lift cylinder, closed end (R.H.) .....	1
17A	R 31352	TUBE - lift cylinder, closed end (L.H.) .....	1
18	214- 268	CLAMP - rod to lift cylinder .....	2
19	R 24703	CUSHION - rubber .....	2
20	218- 5062	FITTING - male, straight .....	4
21	218- 5007	O-RING .....	1
22	REF.	CYLINDER - lift, R.H., see page 175 and 177 for cylinders .....	1
23	REF.	CYLINDER - lift, L.H., see page 175 and 177 for cylinders .....	1



740528

## LOADER BUCKET TILT AND HYDRA-LEVELING HYDRAULIC CIRCUITS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - control, see pages 215 thru 219 for proper valve .....	1
2	218- 5062	FITTING - male, straight .....	2
3	218- 5007	O-RING .....	1
4	L 51198	HOSE - 28" (711 mm) long .....	1
5	D 27484	HOSE - 19-3/8" (492 mm) long .....	1
6	218- 5241	TEE - adjustable .....	1
7	218- 5007	O-RING .....	1
8	218- 5107	FITTING - 90°, adjustable .....	1
9	218- 5007	O-RING .....	1
10	REF.	CYLINDER - hydra-leveling, see page 183 and 185 for cylinders .....	2
11	218- 5184	TEE - adjustable, male .....	1
12	218- 5007	O-RING .....	1
13	218- 5107	FITTING - 90°, adjustable .....	1
14	218- 5007	O-RING .....	1
15	L 46723	HOSE - 42" (1067 mm) long .....	2
16	D 27978	HOSE - 30-3/4" (781 mm) long .....	2
17	13- 632	HHCS - 3/8" - 16 NC x 2" .....	2
18	R 15257	CLAMP - hose .....	4
19	D 38524	SPACER - clamp .....	2
20	131- 6	NUT - hex self lock, 3/8" - 16 NC .....	2
21	218- 595	TEE - male .....	4
22	D 34768	TUBE - crossover .....	2
23	R 30528	TUBE - lift arm, upper .....	2
24	R 30530	TUBE - lift arm, lower .....	2
25	13- 520	HHCS - 5/16" - 18 NC x 1-1/4" .....	4
26	92- 5	WASHER - lock, 5/16" .....	4
27	D 33316	CLAMP - tube .....	4
28	D 33552	SPACER - clamp .....	4
29	L 13750	HOSE - 35" (874 mm) long .....	2
30	218- 5007	O-RING .....	1
31	D 32284	HOSE - 40" (1016 mm) long .....	1
32	REF.	CYLINDER - dump, R.H., see page 179 and 181 for cylinders .....	1
33	REF.	CYLINDER - dump, L.H., see page 179 and 181 for cylinders .....	1
34	214- 267	CLAMP - tube to cylinder .....	2
35	R 24703	CUSHION - rubber .....	2
36	L 13737	TUBE - cylinder, rod end .....	2
37	218- 5007	O-RING .....	2

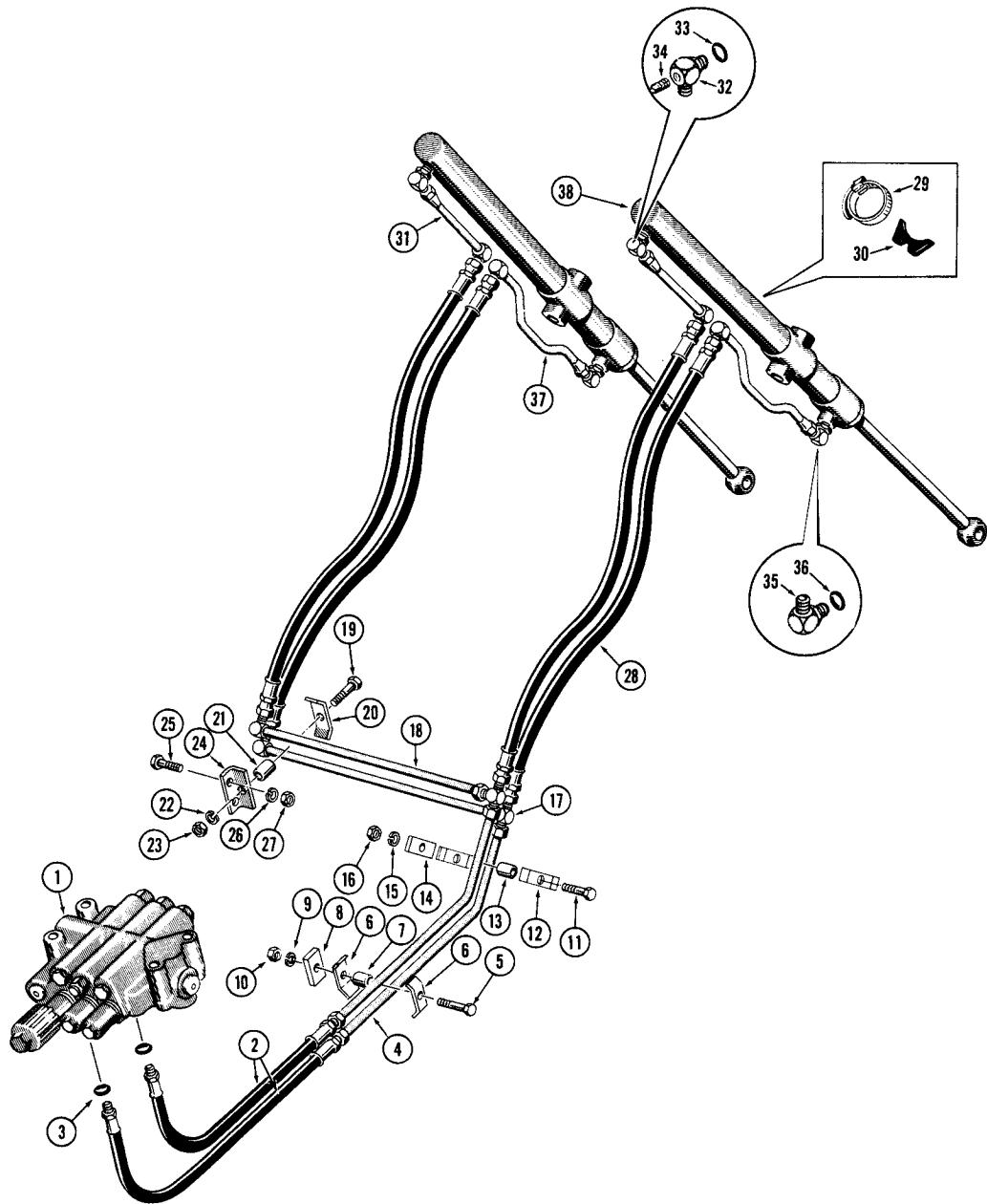


## LOADER ARM AUXILIARY HYDRAULIC CIRCUIT

REF.	PART NO.	REF.	DESCRIPTION	REQ'D.
1		REF.	VALVE - control, see pages 215 thru 219 for proper valve .....	1
2			RESERVED	
3	D 35875		HOSE - 48-1/2" (1232 mm) long.....	1
4	218- 5007		O-RING .....	1
5	D 35873		HOSE - 52-3/4" (1340 mm) long.....	1
6	218- 5007		O-RING .....	1
7	D 35866		TUBE - front control valve port to actuating cylinder (R.H.) .....	1
8	D 35865		TUBE - rear control valve port to actuating cylinder (L.H.) .....	1
9	D 35869		HOSE - control valve to actuating cylinder, upper section .....	2
10	38331		CLAMP - tube .....	3
11	13- 518		HHCS - 5/16" - 18 NC x 1-1/8" .....	3
12	92- 5		WASHER - lock, 5/16" .....	3
13	D 33552		SPACER - tube, clamp .....	3
14	D 24663		BLOCK - tapped .....	3
15	D 33316		CLAMP - hose .....	4
16	13- 556		HHCS - 5/16" - 18 NC x 3-1/2" .....	1
17	D 36524		SPACER - clamp, hose .....	2
18	195- 5		WASHER - flat, 5/16" .....	1
19	131- 4		NUT - hex self lock, 5/16" - 18 NC .....	1

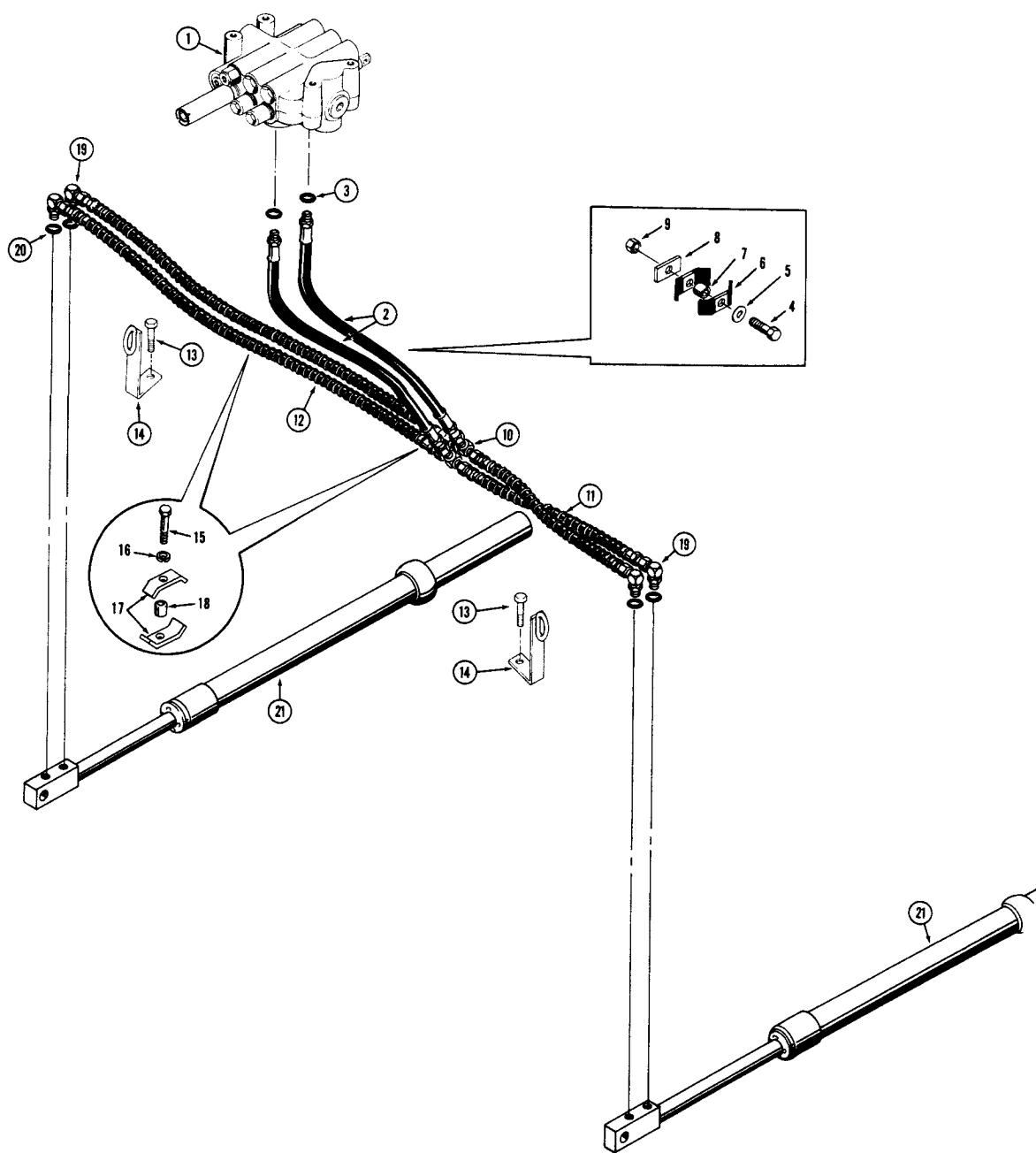
## USED ON LOADER RIPPER OR PULL BEHIND MODELS

20	D 26726		VALVE - diversion, parts list page 173 .....	1
21	13- 648		HHCS - 3/8" - 16 NC x 3" .....	2
22	92- 6		WASHER - lock, 3/8" .....	2
23	25- 106		NUT - hex, 3/8" - 16 NC .....	2
24	D 38913		BRACKET - diversion valve control rod .....	1
25	13- 832		HHCS - 1/2" - 13 NC x 2" .....	1
26	D 38914		ROD - control, diversion valve .....	1
27	70213		KNOB - control rod .....	1
28	218- 494		FITTING - 90° .....	2
29	D 25823		HOSE - 16-1/2" (419 mm) long .....	2
30	218- 5007		O-RING .....	2
31	218- 5040		FITTING - straight, male-female .....	2
32	D 38916		FITTING - special .....	2



## DOZER LIFT HYDRAULIC CIRCUIT

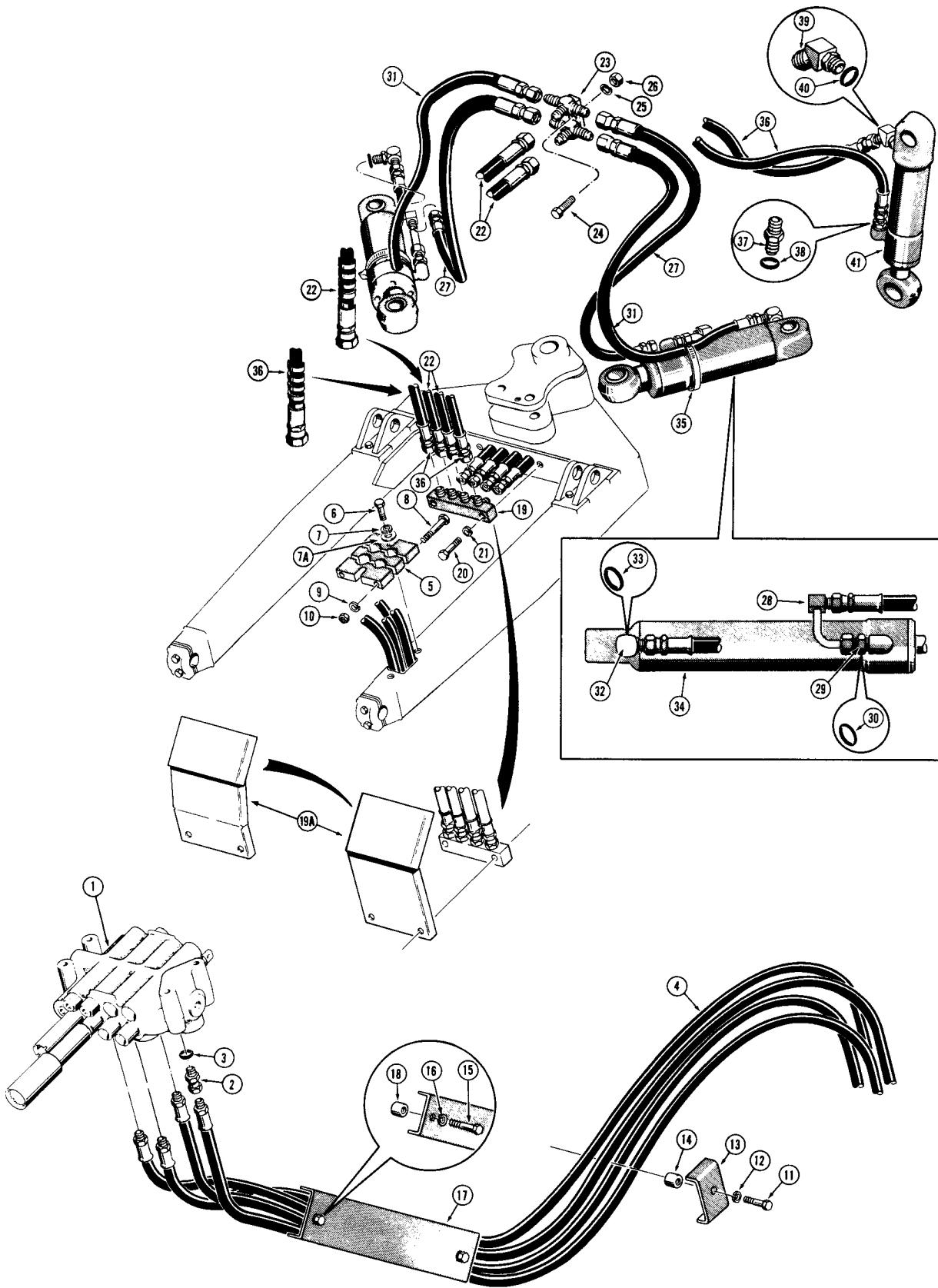
REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - hydraulic, see pages 215 thru 219 for proper valve .....	1
2	D 34759	HOSE - 25" (635 mm) long .....	2
3	218- 5007	O-RING .....	1
4	D 34753	TUBE - valve to crossover tubes .....	2
5	13- 840	HHCS - 1/2" - 13 NC x 2-1/2" .....	1
6	D 31782	CLAMP - tube .....	2
7	D 35228	SPACER - clamp .....	1
8	D 35229	BLOCK - clamp (Used on crawlers without step plate) .....	1
9	92- 8	WASHER - lock, 1/2" .....	1
10	25- 108	NUT - hex, 1/2" - 13 NC .....	1
11	13- 540	HHCS - 5/16" - 18 NC x 2-1/2" (Non ROPS Models) .....	1
11	13- 522	HHCS - 5/16" - 18 NC x 1-3/8" (ROPS Models) .....	1
12	R 17319	CLAMP - tube .....	2
13	D 33552	SPACER - clamp .....	1
14	D 35211	BLOCK - clamp (Non ROPS Models) .....	1
15	92- 5	WASHER - lock, 5/16" .....	1
16	25- 105	NUT - hex, 5/16" - 18 NC, if used .....	1
17	218- 595	TEE - tube, crossover .....	2
18	D 34749	TUBE - crossover .....	2
19	13- 524	HHCS - 5/16" - 18 NC x 1-1/2" .....	1
20	R 16916	CLAMP - tube .....	2
21	D 33552	SPACER - tube .....	1
22	92- 5	WASHER - lock, 5/16" .....	1
23	25- 105	NUT - hex, 5/16" - 18 NC .....	1
24	D 35164	BRACKET - tube mounting .....	1
25	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	2
26	92- 6	WASHER - lock, 3/8" .....	2
27	25- 106	NUT - hex, 3/8" - 16 NC .....	2
28	19178	HOSE - 33-1/2" (851 mm) long .....	4
29	214- 264	CLAMP - tube to cylinder .....	4
30	D 38648	SADDLE - tube, rubber .....	4
31	D 34747	TUBE - lift cylinder, closed end .....	2
32	R 19576	FITTING - special, 90° .....	1
33	218- 5007	O-RING .....	1
34	221- 11	PLUG - square head, 1/8" NPT .....	1
35	218- 5107	FITTING - adjustable, 90° .....	3
36	218- 5007	O-RING .....	1
37	D 34745	TUBE - lift cylinder, rod end (Used on Power Angling Dozer Models) ..	2
	D 36138	TUBE - lift cylinder, rod end (Used on Power Angle-Tilt Dozer Models) ..	2
38	REF.	CYLINDER - lift, see page 191 thru 197 for proper cylinders .....	2



## ANGLE DOZER HYDRAULIC CIRCUIT

## ANGLE CIRCUIT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - control, see pages 215 thru 219 fr proper valve .....	1
2	D 34838	HOSE - 33" (838 mm) long .....	2
3	218- 5007	O-RING .....	1
4	13- 544	HHCS - 5/16" - 18 NC x 2-1/2" .....	1
5	195- 21	WASHER - flat, 5/16" .....	1
6	D 33316	CLAMP - hose .....	2
7	D 33829	SPACER - clamp .....	1
8	D 35211	BLOCK - clamp .....	1
9	131- 4	NUT - hex self lock, 5/16" - 18 NC .....	1
10	218- 595	TEE - hose .....	1
11	D 34834	HOSE - R.H., 23" (584 mm) long .....	2
12	D 34836	HOSE - L.H., 49" (1245 mm) long .....	2
13	13- 1228	HHCS - 3/4" - 10 NC x 1-3/4" .....	2
14	D 40793	GUIDE - hose .....	2
15	13- 540	HHCS - 5/16" - 18 NC x 2-1/2" .....	2
16	92- 5	WASHER - lock, 5/16" .....	2
17	R 17319	CLAMP - hose .....	4
18	D 33829	SPACER - clamp .....	2
19	218- 5107	FITTING - adjustable, 90° .....	4
20	218- 5007	O-RING .....	1
21	REF.	CYLINDER - angling, see page 197 for proper cylinder .....	2

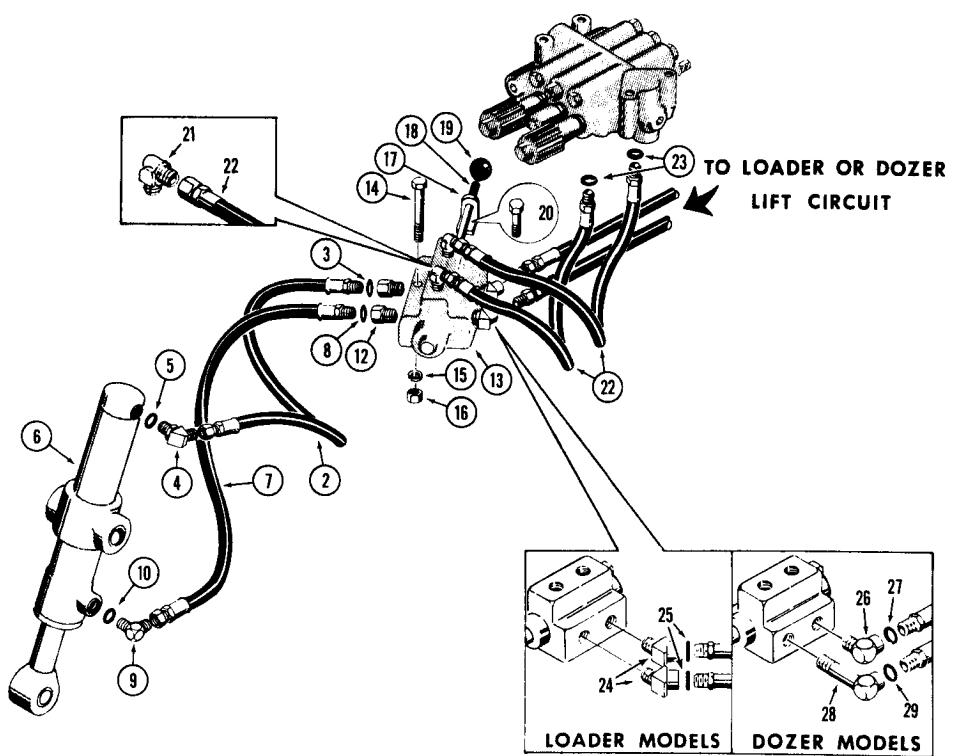
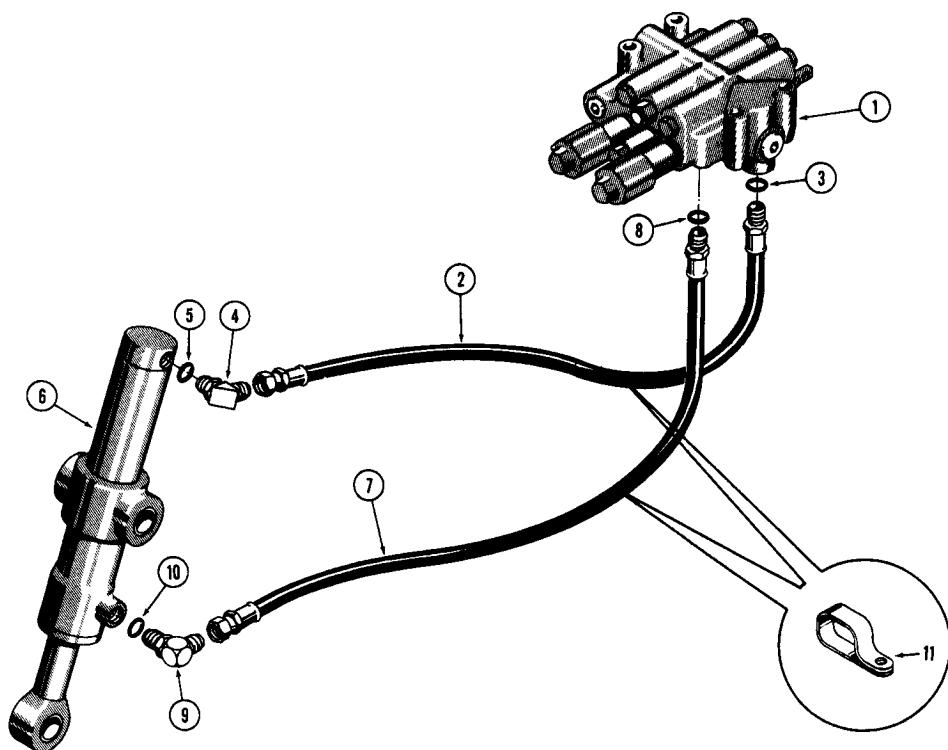


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## ANGLE-TILT DOZER HYDRAULIC CIRCUIT

## (ANGLE AND TILT CIRCUIT)

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - hydraulic, see pages 215 thru 219 for proper valve .....	1
2	D 37118	FITTING - special, straight .....	4
3	218- 5007	O-RING .....	1
4	D 36128	HOSE - 141" (3607 mm) long .....	4
5	D 36131	BLOCK - clamp, hose .....	1
6	13- 620	HHCS - 3/8" - 16 NC x 1-1/4" .....	2
7	92- 6	WASHER - lock, 3/8" .....	2
7A	195- 25	WASHER - flat, 3/8" .....	2
8	13- 472	HHCS - 1/4" - 20 NC x 4-1/2" .....	2
9	92- 4	WASHER - lock, 1/4" .....	2
10	25- 104	NUT - hex, 1/4" - 20 NC .....	2
11	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	1-2
12	92- 6	WASHER - lock, 3/8" .....	1-2
13	D 36134	CLAMP - hose .....	1-2
14	NSS	BLOCK - tapped .....	1-2
15	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	2
16	92- 6	WASHER - lock, 3/8" .....	2
17	D 36132	GUARD - hose .....	1
18	NSS	BLOCK - tapped .....	2
19	D 36130	BLOCK - manifold, rear .....	1
19A	R 24127	GUARD - hoses to manifold .....	1
20	13- 628	HHCS - 3/8" - 16 NC x 1-3/4" .....	2
21	92- 6	WASHER - lock, 3/8" .....	2
22	R 30879	HOSE - 48" (1219 mm) long .....	2
23	R 30914	MANIFOLD - dozer blade (ports) .....	1
24	13- 828	HHCS - 1/2" - 13 NC x 1-3/4" .....	1
25	92- 8	WASHER - lock, 1/2" .....	1
26	25- 108	NUT - hex, 1/2" - 13 NC .....	1
27	R 30835	HOSE - 19" (483 mm) long .....	2
28	D 28205	TUBE - angling cylinder, rod end .....	2
29	218- 5060	FITTING - male, straight .....	2
30	218- 5007	O-RING .....	1
31	R 30836	HOSE - 28" (711 mm) long .....	2
32	218- 5121	FITTING - special, 90° .....	2
33	218- 5007	O-RING .....	1
34	REF.	CYLINDER - angling, see page 201 and 203 for cylinder .....	2
35	214- 269	CLAMP - hose and tube to cylinder .....	2
36	R 30953	HOSE - 57" (1438 mm) long .....	2
37	218- 5060	FITTING - male, straight .....	1
38	218- 5007	O-RING .....	1
39	218- 5146	FITTING - adjustable, 45° .....	1
40	218- 5007	O-RING .....	1
41	REF.	CYLINDER - tilt, see page 205 and 207 for cylinder .....	1

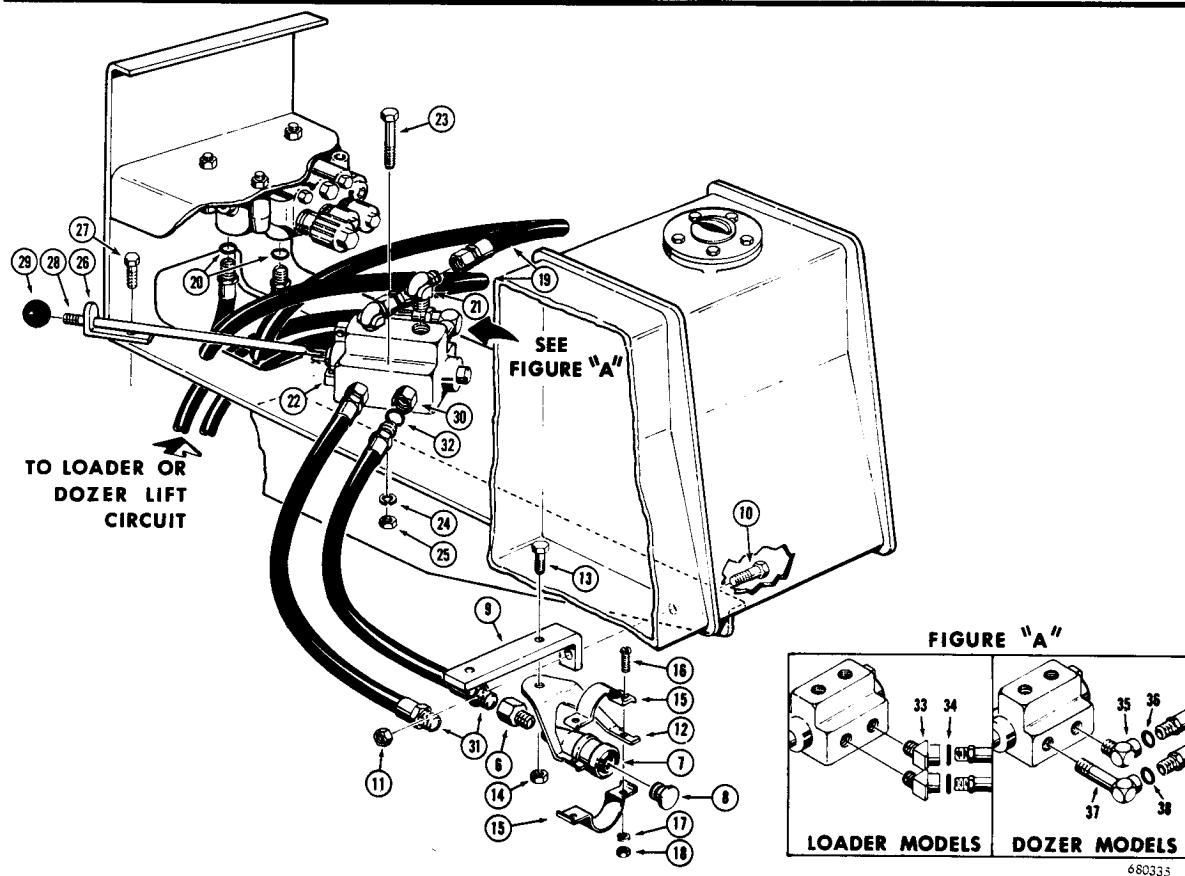
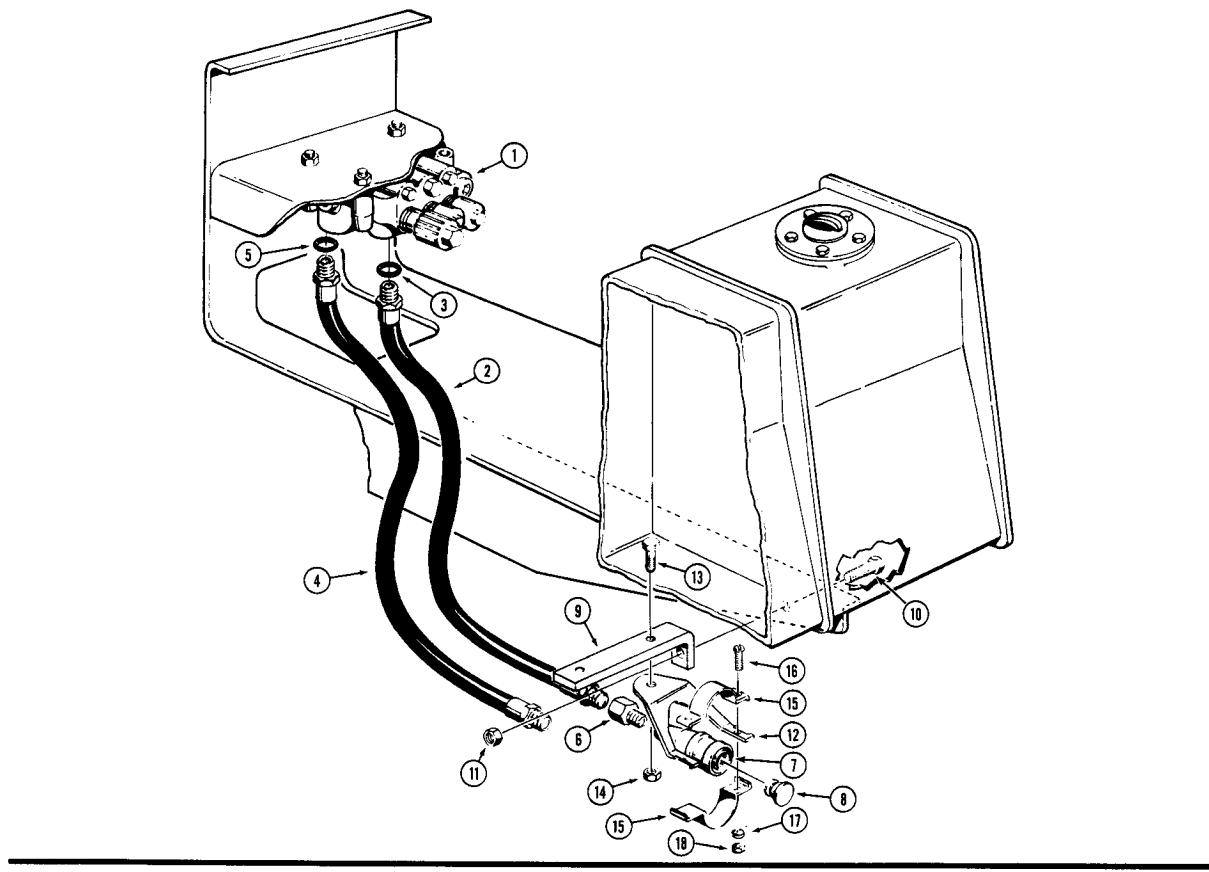


## RIPPER HYDRAULIC CIRCUITS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - hydraulic, see pages 215 thru 219 for proper valve .....	1
2	D 37343	HOSE - 43" (1092 mm) long .....	1
3	218- 5007	O-RING .....	1
4	218- 5137	FITTING - 45° .....	1
5	218- 5007	O-RING .....	1
6	REF.	CYLINDER - ripper, see page 209 and 211 for cylinder .....	1
7	D 35069	HOSE - 48" (1219 mm) long .....	1
8	218- 5007	O-RING .....	1
9	R 20839	FITTING - male, 90° (Special restrictor) .....	1
10	218- 5007	O-RING .....	1
11	D 39696	CLAMP - hose .....	1

## RIPPER WITH DIVERSION VALVE

12	218- 5040	FITTING - special .....	2
12A	218- 5008	O-RING - Not shown .....	1
13	D 26726	VALVE - diversion, parts list page 173 .....	1
14	13- 648	HHCS - 3/8" - 16 NC x 3" .....	2
15	92- 6	WASHER - lock, 3/8" .....	2
16	25- 106	NUT - hex, 3/8" - 16 NC .....	2
17	D 38913	BRACKET - guide, diversion valve rod .....	1
18	D 38914	ROD - diversion valve control .....	1
19	70213	KNOB - control rod .....	1
20	13- 832	HHCS - 1/2" - 13 NC x 2" .....	1
21	218- 494	FITTING - 90° .....	2
22	D 25823	HOSE - 16-1/2" (419 mm) long .....	2
23	218- 5007	O-RING .....	1
24	D 38916	FITTING ELBOW - special, used on Loader Models only .....	2
25	218- 5007	O-RING .....	1
26	D 40249	FITTING - special, used on Dozer Models only .....	1
27	218- 5007	O-RING .....	1
28	D 40250	FITTING - special, used on Dozer Models only .....	1
29	218- 5007	O-RING .....	1



680335

# MODEL 450 CRAWLER TRACTOR

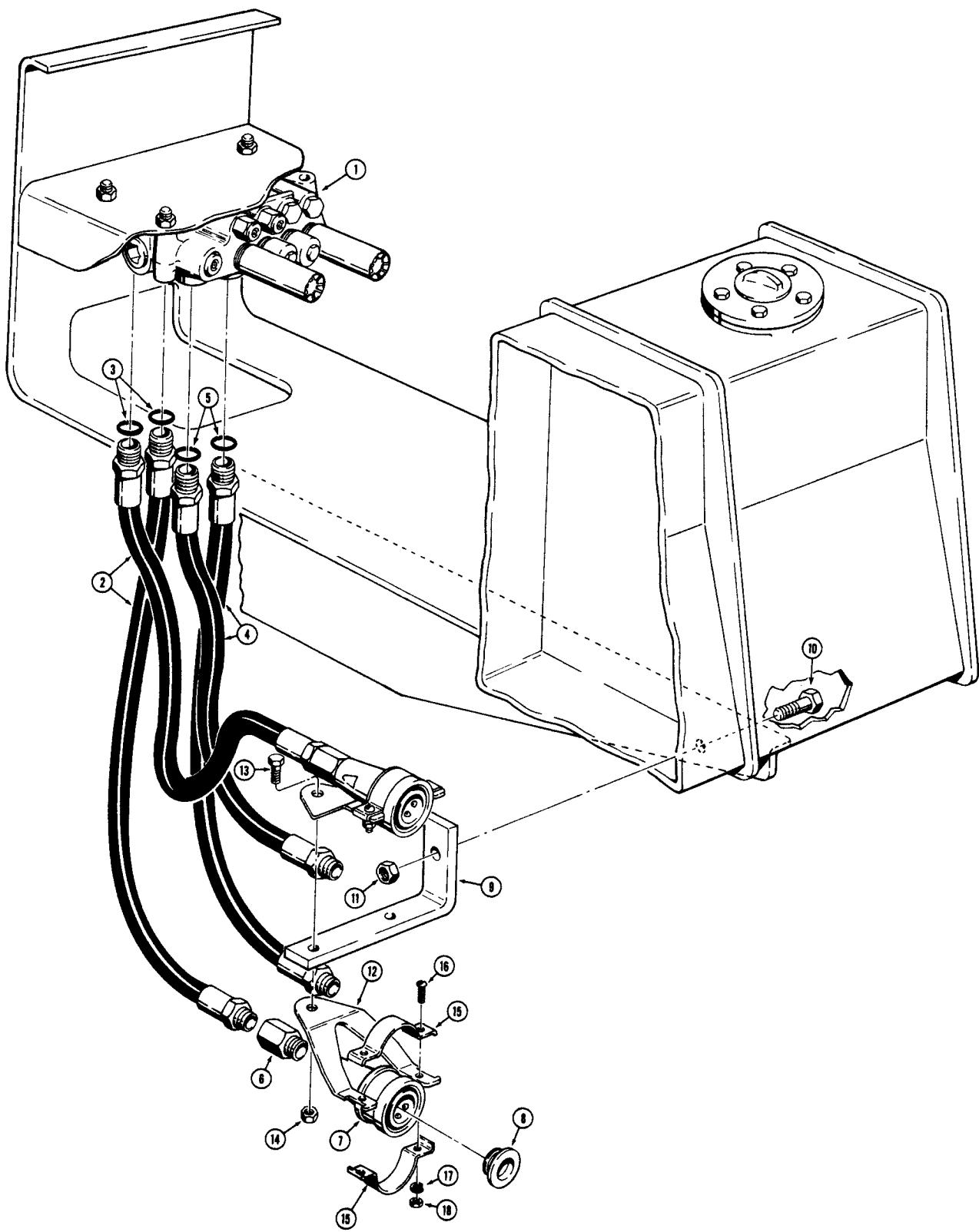
167

## PULL BEHIND HYDRAULIC CIRCUIT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - hydraulic, see pages 217 and 219 for proper valve .....	1
2	D 40257	HOSE - 41" (1041 mm) long .....	1
3	218- 5007	O-RING .....	1
4	D 40258	HOSE - 37" (940 mm) long .....	1
5	218- 5007	O-RING .....	1
6	A 27744	FITTING - coupling .....	2
7	A 28542	COUPLING - female, parts list page 171 .....	2
	A 28541	COUPLING - male, parts list page 171, not illustrated .....	2
8	A 22768	PLUG - dust .....	2
9	D 40251	BRACKET - mounting .....	1
10	13- 620	HHCS - 3/8" - 16 NC x 1-1/4" .....	1
11	131- 6	NUT - hex self lock, 3/8" - 16 NC .....	1
12	A 27360	BRACKET - coupling .....	2
13	13- 516	HHCS - 5/16" - 18 NC x 1" .....	2
14	131- 4	NUT - hex self lock, 5/16" - 18 NC .....	2
15	A 27423	CLAMP - coupling .....	4
16	173- 79	RHMS - no. 8 - 32 NC x 5/8" .....	4
17	192- 6	WASHER - lock, no. 8 .....	4
18	129- 6	NUT - hex , no. 8 - 32 NC .....	4

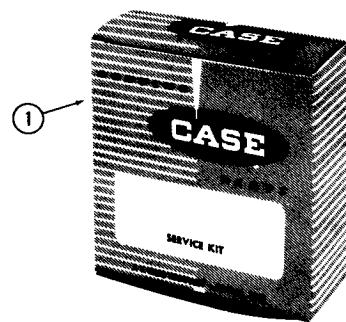
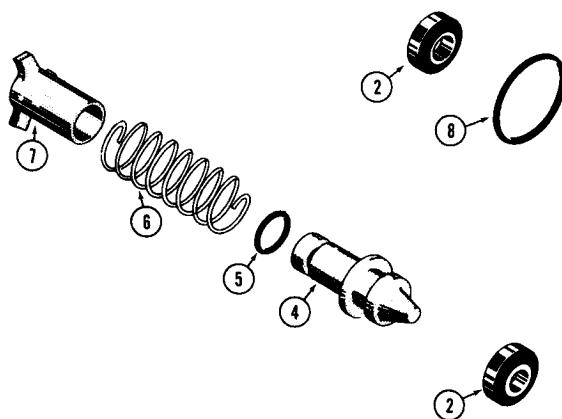
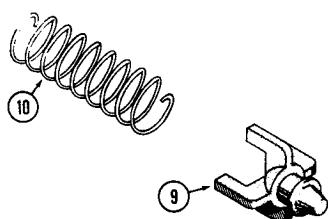
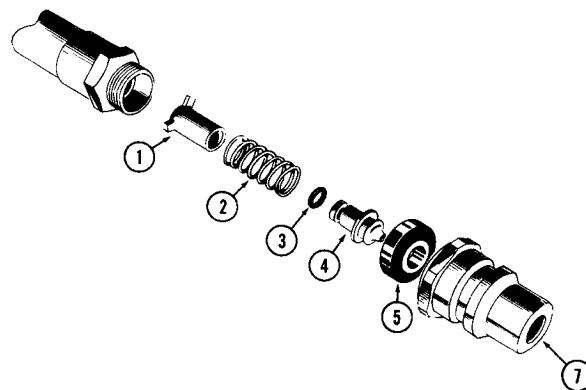
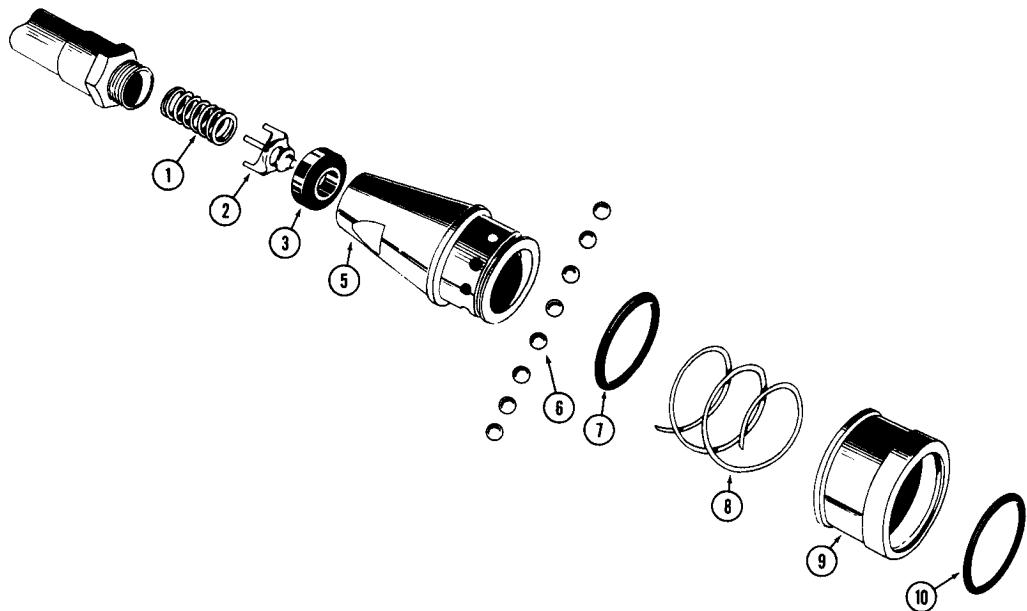
## PULL BEHIND WITH DIVERSION VALVE

19	D 25823	HOSE - 16-1/2" (419 mm) long .....	2
20	218- 5007	O-RING .....	1
21	218- 494	FITTING - 90° .....	2
22	D 26726	VALVE - diversion, parts list page 173 .....	1
23	13- 648	HHCS - 3/8" - 16 NC x 3" .....	2
24	92- 6	WASHER - lock, 3/8" .....	2
25	25- 106	NUT - hex, 3/8" - 16 NC .....	2
26	D 38913	BRACKET - guide, diversion valve rod .....	1
27	13- 832	HHCS - 1/2" - 13 NC x 2" .....	1
28	D 38914	ROD - diversion valve control .....	1
29	70213	KNOB - control rod .....	1
30	218- 5040	FITTING - straight, Male-female .....	2
31	D 40247	HOSE - 27" (686 mm) long .....	2
32	218- 5007	O-RING .....	1
33	D 38916	FITTING - special, Loader Models only .....	2
34	218- 5007	O-RING .....	1
35	D 40249	FITTING - special, Dozer Models only .....	1
36	218- 5007	O-RING .....	1
37	D 40250	FITTING - special, Dozer Models only .....	1
38	218- 5007	O-RING .....	1



## DUAL PULL BEHIND HYDRAULIC CIRCUIT

REF.	PART NO.	DESCRIPTION	REQ'D.
1	REF.	VALVE - control, hydraulic, see page 221 for proper valve .....	1
2	D 40257	HOSE - valve to equipment, 41" (1041 mm) long, If used .....	2
2	D 40258	HOSE - valve to equipment, 37" (940 mm) if used .....	2
3	218- 5007	O-RING .....	1
4	D 40258	HOSE - valve to equipment, 37" (940 mm) long .....	2
5	218- 5007	O-RING .....	1
6	A 27744	ADAPTER - coupling .....	4
7	A 28542	COUPLING - female, parts list page 209 .....	4
	A 28541	COUPLING - male, parts list page 209, not shown .....	4
8	A 22768	PLUG - dust .....	4
9	D 48070	BRACKET - mounting .....	1
10	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" .....	1
11	131- 10	NUT - hex, self lock, 1/2" - 13 NC .....	1
12	A 27360	BRACKET - coupling .....	4
13	13- 516	HHCS - 5/16" - 18 NC x 1" .....	2
14	131- 4	NUT - hex, self lock, 5/16" - 18 NC .....	2
15	A 27423	CLAMP - coupling .....	8
16	173- 79	RHMS - no. 8 - 32 NC x 5/8" .....	8
17	192- 6	WASHER - lock, no. 8 .....	8
18	129- 6	NUT - hex, no. 8 - 32 NC .....	8



751327

## A28542 COUPLING - FEMALE

REF.	PART NO.	DESCRIPTION	REQ'D.
	A 28542	COUPLING - pull-behind, female, service kit parts listed below .....	2
1	A 11324	SPRING - coupling piston .....	1
2	A 26215	PISTON - socket .....	1
3	A 33964	SEAL - piston .....	1
4		RESERVED	
5	A 27349	BODY - female coupling .....	1
6	211- 7	BALL - steel, socket locking .....	8
7	A 27352	O-RING - socket body .....	1
8	A 27354	SPRING - ball retaining sleeve .....	1
9	A 27353	SLEEVE - ball retaining .....	1
10	A 27355	RING - retaining, socket .....	1

## A28541 COUPLING - MALE

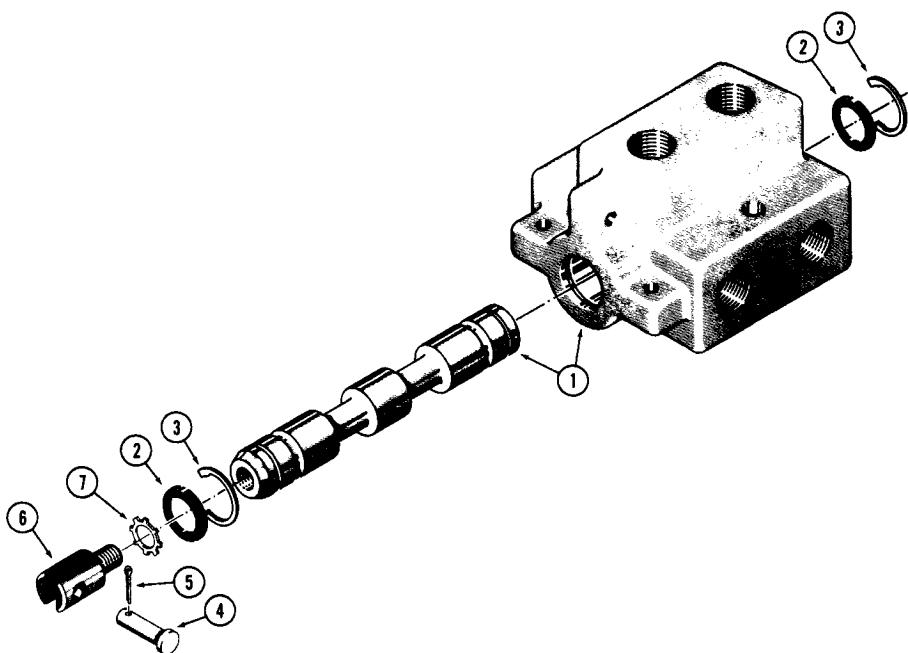
REF.	PART NO.	DESCRIPTION	REQ'D.
	A 28541	COUPLING - pull behind, male, service kit parts listed below .....	2
1	A 9634	SLEEVE - coupling plug piston .....	1
2	A 27351	SPRING - piston .....	1
3	A 27358	O-RING - piston sleeve .....	1
4	A 27508	PISTON - coupling plug .....	1
5	A 33964	SEAL - piston .....	1
6		RESERVED	
7	A 27356	BODY - male plug coupling .....	1

## ADAPTER FOR PULL BEHIND COUPLINGS

A	11161	ADAPTER - connecting, Case hydraulic hose to 1/2" female pipe connection (1/2" male pipe x 7/8" - 18 NF female)
A	27744	ADAPTER - connecting, Case pull behind couplings to hydraulic hose lines having 1/2" pipe thread (1/2" female pipe x 7/8" - 18 NF male)

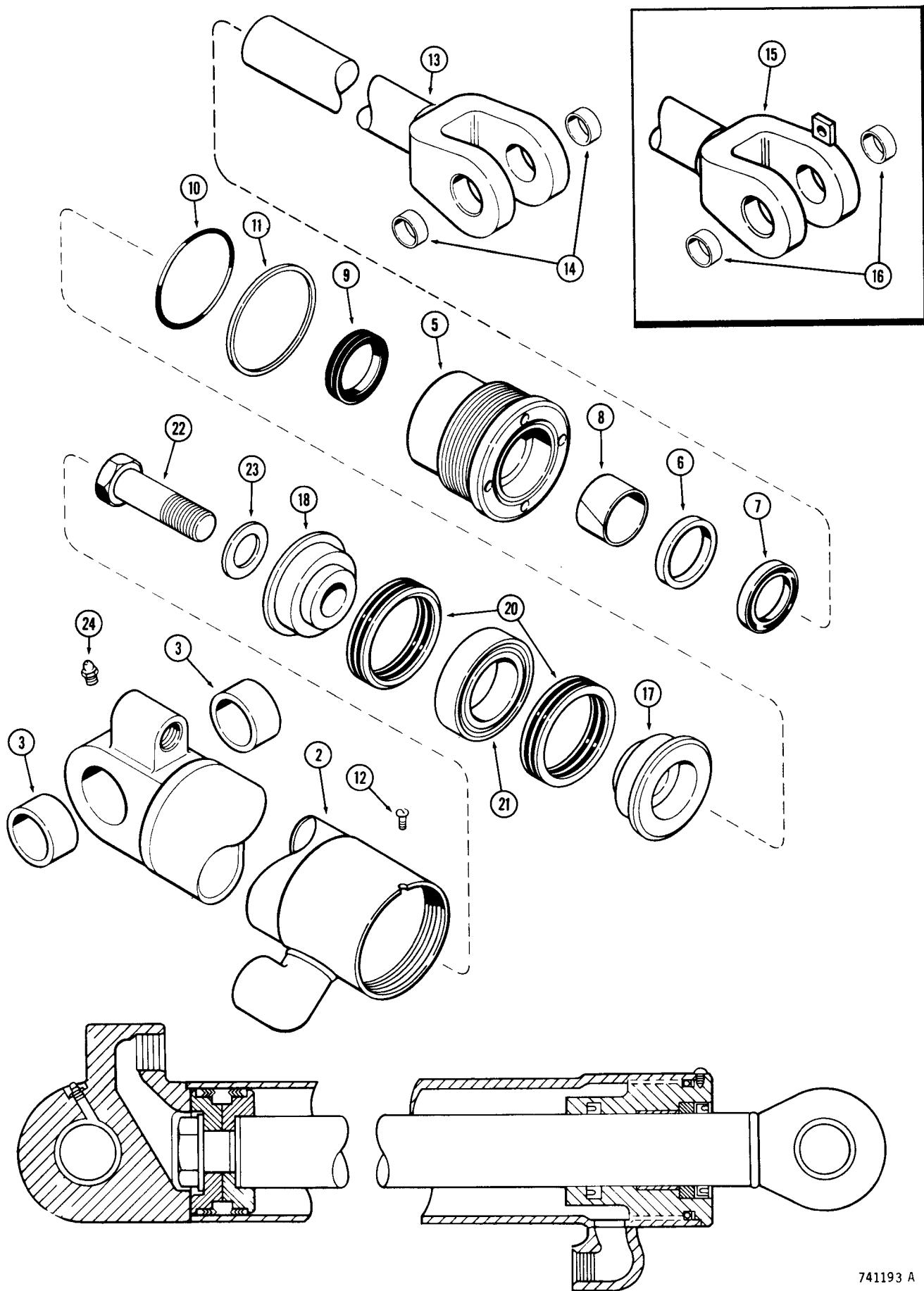
## SERVICE KIT FOR HYDRAULIC COUPLINGS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	A 40459	KIT - service, A28541 and A28542 couplings .....	1
2	A 33964	SEAL - piston .....	2
3		RESERVED	
4	A 27508	PISTON - coupling plug .....	1
5	A 27358	O-RING - piston sleeve .....	1
6	A 27351	SPRING - piston .....	1
7	A 9634	SLEEVE - coupling plug piston .....	1
8	A 27352	O-RING - socket body .....	1
9	A 26215	PISTON - socket .....	1
10	A 11324	SPRING - coupling piston .....	1



## D26726 DIVERSION VALVE

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 26726	VALVE - diversion .....	1
1	NSS	HOUSING AND SPOOL - matched set .....	1
2	D 23691	SEAL - quad ring, spool .....	2
3	D 23692	SNAP RING - spool .....	2
4	D 23693	PIN - clevis .....	1
5	132- 5	PIN - cotter, 1/16" dia. x 1/2"	1
6	D 23694	YOKE - control rod .....	1
7	193- 10	WASHER - shakewood, external lock .....	1

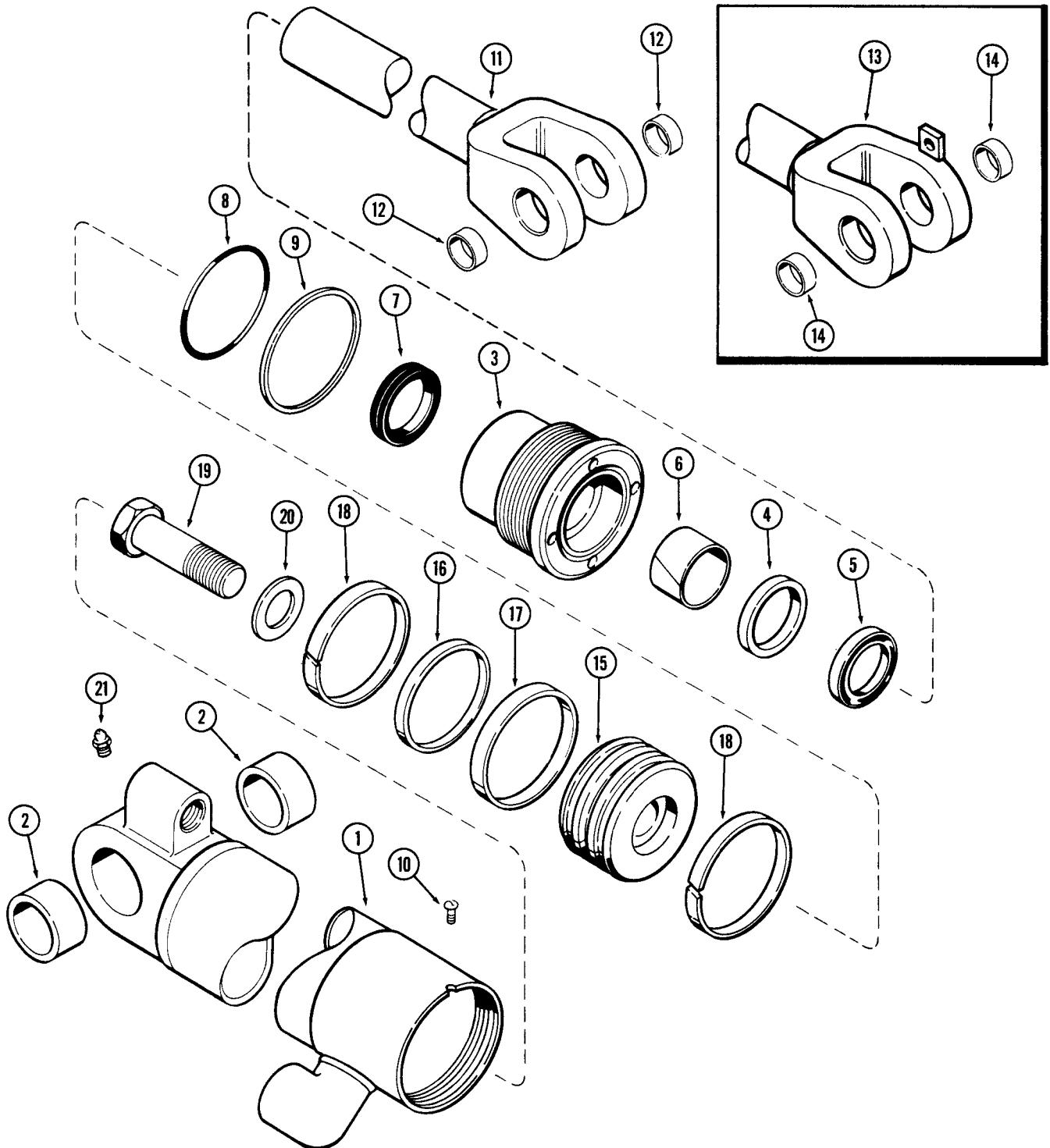


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## G33599, G33602 AND G33603 LOADER LIFT CYLINDERS

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

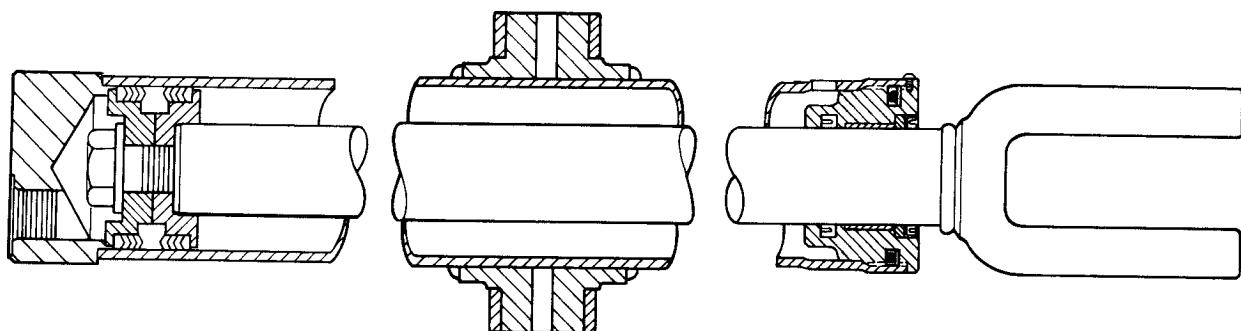
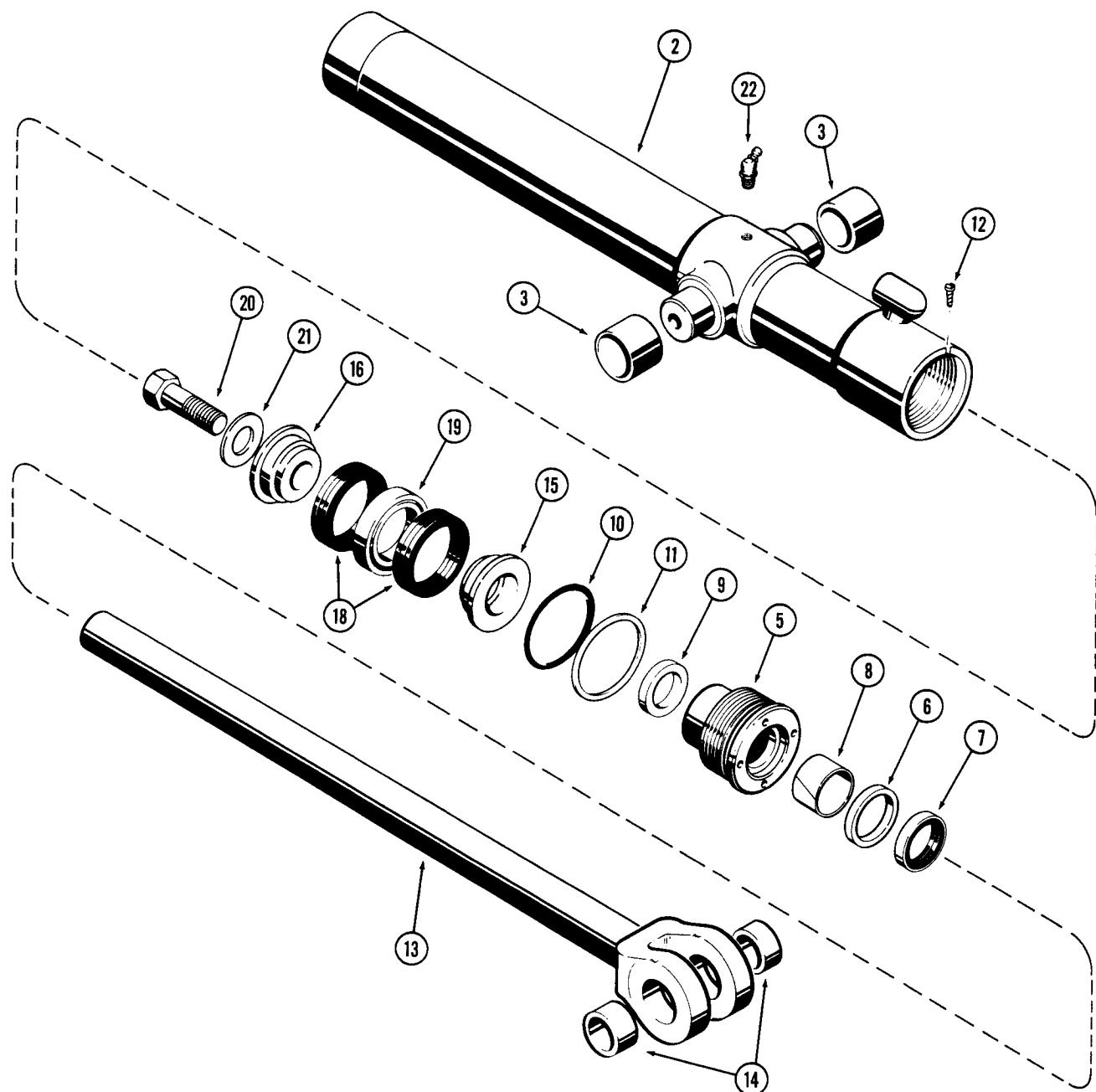
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33603	CYLINDER - L.H., 3-1/2" (88 mm) dia. x 31" (838 mm) stroke, Not shown .....	1
1	G 33602	CYLINDER - R.H., 3-1/2" (88 mm) dia. x 31" (838 mm) stroke, Models without anti-rollback feature (Not shown) .....	1
1	G 33599	CYLINDER - R.H., 3-1/2" (88 mm) dia. x 31" (838 mm) stroke, Models with anti-rollback feature (Not shown) .....	1
2	D 35064	TUBE - G33602 and G33599 cylinder .....	1
2	D 35063	TUBE - G33603 cylinder .....	1
3	D 35071	BUSHING - tube .....	2
4		RESERVED	
	G 34629	GLAND ASSEMBLY .....	1
5	NSS	GLAND .....	1
6	NSS	RING - center bearing .....	1
7	*D 95144	WIPER - piston rod, outer .....	1
8	*G 34322	BEARING - center .....	1
9	*D 36971**	SEAL - piston rod .....	1
10	*G 15457	O-RING .....	1
11	*G 32126	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8-32 NC x 1/4" .....	1
13	G 33604	ROD - piston, 2" (51 mm) dia. G33602 and G33603 cylinders .....	1
14	D 33047	BUSHING - piston rod .....	2
15	G 33600	ROD - piston, 2" (51 mm) dia. G33599 cylinder .....	1
16	D 33047	BUSHING - piston rod .....	2
17	G 33167	PISTON - split, rod end .....	1
18	D 28367	PISTON - split, bolt end .....	1
19		RESERVED	
	*G 33237	PACKING ASSEMBLY - piston .....	1
20	NSS	PACKING - "V" type .....	2
21	NSS	RING - center bearing .....	1
22	28- 1640	HHCS - 1" - 14 NF x 2-1/2", Grade 8 .....	1
23	G 32303	WASHER - hardened .....	1
24	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
	G 34630	KIT - seal, includes all items with an asterisk .....	1
**G	100778	SEAL - piston rod, service option - extreme heat or cold .....	1



## G101223, G101224 LOADER LIFT CYLINDERS

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

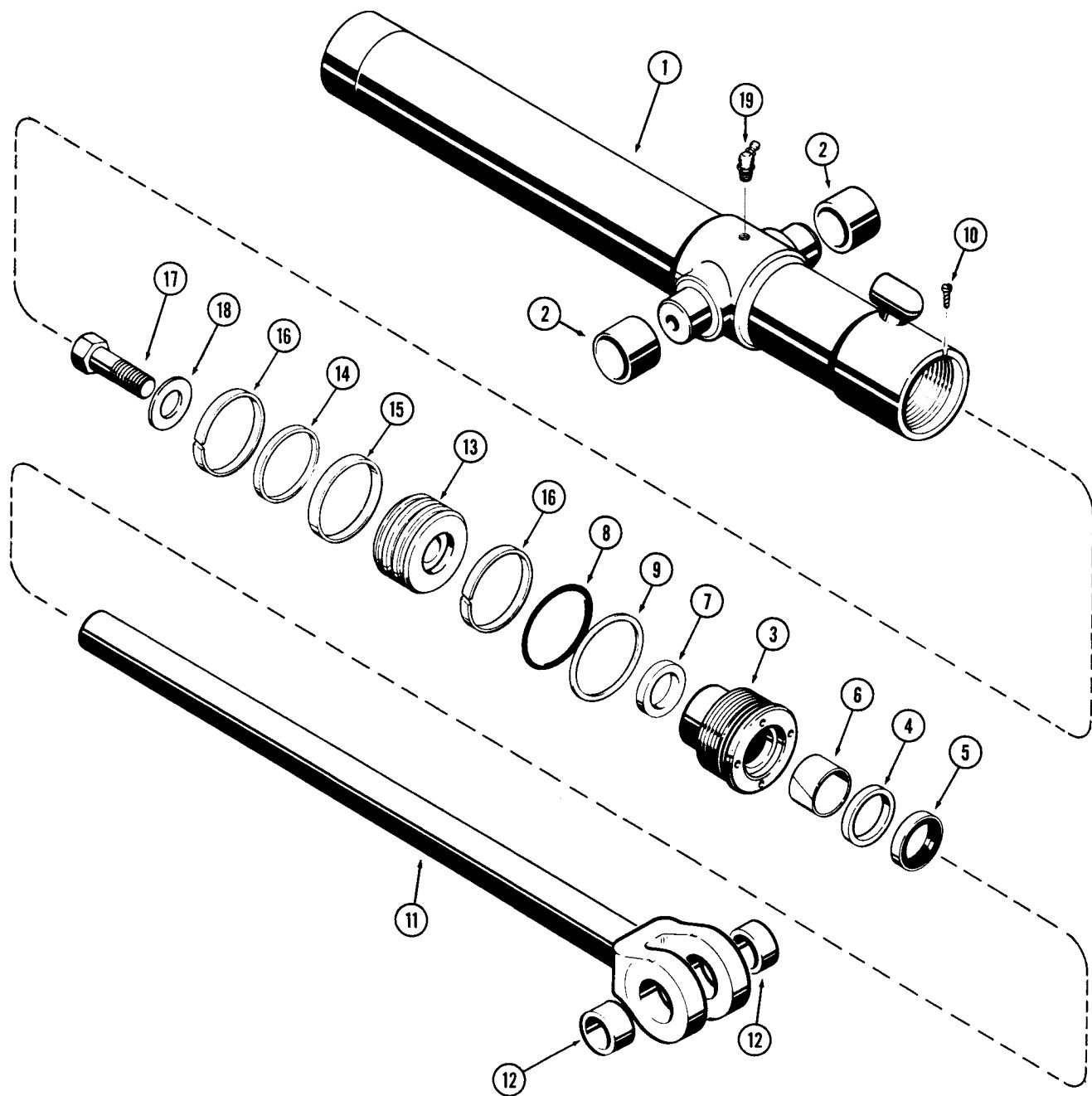
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101223	CYLINDER - L.H., 3-1/2" (88 mm) dia. x 31" (838 mm) stroke .....	1
	G 101224	CYLINDER - R.H., 3-1/2" (88 mm) dia. x 31" (838 mm) stroke .....	1
1	D 35064	TUBE - G101224 cylinder.....	1
1	D 35063	TUBE - G101223 cylinder.....	1
2	D 35071	BUSHING - all tubes .....	2
	G 34629	GLAND ASSEMBLY .....	1
3	NSS	GLAND.....	1
4	NSS	RING - center bearing .....	1
5	*D 95144	WIPER .....	1
6	*G 34322	BEARING - center .....	1
7	*D 36971**	SEAL - rod .....	1
8	*G 15457	O-RING.....	1
9	*G 32126	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
11	G 33604	ROD - 2" (51 mm) dia., G101223 cylinder .....	1
12	D 33047	BUSHING .....	2
13	G 101985	ROD - 2" (51 mm) dia., G101224 cylinder .....	1
14	D 33047	BUSHING .....	2
15	G 100694	PISTON.....	1
16	*G 102286	RING - quad .....	1
17	*G 100710	RING - piston .....	1
18	*G 100711	RING - wear .....	2
19	28- 1640	HHCS - 1" - 14 NF x 2-1/2", Grade 8 .....	1
20	G 32303	WASHER - hardened.....	1
21	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
	G 102402	KIT - seal, includes all items with an asterisk .....	1
**G	100778	SEAL - rod, service option - extreme heat or cold .....	1



## G33561 AND G33562 LOADER DUMP CYLINDERS

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

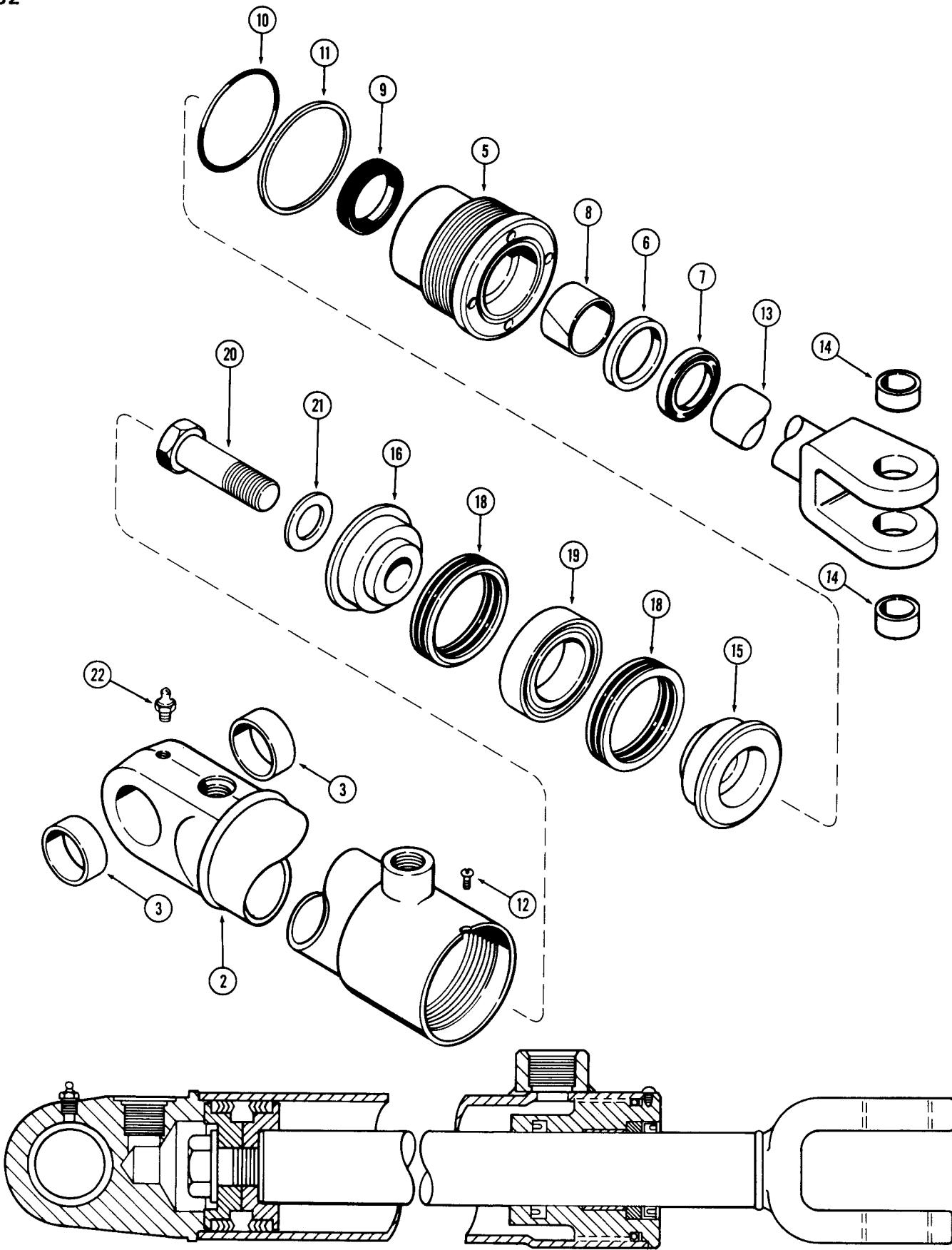
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33561	CYLINDER - L.H., 3" (76 mm) dia. x 23-1/2" (597 mm) stroke, Not shown .....	1
1	G 33562	CYLINDER - R.H., 3" (76 mm) dia. x 23-1/2" (597 mm) stroke, Not shown .....	1
2	D 35103	TUBE - G33561 cylinder.....	1
2	D 35102	TUBE - G33562 cylinder.....	1
3	D 31511	BUSHING - tube trunnion .....	2
4		RESERVED	
	G 34633	GLAND ASSEMBLY .....	1
5	NSS	GLAND.....	1
6	NSS	RING - center bearing .....	1
7	*D 95143	WIPER - piston rod, outer .....	1
8	*G 34621	BEARING - center .....	1
9	*D 36970**	SEAL - piston rod .....	1
10	*A 30095	O-RING.....	1
11	*G 32122	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8-32 NC x 1/4" .....	1
13	G 33563	ROD ASSEMBLY - piston, 1-3/4" (37 m) dia. ....	1
14	D 32865	BUSHING - piston rod .....	2
15	G 33331	PISTON - split, rod end .....	1
16	D 28896	PISTON - split, bolt end .....	1
17		RESERVED	
	*G 33151	PACKING ASSEMBLY - piston .....	1
18	NSS	PACKING - "V" type .....	2
19	NSS	RING - center bearing .....	1
20	28- 1640	HHCS - 1" - 14 NF x 2-1/2", Grade 8.....	1
21	G 32303	WASHER - hardened.....	1
22	219- 36	FITTING - grease, 45° 1/8" NPT .....	1
	G 34643	KIT - seal, includes all items with an asterisk .....	1
**G	100777	SEAL - piston rod, service option - extreme heat or cold .....	1



## G101220 AND G101221 LOADER DUMP CYLINDERS

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

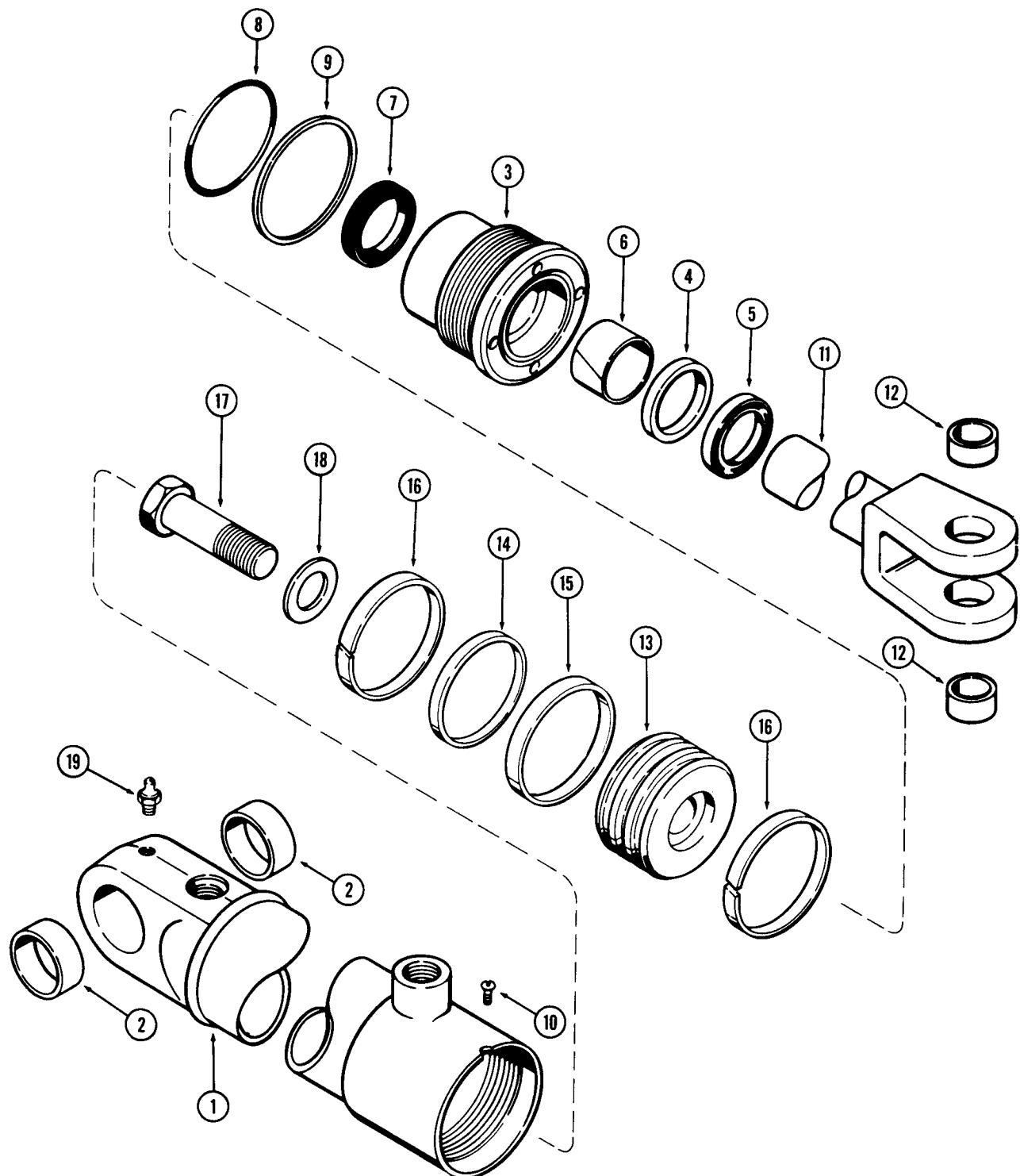
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101220	CYLINDER - R.H., 3" (76 mm) dia. x 23-1/2" (597 mm) stroke .....	1
	G 101221	CYLINDER - L.H., 3" (76 mm) dia. x 23-1/2" (597 mm) stroke .....	1
1	D 35103	TUBE - G101220 cylinder.....	1
1	D 35102	TUBE - G101221 cylinder.....	1
2	D 31511	BUSHING - all tubes .....	2
	G 34633	GLAND ASSEMBLY .....	1
3	NSS	GLAND.....	1
4	NSS	RING - center bearing .....	1
5	*D 95143	WIPER - rod .....	1
6	*G 34621	BEARING - center .....	1
7	*D 36970**	SEAL - rod .....	1
8	*A 30095	O-RING .....	1
9	*G 32122	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
11	G 33563	ROD - 1-3/4" (37 mm) dia. ....	1
12	D 32865	BUSHING .....	2
13	G 100704	PISTON .....	1
14	*G 102288	RING - quad .....	1
15	*G 100444	RING - piston .....	1
16	*G 100449	RING - wear .....	2
17	28- 1640	HHCS - 1" - 14 NF x 2-1/2", grade 8 .....	1
18	G 32303	WASHER - hardened .....	1
19	219- 36	FITTING - 45° grease, 1/8" NPT .....	1
	G 102405	KIT - seal, includes all items with an asterisk .....	1
**G	100777	SEAL - piston rod, service option - extreme heat or cold .....	1



## G33555 LOADER HYDRA-LEVELING CYLINDER

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

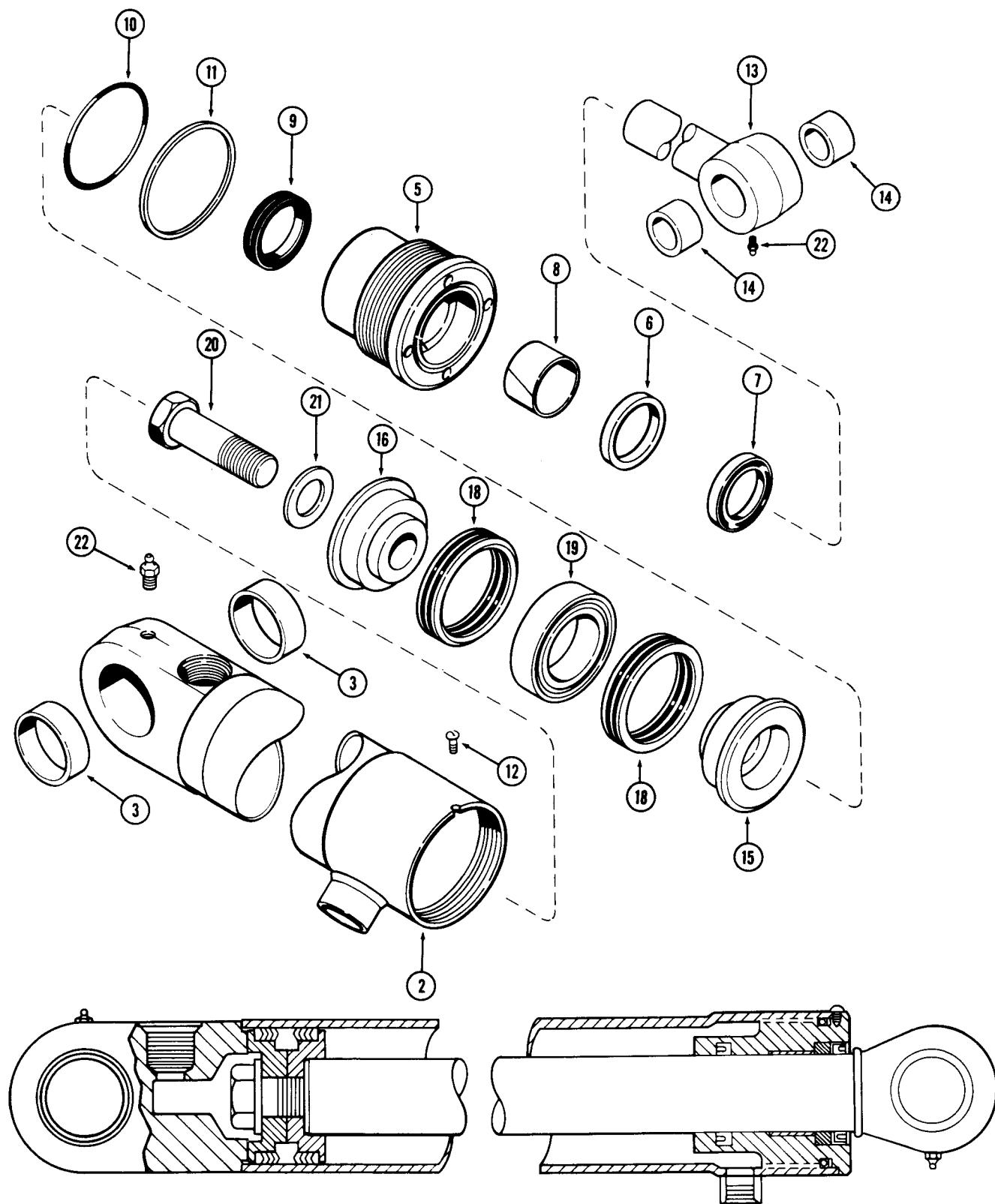
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33555	CYLINDER - 3" (76 mm) dia. x 7-1/4" (184 mm) stroke, not shown .....	2
2	D 35129	TUBE - G33555 cylinder.....	1
3	30613	BUSHING - tube .....	2
4		RESERVED	
	G 34633	GLAND ASSEMBLY .....	1
5	NSS	GLAND.....	1
6	NSS	RING - center bearing .....	1
7	*D 95143	WIPER - piston rod, outer .....	1
8	*G 34621	BEARING - center .....	1
9	*D 36970**	SEAL - piston rod .....	1
10	*A 30095	O-RING.....	1
11	*G 32122	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8-32 NC x 1/4" .....	1
13	G 33556	ROD ASSEMBLY - piston, 1-3/4" (37 mm) dia. ....	1
14	D 32865	BUSHING - piston rod .....	2
15	G 33331	PISTON - split rod end.....	1
16	D 28896	PISTON - split bolt end .....	1
17		RESERVED	
	*G 33151	PACKING ASSY. - piston.....	1
18	NSS	PACKING - "V" type .....	2
19	NSS	RING - center bearing .....	1
20	28- 1640	HHCS - 1" - 14 NF x 2-1/2", grade 8 .....	1
21	G 32303	WASHER - hardened.....	1
22	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
	G 34642	KIT - seal, includes all items with an asterisk .....	1
**G	100777	SEAL - piston rod, service option - extreme heat or cold .....	1



## G101225 LOADER HYDRA-LEVELING CYLINDER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

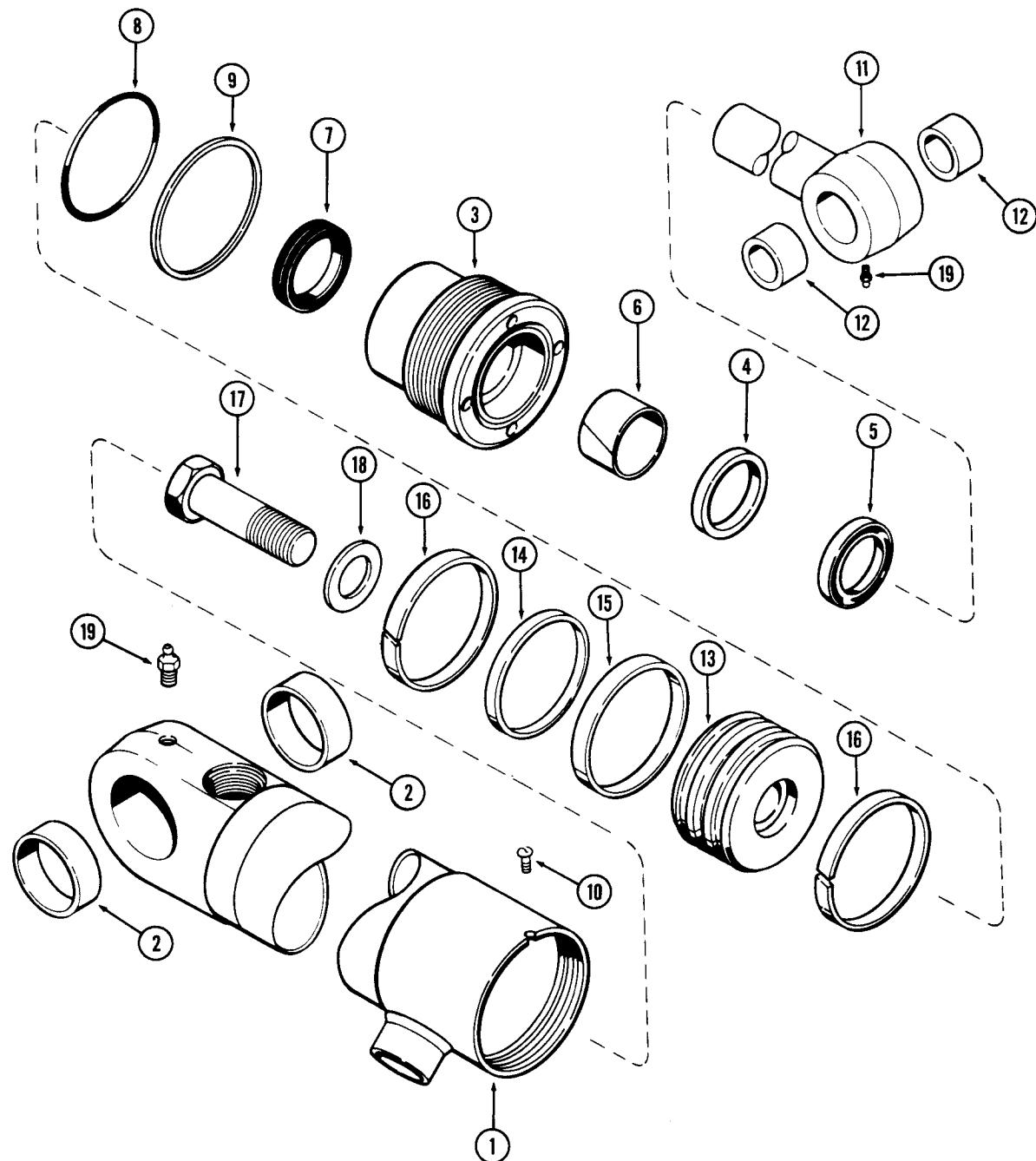
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101225	CYLINDER - 3" (76 mm) dia. x 7-1/4" (184 mm) stroke.....	2
1	D 35129	TUBE .....	1
2	30613	BUSHING .....	2
	G 34633	GLAND ASSEMBLY .....	1
3	NSS	GLAND .....	1
4	NSS	RING - center bearing .....	1
5	*D 95143	WIPER - rod .....	1
6	*G 34621	BEARING - center .....	1
7	*D 36970**	SEAL - rod .....	1
8	*A 30095	O-RING .....	1
9	*G 32122	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
11	G 33556	ROD - 1-3/4" (37 mm) dia. .....	1
12	D 32865	BUSHING .....	2
13	G 100704	PISTON .....	1
14	*G 102288	RING - quad .....	1
15	*G 100444	RING - piston .....	1
16	*G 100449	RING - wear .....	2
17	28- 1640	HHCS - 1" - 14 NF x 2-1/2", grade 8 .....	1
18	G 32303	WASHER - hardened .....	1
19	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
	G 102405	KIT - seal, includes all items with an asterisk .....	1
**	G 100777	SEAL - rod, service option - extreme heat or cold .....	1



## G33770 AND G33771 CLAM CYLINDERS

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

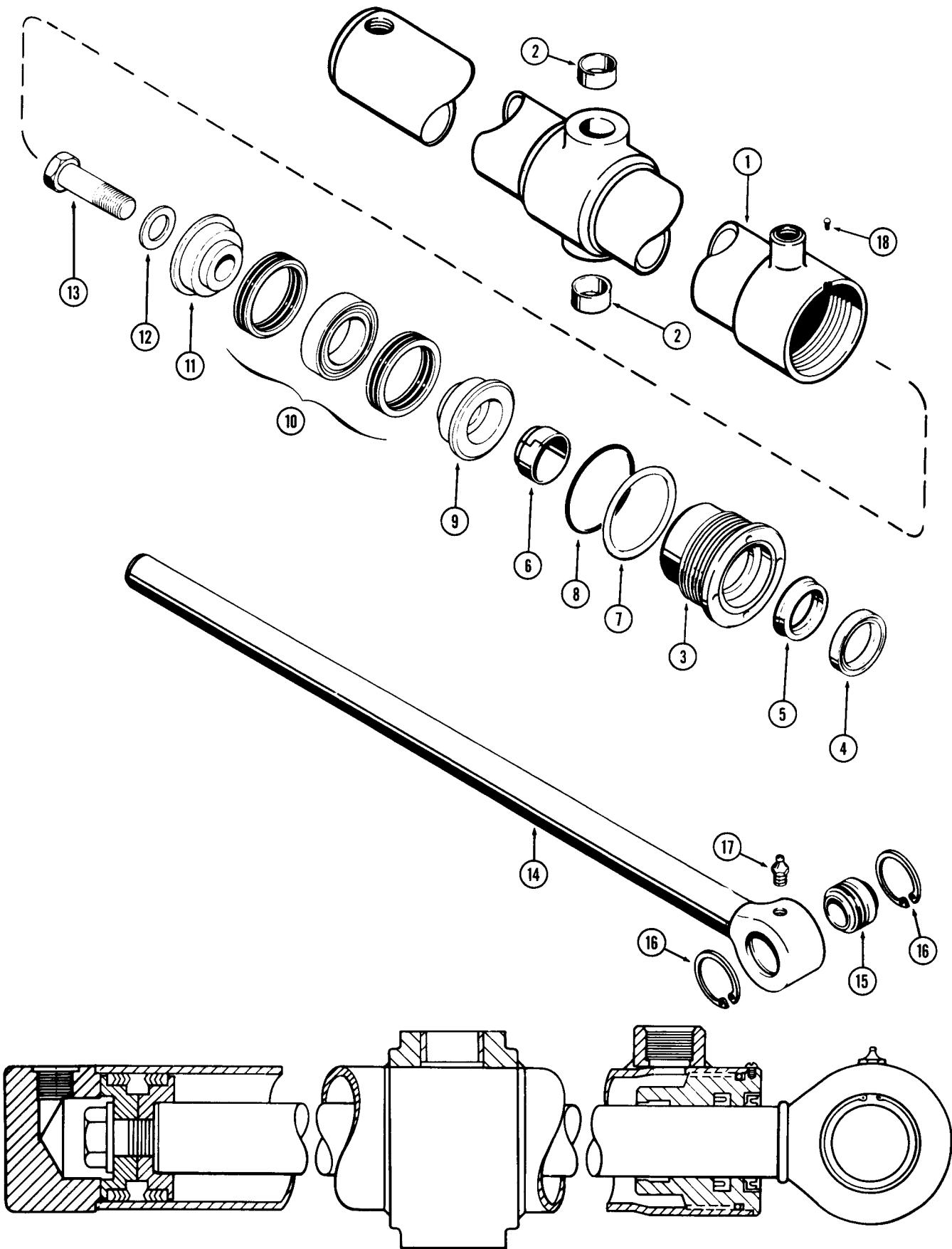
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33770	CYLINDER - R.H., 3" (76 mm) dia. x 10-1/2" (267 mm) stroke, not shown .....	1
1	G 33771	CYLINDER - L.H., 3" (76 mm) dia. x 10-1/2" (267 mm) stroke, not shown .....	1
2	D 36911	TUBE - G33770 cylinder.....	1
2	D 46910	TUBE - G33771 cylinder.....	1
3	30634	BUSHING - tube .....	2
4		RESERVED	
	G 34328	GLAND ASSEMBLY .....	1
5	NSS	GLAND.....	1
6	NSS	RING - center bearing .....	1
7	*D 95142	WIPER - piston rod, outer .....	1
8	*G 34302	BEARING - center .....	1
9	*D 36969**	SEAL - piston rod .....	1
10	*A 30095	O-RING.....	1
11	*G 32122	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
13	G 33467	ROD - piston, 1-1/2" (38 mm) dia.....	1
14	30634	BUSHING - piston rod .....	2
15	G 33150	PISTON - split, rod end .....	1
16	D 28366	PISTON - split, bolt end .....	1
17		RESERVED	
	*G 33151	PACKING - piston .....	1
18	NSS	PACKING - "V" type .....	2
19	NSS	RING - center bearing .....	1
20	28- 1240	HHCS - 3/4" - 16 NF x 2-1/2", grade 8 .....	1
21	G 32317	WASHER - hardened.....	1
22	219- 1	FITTING - straight, grease, 1/8" NPT .....	2
	G 34332	KIT - seal, includes all items with an asterisk .....	1
** G	100776	SEAL - piston rod, service option - extreme heat or cold.....	1



## G101226 AND G101227 CLAM CYLINDERS

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

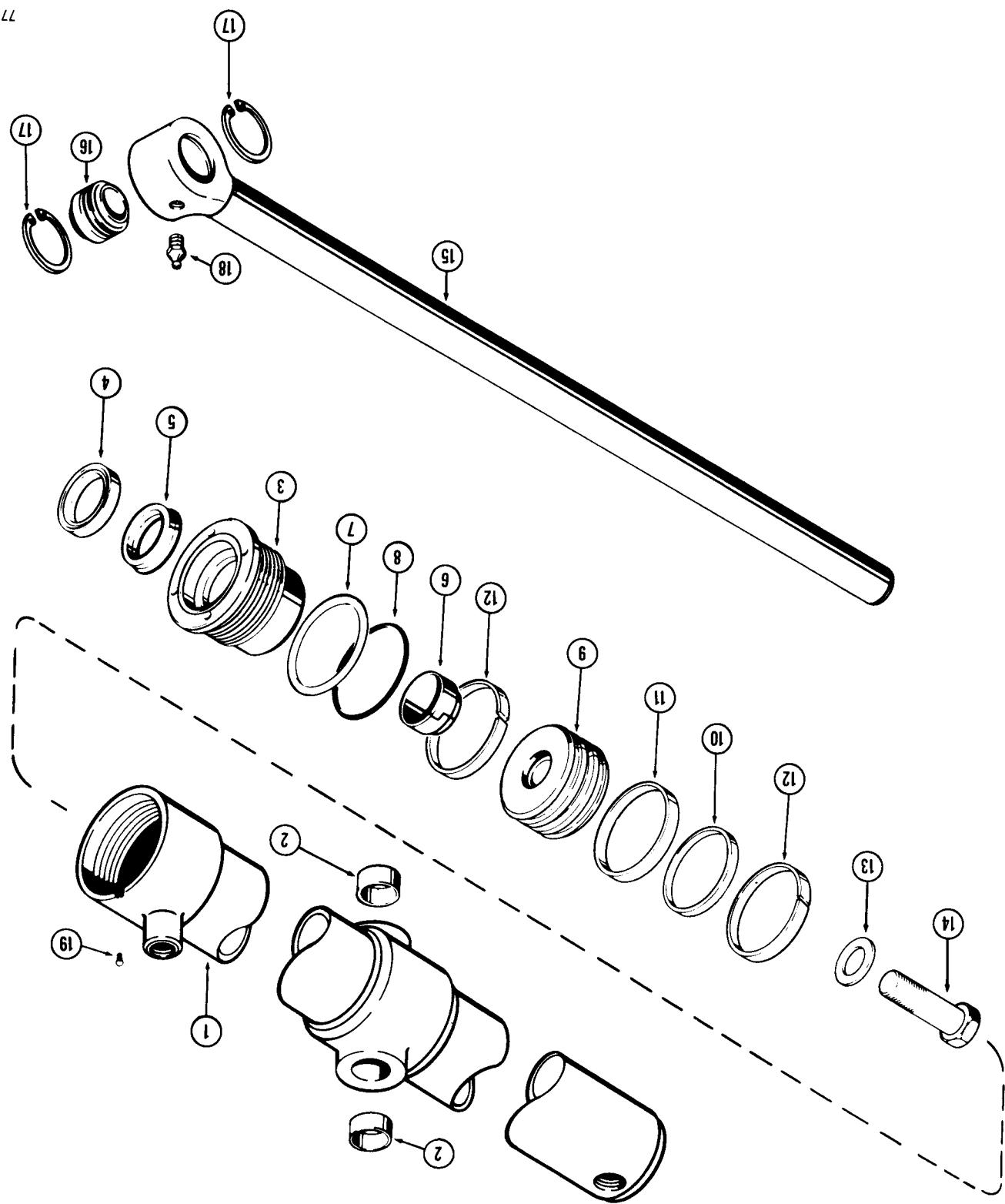
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101226	CYLINDER - R.H., 3" (76 mm) dia. x 10-1/2" (267 mm) stroke .....	1
	G 101227	CYLINDER - L.H., 3" (76 mm) dia. x 10-1/2" (267 mm) stroke .....	1
1	D 36911	TUBE - G101226 cylinder.....	1
1	D 46910	TUBE - G101227 cylinder.....	1
2	30634	BUSHING .....	2
	G 34328	GLAND ASSEMBLY .....	1
3	NSS	GLAND.....	1
4	NSS	RING - center bearing .....	1
5	*D 95142	WIPER - rod .....	1
6	*G 34302	BEARING - center .....	1
7	*D 36969**	SEAL - rod .....	1
8	*A 30095	O-RING.....	1
9	*G 32122	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
11	G 33467	ROD - 1-1/2" (38 mm) dia. ....	1
12	30634	BUSHING .....	2
13	G 100442	PISTON.....	1
14	*G 102288	RING - quad .....	1
15	*G 100444	RING - piston .....	1
16	*G 100449	RING - wear .....	2
17	28- 1240	HHCS - 3/4" - 16 NF x 2-1/2", grade 8 .....	1
18	G 32317	WASHER - hardened.....	1
19	219- 1	FITTING - straight, grease, 1/8" NPT .....	2
	G 102404	KIT - seal, includes all items with an asterisk.....	1
** G	100776	SEAL - rod, service option - extreme heat or cold .....	1



## G33359 LIFT CYLINDER - ANGLE DOZER

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

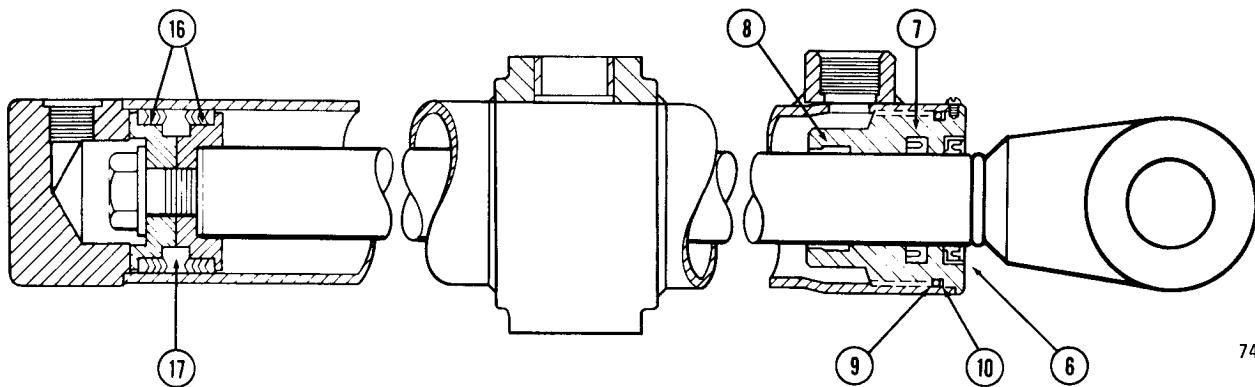
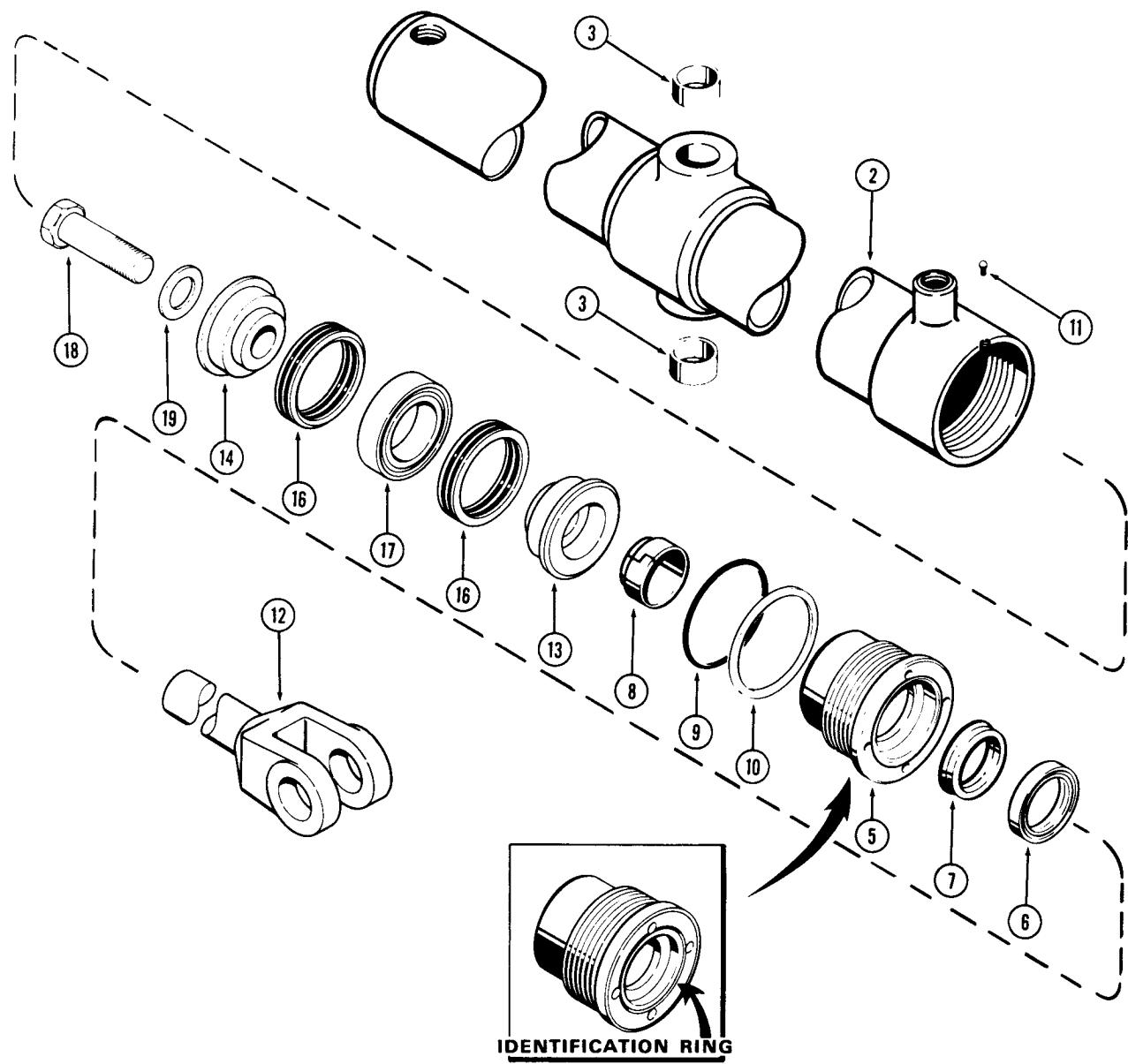
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 33359	CYLINDER - 2-1/2" (64 mm) dia. x 30-3/8" (772 mm) stroke .....	2
1	D 35093	TUBE - cylinder .....	1
2	30634	BUSHING - trunnion .....	2
	G 33578	GLAND ASSEMBLY .....	1
3	NSS	GLAND AND BEARING .....	1
4	*D 95141	WIPER - rod, outer .....	1
5	*D 36968**	SEAL - rod .....	1
6	*D 27705	WIPER - rod, inner .....	1
7	*G 32129	RING - backup .....	1
8	*A 28318	O-RING .....	1
9	G 33347	PISTON - split, rod end .....	1
10	*G 33193	PACKING ASSEMBLY - piston .....	1
11	D 28364	PISTON - split, bolt end .....	1
12	G 32317	WASHER - hardened .....	1
13	28- 1240	HHCS - 3/4" - 16 NF x 2-1/2"	1
14	G 33360	ROD - piston, 1-1/4" dia. ....	1
15	D 22200	BUSHING - self aligning .....	1
16	D 27833	RING - snap .....	2
17	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
18	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
 * G 32295 KIT - seal, includes all items with an asterisk .....			
 ** G 100775 SEAL - rod, service option - extreme heat or cold .....			



## G101231 LIFT CYLINDER - ANGLE DOZER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101231	CYLINDER - 2-1/2" (64 mm) dia. x 30-3/8" (772 mm) stroke .....	2
1	D 35093	TUBE .....	1
2	30634	BUSHING - trunnion.....	2
	G 33578	GLAND ASSEMBLY .....	1
3	NSS	GLAND AND BEARING.....	1
4	* D 95141	WIPER .....	1
5	* D 36968**	SEAL - rod .....	1
6	* D 27705	WIPER - inner .....	1
7	* G 32129	RING - backup .....	1
8	* A 28318	O-RING.....	1
9	G 100708	PISTON .....	1
10	* G 102289**	RING - quad .....	1
11	* G 100713	RING - piston .....	1
12	* G 100714	RING - wear .....	2
13	G 32317	WASHER - hardened.....	1
14	28- 1240	HHCS - 3/4" - 16 NF x 2-1/2". grade 8 .....	1
15	G 33360	ROD - 1-1/4" (32 mm) dia. ....	1
16	D 22200	BUSHING - self aligning.....	1
17	D 27833	SNAP - ring .....	1
18	219- 1	FITTING - straight, grease, 1/8" NPT .....	1
19	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
	*G 102407	KIT - seal, includes all items with an asterisk.....	1
	** G 100775	SEAL - rod, service option - extreme heat or cold .....	1



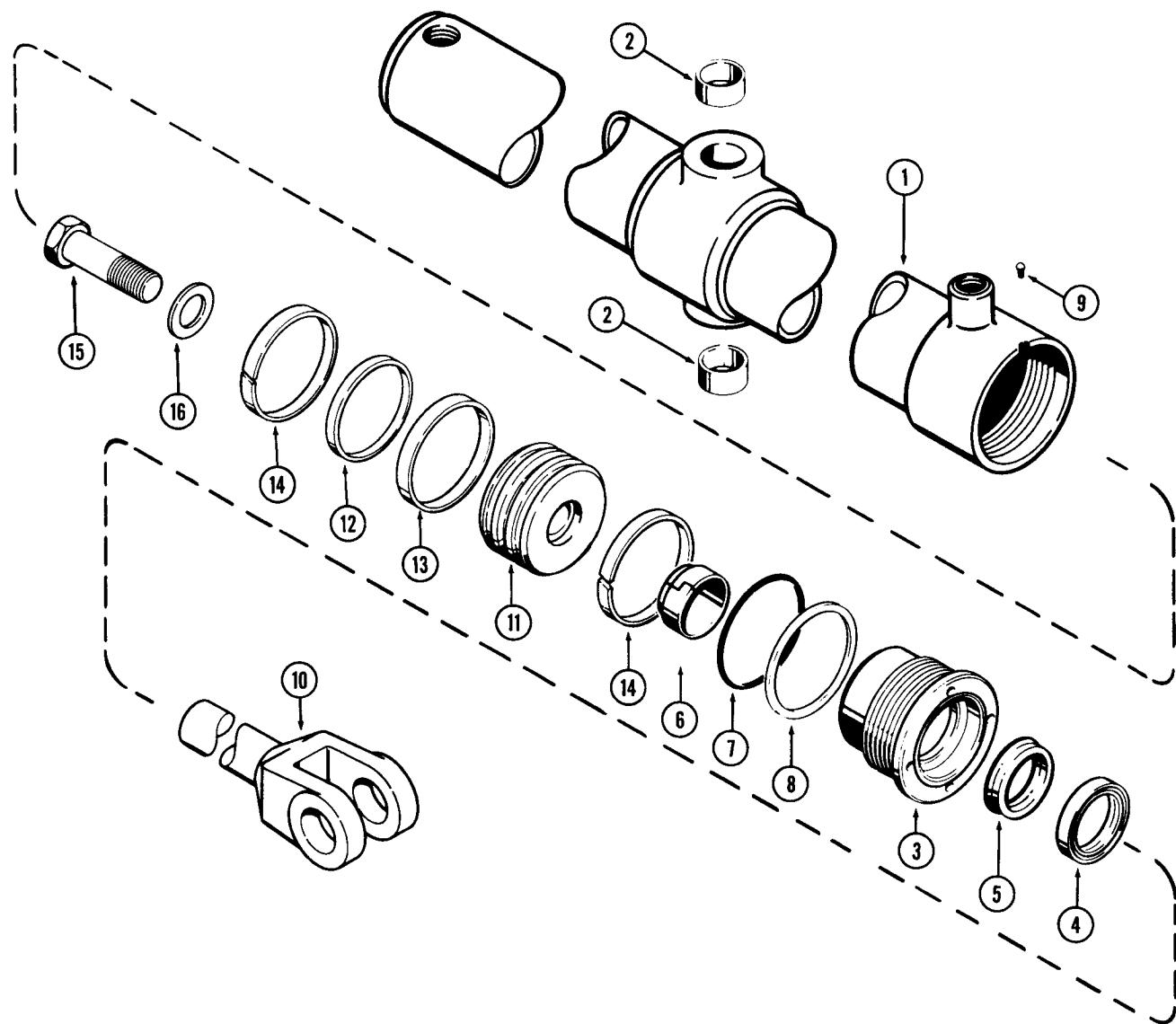
741181

## G34344 LIFT CYLINDER - ANGLE TILT DOZER

## GLAND HAS IDENTIFICATION RING OR TUBE IS STAMPED WITH

## CYLINDER PART NUMBER

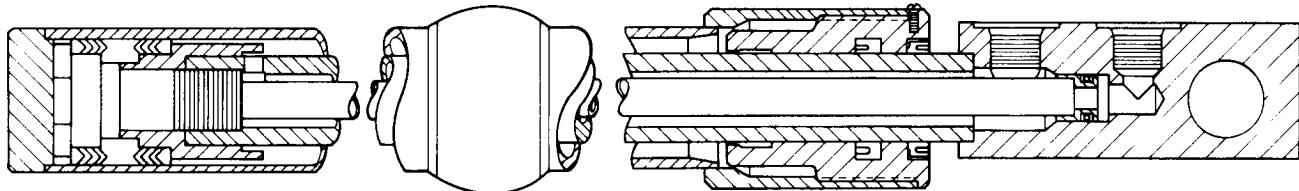
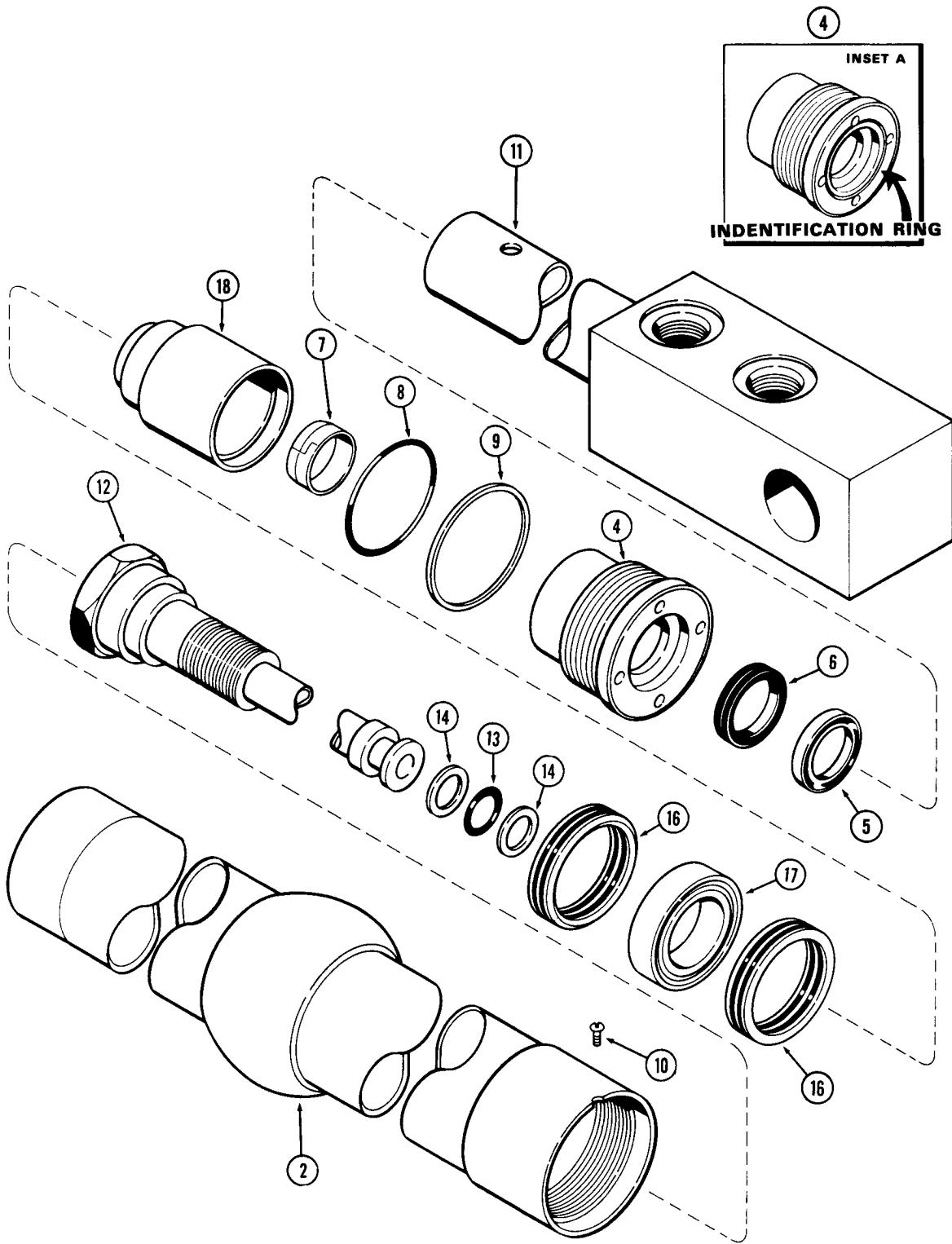
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 34344	CYLINDER - lift, 2-1/2" (64 mm) dia. x 28" (711 mm) stroke, not shown.....	2
2	G 34346	TUBE - cylinder .....	1
3	30634	BUSHING - tube .....	2
4		RESERVED	
	G 33578	GLAND ASSEMBLY .....	1
5	NSS	GLAND.....	1
6	* D 95141	WIPER - piston rod, outer .....	1
7	* D 36968**	SEAL - piston rod .....	1
8	* D 27705	WIPER - piston rod, inner.....	1
9	* A 28318	O-RING.....	1
10	* G 32129	RING - back-up .....	1
11	187- 1031	SCREW - self-tapping, No. 8 - 32 NC x 1/4" .....	1
12	G 34348	ROD - piston, 1-1/4" (21 mm) dia.....	1
13	G 33347	PISTON - split, rod end .....	1
14	D 28364	PISTON - split, bolt end .....	1
15		RESERVED	
	* G 33193	PACKING - piston .....	1
16	NSS	PACKING - "V" type .....	2
17	NSS	RING - center bearing .....	1
18	28- 1240	HHCS - 3/4" - 16 NC x 2-1/2", grade 8 .....	1
19	G 32317	WASHER - hardened.....	1
	G 32295	KIT - seal, includes all items with an asterisk .....	1
** G	100775	SEAL - piston rod, service option - extreme heat or cold.....	1



## G101229 LIFT CYLINDER - ANGLE TILT DOZER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

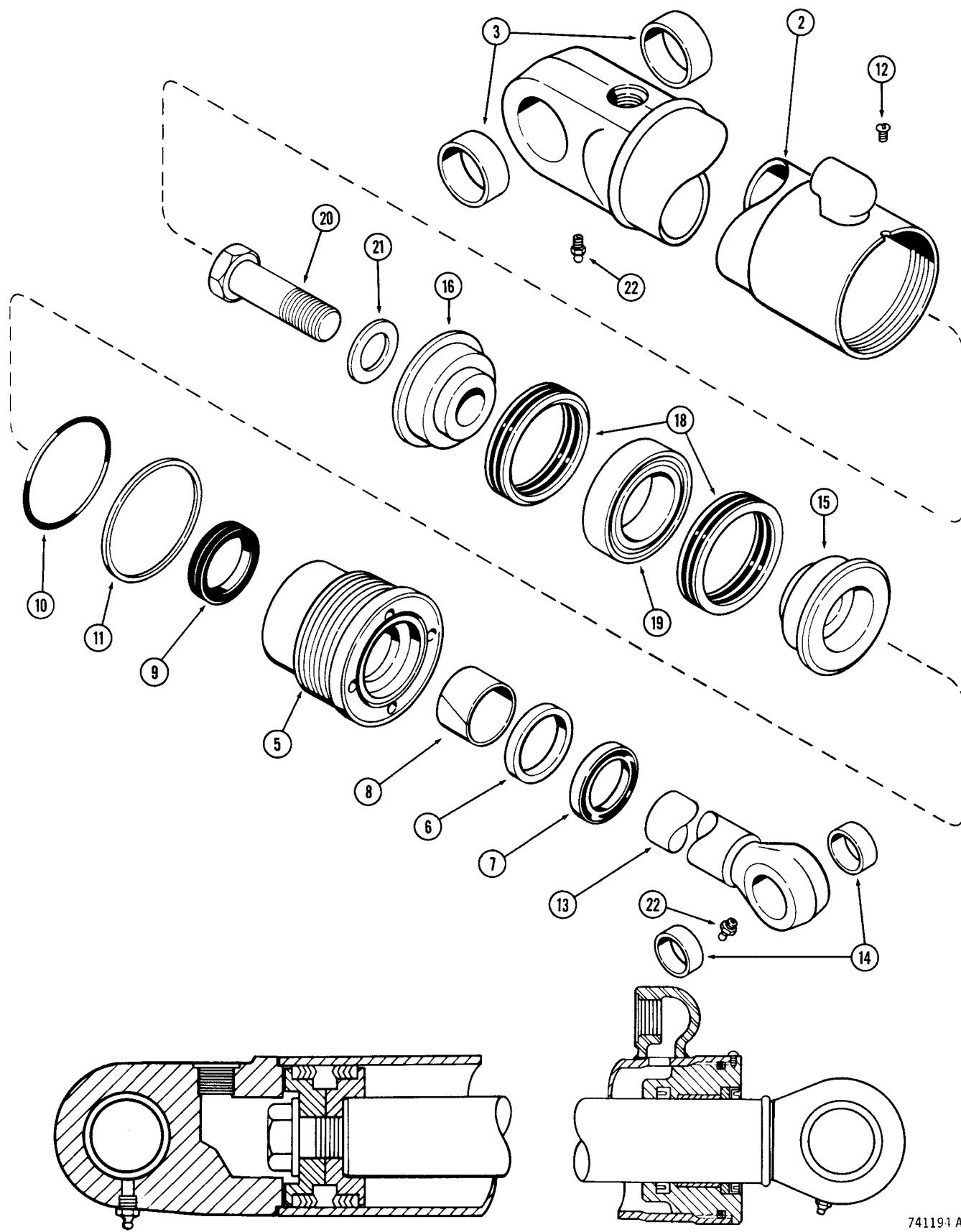
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101229	CYLINDER - 2-1/2" (64 mm) dia. x 28" (711 mm) stroke.....	2
1	G 34346	TUBE .....	1
2	30634	BUSHING .....	2
	G 33578	GLAND ASSEMBLY .....	1
3	NSS	GLAND .....	1
4	*D 95141	WIPER - outer .....	1
5	*D 36968**	SEAL - rod .....	1
6	*D 27705	WIPER - inner .....	1
7	*A 28318	O-RING .....	1
8	*G 32129	RING - back-up .....	1
9	187- 1031	SCREW - self-tapping, No. 8 - 32 NC x 1/4"	1
10	G 34348	ROD - 1-1/4" (31 mm) dia. ....	1
11	G 100708	PISTON .....	1
12	*G 102289	RING - quad .....	1
13	*G 100713	RING - piston .....	1
14	*G 100714	RING - wear .....	2
15	28- 1240	HHCS - 3/4" - 16 NC x 2-1/2", grade 8 .....	1
16	G 32317	WASHER - hardened .....	1
	G 102407	KIT - seal, includes all items with an asterisk .....	1
**G	100775	SEAL - rod, service option - extreme heat or cold .....	1



## G33764 ANGLE CYLINDER - ANGLE DOZER

## GLAND HAS IDENTIFICATION RING

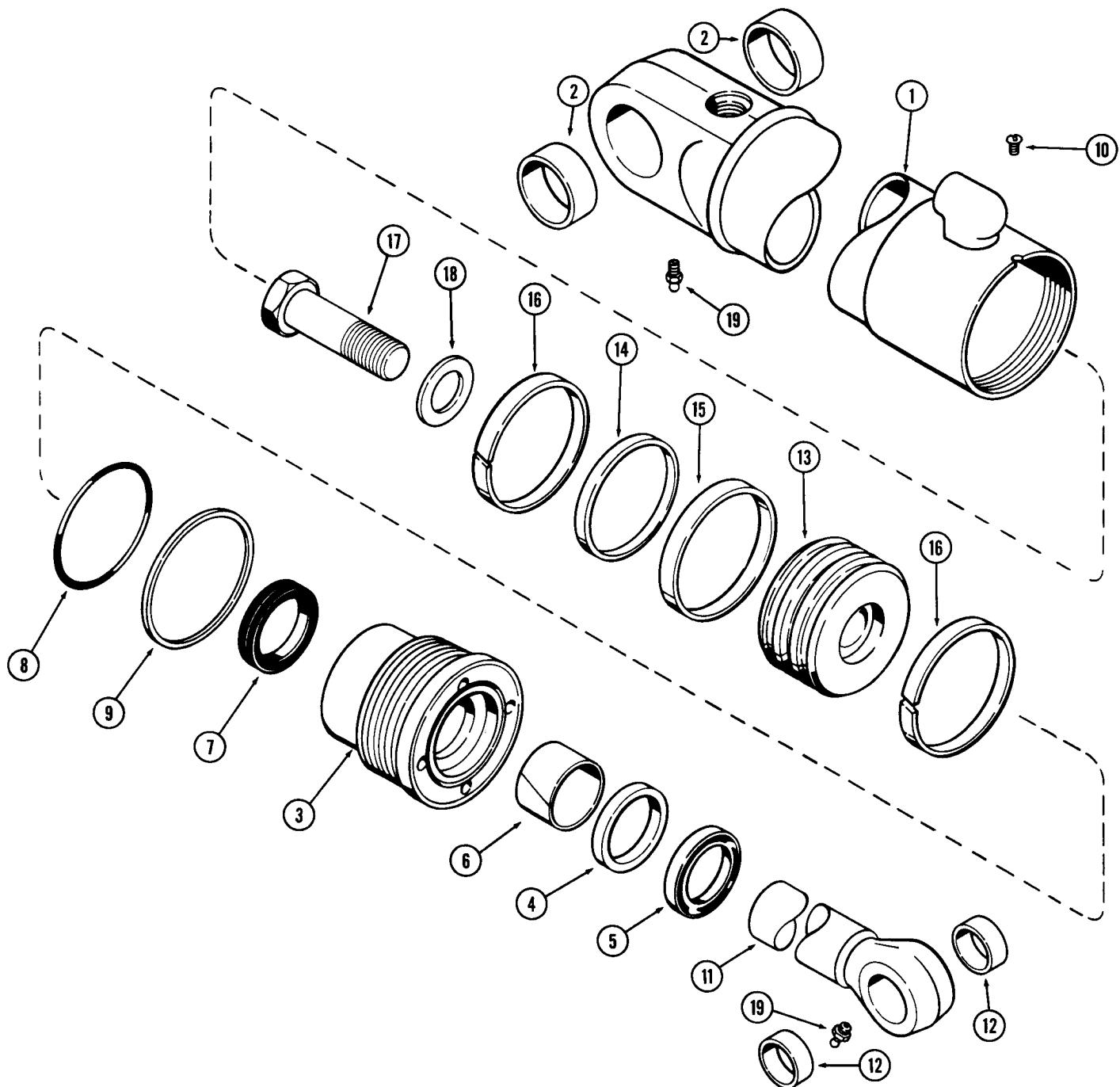
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33764	CYLINDER - angling, 2" (51 mm) dia. x 36-1/2" (917 mm) stroke, not shown .....	1
2	D 34671	TUBE - cylinder body.....	1
3	G 33487	RESERVED GLAND ASSEMBLY .....	1
4	NSS	GLAND - see inset A .....	1
5	* D 95142	WIPER - piston rod, outer .....	1
6	* D 36969**	SEAL - piston.....	1
7	* D 27706	WIPER - piston rod, inner.....	1
8	* A 28318	O-RING.....	1
9	* G 32129	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8-32 NC x 1/4" .....	1
11	G 33766	ROD - piston, 1-1/2" (38 mm) dia.....	1
12	D 34385	TUBE - piston rod, inner .....	1
13	* A 7982	SEAL - O-ring .....	1
14	* D 34938	RING - back-up.....	2
15		RESERVED	
	* G 33201	PACKING - piston .....	1
16	NSS	PACKING - "V" type .....	2
17	NSS	RING - center bearing .....	1
18	G 33765	PISTON - front half .....	1
	G 32459	KIT - seal, includes all items with an asterisk .....	1
** G	100776	SEAL - piston rod, service option - extreme heat or cold.....	1



## G34343 ANGLE CYLINDER - ANGLE TILT DOZER

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

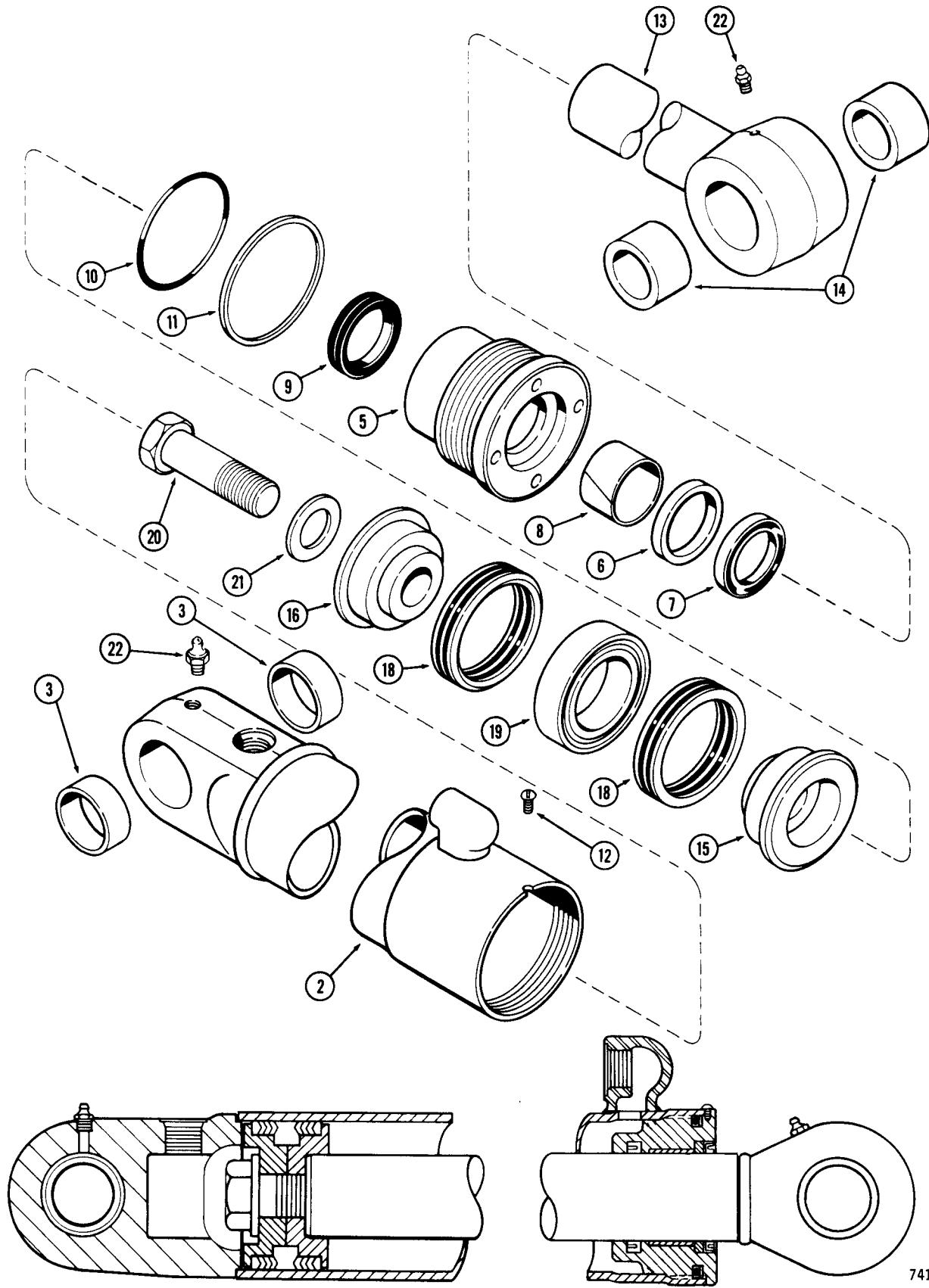
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 34343	CYLINDER - angling, 4" (102 mm) dia. x 8-5/16" (211 mm) stroke, not shown . . . . .	1
2	G 34402	TUBE - cylinder body . . . . .	1
3	D 32865	BUSHING - tube . . . . .	2
4		RESERVED	
	G 34331	GLAND ASSEMBLY . . . . .	1
5	NSS	GLAND . . . . .	1
6	NSS	RING - center bearing . . . . .	1
7	*D 95144	WIPER - piston rod, outer . . . . .	1
8	*G 34322	BEARING - center . . . . .	1
9	*D 36971**	SEAL - piston rod . . . . .	1
10	*A 27507	O-RING . . . . .	1
11	*G 32176	RING - back-up . . . . .	1
12	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" . . . . .	1
13	G 34405	ROD - piston, 2" (51 mm) dia. . . . .	1
14	D 32865	BUSHING - piston rod . . . . .	2
15	G 33159	PISTON - split, rod end . . . . .	1
16	D 28370	PISTON - split, bolt end . . . . .	1
17		RESERVED	
	*G 33239	PACKING - piston . . . . .	1
18	NSS	PACKING - "V" type . . . . .	2
19	NSS	RING - center bearing . . . . .	1
20	28- 2040	HHCS - 1-1/4" - 12 NF x 2-1/2", grade 8 . . . . .	1
21	G 32351	WASHER - hardened . . . . .	1
22	219- 1	FITTING - grease, straight, 1/8" NPT . . . . .	2
	G 34647	KIT - seal, includes all items with an asterisk . . . . .	1
** G	100778	SEAL - piston rod, service option - extreme heat or cold . . . . .	1



## G101232 ANGLE CYLINDER - ANGLE TILT DOZER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

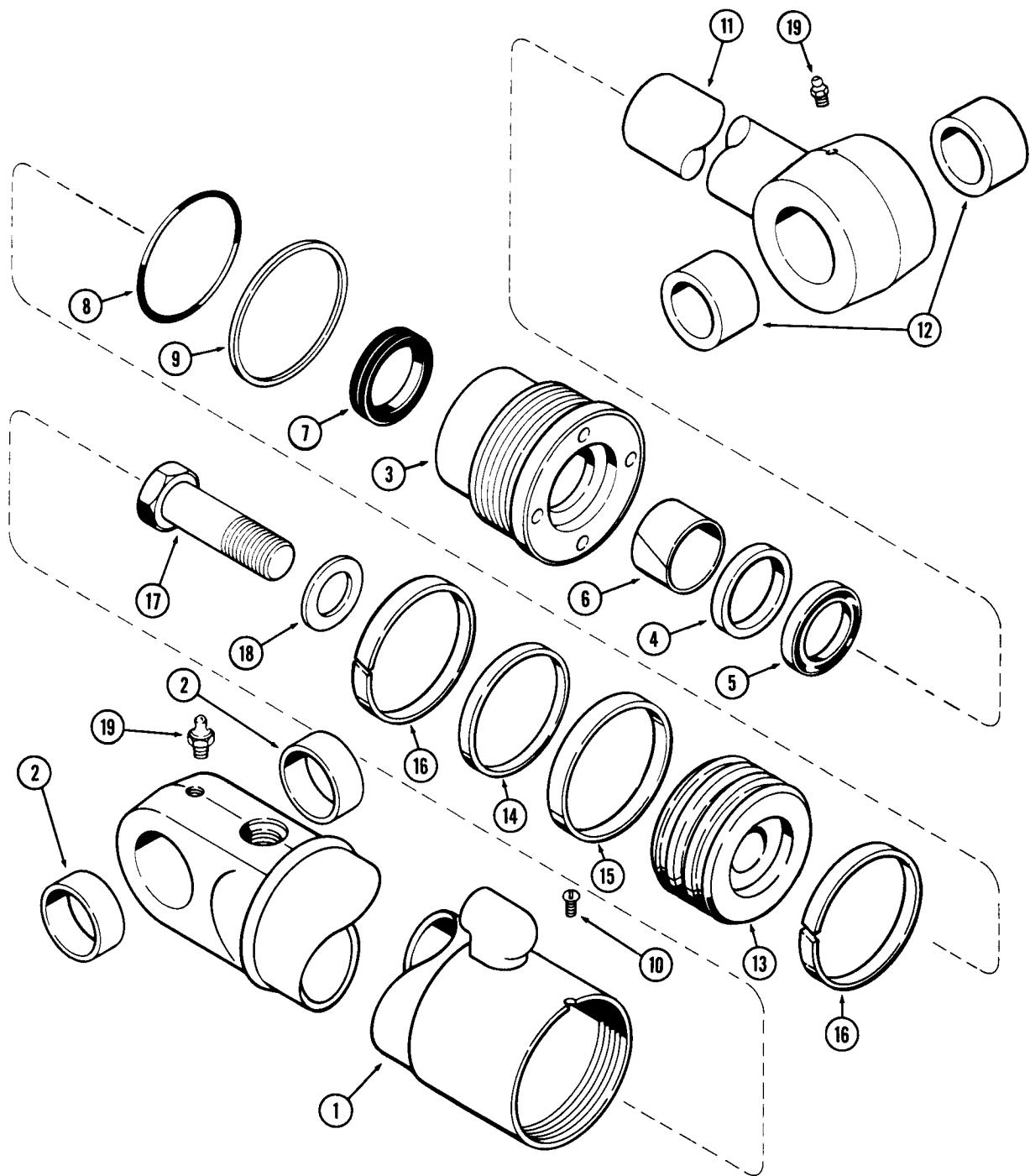
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101232	CYLINDER - angling, 4" (102 mm) dia. x 8-5/16" (211 mm) stroke .....	1
1	G 34402	TUBE .....	1
2	D 32865	BUSHING - tube .....	2
	G 34331	GLAND ASSEMBLY .....	1
3	NSS	GLAND .....	1
4	NSS	RING - center bearing .....	1
5	* D 95144	WIPER - rod .....	1
6	* G 34322	BEARING - center .....	1
7	* D 36971**	SEAL - piston rod .....	1
8	* A 27507	O-RING .....	1
9	* G 32176	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
11	G 34405	ROD - 2" (51 mm) dia. ....	1
12	D 32865	BUSHING - rod .....	2
13	G 102285	PISTON .....	1
14	* G 100439	RING - quad .....	1
15	* G 100440	RING - piston .....	1
16	* G 100448	RING - wear .....	2
17	28- 2040	HHCS - 1-1/4" - 12 NF x 2-1/2", grade 8 .....	1
18	G 32351	WASHER - hardened .....	1
19	219- 1	FITTING - straight, grease, 1/8" NPT .....	2
	G 102401	KIT - seal, includes all items with an asterisk .....	1
** G	100778	SEAL - rod, service option - extreme heat or cold .....	1



## G34345 TILT CYLINDER - ANGLE TILT DOZER

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

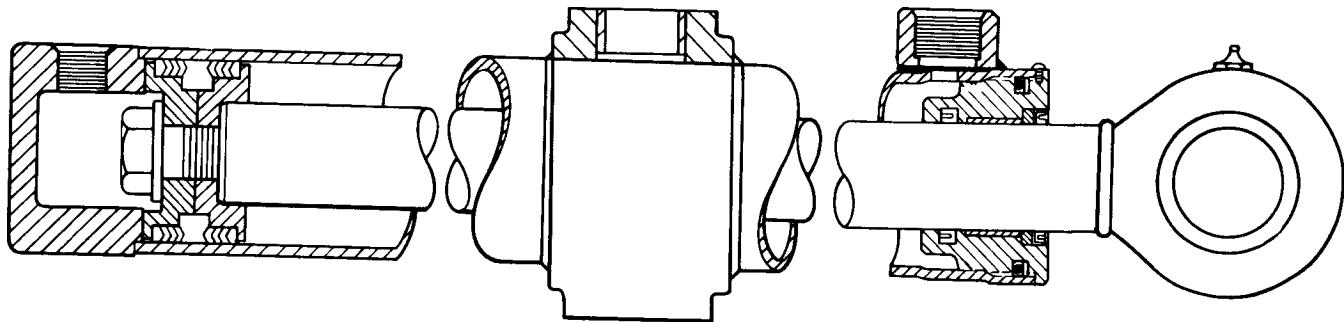
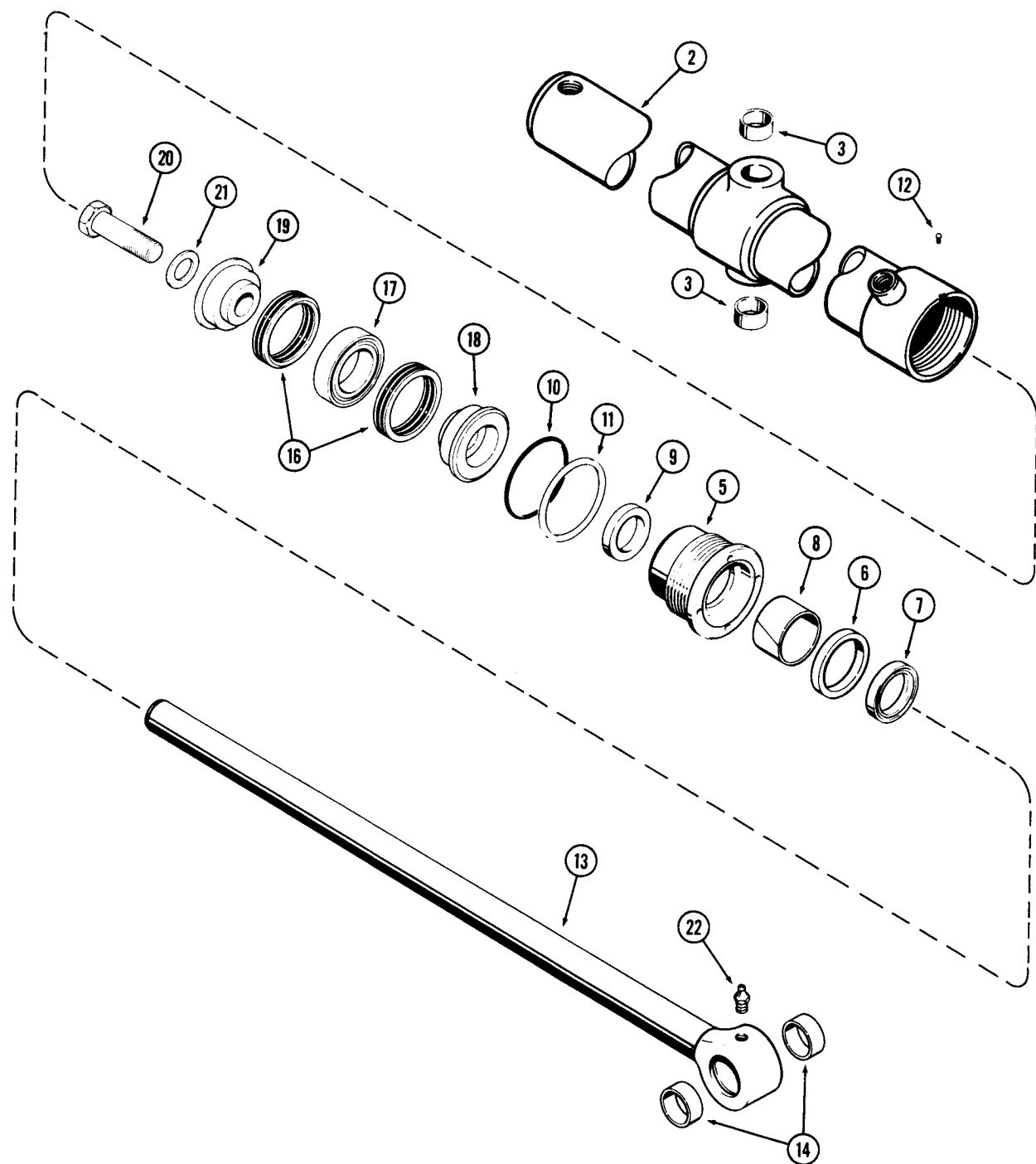
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 34345	CYLINDER - 3-1/2" (89 mm) dia. x 8" (203 mm) stroke, not shown .....	1
2	G 34411	TUBE - cylinder .....	1
3	D 32865	BUSHING - tube .....	2
4		RESERVED	
	G 34629	GLAND ASSEMBLY .....	1
5	NSS	GLAND .....	1
6	NSS	RING - center bearing .....	1
7	*D 95144	WIPER - piston rod, outer .....	1
8	*G 34322	BEARING - center .....	1
9	*D 36971**	SEAL - piston rod .....	1
10	*G 15457	O-RING .....	1
11	*G 32126	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4" .....	1
13	G 34409	ROD - piston, 2" (51 mm) dia. .....	1
14	D 32865	BUSHING - piston rod .....	2
15	G 33167	PISTON - split, rod end .....	1
16	D 28367	PISTON - split, bolt end .....	1
17		RESERVED	
	*G 33237	PACKING - piston .....	1
18	NSS	PACKING - "V" type .....	2
19	NSS	RING - center bearing .....	1
20	28- 1640	HHCS - 1" - 14 NF x 2-1/2", grade 8 .....	1
21	G 32303	WASHER - hardened .....	1
22	219- 1	FITTING - grease, straight, 1/8" NPT .....	2
	G 34630	KIT - seal, includes all items with an asterisk .....	1
**G	100778	SEAL - piston rod, service option - extreme heat or cold .....	1



## G101228 TILT CYLINDER - ANGLE TILT DOZER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

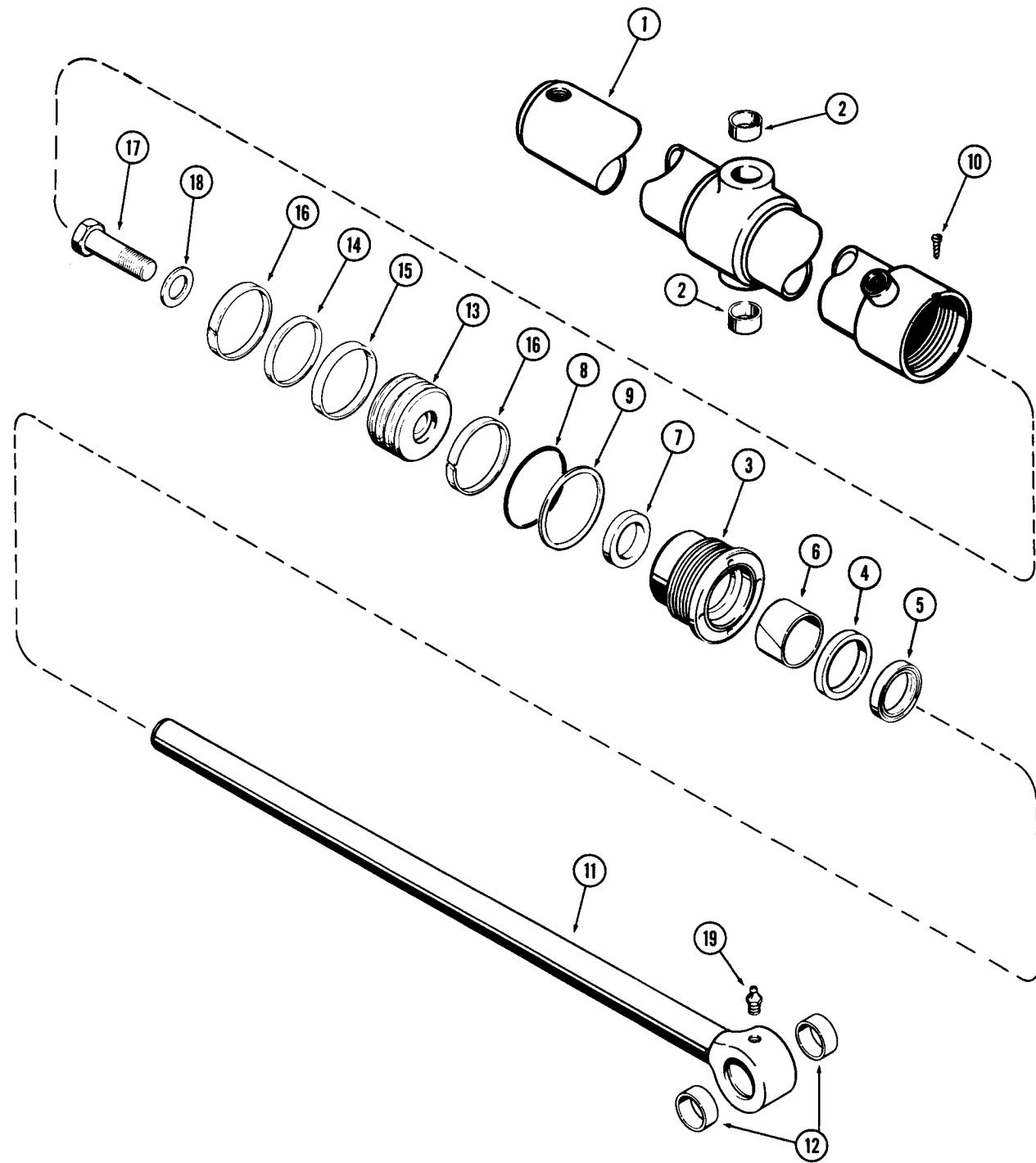
REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101228	CYLINDER - 3-1/2" (89 mm) dia. x 8" (203 mm) stroke.....	1
1	G 34411	TUBE .....	1
2	D 32865	BUSHING .....	2
	G 34629	GLAND ASSEMBLY .....	1
3	NSS	GLAND.....	1
4	NSS	RING - center bearing.....	1
5	*D 95144	WIPER - rod .....	1
6	*G 34322	BEARING - center .....	1
7	*D 36971**	SEAL - rod .....	1
8	*G 15457	O-RING.....	1
9	*G 32126	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4"	1
11	G 34409	ROD - 2" (51 mm) dia.....	1
12	D 32865	BUSHING - rod .....	2
13	G 100694	PISTON.....	1
14	*G 102286	RING - quad .....	1
15	*G 100710	RING - piston .....	1
16	*G 100711	RING - wear .....	2
17	28- 1640	HHCS - 1" - 14 NF x 2-1/2", grade 8 .....	1
18	G 32303	WASHER - hardened.....	1
19	219- 1	FITTING - straight, grease, 1/8" NPT .....	2
	G 102402	KIT - seal, includes all items with an asterisk.....	1
**G	100778	SEAL - rod, service option - extreme heat or cold .....	1



## G33466 RIPPER CYLINDER

## GLAND OR TUBE IS STAMPED WITH CYLINDER PART NUMBER

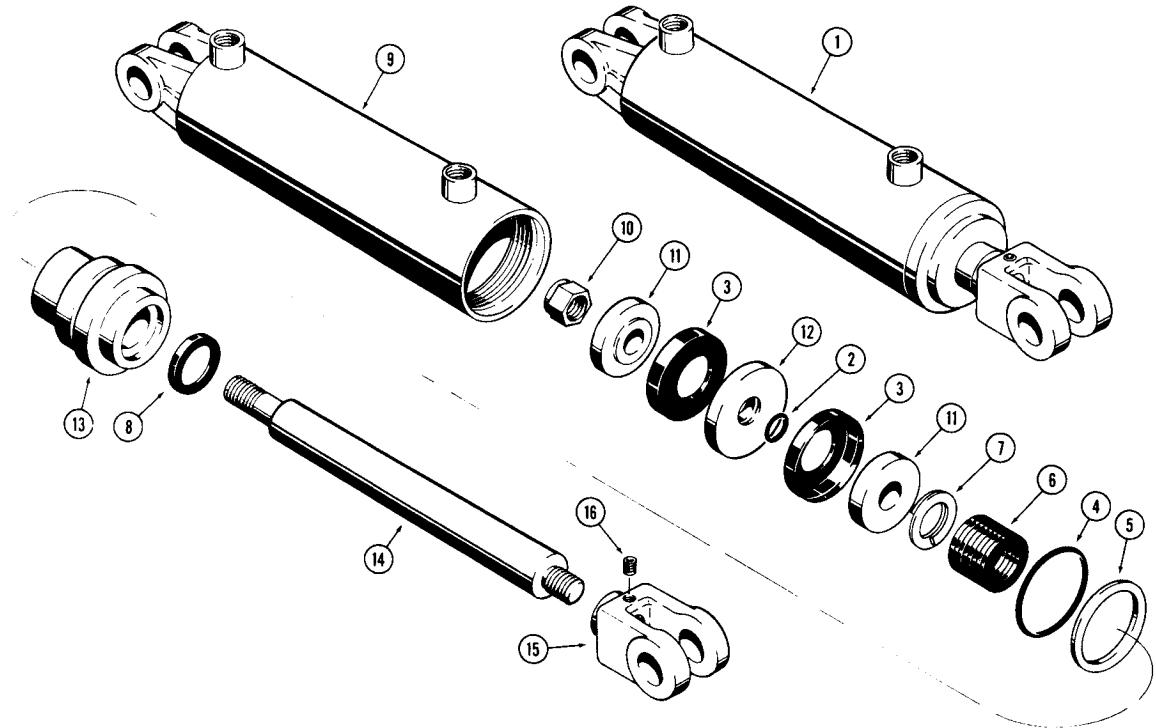
REF.	PART NO.	DESCRIPTION	REQ'D.
1	G 33466	CYLINDER - ripper, 3" (76 mm) dia. x 10-1/2" (267 mm) stroke, not shown .....	1
2	D 35123	TUBE - cylinder .....	1
3	30634	BUSHING - tube trunnion .....	2
4		RESERVED	
	G 34328	GLAND ASSEMBLY .....	1
5	NSS	GLAND .....	1
6	NSS	RING - center bearing .....	1
7	*D 95142	WIPER - piston rod, outer .....	1
8	*G 34302	BEARING - center .....	1
9	*D 36969**	SEAL - piston rod .....	1
10	*A 30095	O-RING .....	1
11	*G 32122	RING - back-up .....	1
12	187- 1031	SCREW - self tapping, No. 8-32 NC x 1/4" .....	1
13	G 33467	ROD - piston, 1-1/2" dia. .....	1
14	30634	BUSHING - piston rod .....	2
15		RESERVED	
	*G 33151	PACKING - piston .....	1
16	NSS	PACKING - "V" type .....	2
17	NSS	RING - center bearing .....	1
18	G 33150	PISTON - split, rod end .....	1
19	D 28366	PISTON - split, bolt end .....	1
20	28- 1240	HHCS - 3/4" - 16 NF x 2-1/2", grade 8 .....	1
21	G 32317	WASHER - hardened .....	1
22	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
	* G 34332	KIT - seal, includes all items with an asterisk .....	1
	** G 100776	SEAL - piston rod, service option - extreme heat or cold .....	1



## G101230 RIPPER CYLINDER

## TUBE IS STAMPED WITH CYLINDER PART NUMBER

REF.	PART NO.	DESCRIPTION	REQ'D.
	G 101230	CYLINDER - 3" (76 mm) dia. x 10-1/2" (267 mm) stroke.....	1
1	D 35123	TUBE .....	1
2	30634	BUSHING .....	2
	G 34328	GLAND ASSEMBLY .....	1
3	NSS	GLAND .....	1
4	NSS	RING - center bearing .....	1
5	*D 95142	WIPER - rod .....	1
6	*G 34302	BEARING - center .....	1
7	*D 36969**	SEAL - rod .....	1
8	*A 30095	O-RING .....	1
9	*G 32122	RING - back-up .....	1
10	187- 1031	SCREW - self tapping, No. 8 - 32 NC x 1/4"	1
11	G 33467	ROD - 1-1/2" (104 mm) dia. ....	1
12	30634	BUSHING - rod .....	2
13	G 100442	PISTON .....	1
14	*G 102288	RING - quad .....	1
15	*G 100444	RING - piston .....	1
16	*G 100449	RING - wear .....	2
17	28- 1240	HHCS - 3/4" 16 NF x 2-1/2", grade 8 .....	1
18	G 32317	WASHER - hardened .....	1
19	219- 1	FITTING - straight, grease, 1/8" NPT .....	1
	*G 102404	KIT - seal, includes all items with an asterisk .....	1
	** G 100776	SEAL - rod, service option - extreme heat or cold .....	1

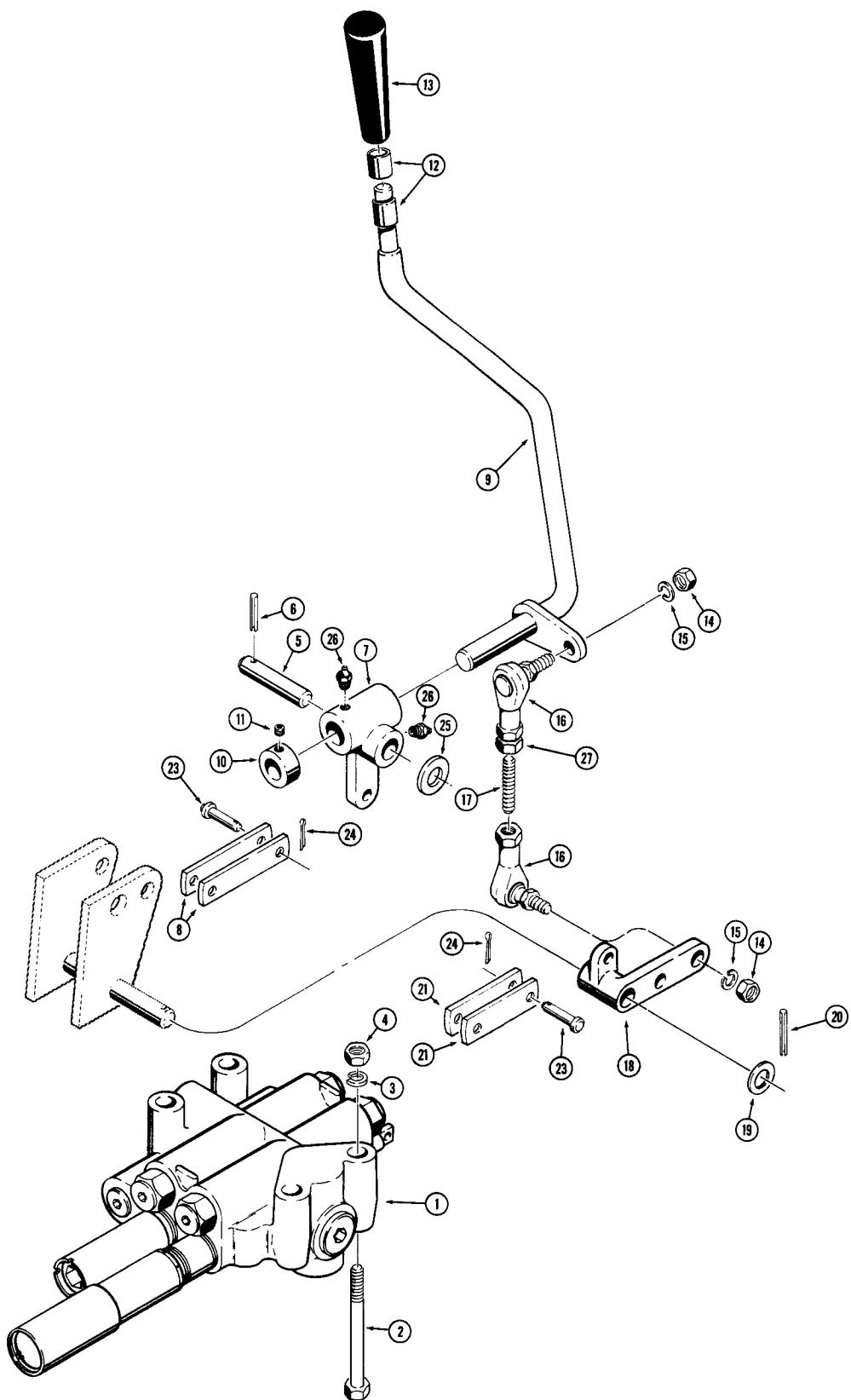


**MODEL 450 CRAWLER TRACTOR**

213

**D39720 AITKIN GRAPPLE CYLINDER**

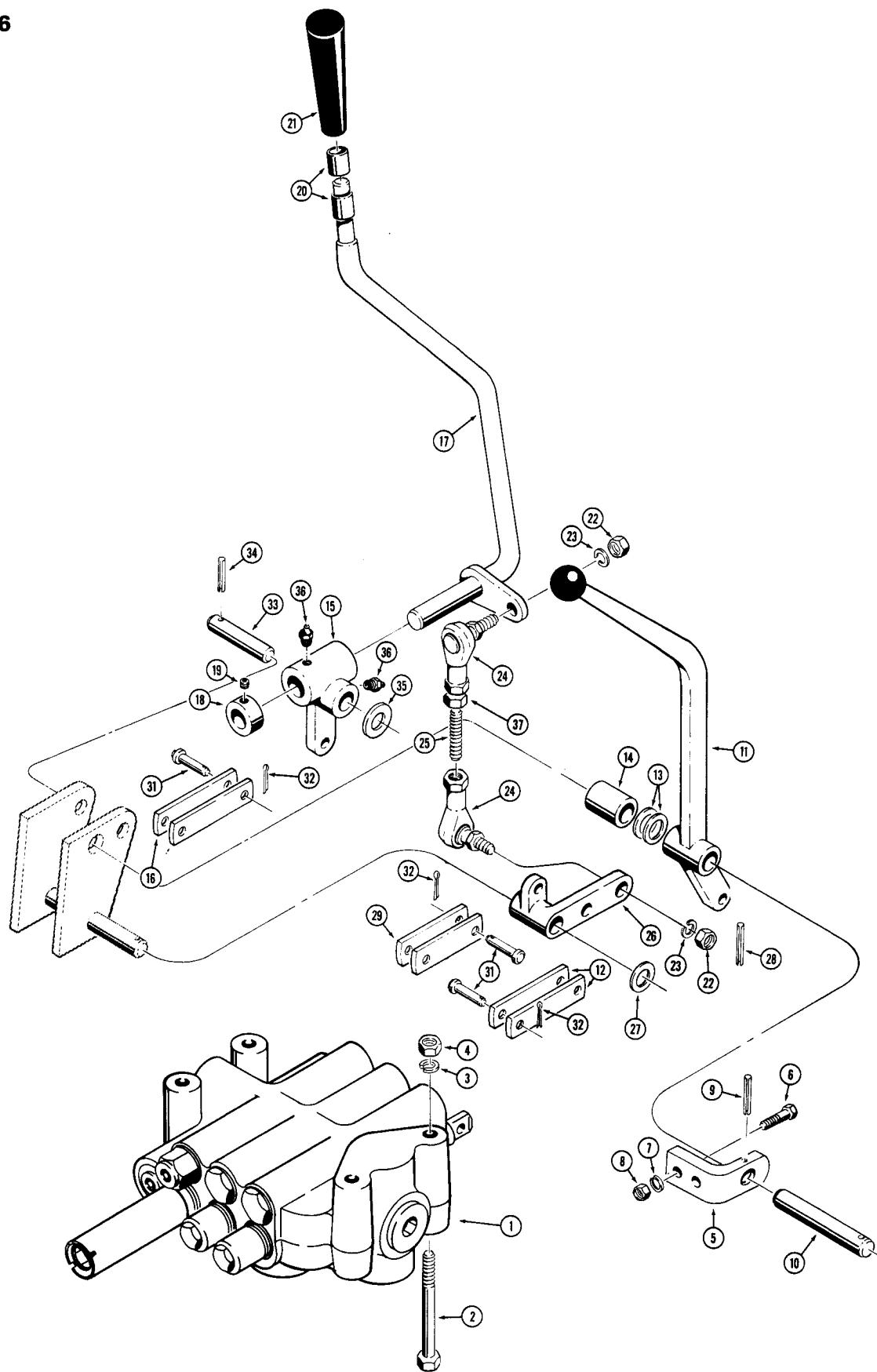
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 39720	CYLINDER - 3" (76 mm) I.D. x 8" (203 mm) stroke .....	1
	D 39721	KIT - cylinder .....	1
2	A 27352	SEAL - O-ring .....	1
3	D 39728	SEAL - piston .....	2
4	A 30095	SEAL - O-ring .....	1
5	D 39729	WASHER - backup .....	1
6	D 39730	PACKING - rod, set of seven .....	1
7	D 40170	RING - snap .....	1
8	D 40171	SEAL - rod wiper .....	1
9	D 39722	TUBE - cylinder .....	1
10	131- 17	NUT - hex, self lock, 7/8" - 14 NF .....	1
11	D 39726	RING - retaining, piston .....	2
12	D 39725	PISTON .....	1
13	D 39723	GLAND - cylinder .....	1
14	D 39724	ROD - piston, 1-1/4" (38 mm) dia. ....	1
15	D 39727	YOKES - rod, piston .....	1
16	D 40172	SCREW - set, 5/16" - 18 NC x 1/2"	1



## TWO SPOOL VALVES AND LEVERS

ALL VALVES HAVE PART NUMBER ON VALVE IDENTIFICATION PLATE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30043	VALVE - two spool, used on Angling Dozer and Drawbar Models, parts list page 223.....	1
1	D 45039	VALVE - two spool, used on Loader Models without Return-To-Dig feature, parts list page 223 .....	1
1	R 24134	VALVE - two spool, used on Return-to-Dig Loader Models, parts list page 225.....	1
2	13- 668	HHCS - 3/8" - 16 NC x 4-1/4"	4
3	92- 6	WASHER - lock, 3/8"	4
4	25- 106	NUT - hex, 3/8" - 16 NC .....	4
5	D 43452	PIN - retaining, pivot lever .....	1
6	138- 61	PIN - roll, 1/8" - 1"	1
7	D 43451	LEVER - pivot .....	1
8	D 43453	LINK - long, use with all valves .....	2
9	D 43450	LEVER - use R38663 lever, R38654 knob and (2) R38655 ring, 1/2" (13 mm) O.D. for knob .....	1
9	R 38663	LEVER - 5/8" (15 mm) O.D. for knob .....	1
10	D 43620	COLLAR - control lever .....	1
11	83- 54	SCREW - set, hex. socket head, 5/16" - 18 NC x 1/4"	1
12	D 38662	RING - 1/2" (13 mm) I.D., D43450 lever .....	2
12	R 38655	RING - 5/8" (15 mm) I.D., R38663 lever .....	2
13	D 37550	KNOB - D43450 lever .....	1
13	R 38654	KNOB - R38663 lever .....	1
14	25- 116	NUT - hex., 3/8" - 24 NF .....	2
15	92- 6	WASHER - lock, 3/8"	2
16	D 40908	BALL JOINT .....	2
17	D 37549	BOLT - stud, 3/8" - 24 NF .....	1
18	R 30508	LEVER - bell crank .....	1
19	A 26411	WASHER - special .....	1
20	138- 61	PIN - roll, 1/8" x 1"	1
21	D 43454	LINK - short, all valves .....	2
22		RESERVED	
23	D 45388	PIN - link retaining .....	4
24	132- 24	PIN - cotter, 3/32" x 1"	4
25	195- 2065	WASHER - spacer .....	UAR
26	219- 4	FITTING - grease, straight, 1/8" NPT, if used .....	2
27	25- 156	NUT - hex, 3/8" - 24 NF .....	1

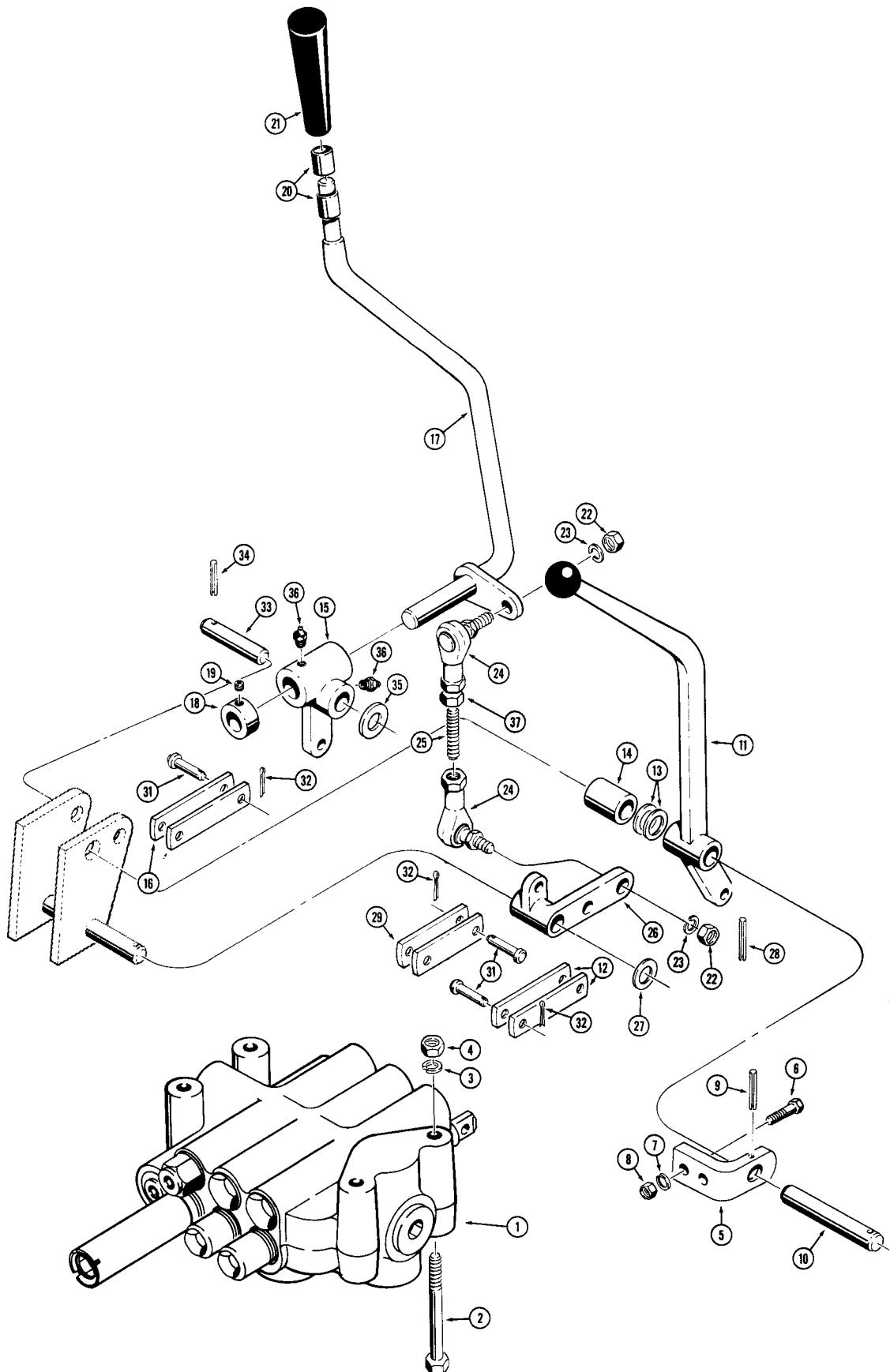


## THREE SPOOL VALVES AND LEVERS

## ALL VALVES HAVE PART NUMBER ON VALVE IDENTIFICATION PLATE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30044	VALVE - three spool, use on Angling Dozer Models with ripper pull behind hydraulics, parts list page 227 .....	1
1	<u>R 30046</u>	VALVE - three spool, use on Angle-Tilt Dozers and Angling Dozers with Ripper or pull behind hydraulics, parts list page 227 .....	1
1	R 24135	VALVE - three spool, used on Return-To-Dig Loader Models with ripper, pull behind hydraulics or clam type bucket, parts list page 225 .....	1
1	R 29817	VALVE - three spool, used on Return-To-Dig Loader Models with logging attachment and ripper or pull behind hydraulics, parts list page 229 .....	1
1	R 29819	VALVE - three spool, used on Loader Models with logging attachment, ripper or pull behind hydraulics without Return-To-Dig feature, parts list page 229 .....	1
2	13- 668	HHCS - 3/8" - 16 NC x 1-1/4"	4
3	92- 6	WASHER - lock, 3/8"	4
4	25- 106	NUT - hex, 3/8" - 16 NC .....	4
5	D 47216	BRACKET - valve lever mounting .....	1
6	13- 616	HHCS - 3/8" - 16 NC x 1"	2
7	92- 6	WASHER - med. sect. lock, 3/8"	2
8	25- 106	NUT - hex, 3/8" - 16 NC .....	2
9	138- 96	PIN - roll, 3/16" - 1 "	1
10	D 43459	SHAFT - pivot .....	1
11	D 35395	LEVER - valve control, R.H. .....	1
12	D 35397	LINK - long .....	2
13	A 26411	WASHER - special .....	UAR
14	D 37548	SPACER - lever .....	1
15	D 43451	LEVER - pivot .....	1
16	D 43453	LINK - long, used with all valves .....	2
	D 43450	LEVER - use R38663 lever, R38654 knob and (2) R38655 ring, 1/2" (13 mm) O.D. for knob .....	1
17	R 38663	LEVER - 5/8" (15 mm) O.D. for knob .....	1
18	D 43620	COLLAR - control lever .....	1
19	83- 54	SCREW - set, hex. socket head, 5/16" - 18 NC x 1/4"	1
20	D 38662	RING - 1/2" (13 mm) I.D., D43450 lever .....	2
20	R 38655	RING - 5/8" (15 mm) I.D., R38663 lever .....	2
21	D 37550	KNOB - D43450 lever .....	1
21	R 38654	KNOB - R38663 lever .....	1
22	25- 116	NUT - hex., 3/8" - 24 NF .....	2
23	92- 6	WASHER - lock, 3/8"	2
24	D 40908	BALL JOINT .....	2
25	D 37549	BOLT - stud, 3/8" - 24 NF .....	1
26	R 30508	LEVER - bell crank .....	1
27	A 26411	WASHER - special .....	1
28	138- 61	PIN - roll, 1/8" x 1"	1
29	D 43454	LINK - long, all valves .....	2

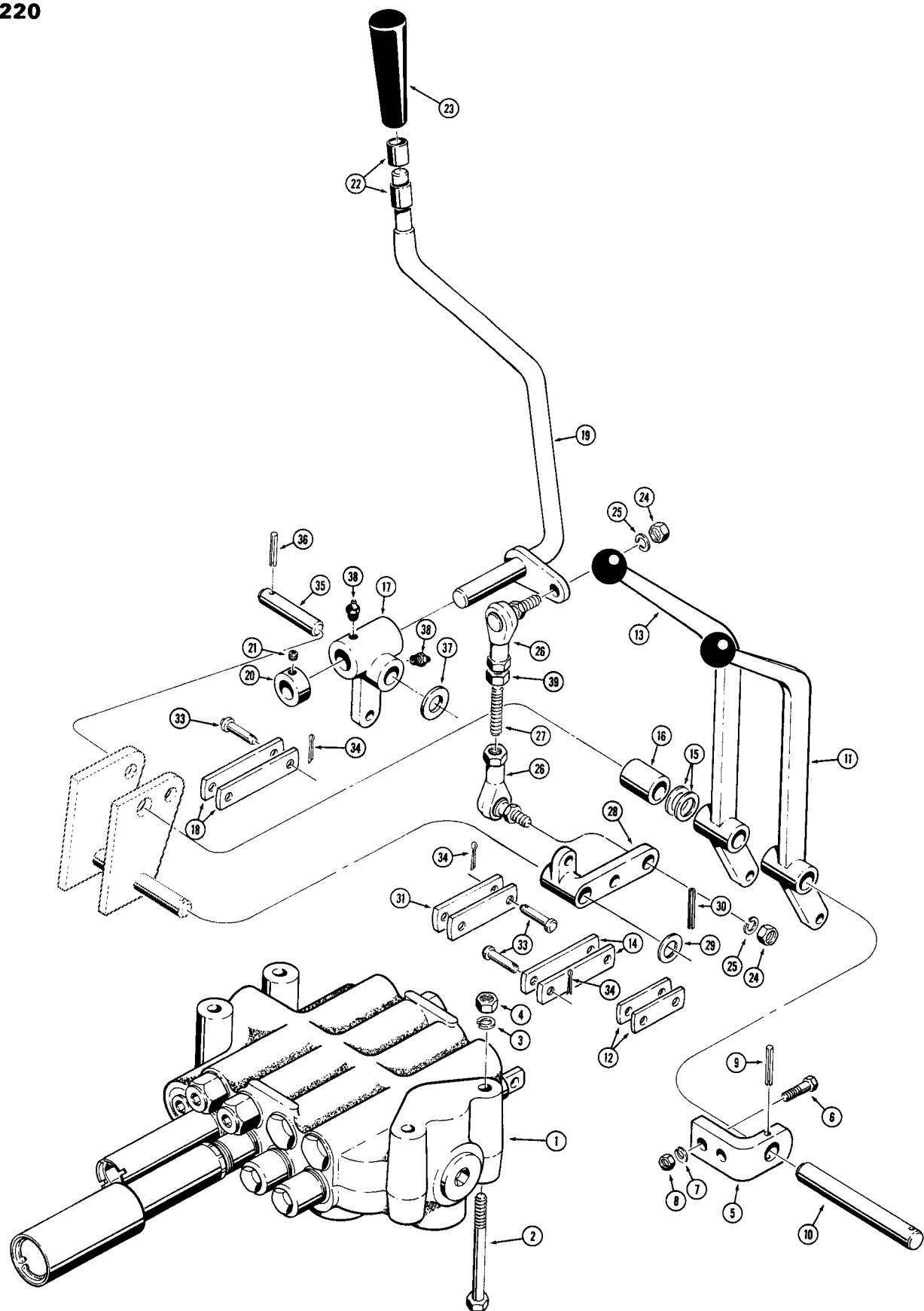
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## THREE SPOOL VALVES AND LEVERS

ALL VALVES HAVE PART NUMBER ON VALVE IDENTIFICATION PLATE

REF.	PART NO.	DESCRIPTION	REQ'D.
30		RESERVED	
31	D 45388	PIN - link, retaining .....	6
32	132- 24	PIN - cotter, 3/32" x 1/2" .....	6
33	D 43452	PIN - retaining, pivot lever .....	1
34	138- 61	PIN - roll, 1/8" x 1" .....	1
35	195- 2065	WASHER - spacer .....	UAR
36	219- 4	FITTING - grease, straight, 1/8" NPT, if used .....	2
37	25- 156	NUT - hex, 3/8" - 24 NF.....	1

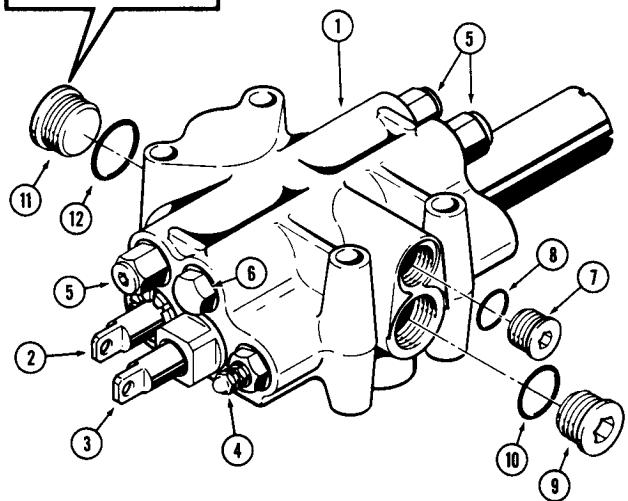
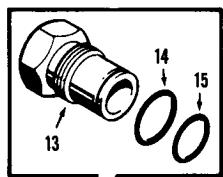
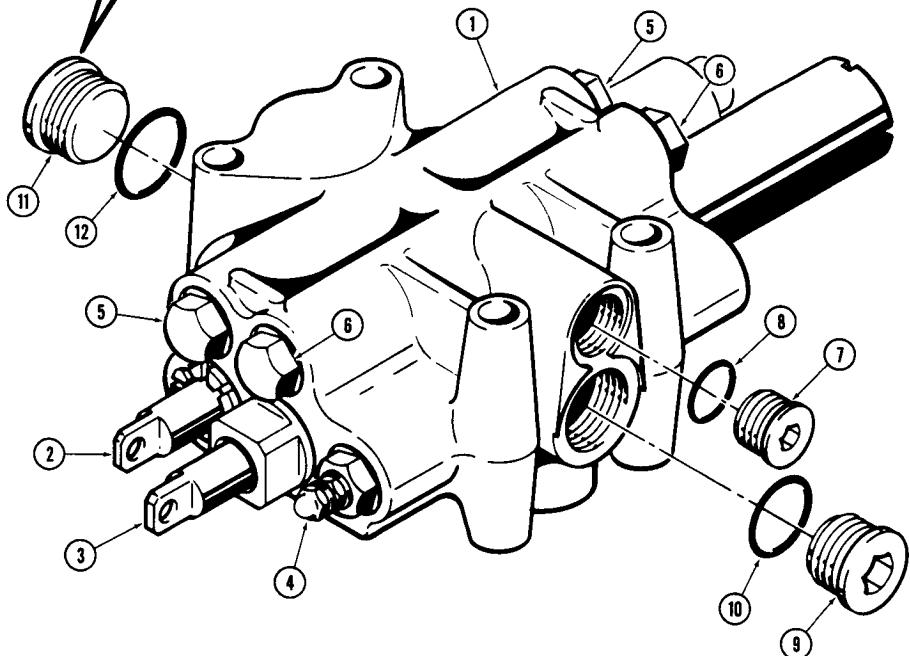
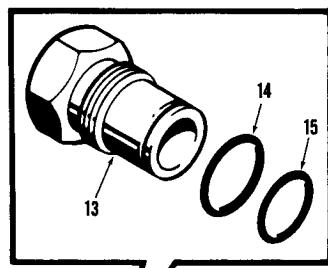


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## FOUR SPOOL VALVES AND LEVERS

ALL VALVES HAVE PART NUMBER ON VALVE IDENTIFICATION PLATE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30045	VALVE - four spool, used on Power Angle-Tilt Dozers Models with ripper or pull behind hydraulics, parts list page 231 .....	1
1	R 33802	VALVE - four spool, use on Power Angle Dozers with Dual Pull Behind Hydraulics, parts list page 231 .....	1
1	R 24136	VALVE - four spool, used on Return-to-Dig Loader Ripper Models and Loader Pull Behind Models with Clam Type Buckets, parts list page 233 .....	1
1	R 29818	VALVE - four spool, use on Return-To-Dig Loader Models with logging attachment and dual pull behind hydraulics, parts list page 233 .....	1
2	13- 668	HHCS - 3/8" - 16 NC x 4-1/4"	4
3	92- 6	WASHER - lock, 3/8"	4
4	25- 106	NUT - hex, 3/8" - 16 NC	4
5	D 47216	BRACKET - valve lever mounting	1
6	13- 616	HHCS - 3/8" - 16 NC x 1"	2
7	92- 6	WASHER - lock, 3/8"	2
8	25- 106	NUT - hex, 3/8" - 16 NC	2
9	138- 96	PIN - roll, 3/16" x 1"	1
10	D 43490	SHAFT - pivot	1
11	D 36086	LEVER - valve control, R.H.	1
12	D 35397	LINK - long	4
13	D 35395	LEVER - valve control, center	1
14	D 35397	LINK - long, use with all valves	2
15	A 26411	WASHER - special	UAR
16	D 37548	SPACER - lever	1
17	D 43451	LEVER - pivot	1
18	D 43453	LINK - long, use with all valves	2
19	D 43450	LEVER - use R38663 lever, R38654 knob and (2) R38655 ring 1/2" (13 mm) O.D. for knob	1
19A	R 38663	LEVER - 5/8" (15 mm) O.D. for knob	1
20	D 43620	COLLAR - control lever	1
21	83- 54	SCREW - set, hex. socket head, 5/16" - 18 NC x 1/4"	1
22	D 38662	RING - 1/2" (13 mm) I.D., D43450 lever	2
22	R 38655	RING - 5/8" (15 mm) I.D., R38663 lever	2
23	D 37550	KNOB - D43450 lever	1
23	R 38654	KNOB - R38663 lever	1
24	25- 116	NUT - hex, 3/8" - 24 NF	2
25	92- 6	WASHER - lock, 3/8"	2
26	D 40908	BALL JOINT	2
27	D 37549	BOLT - stud, 3/8" - 24 NF	1
28	R 30508	LEVER - bell crank	1
29	A 26411	WASHER - special	1
30	138- 61	PIN - roll, 1/8" x 1"	1
31	D 43454	LINK - long, all valves	2
32		RESERVED	
33	D 45388	PIN - link retaining	8
34	132- 24	PIN - cotter, 3/32" x 1/2"	8
35	D 43452	PIN - retaining, pivot lever	1
36	138- 61	PIN - roll, 1/8" x 1"	1
37	195- 2065	WASHER - spacer	UAR
38	219- 4	FITTING - grease, straight, 1/8" NPT, if used	2
39	25- 156	NUT - hex, 3/8" - 24 NF	1



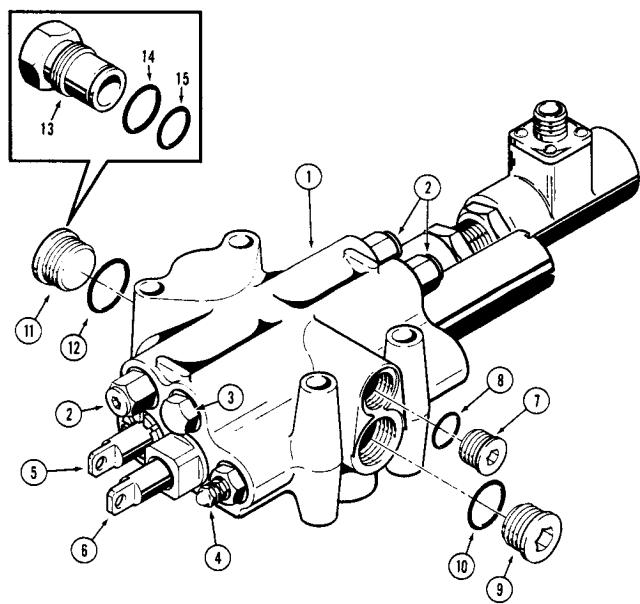
## R30043 ANGLE DOZER OR DRAWBAR CONTROL VALVE (2 SPOOL)

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30043	VALVE - equipment control valve, two spool .....	1
2	D 37050	SPOOL - three position, parts list page 243.....	1
2	D 37051	SPOOL - three position, parts list page 243.....	1
2	D 37052	SPOOL - three position, parts list page 243.....	1
2	D 37053	SPOOL - three position, parts list page 243.....	1
3	D 46024	SPOOL - four position, parts list page 235 .....	1
3	D 46025	SPOOL - four position, parts list page 235 .....	1
3	D 46026	SPOOL - four position, parts list page 235 .....	1
3	D 46027	SPOOL - four position, parts list page 235 .....	1
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - check, parts list page 239 .....	2
6	NSS	VALVE - check, parts list page 239 .....	2
7	218- 5210	PLUG - valve port.....	1
8	218- 5006	O-RING .....	1
9	218- 5212	PLUG - valve port.....	1
10	218- 5008	O-RING.....	1
11	218- 5214	PLUG - valve port.....	1
12	218- 5010	O-RING.....	1
13	D 35401	FITTING - carryover, Backhoe Model only .....	1
14	218- 5010	O-RING - large .....	1
15	A 25590	O-RING - small .....	1

## D45039 LOADER CONTROL VALVE (2 SPOOL)

## WITHOUT RETURN TO DIG FEATURE

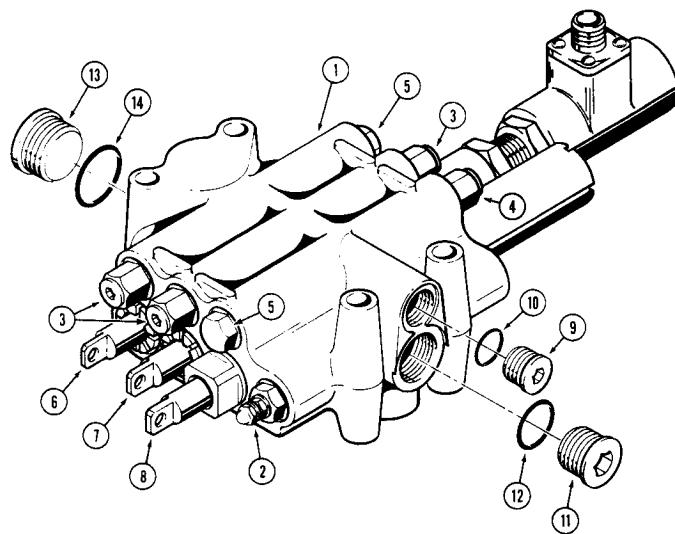
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 45039	VALVE - equipment control, two spool .....	1
2	D 37050	SPOOL - three position, parts list page 243.....	1
2	D 37051	SPOOL - three position, parts list page 243.....	1
2	D 37052	SPOOL - three position, parts list page 243.....	1
2	D 37053	SPOOL - three position, parts list page 243.....	1
3	D 46024	SPOOL - four position, parts list page 235 .....	1
3	D 46025	SPOOL - four position, parts list page 235 .....	1
3	D 46026	SPOOL - four position, parts list page 235 .....	1
3	D 46027	SPOOL - four position, parts list page 235 .....	1
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - secondary relief, parts list page 239 .....	3
6	NSS	VALVE - check, parts list page 239 .....	1
7	218- 5210	PLUG - valve port.....	1
8	218- 5006	O-RING.....	1
9	218- 5212	PLUG - valve port.....	1
10	218- 5008	O-RING.....	1
11	218- 5214	PLUG - valve port.....	1
12	218- 5010	O-RING.....	1
13	D 35401	FITTING - carryover, Backhoe Models only .....	1
14	218- 5010	O-RING - large .....	1
15	A 25590	O-RING - small .....	1




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**ROTATED 180°**

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## R24134 LOADER CONTROL VALVE (2 SPOOL)

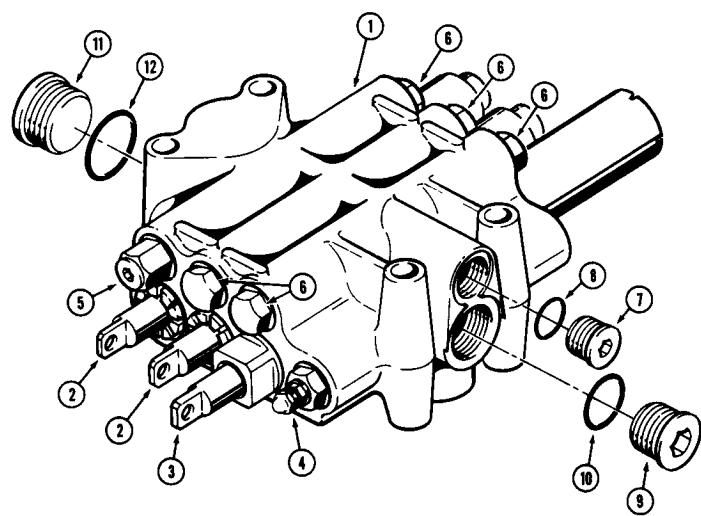
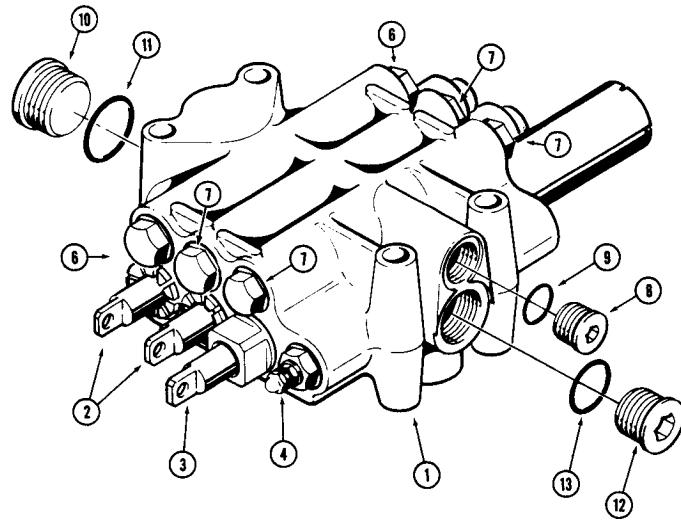
USED ON MODELS WITH RETURN TO DIG FEATURE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 24134	VALVE - loader control, 2 spool .....	1
2	NSS	VALVE - secondary relief, parts list page 239 .....	3
3	NSS	VALVE - check, parts list page 239 .....	1
4	NSS	VALVE - main relief, parts list page 243 .....	1
5	R 29704	SPOOL - three position, parts list page 247 .....	1
5	R 29705	SPOOL - three position, parts list page 247 .....	1
5	R 29706	SPOOL - three position, parts list page 247 .....	1
5	R 29707	SPOOL - three position, parts list page 247 .....	1
6	D 46024	SPOOL - four position, parts list page 235 .....	1
6	D 46025	SPOOL - four position, parts list page 235 .....	1
6	D 46026	SPOOL - four position, parts list page 235 .....	1
6	D 46027	SPOOL - four position, parts list page 235 .....	1
7	218- 5210	PLUG - valve port .....	1
8	218- 5006	O-RING .....	1
9	218- 5212	PLUG - valve port .....	1
10	218- 5008	O-RING .....	1
11	218- 5214	PLUG - valve port .....	1
12	218- 5010	O-RING .....	1
13	D 35401	FITTING - carry over, Backhoe models .....	1
14	218- 5010	O-RING - large .....	1
15	A 25590	O-RING - small .....	1

## R24135 LOADER CONTROL VALVE (3 SPOOL)

USED ON MODELS WITH RETURN TO DIG FEATURE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 24135	VALVE - loader control, 3 spool .....	1
2	NSS	VALVE - main relief, parts list page 243 .....	1
3	NSS	VALVE - secondary relief, parts list page 239 .....	3
4	NSS	VALVE - secondary relief, parts list page 237 .....	1
5	NSS	VALVE - check, parts list page 239 .....	2
6	D 37050	SPOOL - three position, parts list page 243 .....	1
6	D 37051	SPOOL - three position, parts list page 243 .....	1
6	D 37052	SPOOL - three position, parts list page 243 .....	1
6	D 37053	SPOOL - three position, parts list page 243 .....	1
7	R 29704	SPOOL - three position, parts list page 247 .....	1
7	R 29705	SPOOL - three position, parts list page 247 .....	1
7	R 29706	SPOOL - three position, parts list page 247 .....	1
7	R 29707	SPOOL - three position, parts list page 247 .....	1
8	D 46024	SPOOL - four position, parts list page 235 .....	1
8	D 46025	SPOOL - four position, parts list page 235 .....	1
8	D 46026	SPOOL - four position, parts list page 235 .....	1
8	D 46027	SPOOL - four position, parts list page 235 .....	1
9	218- 5210	PLUG - valve port .....	1
10	218- 5006	O-RING .....	1
11	218- 5212	PLUG - valve port .....	1
12	218- 5008	O-RING .....	1
13	218- 5214	PLUG - valve port .....	1
14	218- 5010	O-RING .....	1



## R30046 DOZER CONTROL VALVE (3 SPOOL)

USED ON ANGLE TILT DOZERS AND ANGLE DOZERS

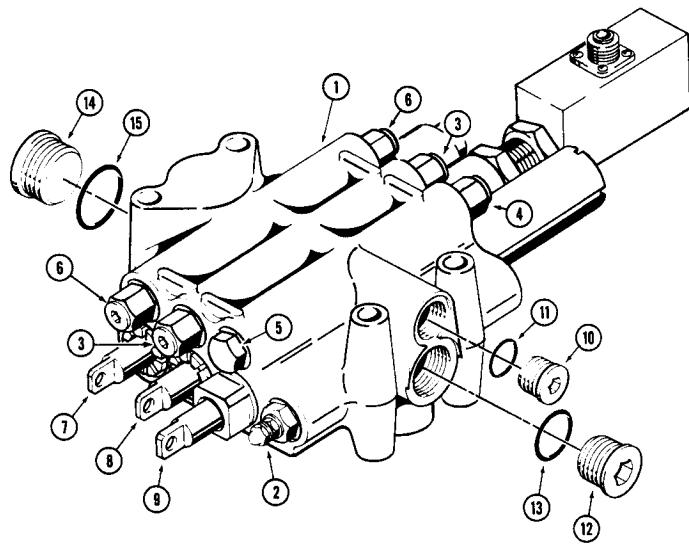
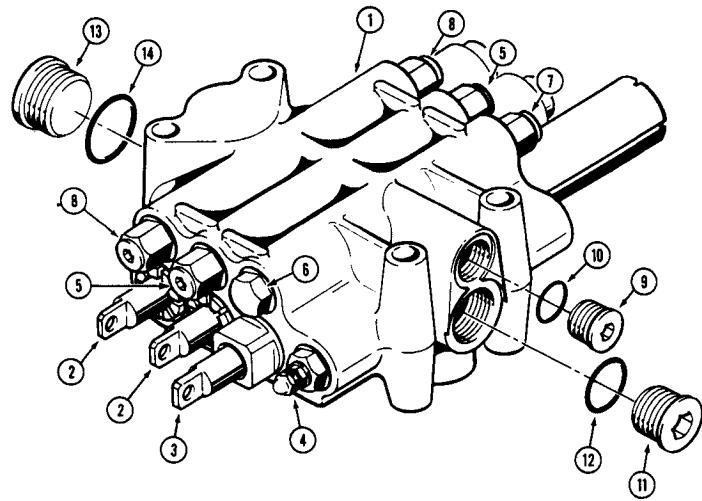
WITH RIPPER OR PULL BEHIND HYDRAULICS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30046	VALVE - equipment control, three spool .....	1
2	D 37050	SPOOL - three position, parts list page 243.....	2
2	D 37051	SPOOL - three position, parts list page 243.....	2
2	D 37052	SPOOL - three position, parts list page 243.....	2
2	D 37053	SPOOL - three position, parts list page 243.....	2
3	D 46024	SPOOL - four position, parts list page 235 .....	1
3	D 46025	SPOOL - four position, parts list page 235 .....	1
3	D 46026	SPOOL - four position, parts list page 235 .....	1
3	D 46027	SPOOL - four position, parts list page 235 .....	1
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - check, parts list page 239 .....	1
6	NSS	VALVE - check, parts list page 239 .....	2
7	NSS	VALVE - check, parts list page 239 .....	3
8	218- 5210	PLUG - valve port.....	1
9	218- 5006	O-RING.....	1
10	218- 5212	PLUG - valve port.....	1
11	218- 5008	O-RING.....	1
12	218- 5214	PLUG - valve port.....	1
13	218- 5010	O-RING.....	1

## R30044 ANGLE DOZER CONTROL VALVE (3 SPOOL)

USED WITH RIPPER OR PULL BEHIND HYDRAULICS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30044	VALVE - equipment control, three spool .....	1
2	D 37050	SPOOL - three position, parts list page 243.....	2
2	D 37051	SPOOL - three position, parts list page 243.....	2
2	D 37052	SPOOL - three position, parts list page 243.....	2
2	D 37053	SPOOL - three position, parts list page 243.....	2
3	D 46024	SPOOL - four position, parts list page 235 .....	1
3	D 46025	SPOOL - four position, parts list page 235 .....	1
3	D 46026	SPOOL - four position, parts list page 235 .....	1
3	D 46027	SPOOL - four position, parts list page 235 .....	1
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - secondary relief, parts list page 237 .....	1
6	NSS	VALVE - check, parts list page 239 .....	5
7	218- 5210	PLUG - valve port.....	1
8	218- 5006	O-RING.....	1
9	218- 5212	PLUG - valve port.....	1
10	218- 5008	O-RING.....	1
11	218- 5214	PLUG - valve port.....	1
12	218- 5010	O-RING.....	1

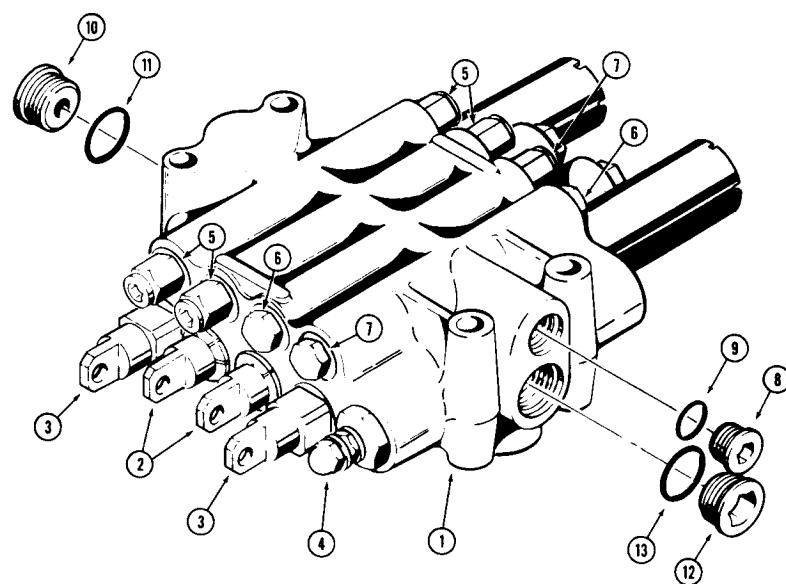
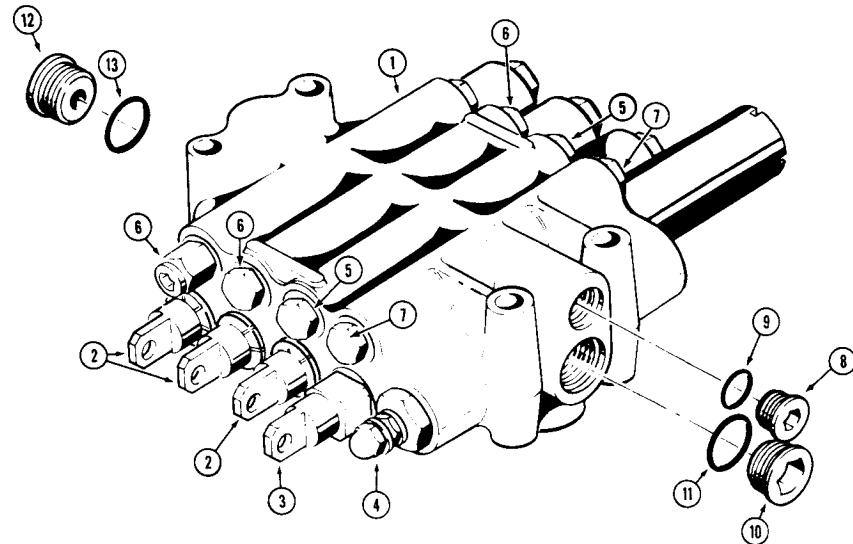


**R29819 LOADER CONTROL VALVE (3 SPOOL)**  
**USED ON MODELS WITHOUT**  
**RETURN-TO-DIG FEATURE AND WITH LOGGING ATTACHMENT**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 29819	VALVE - equipment control, three spool . . . . .	1
2	D 37050	SPOOL - three position, parts list page 243 . . . . .	2
2	D 37051	SPOOL - three position, parts list page 243 . . . . .	2
2	D 37052	SPOOL - three position, parts list page 243 . . . . .	2
2	D 37053	SPOOL - three position, parts list page 243 . . . . .	2
3	D 46024	SPOOL - four position, parts list page 235 . . . . .	1
3	D 46025	SPOOL - four position, parts list page 235 . . . . .	1
3	D 46026	SPOOL - four position, parts list page 235 . . . . .	1
3	D 46027	SPOOL - four position, parts list page 235 . . . . .	1
4	W 16129	VALVE - main relief, parts list page 237 . . . . .	1
5	L 15141	VALVE - secondary relief, parts list page 241 . . . . .	2
6	NSS	VALVE - check, parts list page 239 . . . . .	1
7	L 15141	VALVE - secondary relief, parts list page 241 . . . . .	1
8	NSS	VALVE - secondary relief, parts list page 241 . . . . .	2
9	218- 5210	PLUG - valve port . . . . .	1
10	218- 5006	O-RING . . . . .	1
11	218- 5212	PLUG - valve port . . . . .	1
12	218- 5008	O-RING . . . . .	1
13	218- 5214	PLUG - valve port . . . . .	1
14	218- 5010	O-RING . . . . .	1

**R29817 LOADER CONTROL VALVE (3 SPOOL)**  
**USED ON MODELS WITH**  
**RETURN-TO-DIG FEATURE AND LOGGING ATTACHMENT**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 29817	VALVE - loader control, 3 spool . . . . .	1
2	W 16129	VALVE - main relief, parts list page 237 . . . . .	1
3	L 15141	VALVE - secondary relief, parts list page 241 . . . . .	2
4	L 15141	VALVE - secondary relief, parts list page 241 . . . . .	1
5	NSS	VALVE - check, parts list page 239 . . . . .	1
6	NSS	VALVE - secondary relief, parts list page 241 . . . . .	2
7	D 37050	SPOOL - three position, parts list page 243 . . . . .	1
7	D 37051	SPOOL - three position, parts list page 243 . . . . .	1
7	D 37052	SPOOL - three position, parts list page 243 . . . . .	1
7	D 37053	SPOOL - three position, parts list page 243 . . . . .	1
8	R 29704	SPOOL - three position, parts list page 247 . . . . .	1
8	R 29705	SPOOL - three position, parts list page 247 . . . . .	1
8	R 29706	SPOOL - three position, parts list page 247 . . . . .	1
8	R 29707	SPOOL - three position, parts list page 247 . . . . .	1
9	D 46024	SPOOL - four position, parts list page 235 . . . . .	1
9	D 46025	SPOOL - four position, parts list page 235 . . . . .	1
9	D 46026	SPOOL - four position, parts list page 235 . . . . .	1
9	D 46027	SPOOL - four position, parts list page 235 . . . . .	1
10	218- 5210	PLUG - valve port . . . . .	1
11	218- 5006	O-RING . . . . .	1
12	218- 5212	PLUG - valve port . . . . .	1
13	218- 5008	O-RING . . . . .	1
14	218- 5214	PLUG - valve port . . . . .	1
15	218- 5010	O-RING . . . . .	1



## R30045 ANGLE TILT DOZER CONTROL VALVE (4 SPOOL)

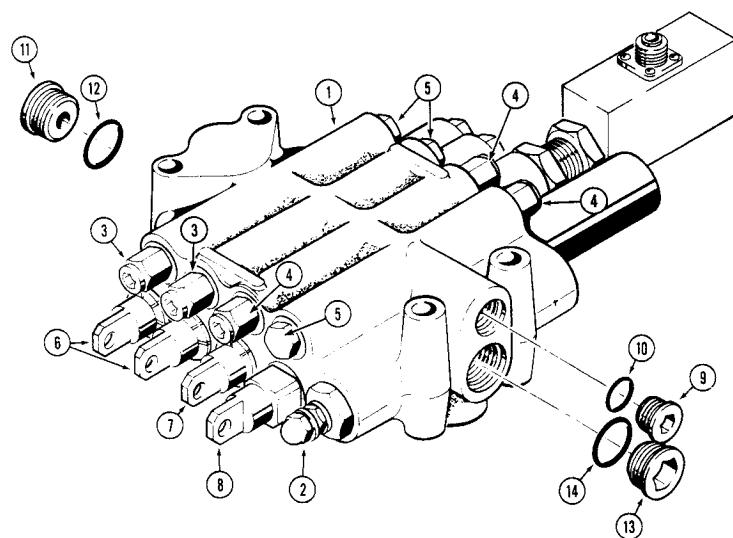
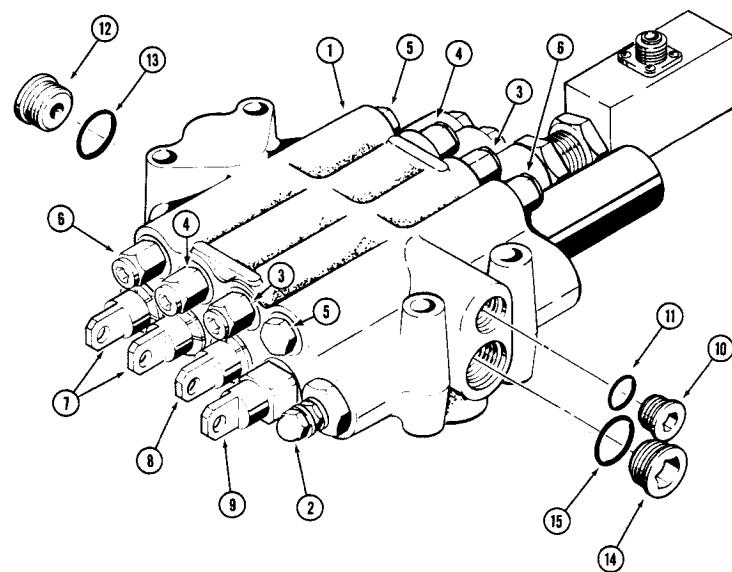
USED WITH RIPPER OR PULL BEHIND HYDRAULICS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 30045	VALVE - equipment control, four spool.....	1
2	D 37050	SPOOL - three position, parts list page 243.....	3
2	D 37051	SPOOL - three position, parts list page 243.....	3
2	D 37052	SPOOL - three position, parts list page 243.....	3
2	D 37053	SPOOL - three position, parts list page 243.....	3
3	D 46024	SPOOL - four position, parts list page 235 .....	1
3	D 46025	SPOOL - four position, parts list page 235 .....	1
3	D 46026	SPOOL - four position, parts list page 235 .....	1
3	D 46027	SPOOL - four position, parts list page 235 .....	1
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - check, parts list page 237 .....	3
6	NSS	VALVE - secondary relief, parts list page 237 .....	1
7	NSS	VALVE - check, parts list page 239 .....	4
8	218- 5210	PLUG - valve port.....	1
9	218- 5006	O-RING.....	1
10	218- 5212	PLUG - valve port.....	1
11	218- 5008	O-RING.....	1
12	218- 5214	PLUG - valve port.....	1
13	218- 5010	O-RING.....	1

## R33802 ANGLE DOZER CONTROL VALVE (4 SPOOL)

USED WITH DUAL PULL BEHIND HYDRAULICS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 33802	VALVE - equipment control (four spool) .....	1
2	D 37050	SPOOL - three position, parts list page 243.....	2
2	D 37051	SPOOL - three position, parts list page 243.....	2
2	D 37052	SPOOL - three position, parts list page 243.....	2
2	D 37053	SPOOL - three position, parts list page 243.....	2
3	D 46024	SPOOL - four position, parts list page 235 .....	2
3	D 46025	SPOOL - four position, parts list page 235 .....	2
3	D 46026	SPOOL - four position, parts list page 235 .....	2
3	D 46027	SPOOL - four position, parts list page 235 .....	2
4	NSS	VALVE - main relief, parts list page 243.....	1
5	NSS	VALVE - secondary relief, parts list page 237 .....	4
6	NSS	VALVE - check, parts list page 239 .....	2
7	NSS	VALVE - check, parts list page 239 .....	2
8	218- 5210	PLUG - valve port.....	1
9	218- 5006	O-RING.....	1
10	218- 5212	PLUG - valve port.....	1
11	218- 5008	O-RING.....	1
12	218- 5214	PLUG - valve port.....	1
13	218- 5010	O-RING.....	1



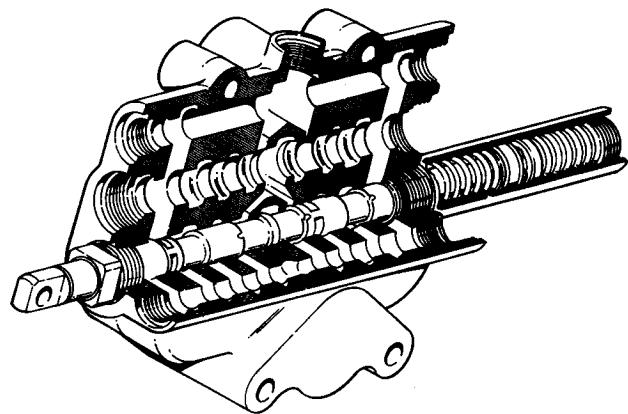
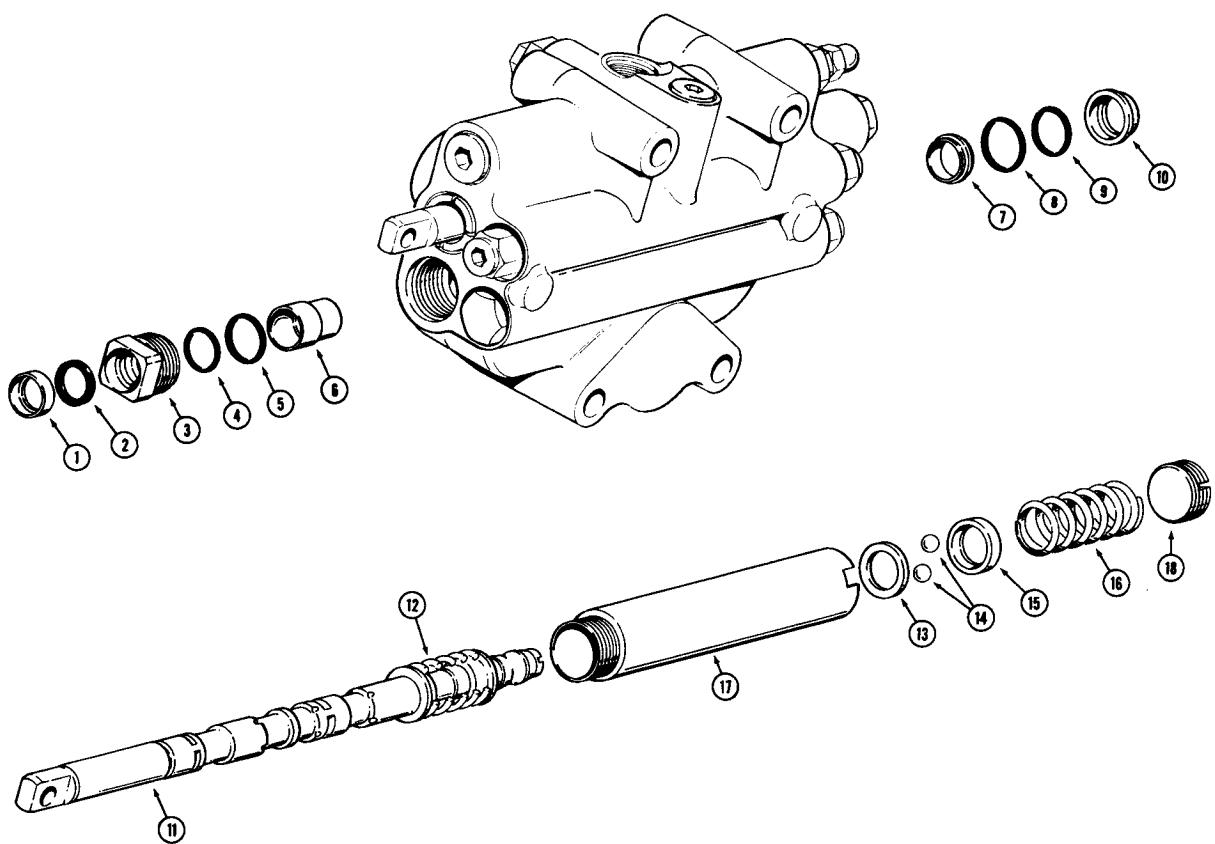
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**R29818 LOADER CONTROL VALVE (4 SPOOL)**  
**USED ON MODELS WITH**  
**RETURN-TO-DIG FEATURE AND LOGGING ATTACHMENT**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 29818	VALVE - loader control, 4 spool .....	1
2	W 16129	VALVE - main relief, parts list page 237 .....	1
3	L 15141	VALVE - secondary relief, parts list page 241 .....	2
4	NSS	VALVE - secondary relief, parts list page 241 .....	2
5	NSS	VALVE - check, parts list page 241 .....	2
6	NSS	VALVE - secondary relief, parts list page 241 .....	1
7	D 37050	SPOOL - three position, parts list page 243 .....	2
7	D 37051	SPOOL - three position, parts list page 243 .....	2
7	D 37052	SPOOL - three position, parts list page 243 .....	2
7	D 37053	SPOOL - three position, parts list page 243 .....	2
8	R 29704	SPOOL - three position, parts list page 247 .....	1
8	R 29705	SPOOL - three position, parts list page 247 .....	1
8	R 29706	SPOOL - three position, parts list page 247 .....	1
8	R 29707	SPOOL - three position, parts list page 247 .....	1
9	D 46024	SPOOL - four position, parts list page 235 .....	1
9	D 46025	SPOOL - four position, parts list page 235 .....	1
9	D 46026	SPOOL - four position, parts list page 235 .....	1
9	D 46027	SPOOL - four position, parts list page 235 .....	1
10	218- 5210	PLUG - valve port .....	1
11	218- 5006	O-RING .....	1
12	218- 5212	PLUG - valve port .....	1
13	218- 5008	O-RING .....	1
14	218- 5214	PLUG - valve port .....	1
15	218- 5010	O-RING .....	1

**R24136 LOADER CONTROL VALVE (4 SPOOL)**  
**USED ON MODELS WITH RETURN TO DIG FEATURE**

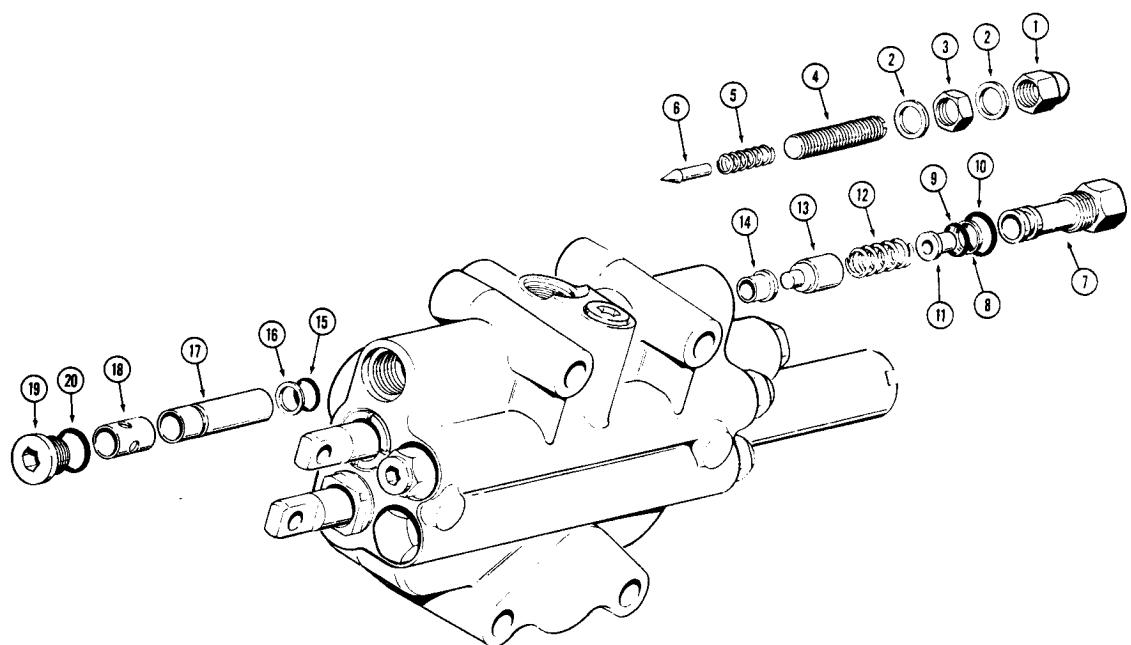
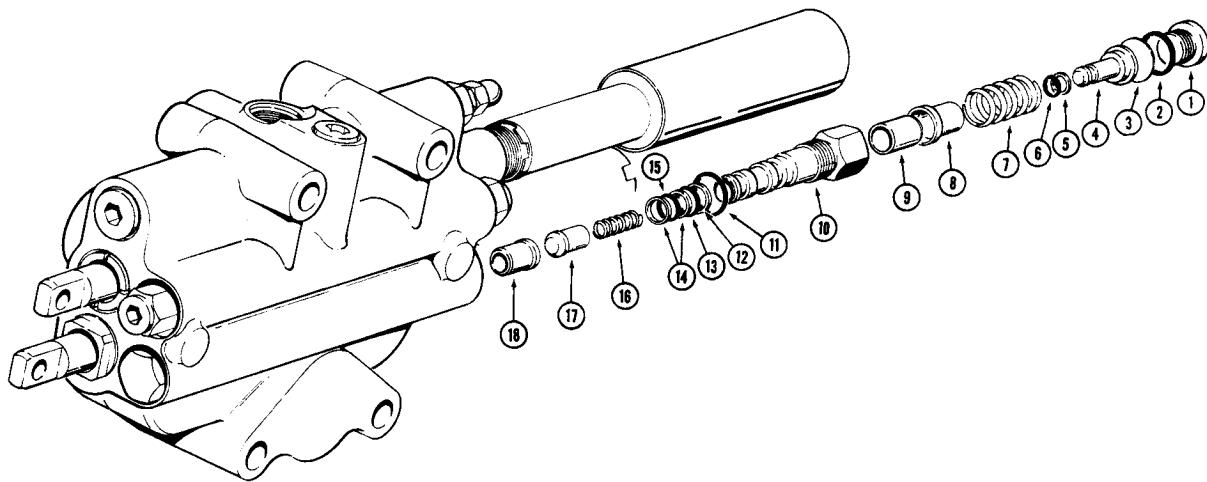
REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 24136	VALVE - loader control, 4 spool .....	1
2	NSS	VALVE - main relief, parts list page 243 .....	1
3	NSS	VALVE - secondary relief, parts list page 237 .....	2
4	NSS	VALVE - secondary relief, parts list page 241 .....	3
5	NSS	VALVE - check, parts list page 241 .....	3
6	D 37050	SPOOL - three position, parts list page 243 .....	2
6	D 37051	SPOOL - three position, parts list page 243 .....	2
6	D 37052	SPOOL - three position, parts list page 243 .....	2
6	D 37053	SPOOL - three position, parts list page 243 .....	2
7	R 29704	SPOOL - three position, parts list page 247 .....	1
7	R 29705	SPOOL - three position, parts list page 247 .....	1
7	R 29706	SPOOL - three position, parts list page 247 .....	1
7	R 29707	SPOOL - three position, parts list page 247 .....	1
8	D 46024	SPOOL - four position, parts list page 235 .....	1
8	D 46025	SPOOL - four position, parts list page 235 .....	1
8	D 46026	SPOOL - four position, parts list page 235 .....	1
8	D 46027	SPOOL - four position, parts list page 235 .....	1
9	218- 5210	PLUG - valve port .....	1
10	218- 5006	O-RING .....	1
11	218- 5212	PLUG - valve port .....	1
12	218- 5008	O-RING .....	1
13	218- 5214	PLUG - valve port .....	1
14	218- 5010	O-RING .....	1



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## FOUR POSITION SPOOLS

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 46024	SPOOL ASSEMBLY - four position, color code - black or letter code - W, .73700" to .73709" (18.720 mm to 18.722 mm) .....	1
	D 46025	SPOOL ASSEMBLY - four position, color code - blue or letter code - X, .73710" to .73719" (18.722 mm to 18.724 mm) .....	1
	D 46026	SPOOL ASSEMBLY - four position, color code - yellow or letter code - Y, .73720" to .73729" (18.725 mm to 18.727 mm) .....	1
	D 46027	SPOOL ASSEMBLY - four position, color code - green or letter code - Z, .73730" to .73740" (18.727 mm to 18.730 mm) .....	1
1	D 37153	RETAINER - wiper ring .....	1
2	A 14527	RING - wiper .....	1
3	D 37152	GLAND - spool .....	1
4	A 27365	O-RING - small .....	1
5	D 37156	O-RING - large .....	1
6	D 37076	SLEEVE - spool, lug end .....	1
7	D 33857	RETAINER - O-ring .....	1
8	A 7623	O-RING - large .....	1
9	A 27342	O-RING - small .....	1
10	D 33856	RETAINER - O-ring .....	1
	D 46034	SPOOL KIT - D46024 spool assembly only .....	1
	D 46035	SPOOL KIT - D46025 spool assembly only .....	1
	D 46036	SPOOL KIT - D46026 spool assembly only .....	1
	D 46037	SPOOL KIT - D46027 spool assembly only .....	1
11	NSS	SPOOL ASSEMBLY - four position .....	1
12	A 16882	SPRING - centering .....	1
13	L 30455	WASHER - detent .....	1
14	211- 8	BALL - detent, 9/32" dia. ....	8
15	L 30456	CAM - detent .....	1
16	L 30626	SPRING - detent .....	1
17	L 30454	CAP - valve, detent .....	1
18	L 30458	PLUG - detent adjustment .....	1



## SECONDARY RELIEF VALVE

ALL SPOOLS EXCEPT LOADER AND DOZER LIFT SPOOLS

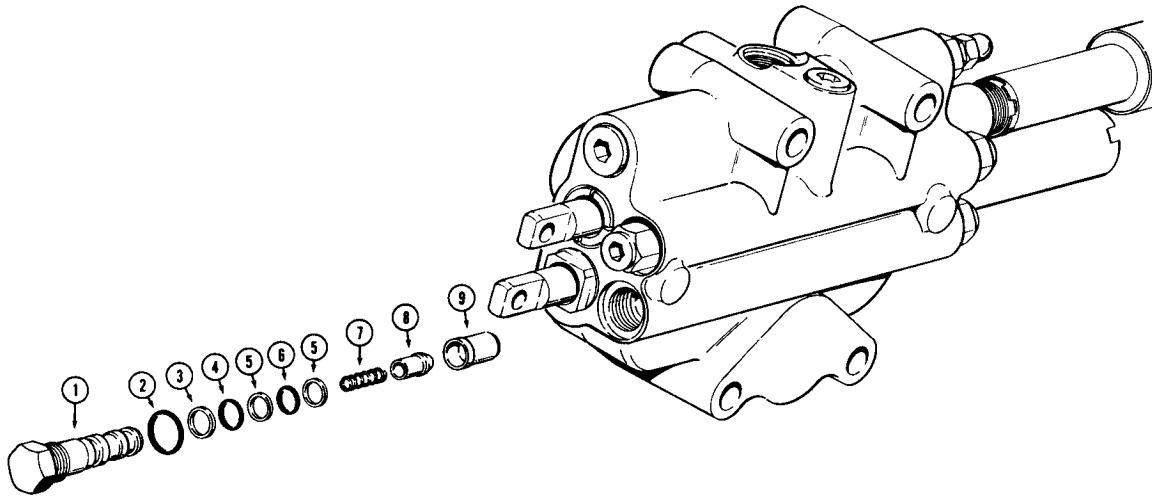
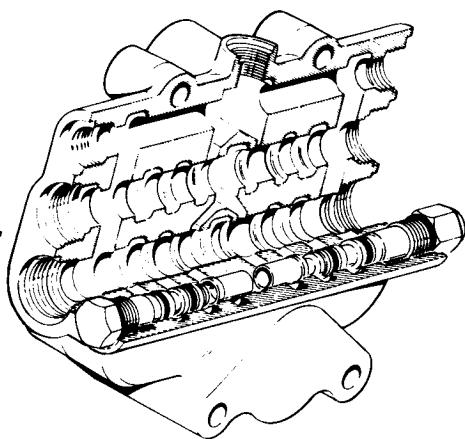
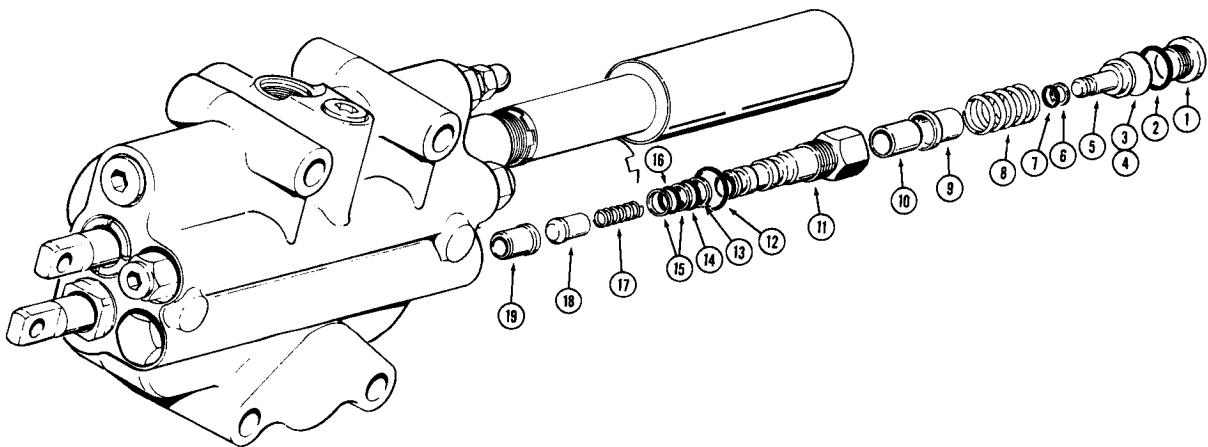
REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 40354	PLUG - secondary relief .....	1
2	218- 5006	O-RING .....	1
3	16917	SHIM - spring guide, .0105" (.127 mm) .....	UAR
	D 40355	SHIM - spring guide, .0050" (.267 mm) .....	UAR
4	D 37150	GUIDE - spring .....	1
5	D 37147	RING - backup, spring guide (Teflon) .....	1
6	A 51274	O-RING .....	1
7	D 37148	SPRING - plunger .....	1
8	D 37151	PLUNGER - relief valve .....	1
9	D 37075	SEAT - plunger .....	1
10	D 37072	BODY - secondary relief .....	1
11	218- 5007	O-RING - large .....	1
12	D 37071	RING - backup, center O-ring .....	1
13	D 26265	O-RING - center .....	1
14	D 37070	RING - backup, small O-ring .....	2
15	D 37149	O-RING - small .....	1
16	D 37067	SPRING - poppet .....	1
17	D 37068	POPPET - check valve .....	1
18	D 37069	SEAT - poppet .....	1

## W16129 MAIN RELIEF VALVE

USED ON MODELS WITH LOGGING ATTACHMENT

REF.	PART NO.	DESCRIPTION	REQ'D.
	W 16129	RELIEF - main .....	1
1	129- 514	NUT - acorn, main relief valve .....	1
2	D 26270	WASHER - special .....	2
3	25- 155	NUT - hex, lock, 5/16" - 24 NF .....	1
4	176- 296	SCREW - 5/16" - 24 NF x 1-3/4" .....	1
5	D 26268	SPRING - pilot .....	1
6	D 26267	PLUNGER - relief valve .....	1
7	A 25291	CAP - relief valve .....	1
8	L 30443	RING - backup, L30444 seal .....	1
9	L 30444	O-RING - small .....	1
10	218- 5006	O-RING - large .....	1
11	D 26266	SEAT - plunger .....	1
12	D 52319	SPRING - relief valve .....	1
13	W 16130	POPPET ASSEMBLY - main relief valve .....	1
14	D 37063	SEAT - poppet .....	1
15	L 30444	O-RING .....	1
16	L 30443	RING - backup, L30444 seal .....	1
17	D 37064	SLEEVE - poppet seat .....	1
18	D 37065	SLEEVE - drain .....	1
19	218- 5210	PLUG - valve .....	1
20	218- 5006	O-RING .....	1

\*NOTE: See page 245 for Dozer Backhoe Main Relief.



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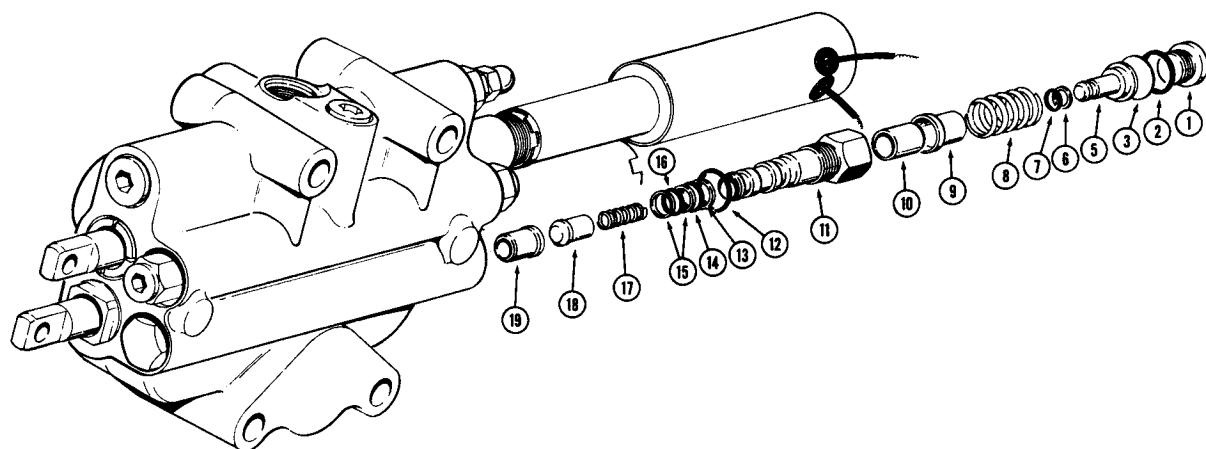
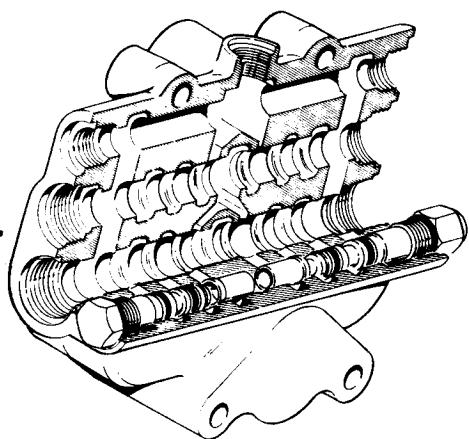
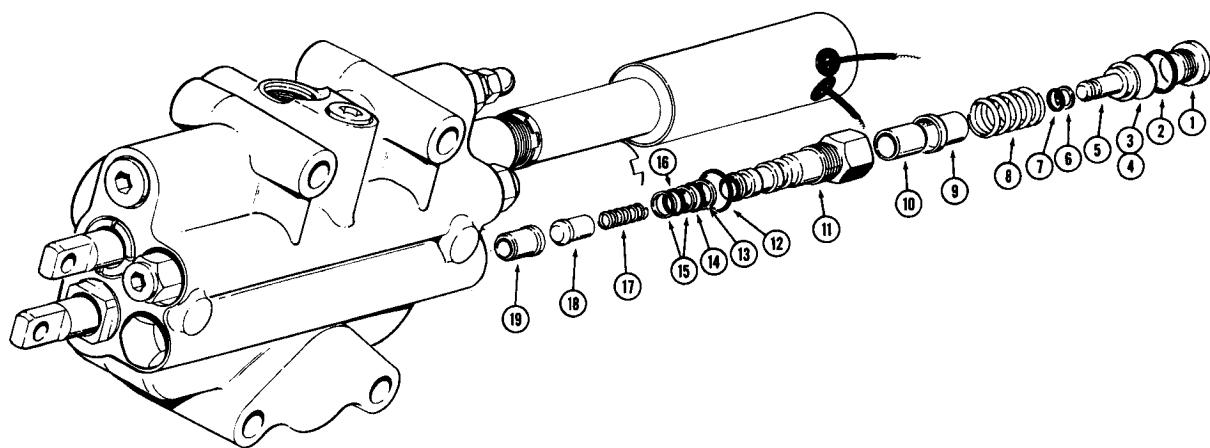
## SECONDARY RELIEF VALVE

## USED WITH DOZER AND LOADER LIFT SPOOLS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 40354	PLUG - secondary relief .....	1
2	218- 5006	O-RING .....	1
3	D 40355	SHIM - spring guide, .0050" (.127 mm).....	UAR
4	16917	SHIM - spring guide, .0105" (.267 mm).....	UAR
5	D 37073	GUIDE - spring .....	1
6	D 40357	RING - backup, spring guide .....	1
7	D 40356	O-RING .....	1
8	D 37148	SPRING - plunger .....	1
9	D 37074	PLUNGER - relief valve .....	1
10	D 37075	SEAT - plunger .....	1
11	D 37072	BODY - secondary relief valve.....	1
12	218- 5007	O-RING - large .....	1
13	D 37071	RING - backup, center O-ring .....	1
14	D 26265	O-RING - center .....	1
15	D 37070	RING - backup, small O-ring .....	2
16	D 37149	O-RING - small .....	1
17	D 37067	SPRING - poppet .....	1
18	D 37068	POPPET - check valve .....	1
19	D 37069	SEAT - poppet .....	1

## CHECK VALVE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 37066	CAP - check valve.....	1
2	218- 5007	O-RING - large .....	1
3	D 37071	RING - backup, center O-ring .....	1
4	D 26265	O-RING - center .....	1
5	D 37070	RING - backup, small O-ring .....	2
6	D 37149	O-RING - small .....	1
7	D 37067	SPRING - check valve .....	1
8	D 37068	POPPET - check valve .....	1
9	D 37069	SEAT - poppet .....	1



**MODEL 450 CRAWLER TRACTOR**

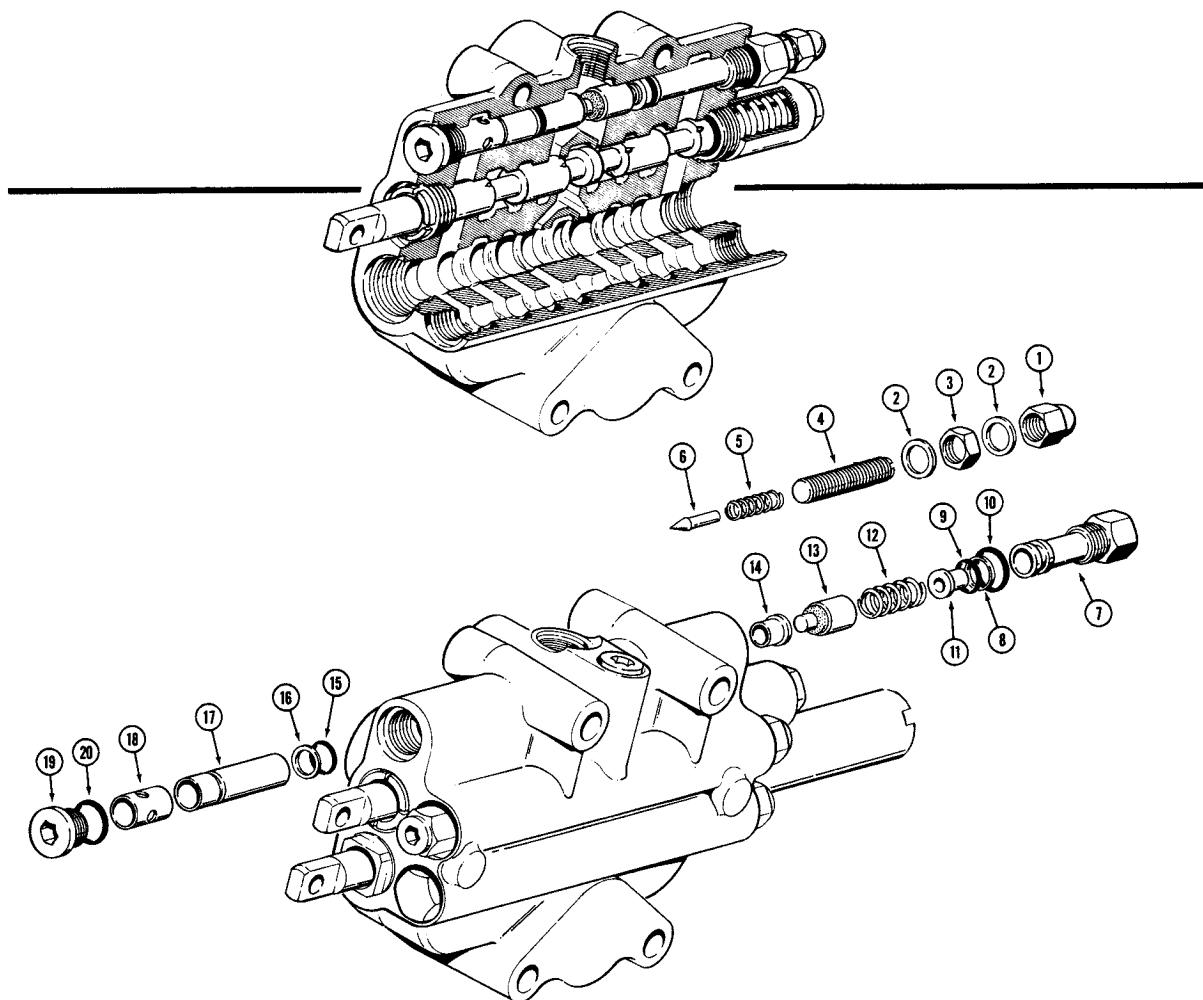
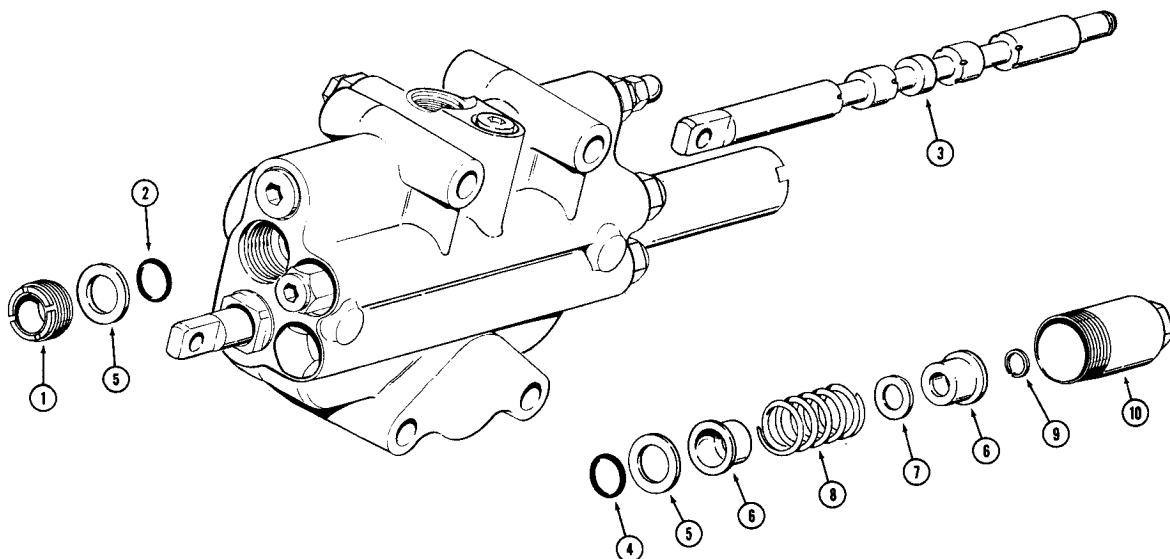
241

**L15141 SECONDARY RELIEF VALVE****USED WITH LOADER LIFT SPOOLS**

REF.	PART NO.	DESCRIPTION	REQ'D.
	L 15141	VALVE SECONDARY RELIEF .....	1
1	D 40354	PLUG - secondary relief.....	1
2	218- 5006	O-RING .....	1
3	D 40355	SHIM - spring guide, .0050" (.127 mm) .....	UAR
4	16917	SHIM - spring guide, .0105" (.267 mm) .....	UAR
5	D 37073	GUIDE - spring .....	1
6	D 40357	RING - backup, spring guide.....	1
7	D 40356	O-RING .....	1
8	D 37148	SPRING - plunger .....	1
9	D 37074	PLUNGER - relief valve .....	1
10	D 37075	SEAT - plunger .....	1
11	D 37072	BODY - secondary relief valve .....	1
12	218- 5007	O-RING - large .....	1
13	D 37071	RING - backup, center O-ring .....	1
14	D 26265	O-RING - center .....	1
15	D 37070	RING - backup, small O-ring .....	2
16	D 26872	O-RING - small .....	1
17	D 37067	SPRING - poppet .....	1
18	D 37068	POPPET - check valve .....	1
19	D 37069	SEAT - poppet .....	1

**SECONDARY RELIEF VALVE****USED ON MODELS WITH LOGGING ATTACHMENT**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	218- 5210	PLUG - secondary relief .....	1
2	218- 5006	O-RING .....	1
3	R 33411	SHIM - spring guide .....	UAR
4		RESERVED	
5	D 37073	GUIDE - spring .....	1
6	D 40357	RING - backup, spring guide .....	1
7	D 40356	O-RING .....	1
8	D 40609	SPRING - plunger .....	1
9	D 37074	PLUNGER - relief valve .....	1
10	D 37075	SEAT - plunger .....	1
11	D 37072	BODY - secondary relief valve .....	1
12	218- 5007	O-RING - large .....	1
13	D 37071	RING - backup, center O-ring .....	1
14	D 26265	O-RING - center .....	1
15	D 37070	RING - backup, small O-ring .....	2
16	D 26872	O-RING - small .....	1
17	D 37067	SPRING - poppet .....	1
18	D 37068	POPPET - check valve .....	1
19	D 37069	SEAT - poppet .....	1



## THREE POSITION SPOOLS - DOUBLE ACTING

USED ON MODELS WITHOUT RETURN TO DIG FEATURE

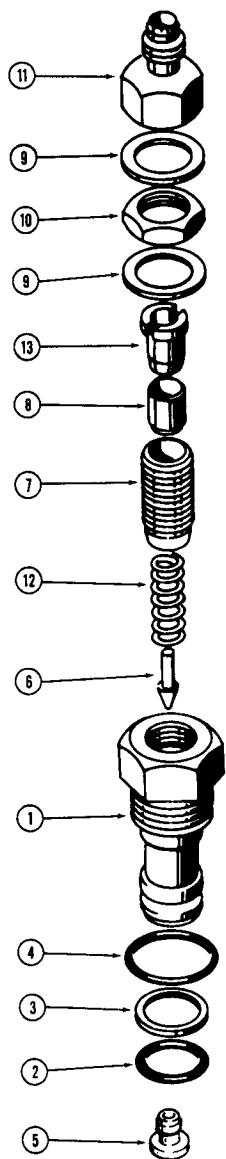
REF.	PART NO.	DESCRIPTION	REQ'D.
	D 37050	SPOOL ASSEMBLY - three position, color code - black or letter code - W, .73700" to .73709" (18.720 to 18.722 mm) .....	1
	D 37051	SPOOL ASSEMBLY - three position, color code - blue or letter code - X, .73710" to .73719" (18.722 mm to 18.724 mm) .....	1
	D 37052	SPOOL ASSEMBLY - three position, color code - yellow or letter code - Y, .73720" to .73729" (18.725 mm to 18.727 mm) .....	1
	D 37053	SPOOL ASSEMBLY - three position, color code - green or letter code - Z, .73730" to .73740" (18.727 mm to 18.730 mm) .....	1
1	L 30744	GLAND AND WIPER - spool .....	1
2	A 27342	O-RING .....	1
3	NSS	SPOOL .....	1
4	A 27342	O-RING .....	1
5	A 14535	RETAINER - seal .....	2
6	A 14533	RETAINER - spring .....	2
7	A 25286	WASHER - special .....	1
8	A 14534	SPRING - spool return .....	1
9	A 27020	SNAP RING - spring retainer .....	1
10	A 14529	CAP - spool .....	1

## MAIN RELIEF VALVE

USED ON ALL MODELS EXCEPT DOZER BACKHOE MODELS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	129- 514	NUT - acorn, main relief valve .....	1
2	D 26270	WASHER - special .....	2
3	25- 155	NUT - hex, lock, 5/16" - 24 NF .....	1
4	176- 296	SCREW - 5/16" - 24 NF x 1-3/4" .....	1
5	D 26268	SPRING - pilot .....	1
6	D 26267	PLUNGER - relief valve .....	1
7	A 25291	CAP - relief valve .....	1
8	L 30443	RING - backup, L30444 seal .....	1
9	L 30444	O-RING - small .....	1
10	218- 5006	O-RING - large .....	1
11	D 26266	SEAT - plunger .....	1
12	D 52319	SPRING - relief valve .....	1
13	D 37062	POPPET ASSEMBLY - main relief valve .....	1
14	D 37063	SEAT - poppet .....	1
15	L 30444	O-RING .....	1
16	L 30443	RING - backup, L30444 seal .....	1
17	D 37064	SLEEVE - poppet seat .....	1
18	D 37065	SLEEVE - drain .....	1
19	218- 5210	PLUG - valve .....	1
20	218- 5006	O-RING .....	1

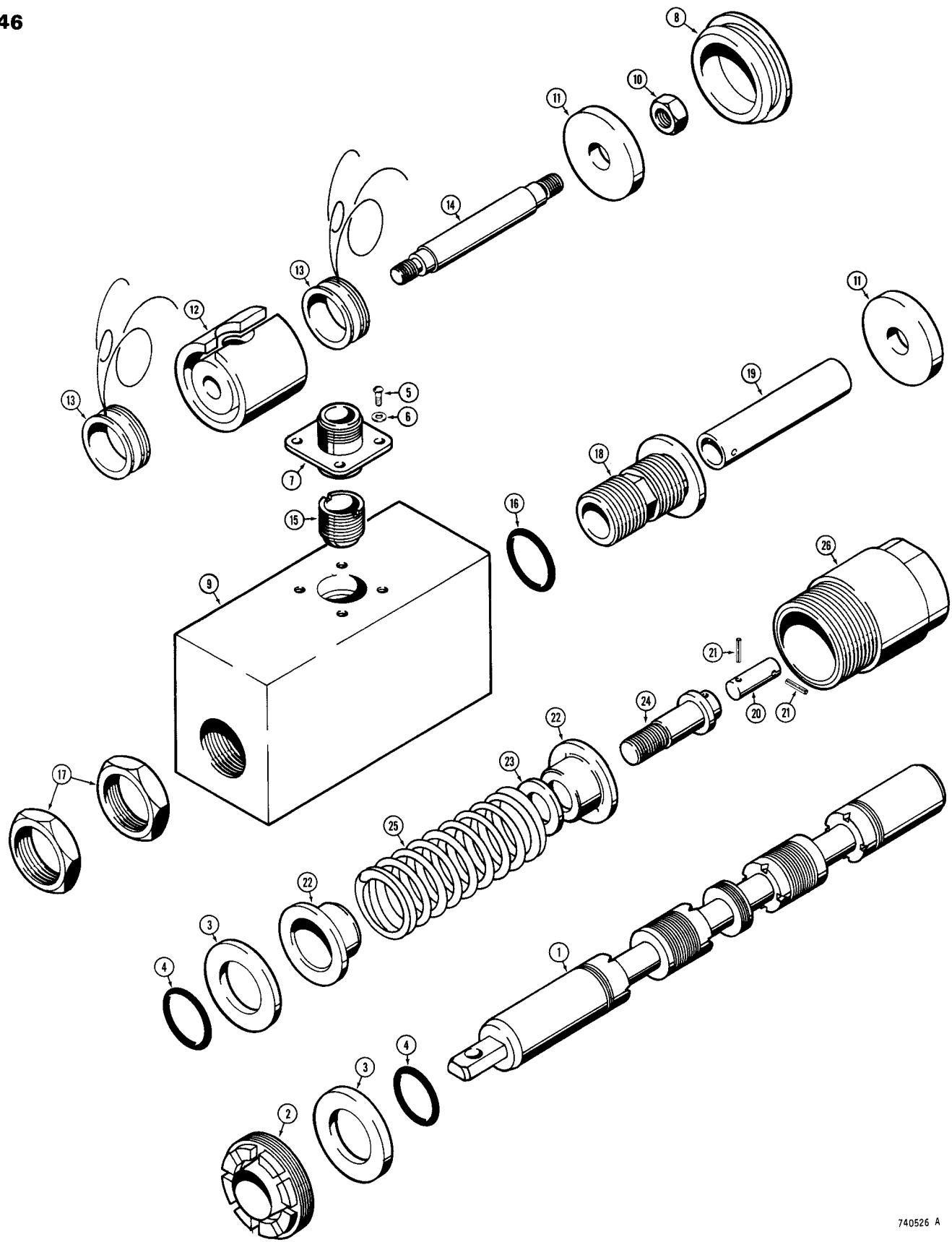
\*NOTE: See page 245 for Dozer Backhoe Main Relief.



## MAIN RELIEF VALVE

## USED ON DOZER BACKHOE MODELS ONLY

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 38570	VALVE - dual main relief .....	1
1	D 37045	BODY - valve .....	1
2	L 30444	O-RING - small .....	1
3	L 30443	RING - backup .....	1
4	218- 5006	O-RING - large .....	1
5	D 26266	SEAT - pilot .....	1
6	D 26267	PLUNGER - pilot .....	1
7	D 27258	SCREW - adjusting .....	1
8	D 27261	PISTON - relief valve .....	1
9	D 27259	SEAL - special .....	2
10	25- 1510	NUT - hex lock, 5/8" - 18 NF .....	1
11	D 27260	FITTING - pilot .....	1
12	D 37043	SPRING - pilot (D41525 retainer only) See ref. no. 13 .....	1
12	D 26268	SPRING - pilot (D41764 retainer only) See ref. no. 13 .....	1
13	D 41525	RETAINER - piston, early production (Code number "2") .....	1
13	D 41764	RETAINER - piston, late production (Code number "3") .....	1

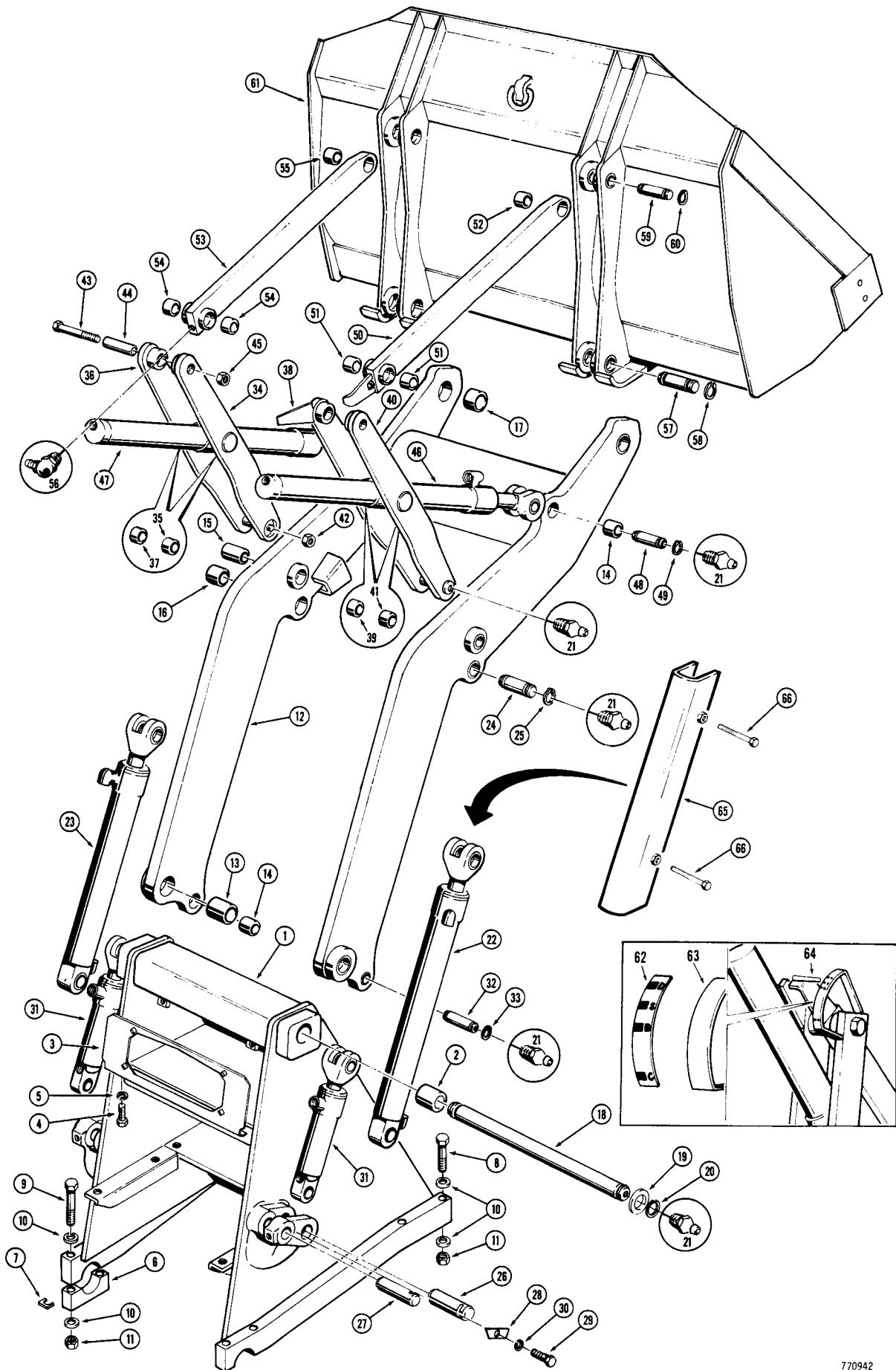


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## THREE POSITION SPOOLS - DOUBLE ACTING

USED ON MODELS WITH RETURN-TO-DIG FEATURE

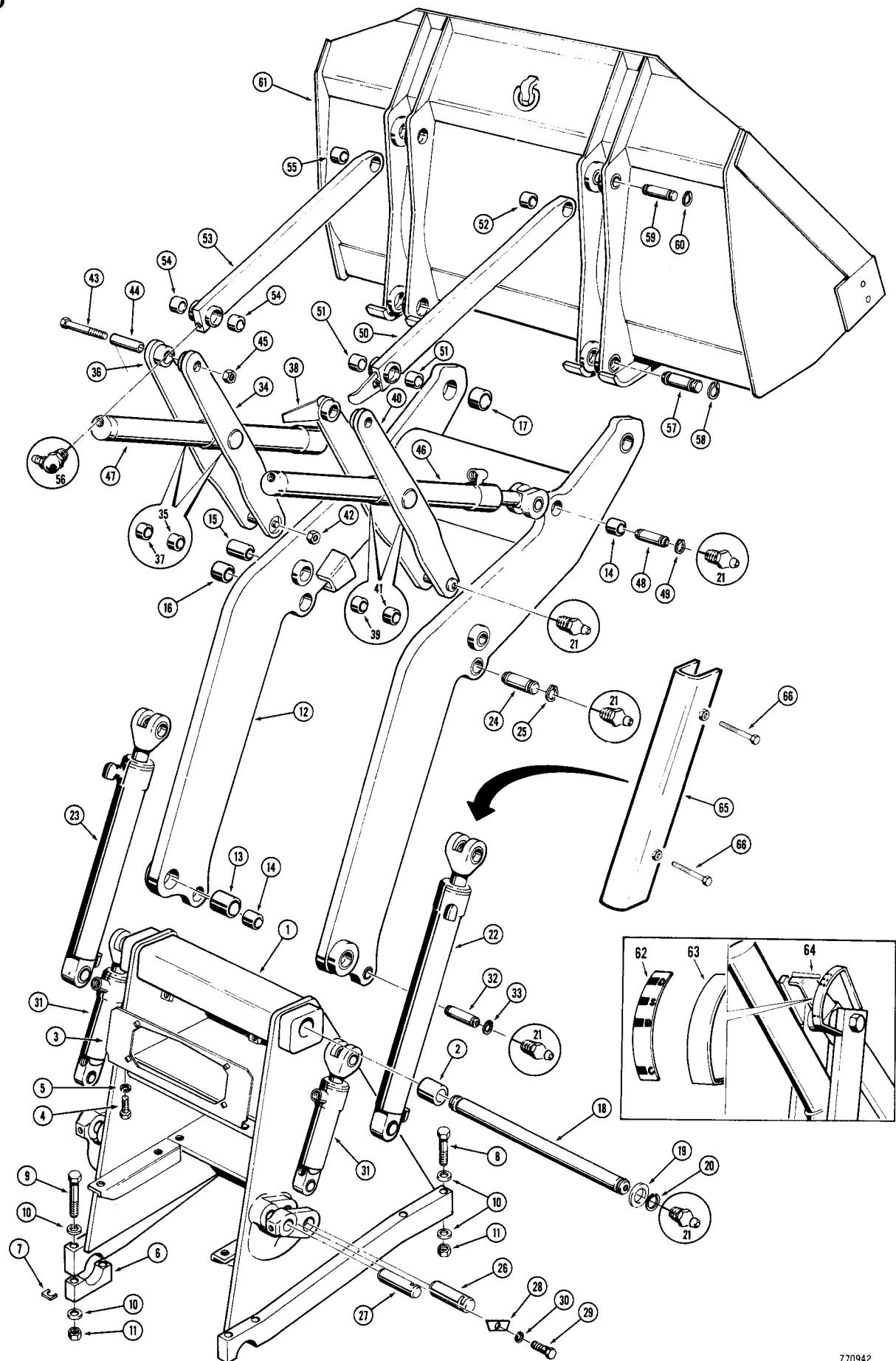
REF.	PART NO.	DESCRIPTION	REQ'D.
	R 29704	SPOOL ASSEMBLY - three position, Color code - black or letter code - W, .73700" to .73709" (18.720 mm to 18.722 mm).....	1
	R 29705	SPOOL ASSEMBLY - three position, Color code - blue or letter code - X, .73710" to .73719" (18.722 mm to 18.724 mm).....	1
	R 29706	SPOOL ASSEMBLY - three position, Color code - yellow or letter code - Y, .73720" to .73729" (18.725 mm to 18.727 mm) .....	1
	R 29707	SPOOL ASSEMBLY - three position, Color code - green or letter code Z, .73730" to 73740" (18.727 mm to 18.730 mm) .....	1
1	NSS	SPOOL - three position .....	1
2	L 30744	GLAND AND WIPER - spool .....	1
3	A 14535	RETAINER - seal .....	2
4	A 17526	O-RING .....	2
5	173- 26	SCREW - round head slotted, no. 4 - 40 NC x 5/16".....	4
6	192- 153	WASHER - lock, no. 4 Plated.....	4
7	R 33408	CONNECTOR - special .....	1
8	L 36039	PLUG - spool, coil and sleeve end .....	1
9	L 36040	HOUSING - coil and sleeve.....	1
10	25- 114	NUT - hex, lock, 1/4" - 28 NF.....	1
11	L 36038	WASHER - coil.....	2
	R 33407	KIT - sleeve and coil.....	1
12	NSS	SLEEVE - coil .....	1
13	NSS	COIL - magnetic .....	2
14	L 36050	SPACER - coil, Rod .....	1
15	L 36042	TUBE - connector .....	1
16	F 62114	SEAL - "O" ring .....	1
17	L 36045	NUT - jam .....	2
18	L 36046	CONNECTOR - spool to coil housing.....	1
19	L 36049	SPACER - spool and link.....	1
20	D 33858	LINK - spool to connector.....	1
21	138- 2012	PIN - spool .....	2
22	A 14533	RETAINER - spring .....	2
23	A 25286	WASHER - special.....	1
24	L 36048	PLUG spool end .....	1
25	A 25285	SPRING - spool return.....	1
26	L 36047	HOUSING - spring .....	1



## LOADER

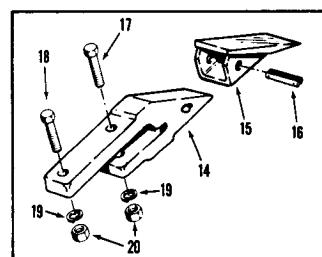
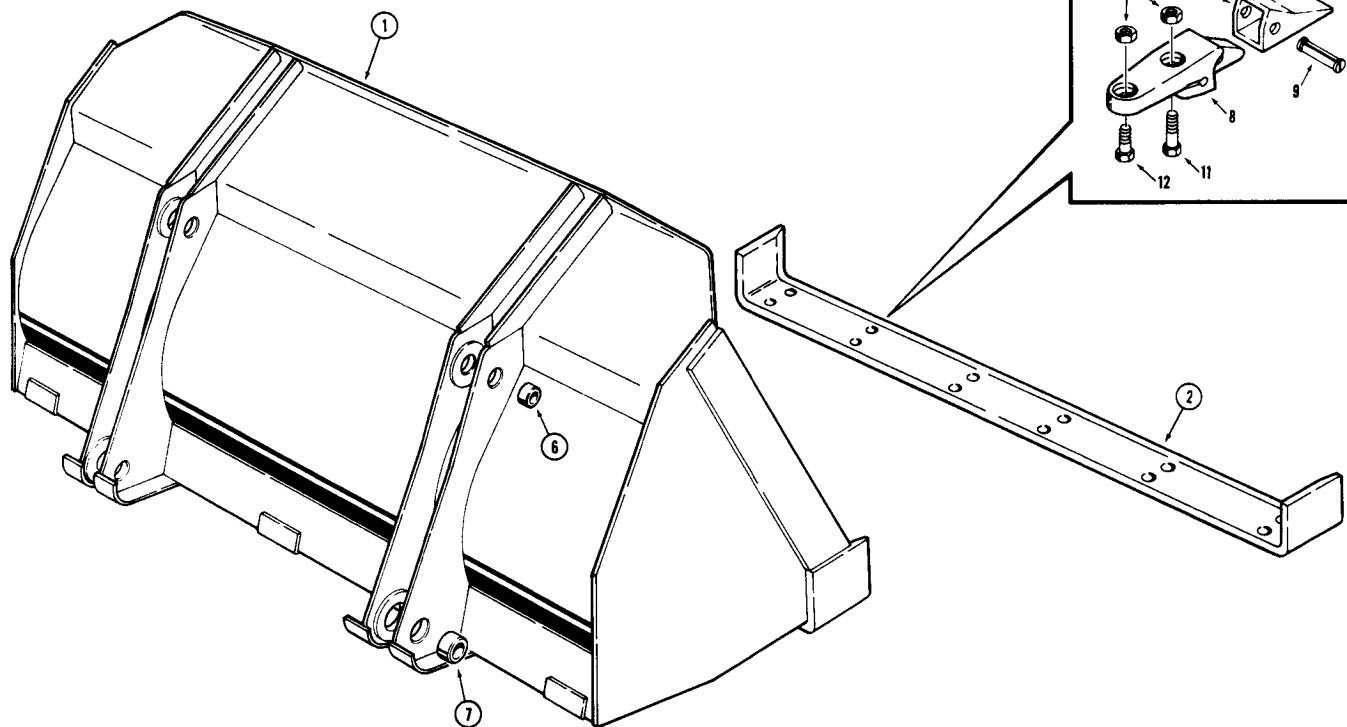
REF.	PART NO.	DESCRIPTION	REQ'D
1	R 38117	FRAME AND COWL - loader .....	1
2	D 33023	BUSHING - cowl and upright.....	2
3	D 34652	DASH - loader.....	1
4	13- 612	HHCS - 3/8" - 16 NC x 3/4" .....	3
5	92- 6	WASHER - lock, 3/8" .....	3
6	D 34663	CLAMP — mounting, cowl and frame.....	2
7	D 33982	SPACER - clamp.....	2
8	13- 1480	HHCS - 7/8" - 9 NC x 5" .....	4
9	13- 14120	HHCS - 7/8" - 9 NC x 7-1/2" .....	4
10	D 34667	WASHER - special .....	16
11	131- 358	NUT - hex self lock, 7/8" - 9 NC .....	8
12	R 39200	ARM - lift, loader .....	1
13	D 34506	BUSHING - rear pivot .....	2
14	D 30929	BUSHING - hydra-leveling and dump cylinder pivot .....	4
15	D 30931	BUSHING - dump link pivot .....	2
16	D 34354	BUSHING - lift cylinder pivot .....	2
17	D 31142	BUSHING - bucket pivot .....	2
18	D 34659	ROD - pivot, lift arm .....	1
19	D 34668	WASHER - special .....	2
20	D 34664	RING - retaining .....	2
21	219- 1	FITTING - straight grease 1/8" NPT .....	10
22	REF.	CYLINDER - lift, R.H., See page 175 and 177 for proper cylinders .....	1
23	REF.	CYLINDER - lift, L.H., See page 175 and 177 for proper cylinders .....	1
24	D 34658	PIN - mounting .....	2
25	D 25280	RING - retaining .....	4
26	D 34660	PIN - mounting .....	2
27	D 34661	PIN - mounting .....	2
28	D 34662	BLOCK - retaining .....	2
29	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" .....	2
30	92- 8	WASHER - lock, 1/2" .....	2
31	REF.	CYLINDER - hydra-leveling, See pages 183 and 185 for proper cylinders .....	2
32	D 34656	PIN - mounting .....	2
33	D 25279	RING - retaining .....	4
34	D 34642	LINK - inner, L.H.....	1
35	D 31512	BUSHING - inner link.....	1
36	D 34647	LINK - outer, L.H.....	1
37	D 31512	BUSHING - outer link .....	1
38	D 44628	LINK - inner, R.H.....	1
39	D 31512	BUSHING .....	1
40	R 30524	LINK - outer, R.H., Models with return-to-dig feature .....	1
41	D 31512	BUSHING .....	1
42	131- 357	NUT - hex self lock, 3/4" - 10 NC .....	2
43	13- 12104	HHCS - 3/4" - 10 NC x 6-1/2" .....	2

(Con't on next page)



## LOADER

REF.	PART NO.	DESCRIPTION	REQ'D.
44	D 34653	BUSHING - dump link .....	2
45	131- 357	NUT - hex self lock, 3/4" - 10 NC .....	2
46	REF.	CYLINDER - dump, R.H., See pages 179 and 181 for proper cylinders ..	1
47	REF.	CYLINDER - dump, L.H., See pages 179 and 181 for proper cylinders ..	1
48	D 34656	PIN - mounting .....	2
49	D 25279	RING - retaining .....	4
50	D 34651	LINK - dump, R.H.....	1
51	D 31140	BUSHING - Rear .....	2
52	D 30929	BUSHING - Front.....	1
53	D 34650	LINK - dump, L.H.....	1
54	D 31140	BUSHING - Rear .....	2
55	D 30929	BUSHING - Front.....	1
56	219- 55	FITTING - grease, 90°, 1/8" NPT .....	2
57	D 34655	PIN - mounting .....	2
58	D 26919	RING - retaining .....	4
59	D 34654	PIN - mounting .....	2
60	D 25279	RING - retaining .....	4
61	REF.	BUCKET - loader, parts list page 253 .....	1
62	D 39304	DECAL - clam bucket position .....	1
63	D 39314	BRACKET - indicator, clam bucket position .....	1
64	D 39315	POINTER - indicator, clam bucket position .....	1
65	R 38895	STRUT - safety .....	1
66	13- 1056	HHCS - 5/8" NC x 3-1/2" .....	2

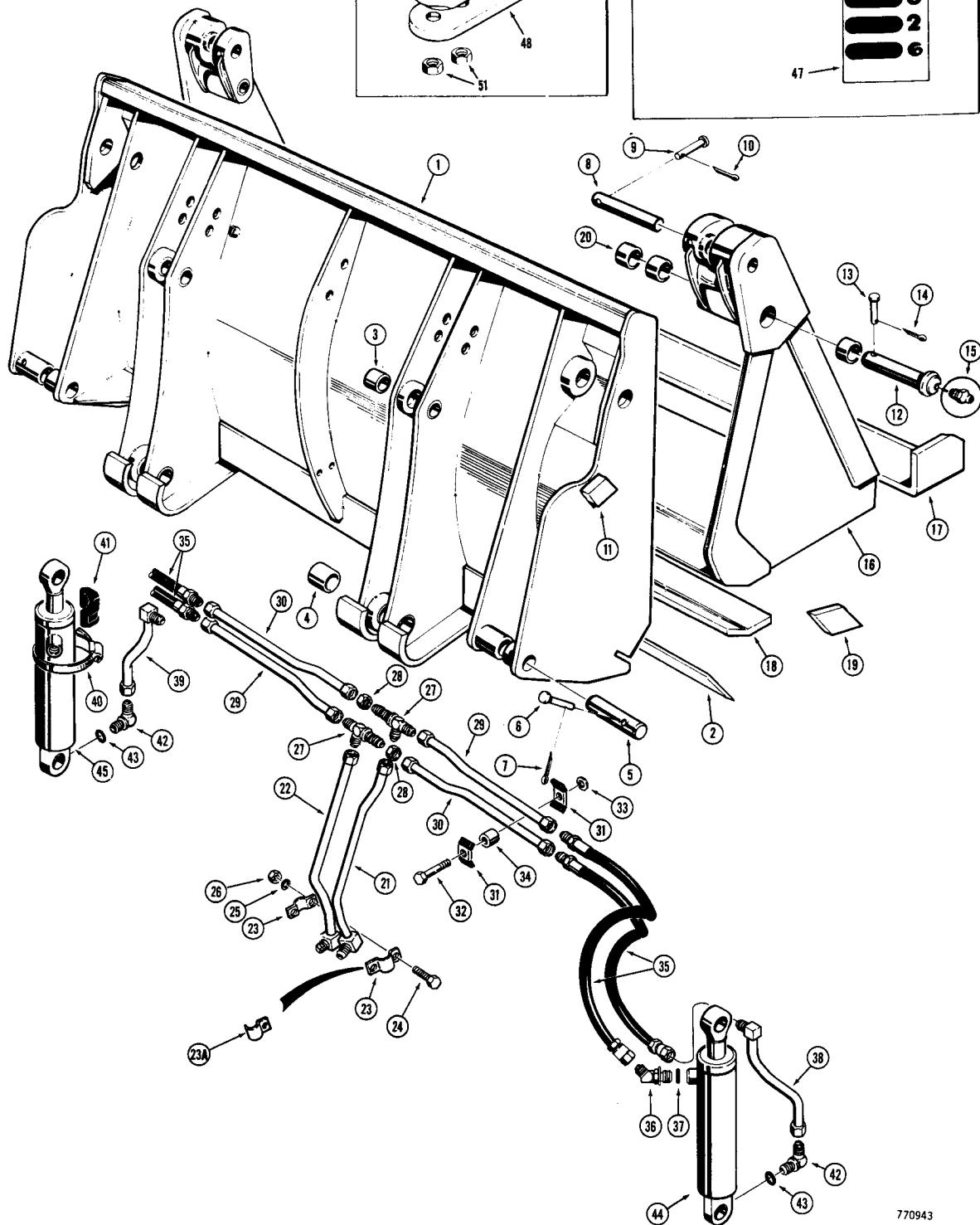


## D49578 LOADER BUCKET

REF.	PART NO.		DESCRIPTION	REQ'D.
	Mach.	Item		
1		NSS	BUCKET - loader, complete (See page 2 or 3 for ordering) .....	1
2	D	51886	BUCKET - loader .....	1
3			EDGE - cutting, one piece (If used) .....	1
4			RESERVED	
5			RESERVED	
6	D	32865	RESERVED	
7	D	33678	BUSHING - bucket mounting (Upper).....	4
			BUSHING - bucket mounting (Lower) .....	4

## BUCKET TEETH (OPTIONAL)

8	D	50780	TOOTH ASSEMBLY - complete.....	6
		NSS	SHANK - tooth.....	1
9	D	39094	PIN - flex .....	1
10	D	51750	POINT - tooth.....	1
11	26-	1036	HHCS - 5/8" - 11 NC x 2-1/4" .....	6
12	26-	1040	HHCS - 5/8" - 11 NC x 2-1/2" .....	6
13	25-	1010	NUT - hex. lock, 5/8" - 11 NC.....	12
	D	40449	TOOTH ASSEMBLY - service option.....	6
14		NSS	SHANK - tooth.....	1
15	D	39093	POINT - tooth.....	1
16	D	39094	FLEX PIN - point.....	1
17	13-	856	HHCS - 1/2" - 13 NC x 3-1/2" .....	6
18	13-	840	HHCS - 1/2" - 13 NC x 2-1/2" .....	6
19	92-	8	WASHER - lock, 1/2" .....	12
20	25-	108	NUT - hex, 1/2" - 13 NC .....	12

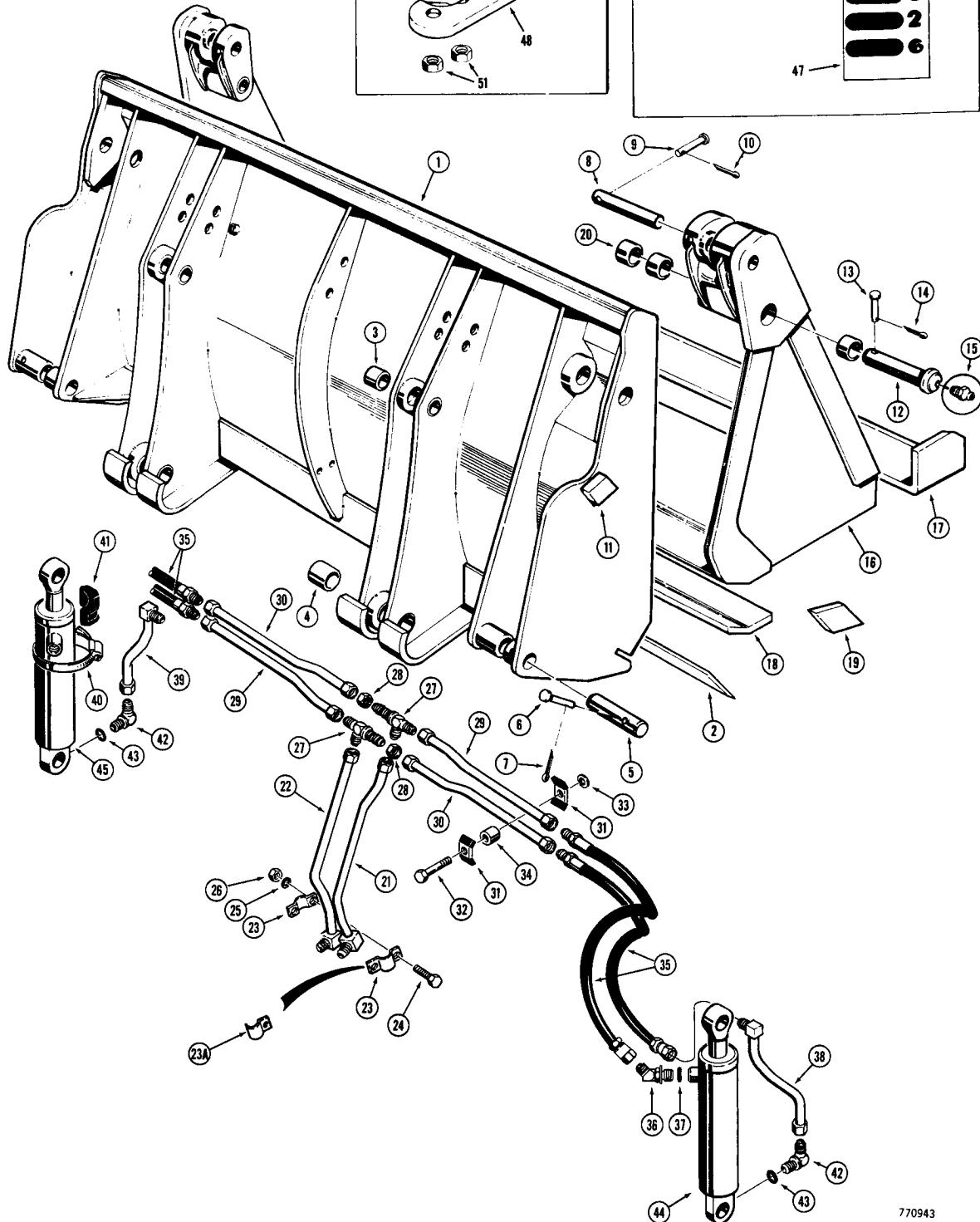


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## D46899 4-In1 BUCKET

REF.	PART NO.	DESCRIPTION	REQ'D.
	D 46899	BUCKET - without teeth Machinery item .....	1
1	D 46873	BLADE ASSEMBLY - bucket .....	1
2	D 39316	CUTTING EDGE - bucket .....	1
3	D 32919	BUSHING - upper .....	4
4	D 33659	BUSHING - lower .....	4
5	D 39306	PIN - lower, cylinder to blade .....	2
6	D 47251	PIN - clevis .....	2
7	132- 48	PIN - cotter, 1" x 1/8" .....	2
8	D 39311	PIN - upper, cylinder to blade .....	2
9	D 47252	PIN - clevis .....	2
10	132- 48	PIN - cotter, 1" x 1/8" .....	2
11	D 46913	BLOCK - stop .....	2
12	D 46917	PIN - blade to clam .....	2
13	D 46973	PIN - clevis .....	2
14	132- 48	PIN - cotter, 1" x 1/8" .....	2
15	219- 1	FITTING - straight, grease, 1/8" NPT .....	2
	D 46851	CLAM ASSEMBLY - bucket .....	1
16	NSS	CLAM - bucket .....	1
17	D 39310	CUTTING EDGE - clam .....	1
18	D 39312	WEAR PLATE - clam .....	1
19	D 46914	GRAB HOOK .....	2
20	D 31140	BUSHING - hinge .....	6
21	D 46905	TUBE - R.H. .....	1
22	D 46903	TUBE - L.H. ....	1
23	D 46901	CLAMP - tube, if used .....	2
23A	38188	CLAMP - tube, if used .....	2
24	13- 514	HHCS - 5/16" - 18 NC x 7/8" .....	1-2
25	92- 5	WASHER - lock, 5/16" .....	1-2
26	25- 105	NUT - hex, 5/16" - 18 NC .....	1-2
27	218- 1237	TEE - bulkhead .....	2
28	218- 1251	NUT - hex, 1/4" - 20 NC .....	2
29	D 46907	TUBE - tee to cylinder, L.H. lower - R.H. upper .....	2
30	D 46909	TUBE - tee to cylinder, R.H. lower - L.H. upper .....	2
31	D 40236	CLAMP - tube .....	4
32	13- 630	HHCS - 3/8" - 16 NC x 1-7/8" .....	2
33	92- 6	WASHER - lock, 3/8" .....	2
34	D 33552	SPACER - clamp .....	2
35	36547	HOSE - 19" (483mm) long .....	4
36	218- 5137	FITTING - 45° .....	2
37	218- 5007	O-RING .....	1
38	D 46957	TUBE - closed end of cylinder, R.H. ....	1
39	D 46955	TUBE - closed end of cylinder, L.H. ....	1
40	214- 267	CLAMP - tube .....	2
41	D 38648	CUSHIONS - rubber .....	2
42	218- 5107	FITTING - 90° .....	2
43	218- 5007	O-RING .....	1
44	REF.	CYLINDER - R.H., See pages 187 and 189 for cylinders .....	1
45	REF.	CYLINDER - L.H., See pages 187 and 189 for cylinders .....	1
46	A 18673	DECAL - clean out, clam .....	2
47	D 39303	DECAL - clam opening .....	1

Continued on next page

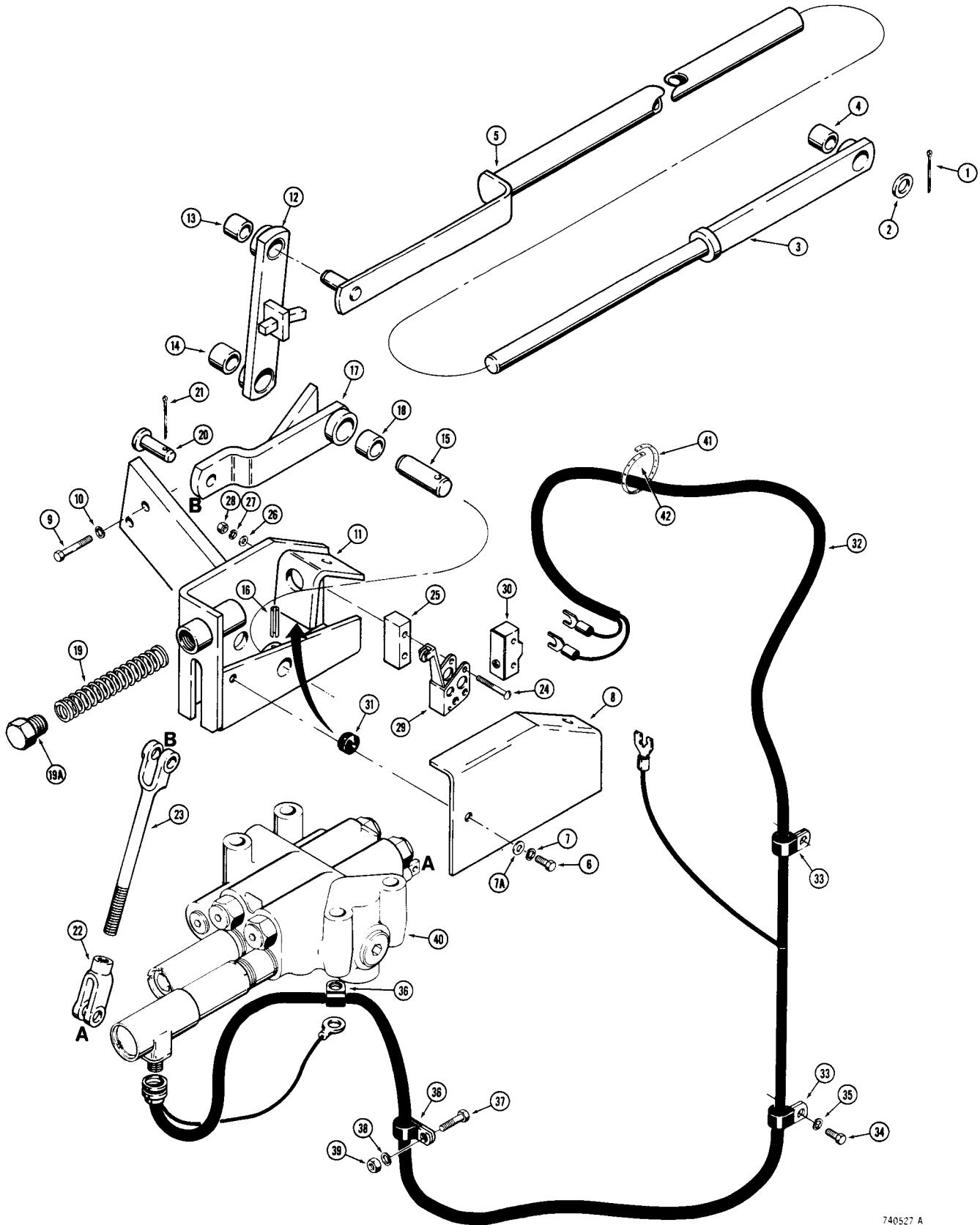


**MODEL 450 CRAWLER TRACTOR**

257

**D46899 4-IN-1 BUCKET**

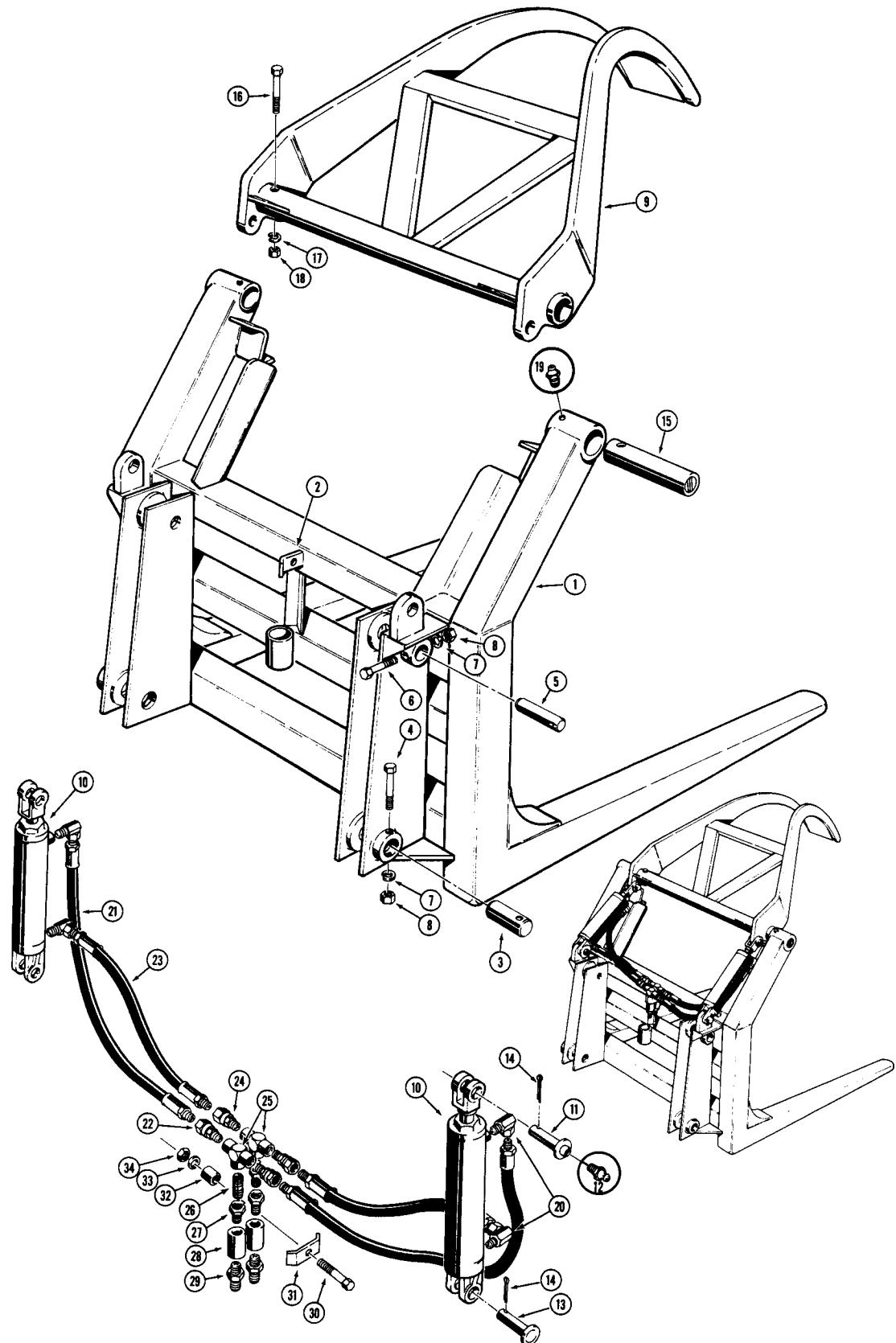
REF.	PART NO.	DESCRIPTION	REQ'D
<b>BUCKET TEETH (OPTIONAL)</b>			
48	D 46885	TOOTH - bucket .....	6
49	13- 840	HHCS - 1/2" - 13 NC x 2-1/2"	6
50	13- 836	HHCS - 1/2" - 13 NC x 2-1/4"	6
51	25- 108	NUT - hex, 1/2" - 13 NC .....	12



740527 A

## RETURN-TO-DIG AND ANTI-ROLLBACK

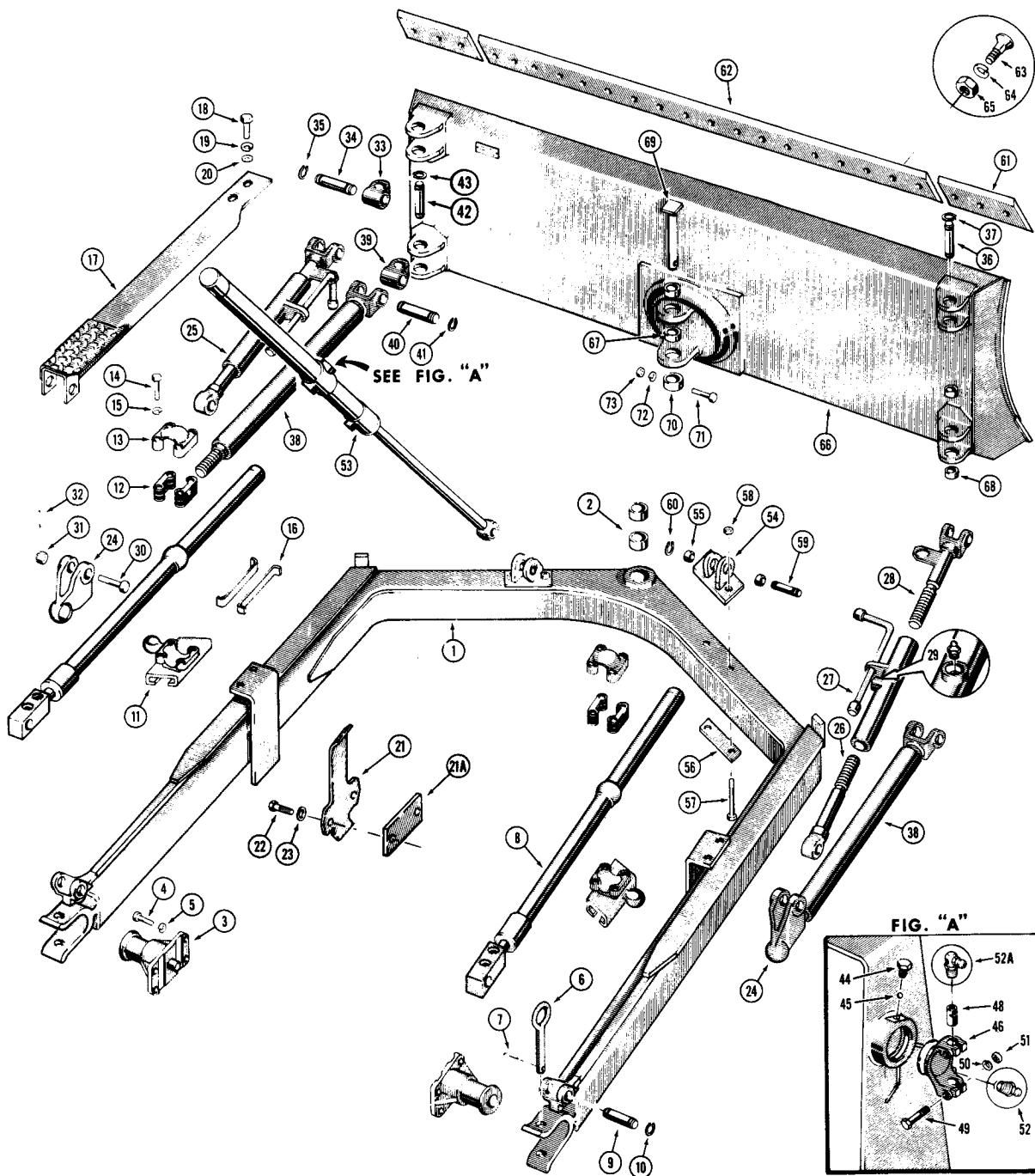
REF.	PART NO.	DESCRIPTION	REQ'D
1	132- 50	PIN - cotter, 1/8" x 1-1/4"	1
2	195- 45	WASHER - flat, 3/4"	1
3	R 31488	ROD - at link, inner	1
4	A 12018	BUSHING - rod	1
5	R 33253	ROD - at switch box	1
6	13- 410	HHCS - 1/4" - 20 NC x 5/8"	2
7	92- 4	WASHER - lock, 1/4"	2
7A	95- 4	WASHER - flat, 1/4"	2
8	R 33258	COVER - switch	1
9	13- 620	HHCS - 3/8" - 16 NC x 1-1/4"	2
10	92- 6	WASHER - lock, 3/8"	2
11	R 33246	BOX - switch	1
12	R 33265	LINK - anti-rollback	1
13	B 15768	BUSHING - upper end	1
14	R 33023	BUSHING - lower end	1
15	R 33259	PIN - link, retaining	1
16	138- 136	PIN - roll, 1/4" - 1-1/4"	1
17	R 33257	LINK - to valve control	1
18	A 12018	BUSHING - link	1
19	R 33014	SPRING - return-to-dig	1
19A	218- 5158	PLUG - hex. head	1
20	141- 6	PIN - clevis	1
21	132- 50	PIN - cotter, 1/8" x 1-1/4"	1
22	213- 6	YOKE - adjustable	1
23	R 33017	ROD - at valve controls	1
24	169- 71	SCREW - machine, slotted, no. 6 - 32 NC x 2"	2
25	R 33260	SPACER - switch	1
26	A 31205	WASHER - special	2
27	193- 6	WASHER - lock, no. 6	2
28	129- 5	NUT - hex, no. 6 - 32 NC	1
29	R 33016	ACTUATOR - switch	1
30	R 33015	SWITCH - micro	1
31	A 23870	GROMMET - rubber	1
32	R 33018	HARNESS - wiring, ignition switch to micro switch and valve	1
33	49859	CLAMP - harness	5
34	13- 610	HHCS - 3/8" - 16 NC x 5/8"	2
35	92- 6	WASHER - lock, 3/8"	2
36	49853	CLAMP - harness	2
37	13- 616	HHCS - 3/8" - 16 NC x 1"	1
38	92- 6	WASHER - lock, 3/8"	1
39	25- 106	NUT - hex, 3/8" - 16 NC	1
40	REF.	VALVE - loader, See pages 215 through 219 for proper valves	1
41	D 43188	STRAP - harness	2
42	D 41075	STUD - strap retaining	2



771069

## LOGGING FORK AND GRAPPLE ATTACHMENT

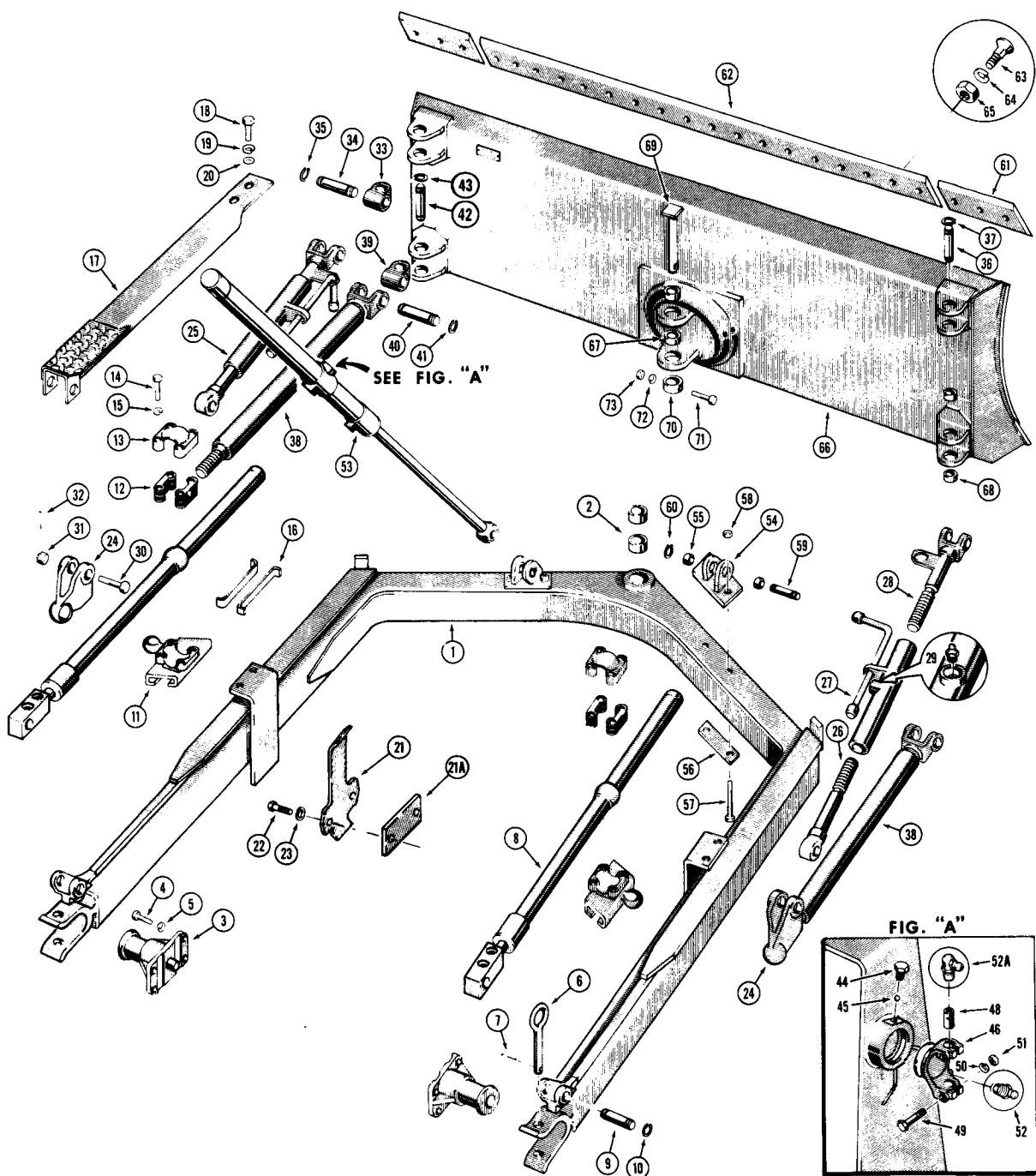
REF.	PART NO.		DESCRIPTION	REQ'D
	Mach. Item			
1		NSS	LOGGING FORK ASSEMBLY - See page 2 or 3 for service .....	1
2	D	40173	FORK - logging.....	1
3	D	40174	BRACKET - hydraulic fittings .....	1
4	13-	856	PIN - mounting, fork to loader arm .....	2
5	D	40175	PIN - mounting, fork to dump link .....	2
6	13-	848	HHCS - 1/2" - 13 NC x 3-1/2" .....	2
7	92-	8	WASHER - lock, 1/2" .....	4
8	25-	108	NUT - hex, 1/2" - 13 NC .....	4
	Mach. Item		GRAPPLE ATTACHMENT ASSEMBLY - See page 2 or 3 for service .....	1
9	D	39969	HOOK - grapple .....	1
10	D	39720	CYLINDER - grapple hook, parts list page 213 .....	2
11	D	40179	PIN - cylinder to grapple hook .....	2
12	219-	1	FITTING - grease, straight, 1/8" NPT .....	2
13	D	40180	PIN - cylinder to fork .....	2
14	132-	150	PIN - cotter .....	4
15	D	40178	PIN - fork to grapple hook .....	2
16	13-	864	HHCS - 1/2" - 13 NC x 4" .....	2
17	92-	8	WASHER - lock, 1/2" .....	2
18	25-	108	NUT - hex, 1/2" - 13 NC .....	2
19	219-	1	FITTING - grease, straight, 1/8" NPT .....	2
20	218-	923	FITTING - 90°, swivel .....	2
21	T	31063	HOSE - 30" (762 mm) long .....	4
22	218-	902	ADAPTER - swivel .....	1
23	D	40186	HOSE - 18" (457 mm) long .....	2
24	218-	902	ADAPTER - swivel .....	1
25	217-	1162	TEE - female .....	2
26	221-	161	NIPPLE - 3/8" NPT .....	2
27	221-	56	BUSHING - reducing 1/2" NPT x 3/8" NPT .....	2
28	221-	338	COUPLING - 1/2" NPT .....	2
29	218-	445	FITTING - straight .....	2
30	13-	632	HHCS - 3/8" - 16 NC x 2" .....	1
31	D	40183	CLAMP .....	1
32	D	40182	SPACER - clamp .....	1
33	92-	6	WASHER - lock, 3/8" .....	1
34	25-	106	NUT - hex, 3/8" - 16 NC .....	1



## POWER ANGLING DOZER

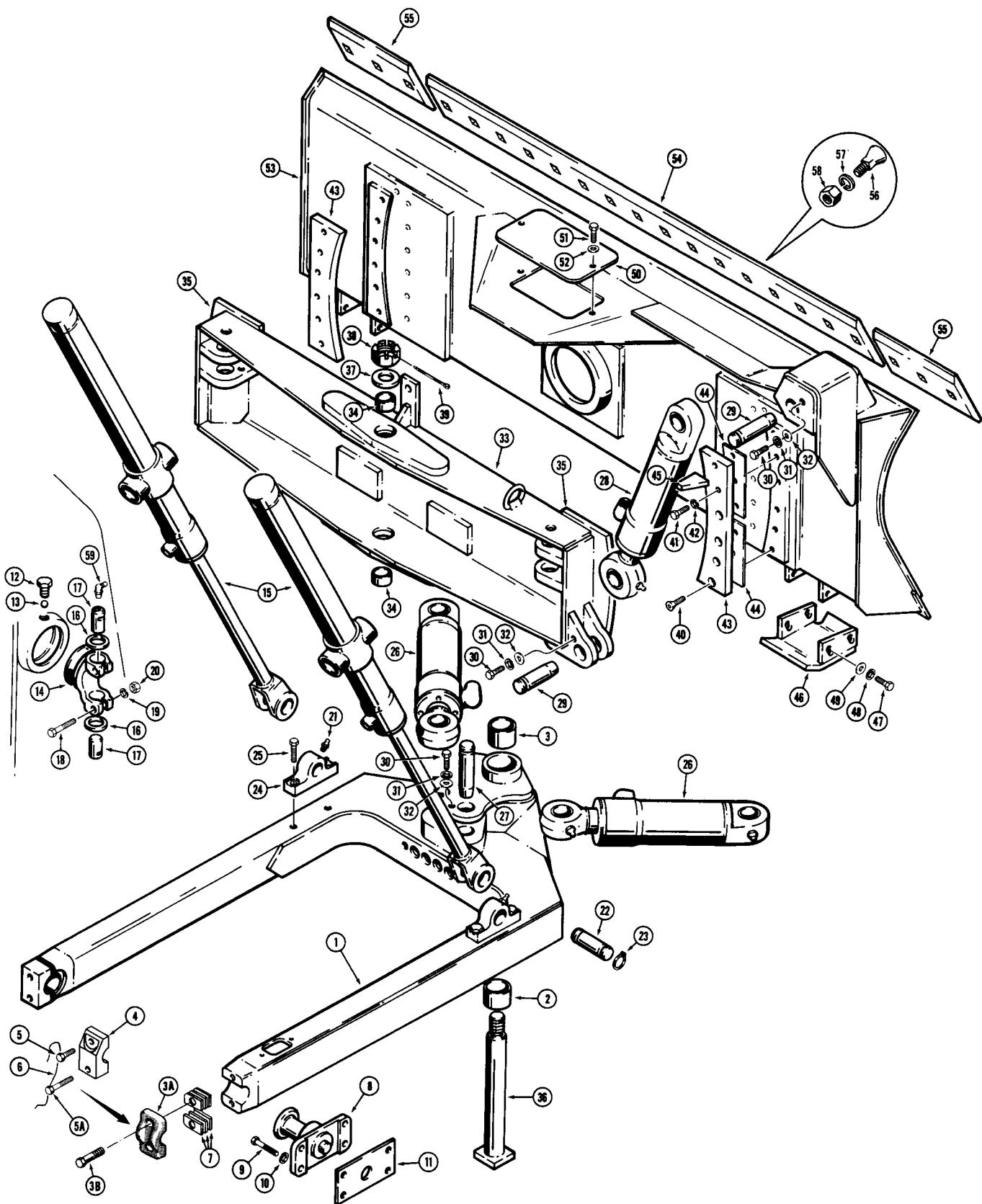
REF.	PART NO.	DESCRIPTION	REQ'D
1	D 34300	"C" FRAME - Power Angling Dozer .....	1
2	D 3454	BUSHING - "C" frame .....	2
3	R 27961	TRUNNION - push .....	2
4	13- 1024	HHCS - 5/8" - 11 NC x 1-1/2" .....	8
5	92- 10	WASHER - lock, 5/8" .....	8
6	D 34313	PIN - mounting, "C" frame .....	2
7	132- 154	PIN - cotter .....	2
8	REF.	CYLINDER - angling, See page 199 for cylinder .....	2
9	D 34315	PIN - mounting .....	2
10	D 26918	RING - retaining .....	4
11	D 34305	BRACKET - slide, L.H. (Includes ref. no. 12 thru 15) .....	1
	D 34306	BRACKET - slide, R.H. .....	1
12	D 34364	SHIM - slide bracket .....	UAR
13	NSS	CAP - slide bracket .....	1
14	13- 632	HHCS - 3/8" - 16 NC x 2" .....	4
15	92- 6	WASHER - lock, 3/8" .....	4
16	D 34314	STRIP - wear, slide bracket .....	4
17	D 34308	GUARD - angling cylinder, L.H. ....	1
	D 34309	GUARD - angling cylinder, R.H. ....	1
18	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
19	92- 8	WASHER - lock, 1/2" .....	4
20	195- 33	WASHER - flat, 1/2" .....	4
21	R 31100	BRACKET - rub .....	2
21A	R 27963	SPACER - bracket only .....	2
22	13- 1028	HHCS - 5/8" - 11 NC x 1-1/2" .....	4
23	92- 10	WASHER - lock, 5/8" .....	4
24	D 34311	BRACKET - strut, R.H. ....	1
	D 34312	BRACKET - strut, L.H. ....	1
25	D 34303	STRUT - upper, complete .....	2
26	D 34360	SCREW - strut, eye .....	1
27	NSS	TURNBUCKLE - strut .....	1
28	D 34361	SCREW - strut, yoke .....	1
29	219- 1	FITTING - grease, straight, 1/8" NPT .....	1
30	D 32802	BOLT - special .....	2
31	25- 2316	NUT - hex, 1" - 14 NF .....	2
32	132- 97	PIN - cotter .....	2
33	D 35443	JOINT - universal, moldboard attaching .....	2
34	D 25075	PIN - attaching, upper strut to universal joint .....	2
35	D 26918	RING - retaining .....	4
36	D 34316	PIN - attaching, universal joint to moldboard .....	2
37	D 26918	RING - retaining .....	4
38	D 34304	STRUT - lower .....	2
39	D 35443	JOINT - universal, moldboard attaching .....	2
40	D 25075	PIN - attaching, lower strut to universal joint .....	2
41	D 26918	RING - retaining .....	4
42	D 34316	PIN - attaching, universal joint to moldboard .....	2
43	D 26918	RING - retaining .....	4
44	D 28481	PLUG - special .....	2
45	211- 17	BALL - steel, 3/4" dia.....	38

(Con't on next page)



## POWER ANGLING DOZER

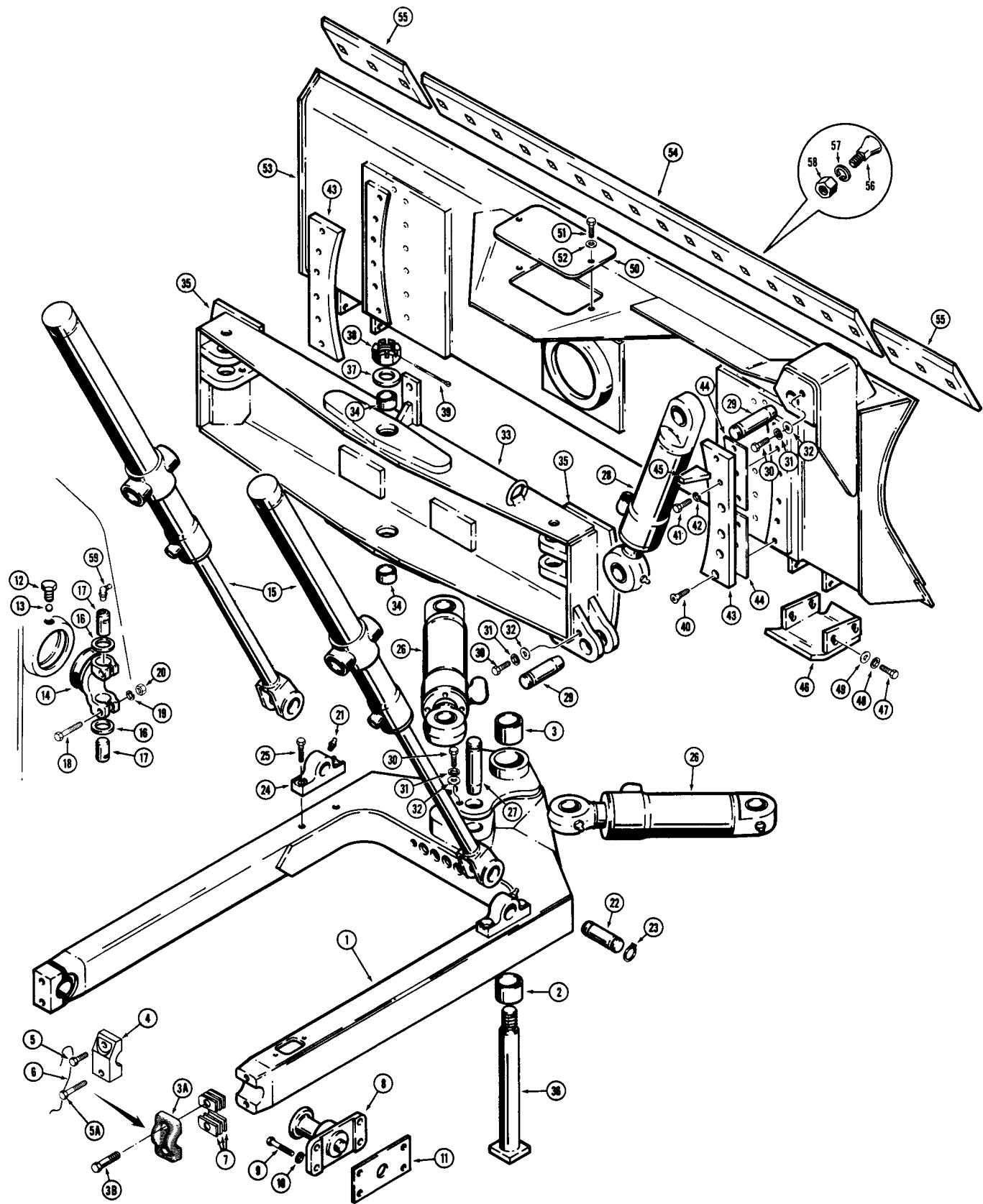
REF.	PART NO.	DESCRIPTION	REQ'D
46	D 27045	TRUNNION - inner race .....	2
47		RESERVED	
48	D 24508	PIN - mounting, lift cylinder .....	4
49	13- 648	HHCS - 3/8" - 16 NC x 3" .....	4
50	92- 6	WASHER - lock 3/8"	4
51	25- 106	NUT - hex , 3/8" - 16 NC .....	4
52	219- 1	FITTING - grease, straight, 1/8" NPT .....	2
52A	219- 55	FITTING - grease, 90°, 1/8" NPT .....	4
53	REF.	CYLINDER - lift, See page 191 and 193 for cylinders .....	2
54	D 36531	BRACKET - lift cylinder, R.H. ....	1
55	D 34359	BUSHING - bracket .....	2
54	D 36530	BRACKET - lift cylinder, L.H. ....	1
55	D 34359	BUSHING - bracket .....	2
56	D 36529	PLATE - backing .....	2
57	15- 10104	HHCS - 5/8" - 11 NC x 6-1/2" .....	4
58	25- 1010	NUT - hex, 5/8" - 11 NC .....	4
59	D 34317	PIN - mounting, lift cylinder to "C" frame .....	2
60	D 25277	RING - retaining, D34317 pin .....	4
	D 34299	MOLDBOARD - complete .....	1
61	R 29742	BLADE - cutting, end .....	2
	D 43406	BLADE - cutting, L.H. (Optional cast) .....	1
	D 43407	BLADE - cutting, R.H. (Optional cast) .....	1
62	16792	BLADE - cutting, center .....	1
63	19- 828	BOLT - plow, 1/2" - 13 NC x 1-3/4" .....	24
64	92- 8	WASHER - lock, 1/2" .....	24
65	25- 108	NUT - hex, 1/2" - 13 NC .....	24
66	NSS	MOLDBOARD .....	1
67	D 34340	BUSHING - moldboard, "C" frame mounting .....	2
68	D 34337	BUSHING - moldboard, strut mounting .....	8
69	D 34318	PIN - mounting, moldboard to "C" frame .....	1
70	D 34319	COLLAR - mounting pin .....	1
71	13- 652	HHCS - 3/8" - 16 NC x 3-1/4" .....	1
72	92- 6	WASHER - lock, 3/8" .....	1
73	25- 106	NUT - hex , 3/8" - 16 NC .....	1



## POWER ANGLE TILT DOZER

REF.	PART NO.	DESCRIPTION	REQ'D
1	R 29668	"C FRAME - Angle Tilt Dozer .....	1
2	D 33023	BUSHING - blade mounting, bottom .....	1
3	D 33023	BUSHING - blade mounting, top .....	1
3A	NSS	CAP - end (Use R32490 kit for service) .....	2
3B	13- 1236	HHCS - 3/4" - 10 NC x 2-1/4" (Original equipment only) .....	4
	R 32490	KIT - end cap .....	2
4	NSS	CAP - end, "C" frame .....	1
5	S 78662	BOLT - special .....	1
5A	R 32489	BOLT - special .....	1
6	391- 618	WIRE - lock, no. 16 x 10" .....	1
7	D 34794	SHIM - "C" frame, 1/32" thick .....	UAR
8	D 34793	TRUNNION - push "C" frame .....	2
9	13- 1028	HHCS - 5/8" - 11 NC x 1-3/4" .....	8
10	92- 6	WASHER - lock, 5/8" .....	8
11	R 27967	SPACER - trunnion .....	2
12	D 28481	PLUG - special .....	2
13	211- 17	BALL - steel, 3/4" dia. ....	38
14	D 36155	TRUNNION - inner race .....	2
15	G 34344	CYLINDER - lift, see pages 195 and 197 .....	2
16	D 24516	WASHER - thrust .....	4
17	D 24508	PIN - trunnion to lift cylinder .....	4
18	13- 648	HHCS - 3/8" - 16 NC x 3" .....	4
19	92- 6	WASHER - lock, 3/8" .....	4
20	25- 106	NUT - hex , 3/8" - 16 NC .....	4
21	219- 1	FITTING - grease, straight, 1/8" NPT .....	4
22	D 46467	PIN - cylinder mounting .....	2
23	D 26918	RING - snap .....	4
24	D 46466	BRACKET - cylinder mounting .....	2
25	13- 1036	HHCS - 5/8" - 11 NC x 2-1/4" .....	4
26	G 34343	CYLINDER - angle, see pages 201 and 203 .....	2
27	D 34795	PIN - cylinder mounting .....	4
28	G 34345	CYLINDER - tilt, see pages 205 and 207 .....	1
29	D 34796	PIN - cylinder mounting .....	2
30	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" .....	6
31	92- 10	WASHER - lock, 5/8" .....	6
32	70523	WASHER - flat, special .....	6
33	R 29749	BEAM - leveling .....	1
34	D 31142	BUSHING - beam .....	2
35	D 34868	PLATE - guide .....	2
36	D 34789	PIN - swivel .....	1
37	95- 24	WASHER - flat 1-1/2" .....	1
38	25- 1224	NUT - hex , slotted, 1-1/2" - 6 NC .....	1
39	132- 157	PIN - cotter, 1/4" x 2-1/2" .....	1
40	164- 81	SCREW - hex. socket head, 5/8" - 11 NC x 1-1/2" .....	4
41	13- 1028	HHCS - 5/8" - 11 NC x 1-3/4" .....	8
42	92- 10	WASHER - lock, 5/8" .....	8
43	D 47764	PLATE - guide .....	2
44	D 47911	SHIM - .0319" (.81 mm) thick .....	UAR
45	D 42402	GAUGE - leveling .....	1
46	R 24491	SHOE - shield, blade .....	2

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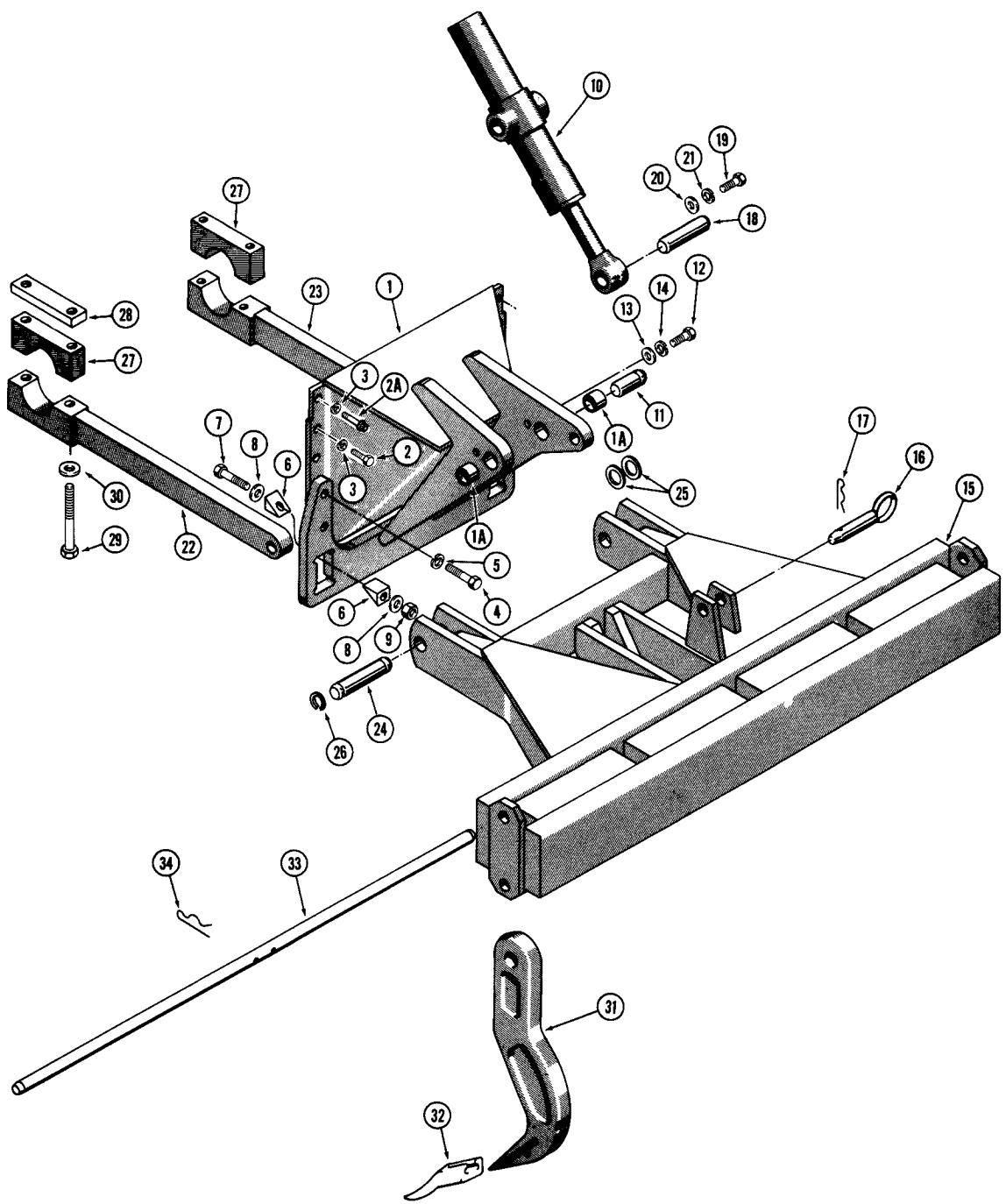


**MODEL 450 CRAWLER TRACTOR**

269

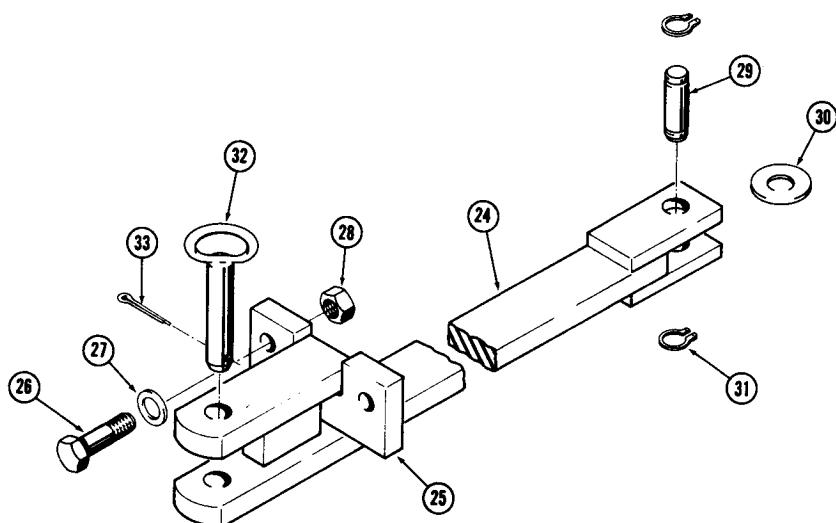
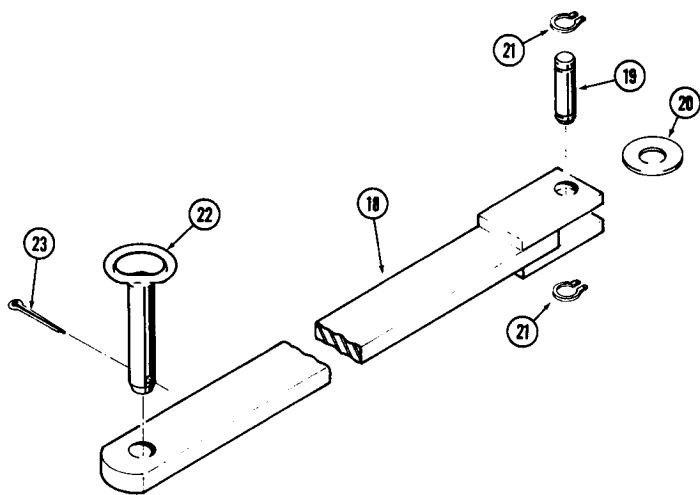
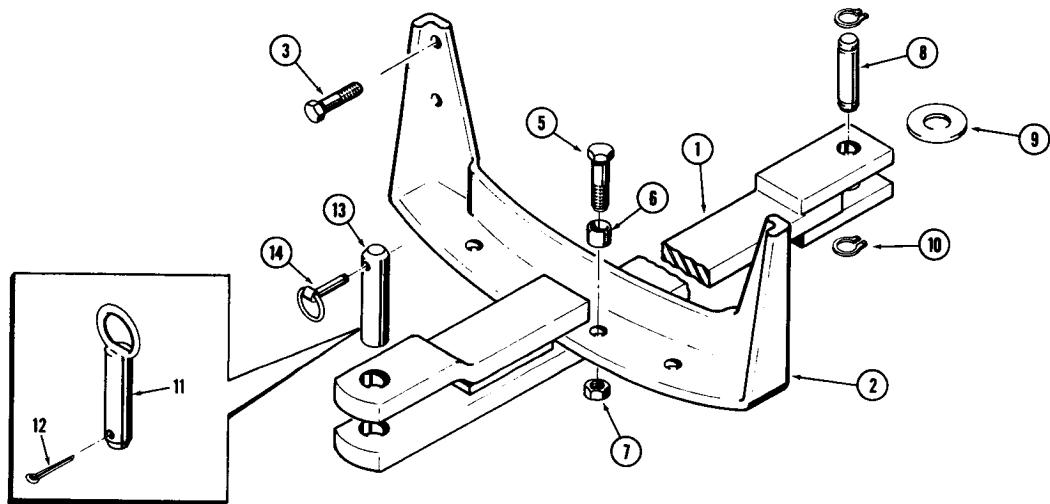
**POWER ANGLE TILT DOZER**

REF.	PART NO.	DESCRIPTION	REQ'D
47	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	8
48	92- 8	WASHER - lock, 1/2"	8
49	195- 33	WASHER - flat, 1/2"	8
50	R 24647	GUARD - hose	1
51	13- 816	HHCS - 1/2" - 13 NC x 1"	2
52	195- 3	WASHER - flat, 1/2"	2
53	R 29731	MOLDBOARD - dozing	1
54	R 29741	BLADE - cutting, center	1
55	R 29742	BLADE - cutting, end	2
56	19- 828	BOLT - plow, 1/2" - 13 NC x 1-3/4"	22
57	92- 8	WASHER - lock, 1/2"	22
58	25- 108	NUT - hex , 1/2" - 13 NC	22
59	217- 55	FITTING - grease, 90°	4



## RIPPER

REF.	PART NO.	DESCRIPTION	REQ'D
1	R 24190	PLATE - mounting, ripper . . . . .	1
1A	D 32890	BUSHING - R24190 plates . . . . .	2
2	13- 1020	HHCS - 5/8" - 11 NC x 1-1/2" . . . . .	4
2A	166- 131	BOLT - ferr head, 5/8" - 11 NC x 1-1/4" . . . . .	2
3	92- 10	WASHER - lock, 5/8" . . . . .	6
4	13- 1040	HHCS - 5/8" - 11 NC x 2-1/2" . . . . .	4
5	92- 10	WASHER - lock, 5/8" . . . . .	4
6	D 34678	BLOCK - wedge . . . . .	4
7	13- 836	HHCS - 1/2" - 13 NC x 2-1/4" . . . . .	2
8	D 34705	WASHER - special, 1/2" . . . . .	4
9	131- 354	NUT - hex, self lock, 1/2" - 13 NC . . . . .	2
10	REF.	CYLINDER - ripper, See pages 209 and 211 for cylinder . . . . .	1
11	D 34706	PIN - trunnion . . . . .	2
12	13- 1020	HHCS - 5/8" - 11 NC x 1-1/4" . . . . .	2
13	70523	WASHER - special . . . . .	2
14	92- 10	WASHER - lock, 5/8" . . . . .	2
15	D 35886	FRAME - ripper . . . . .	1
16	D 34715	PIN ASSEMBLY - latch . . . . .	1
17	136- 112	PIN - hair pin . . . . .	1
18	R 37292	PIN - attaching, cylinder rod to ripper frame . . . . .	1
19	13- 812	HHCS - 1/2" - 13 NC x 3/4" . . . . .	2
20	D 25022	WASHER - special . . . . .	2
21	92- 8	WASHER - lock, 1/2" . . . . .	2
22	D 34743	ARM - L.H., Loader-Ripper Models only . . . . .	1
	D 34693	ARM - L.H., Dozer-Ripper Models only . . . . .	1
23	D 34744	ARM - R.H., Loader-Ripper Models only . . . . .	1
	D 34694	ARM - R.H., Dozer-Ripper Models only . . . . .	1
24	D 36614	PIN - attaching, ripper frame to mounting arms . . . . .	2
25	R 15389	SPACER - mounting pin . . . . .	2
26	D 26918	RING - retaining, mounting pin . . . . .	4
27	D 34663	CLAMP - mounting arm . . . . .	2
28	D 34722	BLOCK - tapped . . . . .	2
29	13- 14120	HHCS - 7/8" - 9 NC x 7-1/2" . . . . .	4
30	D 34667	WASHER - special . . . . .	4
31	D 35885	SHANK - tooth, ripper . . . . .	3
32	R 33815	TOOTH - ripper . . . . .	3
33	D 35900	ROD - attaching, ripper teeth . . . . .	1
34	136- 112	PIN - hair pin . . . . .	2



**MODEL 450 CRAWLER TRACTOR**

273

**DRAWBARS (MODELS WITHOUT WINCH)**

REF.	PART NO.	DESCRIPTION	REQ'D
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**MODELS WITHOUT REAR MOUNTED EQUIPMENT**

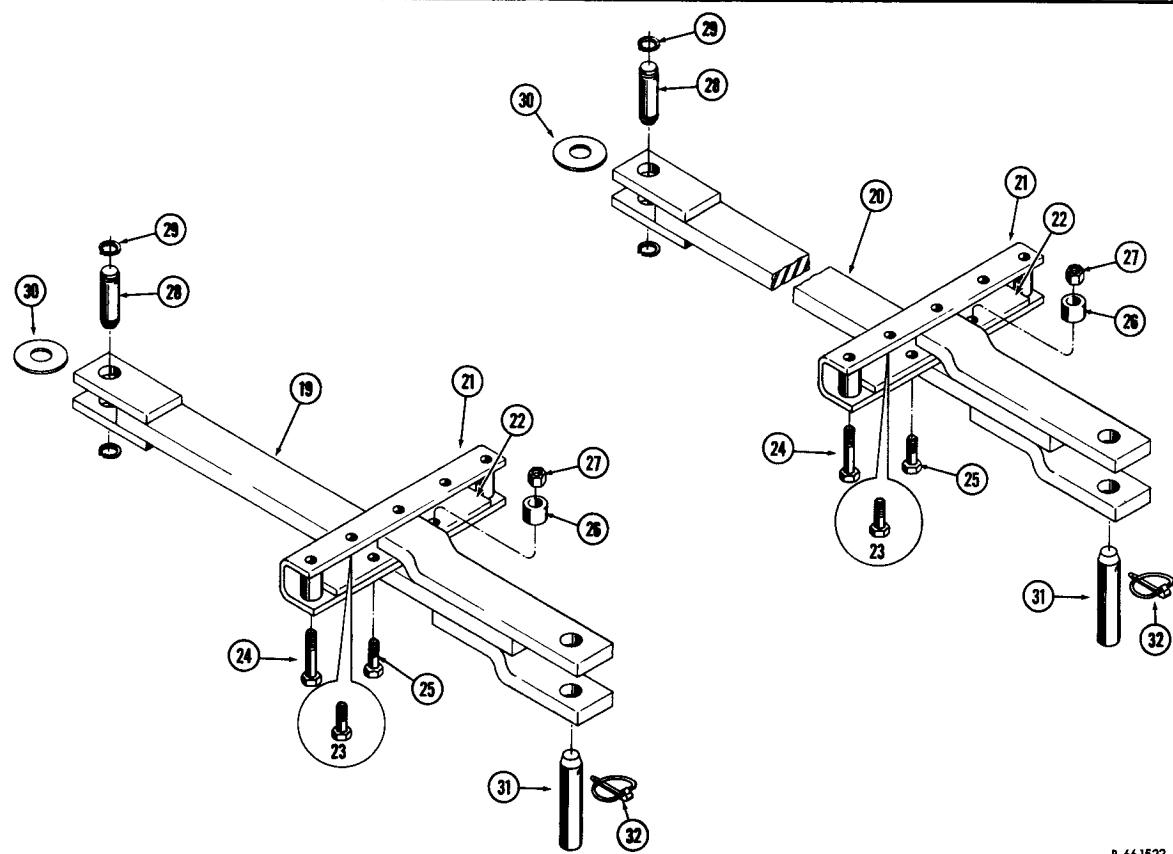
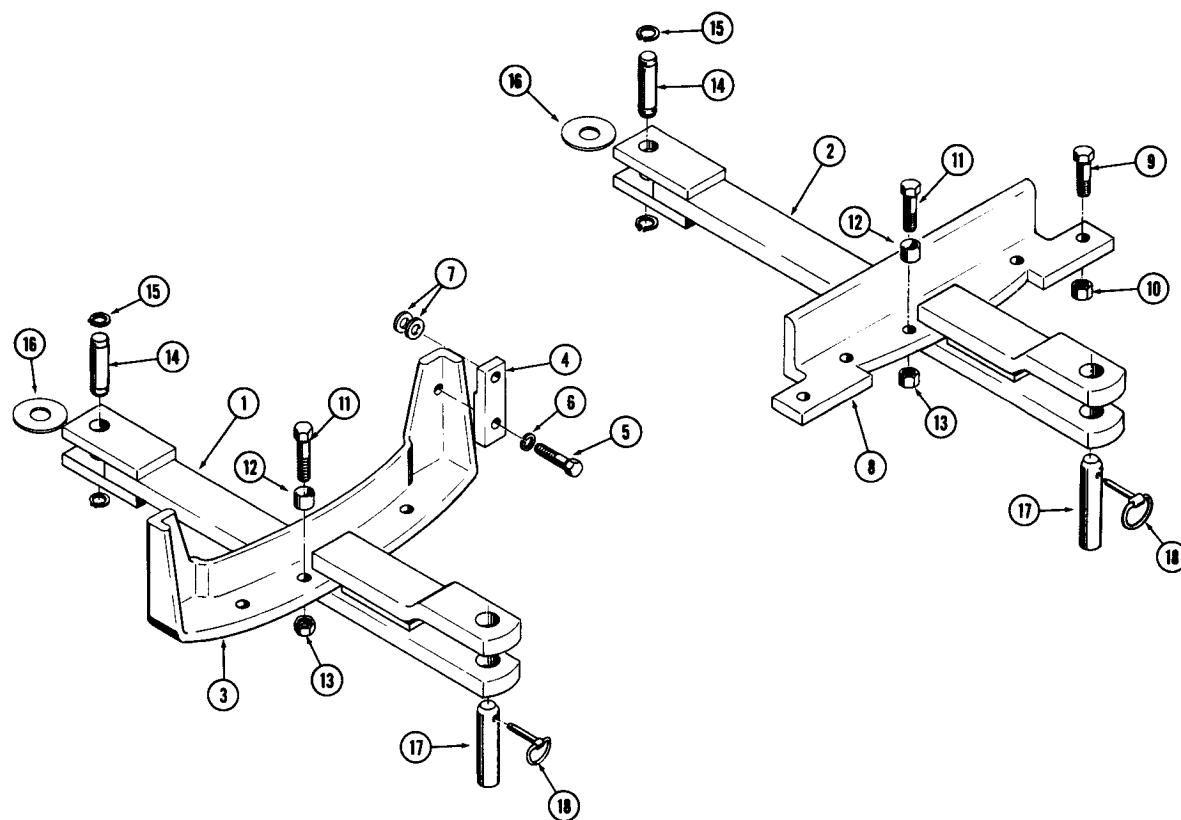
1	R 37272	DRAWBAR - Drawbar and Dozer Models only.....	1
1	R 37273	DRAWBAR - Loader Counterweight Models only.....	1
2	R 30272	GUIDE - drawbar, before tractor sn. 3060333 .....	1
2	R 39425	GUIDE - drawbar, tractor sn. 3060333 and after .....	1
3	13- 1228	HHCS - 3/4" - 10 NC x 1-1/2" .....	4
4		RESERVED	
5	13- 1244	HHCS - 3/4" - 10 NC x 2-3/4" .....	2
6	T 29173	BUSHING - stop.....	2
7	25- 1012	NUT - hex , 3/4" - 10 NC.....	2
8	D 25993	PIN - mounting .....	1
9	95- 20	WASHER - flat, 1-1/4" .....	1
10	D 26918	SNAP RING .....	2
11	R 24105	PIN - R37272 drawbar .....	1
12	132- 154	PIN - cotter .....	1
13	D 35202	PIN - R37273 drawbar .....	1
14	D 33805	PIN - Klik .....	1
15		RESERVED	
16		RESERVED	
17		RESERVED	

**USED ON MODELS WITH RIPPER**

18	D 44146	DRAWBAR - Loader Models .....	1
18	D 44152	DRAWBAR - Dozer Models .....	1
19	D 25993	PIN - mounting .....	1
20	95- 20	WASHER - flat, 1-1/4" .....	1
21	D 26918	SNAP RING .....	2
22	R 24105	PIN - mounting, equipment.....	1
23	132- 154	PIN - cotter .....	1

**LOADER AND DOZER WITH BACKHOE**

24	R 37190	DRAWBAR - Dozer Models .....	1
24	R 37292	DRAWBAR - Loader Models .....	1
25	D 39519	BRACKET - locking, drawbar .....	1
26	13- 1648	HHCS - 1" - 8 NC x 3" .....	2
27	D 36505	WASHER - special .....	2
28	25- 1016	NUT - hex , 1" - 8 NC.....	2
29	D 25993	PIN - mounting .....	1
30	95- 20	WASHER - flat, 1-1/4" .....	1
31	D 26918	SNAP RING .....	2
32	R 24105	PIN - mounting, equipment.....	1
33	132- 154	PIN - cotter .....	1



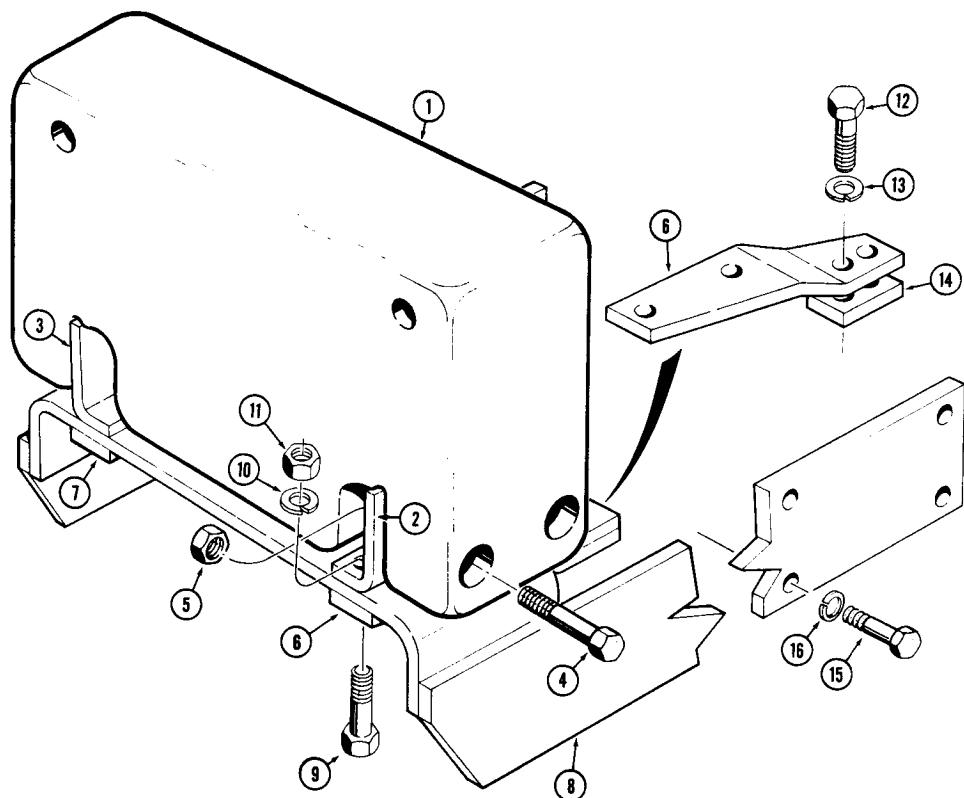
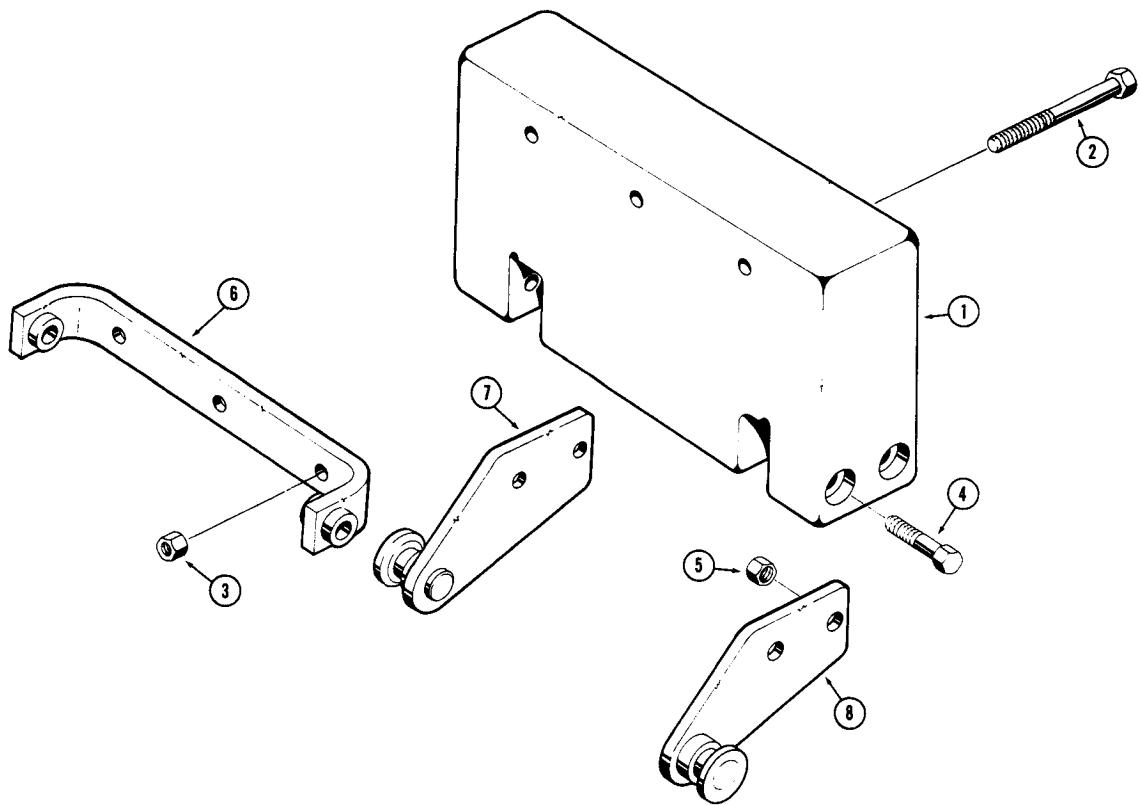
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**MODEL 450 CRAWLER TRACTOR**

275

**DRAWBARS (MODELS WITH WINCH)**

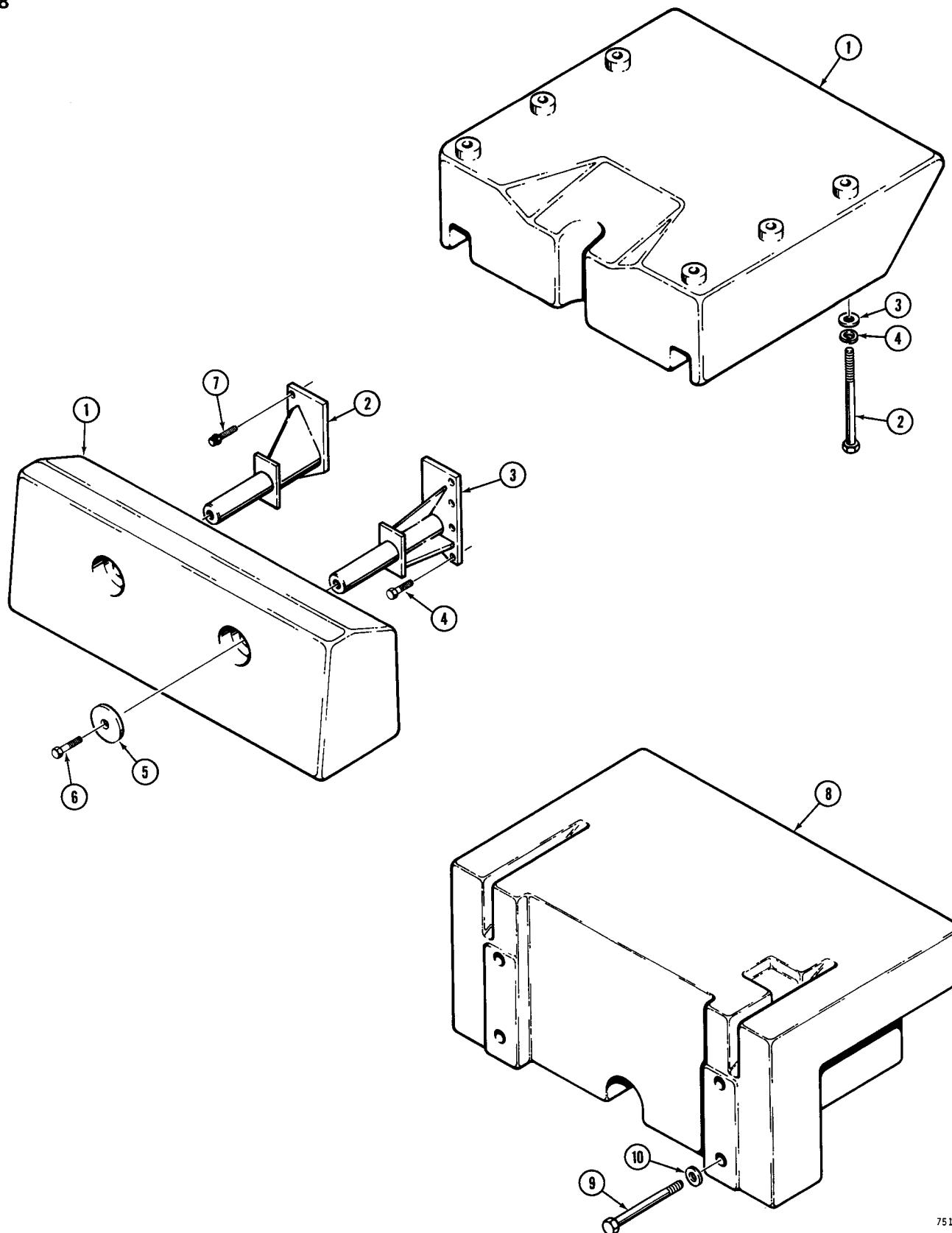
REF.	PART NO.	DESCRIPTION	REQ'D
<b>MODEL 9 WINCH</b>			
1	R 37272	DRAWBAR - Dozer Models only .....	1
2	D 44148	DRAWBAR - Loader Models only .....	2
3	D 38516	GUIDE - D44147 drawbar.....	1
3	D 38501	GUIDE - D44148 drawbar.....	1
4	D 38523	BAR - D44147 drawbar .....	1
5	13- 1040	HHCS - 5/8" - 10 NC x 2-1/2"	4
6	92- 10	WASHER - lock, 5/8" .....	4
7	A 29880	WASHER - special .....	UAR
8	D 38501	GUIDE - D44148 drawbar.....	1
9	13- 1236	HHCS - 3/4" - 10 NC x 2-1/4"	2
10	25- 1012	NUT - hex , 3/4" - 10 NC.....	2
11	13- 1244	HHCS - 3/4" - 10 NC x 2-3/4"	2
12	T 29173	BUSHING - stop, drawbar.....	2
13	25- 1012	NUT - hex , 3/4" - 10 NC.....	2
14	D 25993	PIN - mounting, drawbar .....	1
15	D 26918	SNAP RING .....	2
16	95- 20	WASHER - flat, 1-1/4" .....	1
17	D 35202	PIN - mounting, equipment.....	1
18	D 33805	PIN - Klik .....	1
<b>MODEL 19 WINCH</b>			
19	R 37296	DRAWBAR - Loader Models only .....	1
20	R 37297	DRAWBAR - Dozer Models only .....	1
21	D 38542	GUIDE - drawbar .....	1
22	D 38540	PLATE - wear .....	1
23	13- 1220	HHCS - 3/4" - 10 NC x 1-1/4"	2
24	13- 1260	HHCS - 3/4" - 10 NC x 3-3/4"	2
25	13- 1236	HHCS - 3/4" - 10 NC x 2-1/2"	2
26	T 29173	BUSHING - stop, drawbar.....	2
27	25- 1412	NUT - hex lock, 3/4" - 10 NC .....	2
28	D 25993	PIN - mounting, drawbar .....	1
29	D 26918	SNAP RING .....	2
30	95- 20	WASHER - flat, 1-1/4" .....	1
31	D 35202	PIN - mounting, equipment.....	1
32	D 33805	PIN - Klik .....	1



710289

## REAR MOUNTED COUNTERWEIGHTS

REF.	PART NO.	DESCRIPTION	REQ'D
BACKHOE MODELS ONLY			
1	D 31204	COUNTERWEIGHT - rear, 1400 lbs., (635 kg) .....	1
2	13- 16168	HHCS - 1" - 8 NC x 10-1/2" .....	2
3	131- 359	NUT - hex self lock, 1" - 8 NC.....	2
4	13- 16104	HHCS - 1" - 8 NC 6-1/2" .....	4
5	131- 359	NUT - hex self lock, 1" - 8 NC.....	4
6	D 37534	BRACKET - counterweight mounting, upper .....	1
7	D 37134	SUPPORT ARM - lower, at counterweight (R.H.) .....	1
8	D 37135	SUPPORT ARM - lower, at counterweight (L.H.) .....	1
WINCH MODELS ONLY			
REF.	PART NO.	DESCRIPTION	REQ'D
1	32105	COUNTERWEIGHT - rear, 900 lbs., (408 kg) .....	1
2	D 43368	BRACKET - mounting, R.H.....	1
3	D 43367	BRACKET - mounting, L.H.....	1
4	13- 1680	HHCS - 1" - 8 NC x 5" .....	4
5	131- 359	NUT - hex selflock, 1" - 8 NC .....	4
6	D 44013	BRACKET - support, R.H.....	1
7	D 44012	BRACKET - support, L.H.....	1
8	D 43373	ARM - support, counterweight.....	1
9	13- 1040	HHCS - 5/8" - 11 NC x 2-1/2" .....	4
10	92- 10	WASHER - lock, 5/8" .....	4
11	25- 1010	NUT - hex , 5/8" - 11 NC.....	4
12	13- 1036	HHCS - 5/8" - 11 NC x 2-1/4" .....	4
13	92- 10	WASHER - lock, 5/8" .....	4
14	D 43365	SPACER - use on models without fairleads.....	2
15	13- 1236	HHCS - 5/8" - 10 NC x 2-1/4" .....	8
16	92- 10	WASHER - lock, 5/8" .....	8



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## FRONT COUNTERWEIGHT

REF.	PART NO.	DESCRIPTION	REQ'D
1	D 34625	COUNTERWEIGHT - 1000 lb., (454 kg) Loader Models.....	1
1	D 40114	COUNTERWEIGHT - 1000 lb., (454 kg) Dozer Models .....	1
2	13- 10120	HHCS - 5/8" - 11 NC x 7-1/2" (Loader Models) .....	6
2	13- 1096	HHCS - 5/8" - 11 NC x 6" (Dozer Models) .....	6
3	195- 41	WASHER - flat, 5/8" .....	6
4	92- 10	WASHER - lock, 5/8" .....	6

REAR COUNTERWEIGHT  
WITHOUT REAR MOUNTED EQUIPMENT

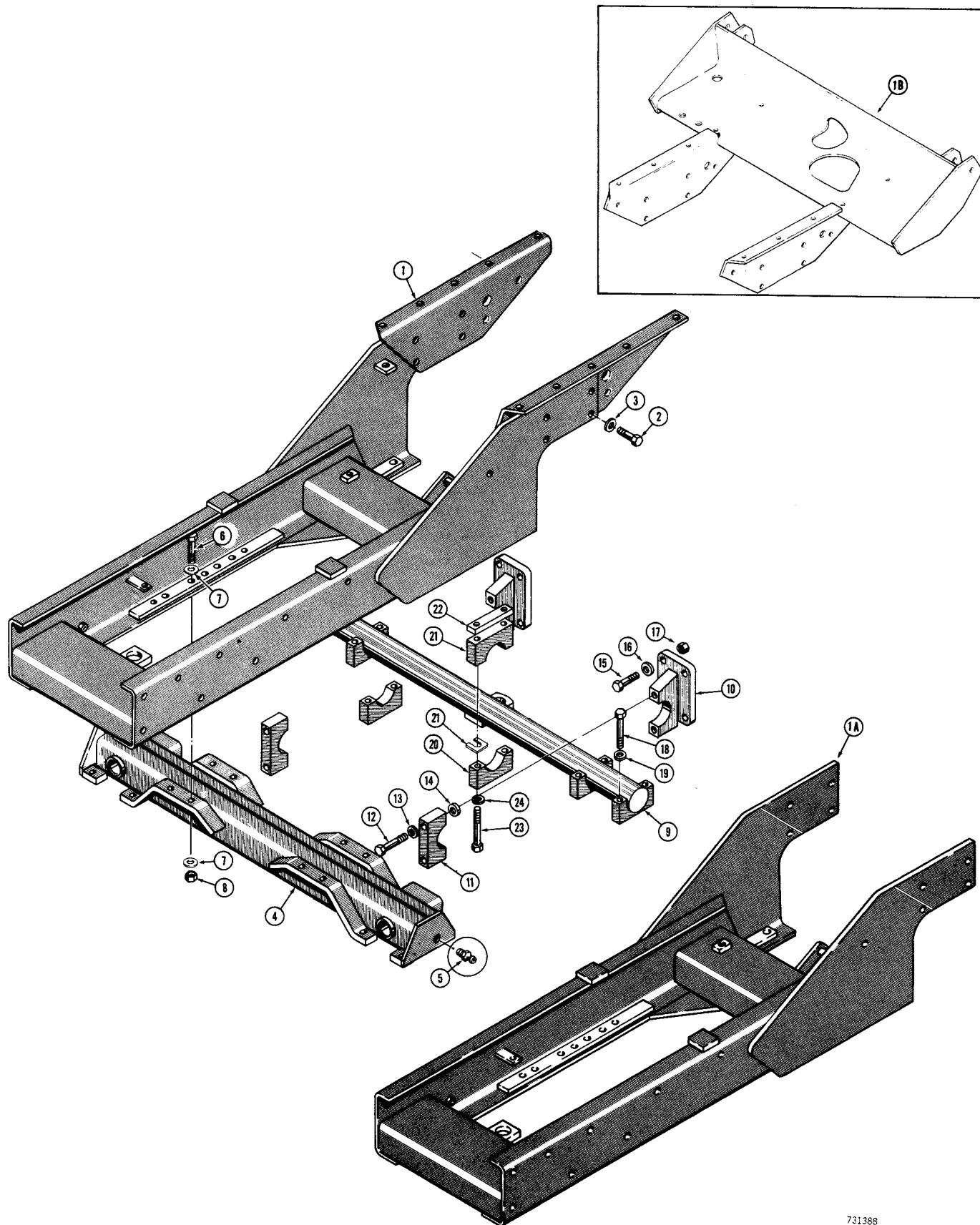
REF.	PART NO.	DESCRIPTION	REQ'D
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## BEFORE TRACTOR SN. 3060333

1	D 34737	COUNTERWEIGHT - rear, 1665 lbs., (755 kg) Cast Iron .....	1
1	R 32712	COUNTERWEIGHT - rear, 1535 lbs., (675 kg) Fabricated, Not shown .....	1
2	R 35978	BRACKET - mounting, L.H. ....	1
3	R 35979	BRACKET - mounting, R.H. ....	1
4	13- 1224	HHCS - 3/4" - 10 NC x 1-3/4" .....	4
5	R 17607	WASHER - special .....	2
6	13- 1240	HHCS - 3/4" - 10 NC x 2-1/2", D34737 counterweight .....	2
6	13- 1248	HHCS - 3/4" - 10 NC x 3", R32712 counterweight .....	2
7	166- 132	BOLT - ferr head, 3/4" - 10 NC x 1-3/4" .....	4

## TRACTOR SN. 3060333 AND AFTER

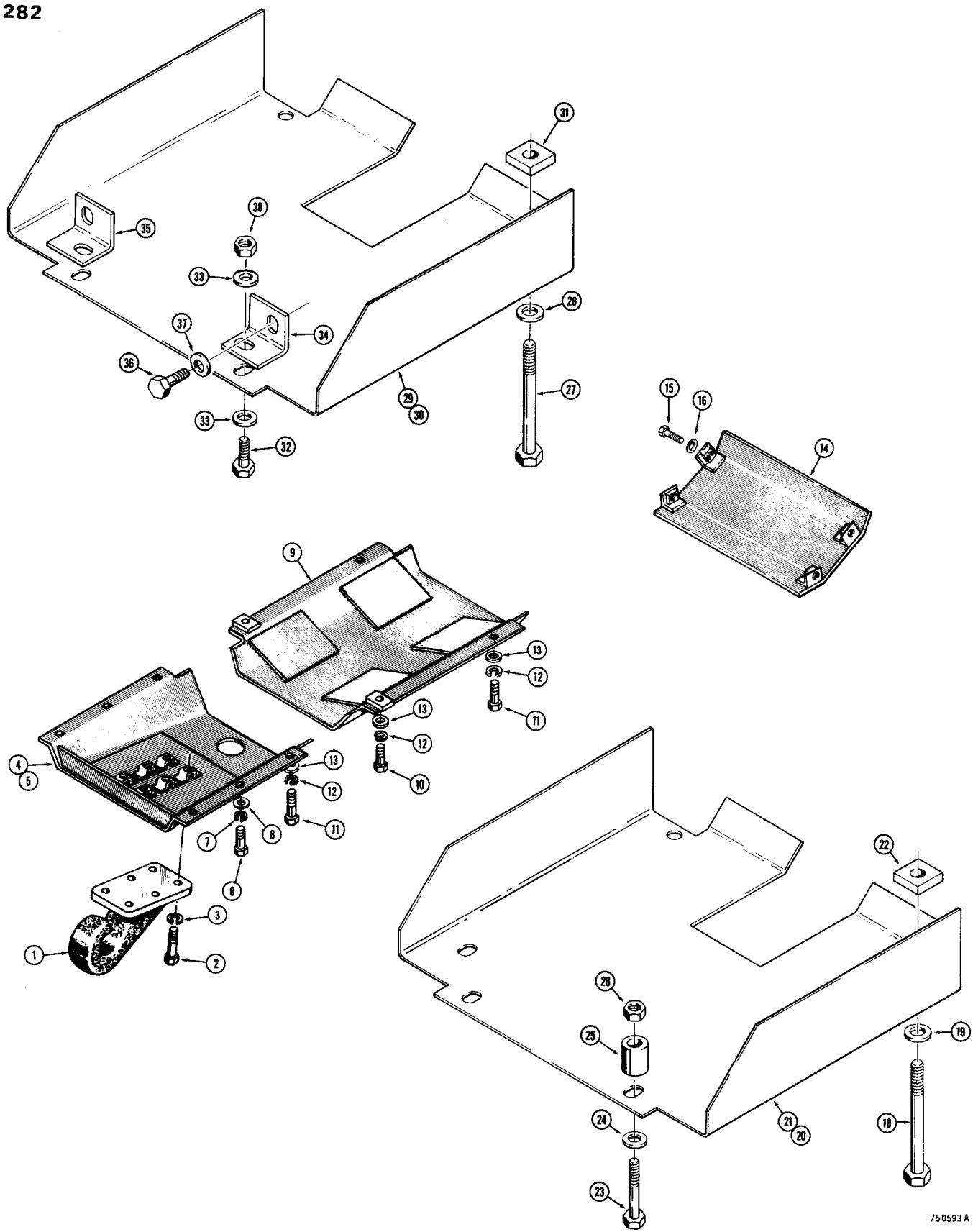
8	R 38788	COUNTERWEIGHT - rear, 1600 lb. (726 kg) .....	1
9	13- 1296	HHCS - 3/4" - 10 NC x 6" .....	4
10	T 53681	WASHER - special .....	4



731388

## MAIN FRAME, CROSSBAR AND CROSMEMBER

REF.	PART NO.	DESCRIPTION	REQ'D
1	D 35264	FRAME - engine, Used on Models without ROPS .....	1
1A	R 30438	FRAME - main, engine, Used on Models with ROPS.....	1
1B	F 93314	FRAME - main, transmission, Used on Models with ROPS.....	1
2	13- 1228	HHCS - 3/4" - 10 NC x 1-3/4" .....	8
3	D 34666	WASHER - Heat treated .....	8
4	R 27991	CROSMEMBER - front, 50" (1270 mm) gauge.....	1
4	R 27990	CROSMEMBER - front, 52" (1321 mm) gauge.....	1
5	219- 1	FITTING - grease, straight, 1/8" NPT .....	2
6	13- 1248	HHCS - 3/4" - 10 NC x 3" .....	4
7	D 34666	WASHER - Heat treated .....	8
8	25- 1012	NUT - hex, 3/4" - 10 NC .....	4
9	R 24583	CROSSBAR - rear, 50" (1270 mm) gauge.....	1
9	R 24581	CROSSBAR - rear, 52" (1321 mm) gauge.....	1
10	D 35177	CLAMP - final drive to crossbar .....	2
11	D 34663	CLAMP - final drive to crossbar .....	2
12	13- 1464	HHCS - 7/8" - 9 NC x 4" .....	4
13	D 34667	WASHER - special .....	4
14	D 33982	SPACER - clamp.....	2
15	13- 1240	HHCS - 3/4" - 10 NC x 2-1/2" .....	8
16	D 34666	WASHER - Heat treated .....	8
17	131- 148	NUT - hex. self lock, 3/4" - 10 NC .....	8
18	13- 1264	HHCS - 3/4" - 10 NC x 4" .....	8
19	D 34666	WASHER - Heat treated .....	8
20	D 34663	CLAMP - rear crossbar to engine frame.....	4
21	D 33982	SPACER - clamp.....	2
22	D 34722	BLOCK - tapped .....	2
23	13- 14120	HHCS - 7/8" - 9 NC x 7-1/2" .....	4
24	D 34667	WASHER - special .....	4



750593A

**PULL HOOK, CRANKCASE, TORQUE CONVERTER  
AND SEDIMENT BOWL GUARD**

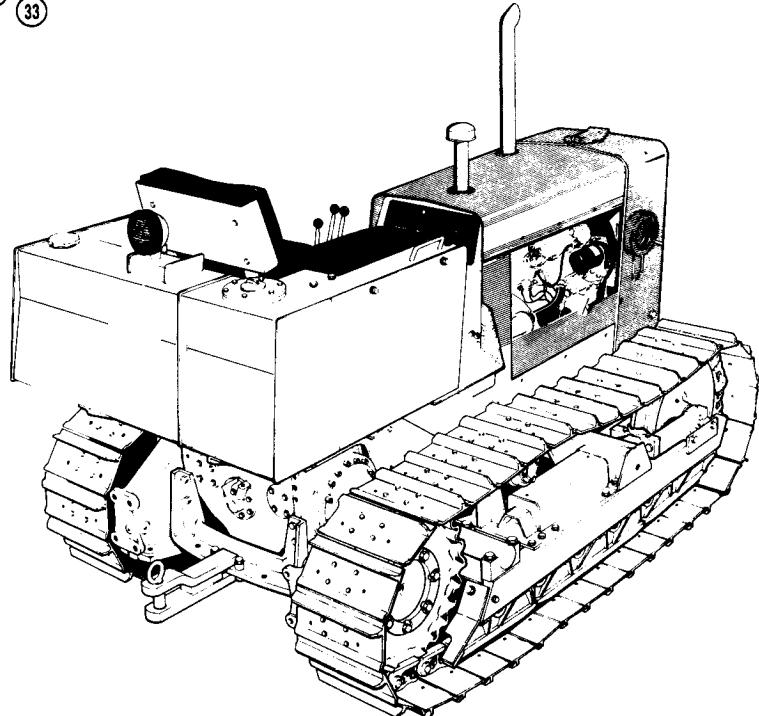
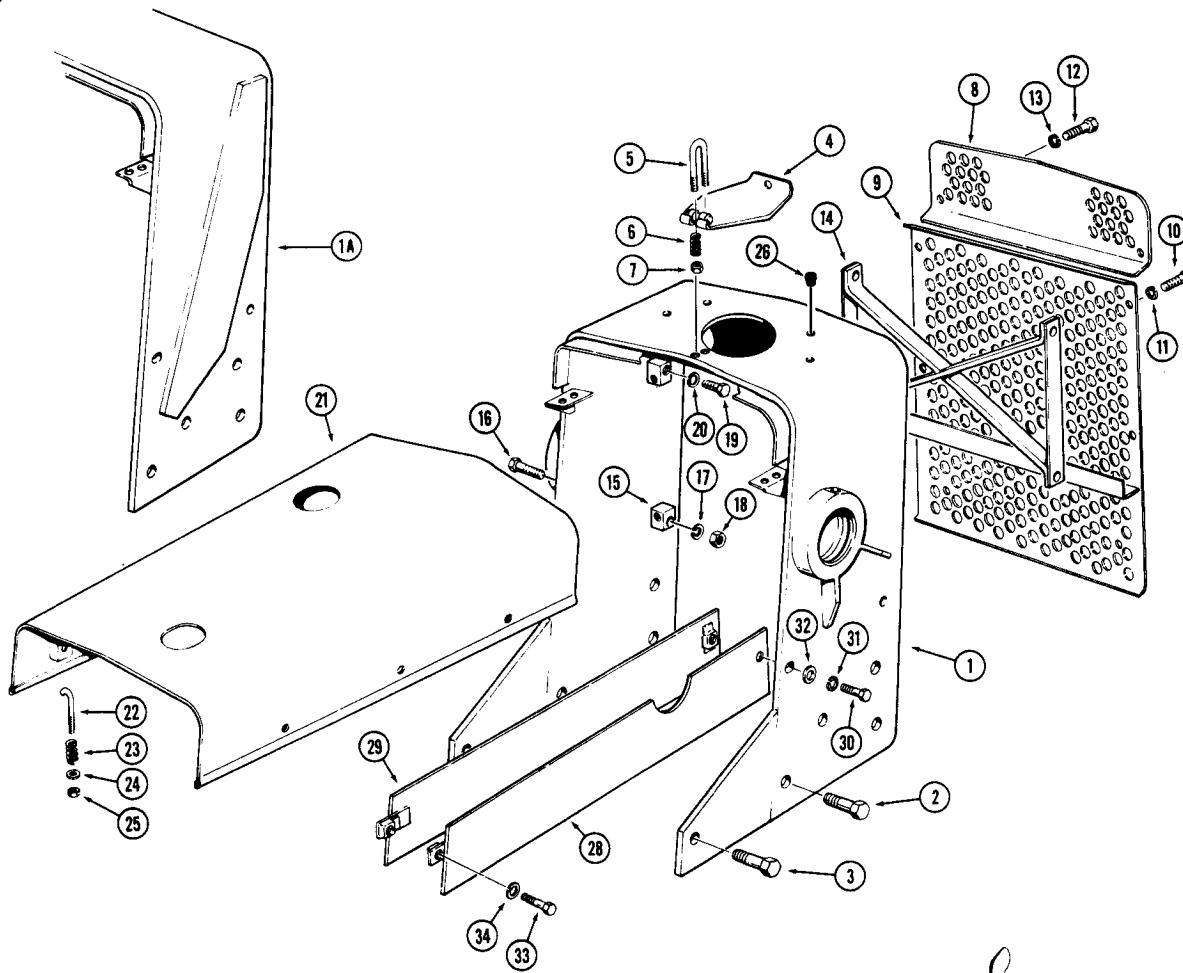
REF.	PART NO.	DESCRIPTION	REQ'D.
1	10940	HOOK - pull, all models except Backhoe models .....	1
2	13- 828	HHCS - 1/2" - 13 NC x 1-3/4" .....	6
3	92- 8	WASHER - lock, 1/2" .....	6
4	D 35159	GUARD - crankcase, Drawbar and Dozer Models .....	1
5	D 35157	GUARD - crankcase, Loader Models without backhoe .....	1
6	13- 1024	HHCS - 5/8" - 11 NC x 1-1/2" .....	4
7	92- 10	WASHER - lock, 5/8" .....	4
8	195- 41	WASHER - flat, 5/8" .....	4
9	D 35162	GUARD - torque converter .....	1
10	13- 1040	HHCS - 5/8" - 11 NC x 2-1/2" .....	2
11	13- 1032	HHCS - 5/8" - 11 NC x 2" .....	4
12	92- 10	WASHER - lock, 5/8" .....	6
13	195- 41	WASHER - flat, 5/8" .....	6
14	D 42811	GUARD - rear sediment bowl, Models without rear mounted equipment .....	1
15	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
16	92- 8	WASHER - lock, 1/2" .....	4
17		RESERVED	

**TRANSMISSION GUARDS**

REF.	PART NO.	DESCRIPTION	REQ'D.
<b>FOR MODELS WITHOUT REAR MOUNTED EQUIPMENT</b>			
18	13- 14128	HHCS - 7/8" - 9 NC x 8" .....	2
19	D 34666	WASHER - special .....	2
20	D 47851	GUARD - transmission, Dozer and Drawbar models .....	1
21	D 47852	GUARD - transmission, Loader models .....	1
22	D 47858	SPACER - guard, front .....	2
23	13- 1272	HHCS - 3/4" - 10 NC x 4-1/2" .....	2
24	195- 45	WASHER - flat, 3/4" .....	2
25	R 36356	SPACER - guard, rear .....	2
26	125- 1012	NUT - hex, 3/4" - 10 NC .....	2

**FOR MODELS WITH WINCH OR RIPPER**

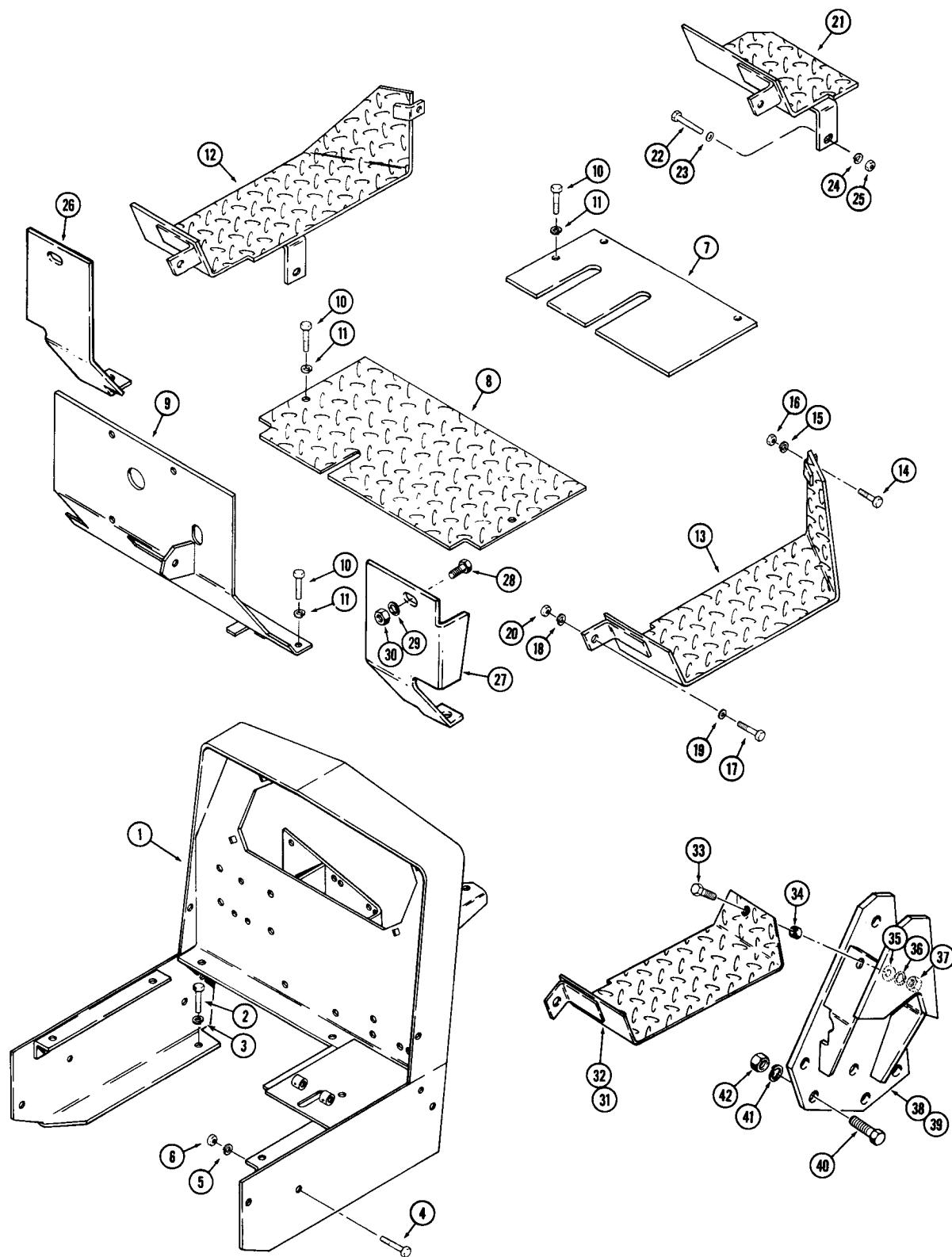
27	13- 14128	HHCS - 7/8" - 9 NC x 8" .....	2
28	D 34666	WASHER - special .....	2
29	D 47851	GUARD - transmission, Dozer and Drawbar models .....	1
30	D 47852	GUARD - transmission, Loader models .....	1
31	D 47858	SPACER - guard .....	2
32	13- 1228	HHCS - 3/4" - 10 NC x 1-3/4" .....	2
33	195- 45	WASHER - flat, 3/4" .....	4
34	D 47853	BRACKET - guard, R.H., Ripper only .....	1
34	R 35997	BRACKET - guard, R.H., Winch only .....	1
35	D 47854	BRACKET - guard, L.H., Ripper only .....	1
35	R 35998	BRACKET - guard, L.H., Winch only .....	1
36	13- 1228	HHCS - 3/4" - 10 NC x 1-3/4", Ripper only .....	2
36	13- 1236	HHCS - 3/4" - 10 NC x 1-3/4", Winch only .....	2
37	195- 45	WASHER - flat, 1-3/4" .....	2
38	25- 102	NUT - hex, 3/4" - 10 NC .....	2



750594A

## HOOD, SHROUD AND GRILLE

REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 31289	GUARD - radiator, Drawbar Models .....	1
1A	R 31290	GUARD - radiator, Loader Models .....	1
2	13- 1224	HHCS - 3/4" - 10 NC x 1-1/2", All Models .....	8
3	13- 1224	HHCS - 3/4" - 10 NC x 1-1/2", Dozer Models only .....	2
4	D 30074	LID - radiator .....	1
5	D 35723	"U" BOLT - radiator lid .....	1
6	23098	SPRING - "U" Bolt .....	2
7	131- 351	NUT - hex self lock, 5/16" - 18 NC .....	2
8	D 43668	GUARD - headlight .....	1
9	D 35210	GUARD - grille .....	1
10	113- 472	HHCS - 1/2" - 13 NC x 1", plated .....	6
11	192- 42	WASHER - lock, 1/2", plated .....	6
12	113- 473	HHCS - 1/2" - 13 NC x 1-1/4", plated .....	2
13	192- 42	WASHER - lock, 1/2", plated .....	2
14	D 35190	BRACE - radiator guard .....	1
15	D 35516	BLOCK - brace mounting .....	2
16	13- 1048	HHCS - 5/8" - 11 NC x 3" .....	2
17	92- 10	WASHER - lock, 5/8" .....	2
18	25- 1010	NUT - hex , 5/8" - 11 NC .....	2
19	13- 1024	HHCS - 5/8" - 11 NC x 1-1/2" .....	2
20	92- 10	WASHER - lock, 5/8" .....	2
21	R 32966	HOOD - standard .....	1
21	R 37981	HOOD AND PAD - noise reduction, see page 143 for pad & fasteners .....	1
22	D 33958	BOLT - hood hold down .....	4
23	F 60482	SPRING - hood hold down .....	4
24	195- 25	WASHER - plain .....	4
25	131- 352	NUT - hex self lock, 3/8" - 16 NC .....	4
26	R 38089	PLUG - quad .....	4
26		RESERVED	
27		RESERVED	
28	D 34996	PANEL - side, R.H. ....	1
29	D 34997	PANEL - side, L.H. ....	1
30	13- 820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
31	92- 8	WASHER - lock, 1/2" .....	4
32	195- 33	WASHER - flat, 1/2" .....	4
33	13- 828	HHCS - 1/2" - 13 NC x 1-3/4" .....	2
34	92- 8	WASHER - lock, 1/2" .....	2

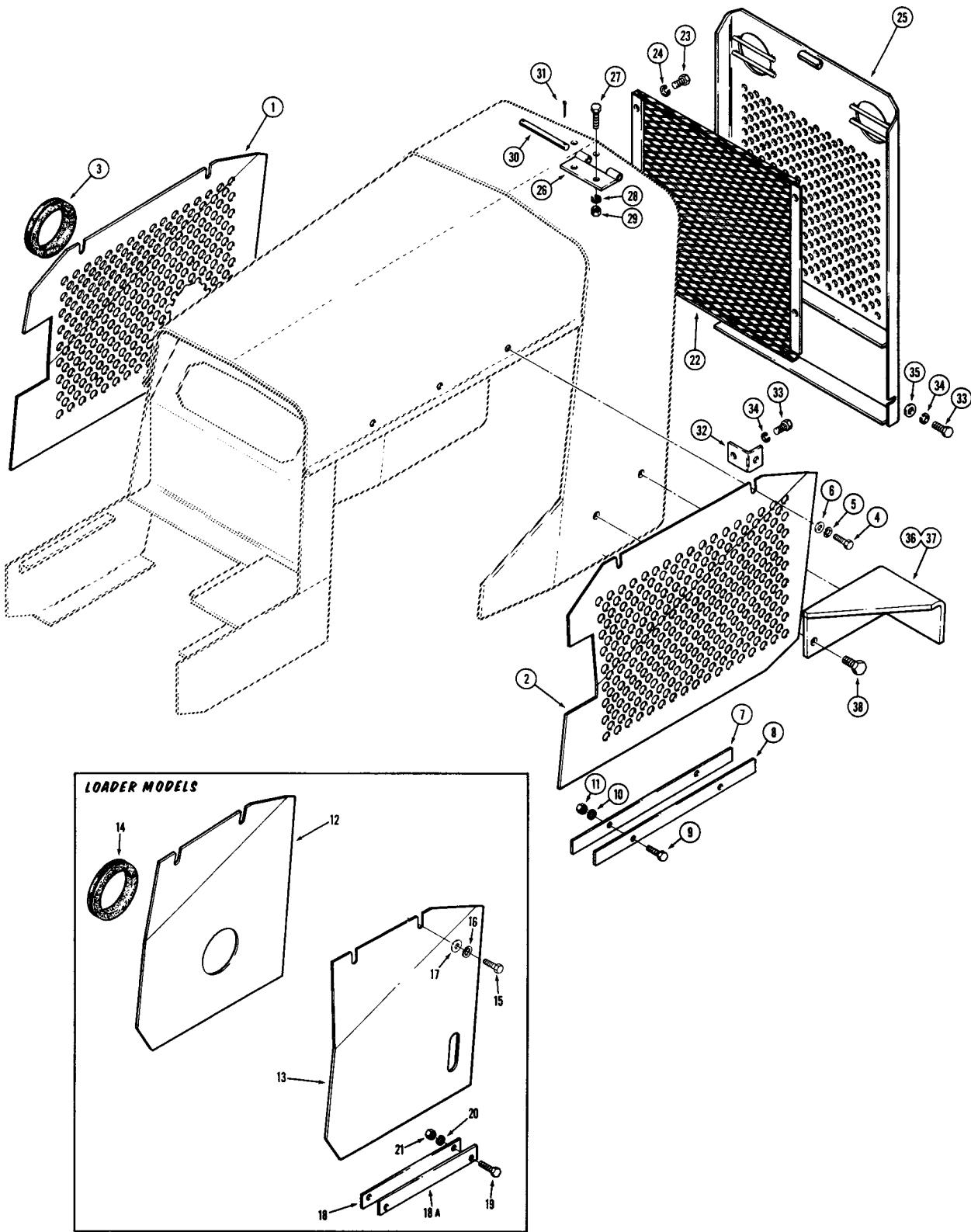


## COWL, FLOOR PLATES AND RELATED PARTS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 35218	COWL - Dozer and Drawbar Models with Pre-heater.....	1
1	R 36926	COWL - Dozer and Drawbar Models with ether injection .....	1
2	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	2
3	92- 8	WASHER - lock, 1/2"	2
4	13- 828	HHCS - 1/2" - 13 NC x 1-3/4"	2
5	92- 8	WASHER - lock, 1/2"	2
6	25- 108	NUT - hex, 1/2" - 13 NC	2
7	D 45392	PLATE - floor, front	1
8	D 35167	PLATE - floor, rear	1
9	D 35169	PLATE - heel	1
10	13- 820	HHCS - 1/2" - 13 NC x 1-1/4"	7
11	92- 8	WASHER - lock, 1/2"	7
12	D 35120	PLATE - step, L.H., Drawbar and Dozer models, without ROPS	1
13	D 35121	PLATE - step, R.H., Drawbar and Dozer models, without ROPS	1
14	13- 616	HHCS - 3/8" - 16 NC x 1"	2
15	92- 6	WASHER - lock, 3/8"	2
16	25- 106	NUT - hex, 3/8" - 16 NC	2
17	13- 828	HHCS - 1/2" - 13 NC x 1-3/4"	4
18	92- 8	WASHER - lock, 1/2"	4
19	195- 33	WASHER - flat, 1/2"	4
20	25- 108	NUT - hex, 1/2" - 13 NC	4
21	D 35116	PLATE - step, Loader Models only	1
22	13- 828	HHCS - 1/2" - 13 NC x 1-3/4"	2
23	195- 33	WASHER - flat, 1/2"	2
24	92- 8	WASHER - lock, 1/2"	2
25	25- 108	NUT - hex , 1/2" - 13 NC	2
26	R 26121	PLATE - heel, L.H.	1
27	R 26125	PLATE - heel, R.H.	1
28	13- 616	HHCS - 3/8" - 16 NC x 1"	2
29	92- 6	WASHER - lock, 3/8"	2
30	25- 106	NUT - hex, 3/8" - 16 NC	2

## STEPS AND MOUNTS FOR ROPS MODELS

31	F 93325	PLATE - step, L.H., Drawbar and Dozer Models .....	1
32	F 93326	PLATE - step, R.H., Drawbar and Dozer Models .....	1
33	13- 624	HHCS - 3/8" - 16 NC x 1-1/2"	2
34	F 10140	SPACER - plate.....	2
35	195- 25	WASHER .....	2
36	92- 6	WASHER - lock, 3/8"	2
37	25- 106	NUT - hex, 3/8" - 16 NC	2
38	F 93312	BRACKET ASSEMBLY - mounting, L.H.	1
39	F 93313	BRACKET ASSEMBLY - mounting, R.H.	1
40	13- 1036	HHCS - 5/8" - 11 NC x 2-1/4"	10
41	92- 10	WASHER - lock, 5/8"	10
42	25- 1010	NUT - hex, 5/8" - 11 NC	10



## SIDE SHIELDS AND BRUSH GUARDS

REF.	PART NO.	DESCRIPTION	REQ'D.
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**SIDE SHIELD (USED ON DRAWBAR AND DOZER MODELS ONLY)**

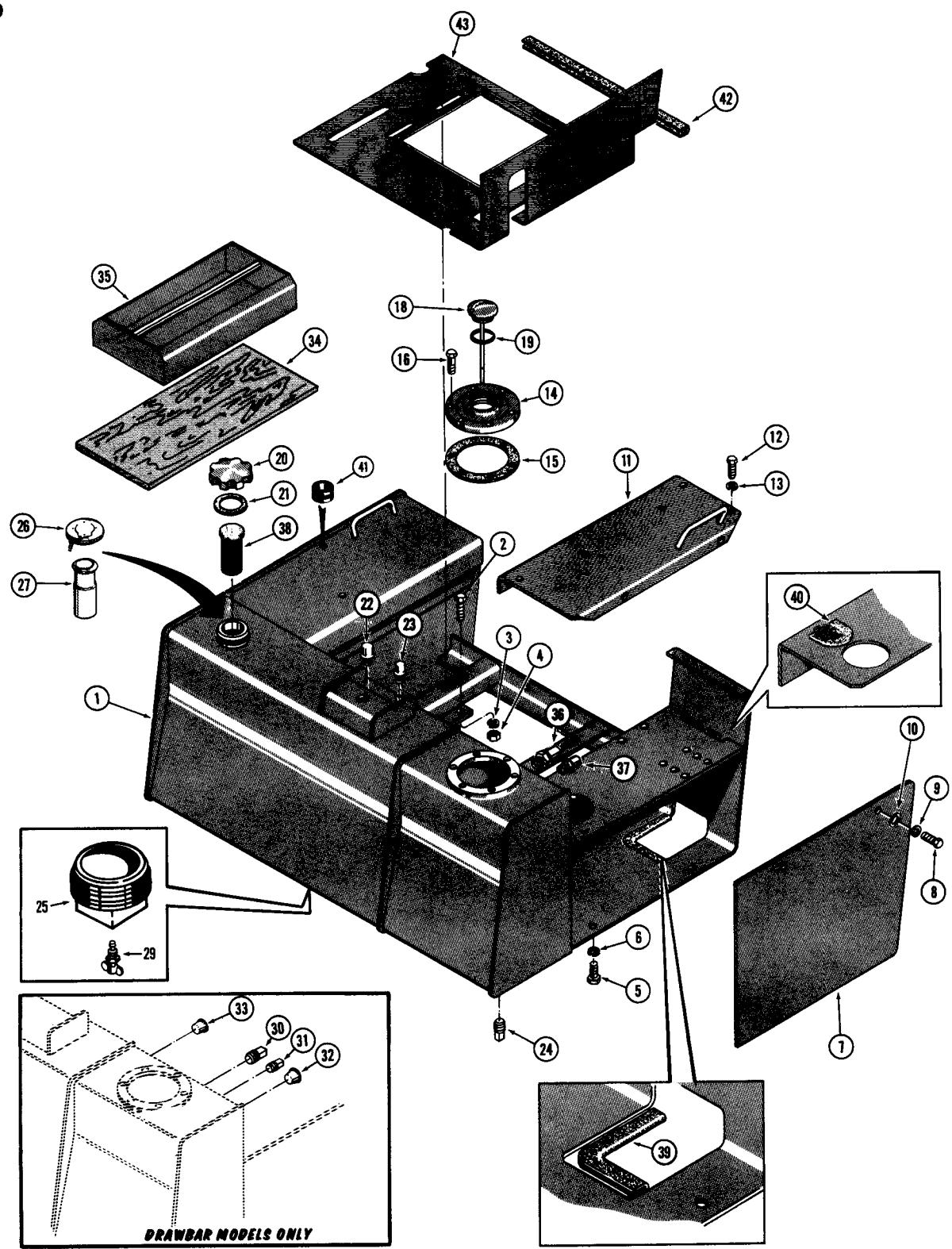
1	*R	38001	SHIELD AND PAD - L.H., noise reduction .....	1
1	D	35432	SHIELD - L.H., standard .....	1
2	D	35433	SHIELD - R.H., standard .....	1
2	*R	38002	SHIELD AND PAD - R.H., noise reduction .....	1
3	D	35424	TRIM - quick edge .....	1
4	13-	820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
5	92-	8	WASHER - lock, 1/2" .....	4
6	195-	53	WASHER - flat, 1/2" .....	4
7	D	38472	STRIP - side shield retaining, inner .....	2
8	D	38471	STRIP - side shield retaining, outer .....	2
9	13-	820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
10	92-	8	WASHER - lock, 1/2" .....	4
11	25-	108	NUT - hex, 1/2" - 13 NC .....	4

**SIDE SHIELD (USED ON LOADER MODELS ONLY)**

12	*R	37996	SHIELD AND PAD - L.H., noise reduction .....	1
12	D	35430	SHIELD - L.H., standard .....	1
13	D	35431	SHIELD - R.H., standard .....	1
13	*R	37997	SHIELD AND PAD - R.H., noise reduction .....	1
14	D	35424	TRIM - quick edge .....	1
15	13-	820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
16	92-	8	WASHER - lock, 1/2" .....	4
17	195-	33	WASHER - flat, 1/2" .....	4
18	D	38472	STRIP - side shield retaining, inner .....	2
18A	D	38471	STRIP - side shield retaining, outer .....	2
19	13-	820	HHCS - 1/2" - 13 NC x 1-1/4" .....	4
20	92-	8	WASHER - lock, 1/2" .....	4
21	25-	108	NUT - hex, 1/2" - 13 NC .....	4

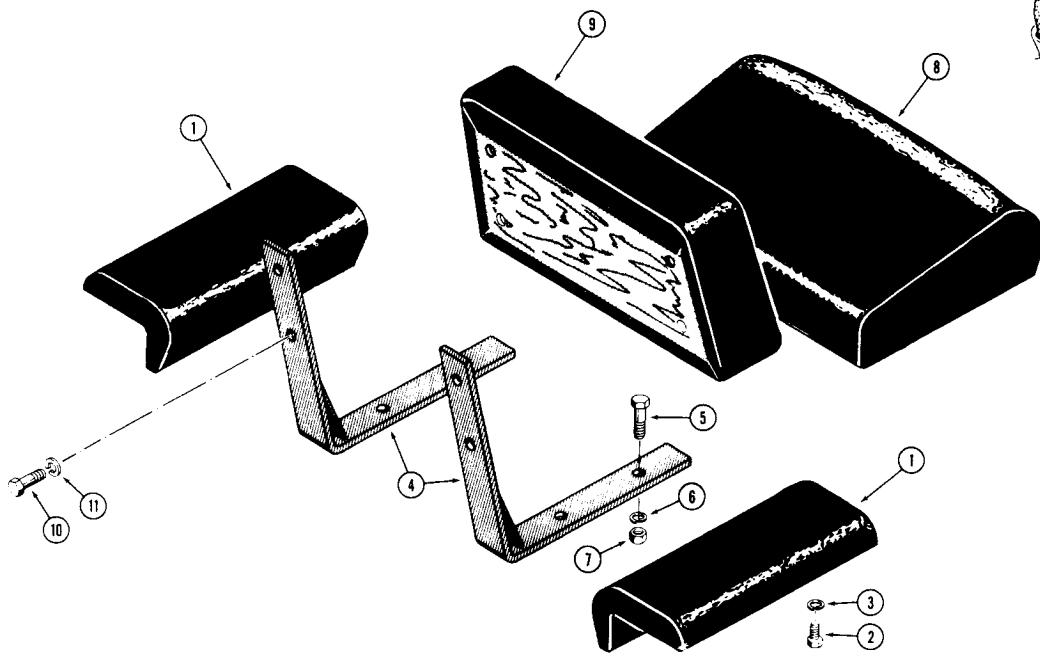
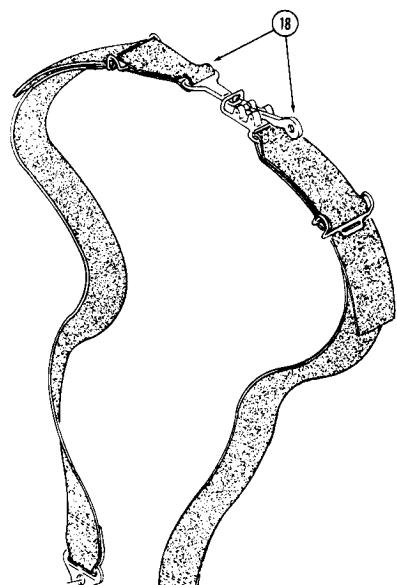
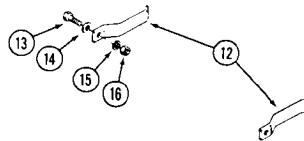
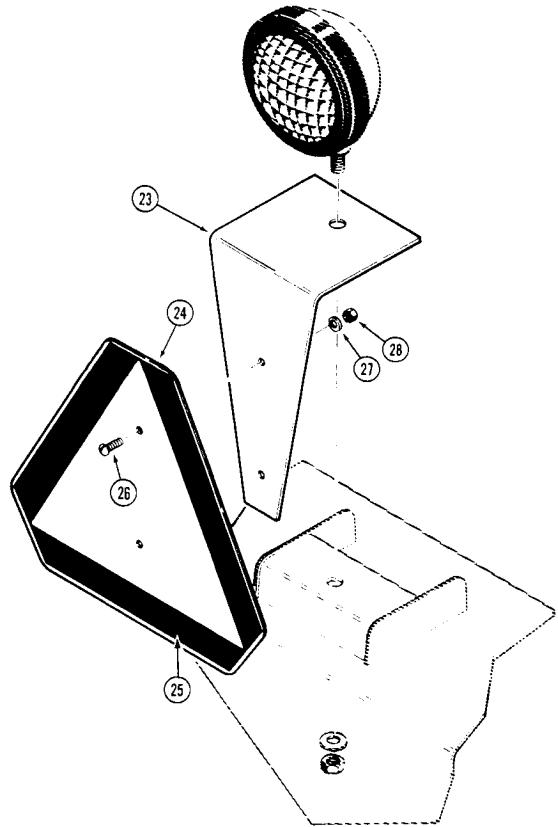
**BRUSH GUARD**

22	D	35328	SCREEN - grille .....	1
23	13-	816	HHCS - 1/2" - 13 NC x 1" .....	4
24	92-	8	WASHER - lock, 1/2" .....	4
25	D	35330	GUARD - grille .....	1
26	D	40462	BRACKET - mounting, grille .....	1
27	113-	273	HHCS - 3/8" - 16 NC x 1-1/2" .....	2
28	192-	43	WASHER - lock, 1/2" .....	2
29	25-	106	NUT - hex, 3/8" - 16 NC .....	2
30	D	40286	PIN - mounting bracket .....	1
31	132-	48	PIN - cotter, 1/8" - 1" .....	2
32	D	35324	BRACKET - grille, lower .....	2
33	13-	824	HHCS - 1/2" - 13 NC x 1-1/2" .....	4
34	92-	8	WASHER - lock, 1/2" .....	4
35	195-	33	WASHER - flat, 1/2" .....	2
36	D	35332	BUMPER - L.H. Drawbar Models only .....	1
37	D	35333	BUMPER - R.H., Drawbar Models only .....	1
38	13-	1232	HHCS - 3/4" - 10 NC x 2" .....	4



## FUEL TANK AND HYDRAULIC RESERVOIR ASSEMBLY

REF.	PART NO.	DESCRIPTION	REQ'D.
1	D 43640	TANK AND RESERVOIR - uses items 2 thru 23 .....	1
1	R 39375	TANK AND RESERVOIR - uses items 26 and 27 .....	1
2	13- 824	HHCS - 1/2" - 13 NC x 1-1/2"	7
2	13- 828	HHCS - 1/2" - 13 NC x 1-3/4", Ripper hose clamp - not shown	1
3	92- 8	WASHER - lock, 1/2"	8
4	25- 108	NUT - hex, 1/2" - 13 NC .....	8
5	13- 814	HHCS - 1/2" - 13 NC x 7/8"	2
6	92- 8	WASHER - lock, 1/2"	2
7	D 34941	COVER - side, R.H., all models except 3 spool backhoe Model .....	1
	D 37251	COVER - side, R.H., Backhoe Models with 3 spool valve .....	1
8	13- 816	HHCS - 1/2" - 13 NC x 1"	4
9	92- 8	WASHER - lock, 1/2"	4
10	195- 33	WASHER - plain .....	4
11	D 34943	COVER - top, R.H., used without return-to-dig feature .....	1
11	R 40343	COVER - top, R.H., used with return-to-dig feature .....	1
12	13- 816	HHCS - 1/2" - 13 NC x 1"	3
13	92- 8	WASHER - lock, 1/2"	3
14	D 34977	CAP - hydraulic tank .....	1
15	D 50547	GASKET - hydraulic, tank cap .....	1
16	D 50550	BOLT - special .....	6
17		RESERVED	
18	D 34945	DIPSTICK .....	1
19	A 7552	O-RING - dipstick .....	1
20	D 31747	CAP - D43640 tank .....	1
21	D 34975	GASKET - D43640 tank .....	1
22	D 33027	AIR INLET - D43640 tank .....	1
23	D 33028	VALVE - relief, D43640 tank .....	1
24	221- 4	PLUG - sq. head, 1/2" NPT .....	2
25	R 27578	PLUG - tank .....	1
26	R 39338	CAP - R39375 tank .....	1
27	R 39339	STRAINER - R39375 tank .....	1
28		RESERVED	
29	217- 81	VALVE - drain .....	1
30	221- 3	PLUG - 3/8" NPT, Drawbar Models only .....	1
31	221- 1	PLUG - 1/8" NPT, Drawbar Models only .....	1
32	353- 16	CAPLUG - Drawbar Models only .....	1
33	353- 21	CAPLUG - Drawbar Models only .....	1
34	D 35022	SHIELD - battery .....	1
35	R 31452	BOX - tool .....	1
36	R 15538	AIR INLET - hydraulic tank .....	1
37	R 15536	VALVE - relief, hydraulic .....	1
38	D 36346	STRAINER - fuel .....	1
39	D 38500	TRIM - hose guard .....	1
40	D 43403	TRIM - hose guard, quick edge .....	1
41	A 23870	GROMMET - rubber .....	1
42	D 35424	TRIM - quick edge .....	1
43	R 26140	PLATE - under seat .....	1



750597

## SEAT FRAME AND CUSHIONS

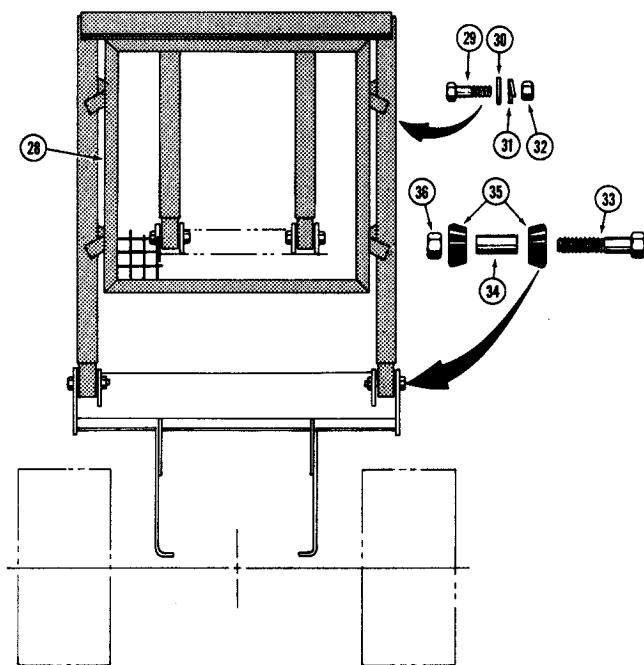
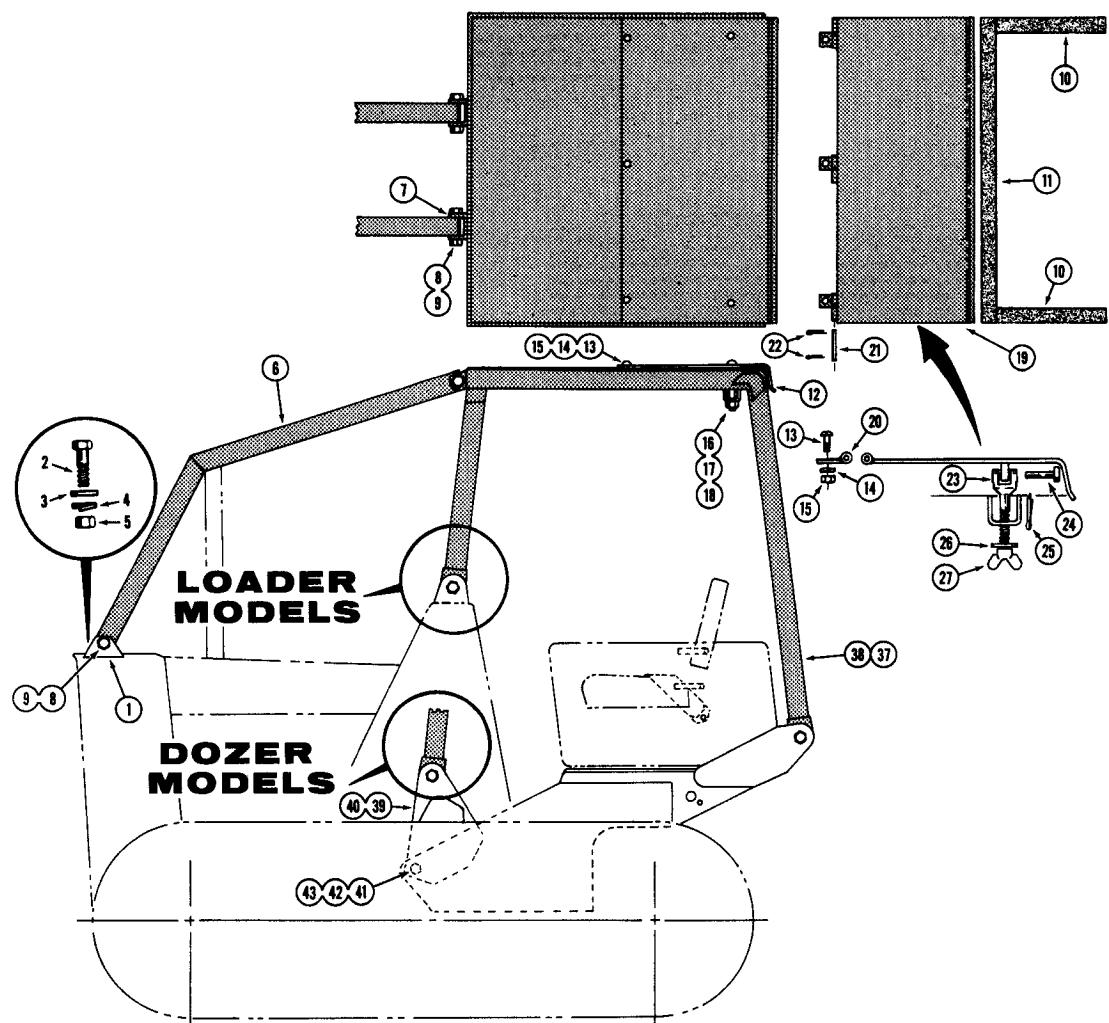
REF.	PART NO.	DESCRIPTION	REQ'D.
1	R 40342	CUSHION - arm and hip .....	2
2	13- 412	HHCS - 1/4" - 20 NC x 3/4" .....	4
3	92- 4	WASHER - lock, 1/4" .....	4
4	D 35198	BRACKET - seat mounting .....	2
5	14- 824	HHCS - 3/4" - 10 NC x 2-1/2" .....	4
6	92- 8	WASHER - lock, 1/2" .....	4
7	131- 392	NUT - hex self lock, 1/2" - 20 NF .....	4
8	D 35226	CUSHION - seat .....	1
9	D 44169	CUSHION - back rest .....	1
10	13- 616	HHCS - 3/8" - 16 NC x 1" .....	4
11	92- 6	WASHER - lock, 3/8" .....	4

## SEAT BELTS

REF.	PART NO.	DESCRIPTION	REQ'D.
12	R 24720	HOOK - seat belt .....	2
13	13- 516	HHCS - 5/16" - 18 NC x 7/8" .....	2
14	195- 21	WASHER - flat, 5/16" .....	2
15	92- 5	WASHER - lock, 5/16" .....	2
16	25- 105	NUT - hex, 5/16" - 18 NC .....	2
17		RESERVED	
18	R 36488	BELT ASSEMBLY - seat, 3" (76 mm) wide .....	1
18	R 39063	BELT ASSEMBLY - seat, 2" (51 mm) wide .....	1
19	F 42236	BOLT - special .....	2
20	195- 529	WASHER - flat, 7/16", plated .....	2
21	192- 22	WASHER - lock, 7/16", plated .....	2
22	129- 124	NUT - hex, 7/16" - 20 NF .....	2

## SLOW MOVING VEHICLE EMBLEM

REF.	PART NO.	DESCRIPTION	REQ'D.
23	D 52015	BRACKET - emblem mounting .....	1
	A 59450	EMBLEM ASSEMBLY - slow moving vehicle .....	1
24	NSS	PLATE - SMV emblem .....	1
25	321- 1751	DECAL - SMV emblem .....	1
26	173- 96	SCREW - flat head, No. 10 - 24 NC x 7/16" .....	2
27	92- 3	WASHER - lock, No. 10 .....	2
28	129- 7	NUT - hex, No. 10 - 24 NC .....	2



721215

## ROLL OVER PROTECTION STRUCTURE

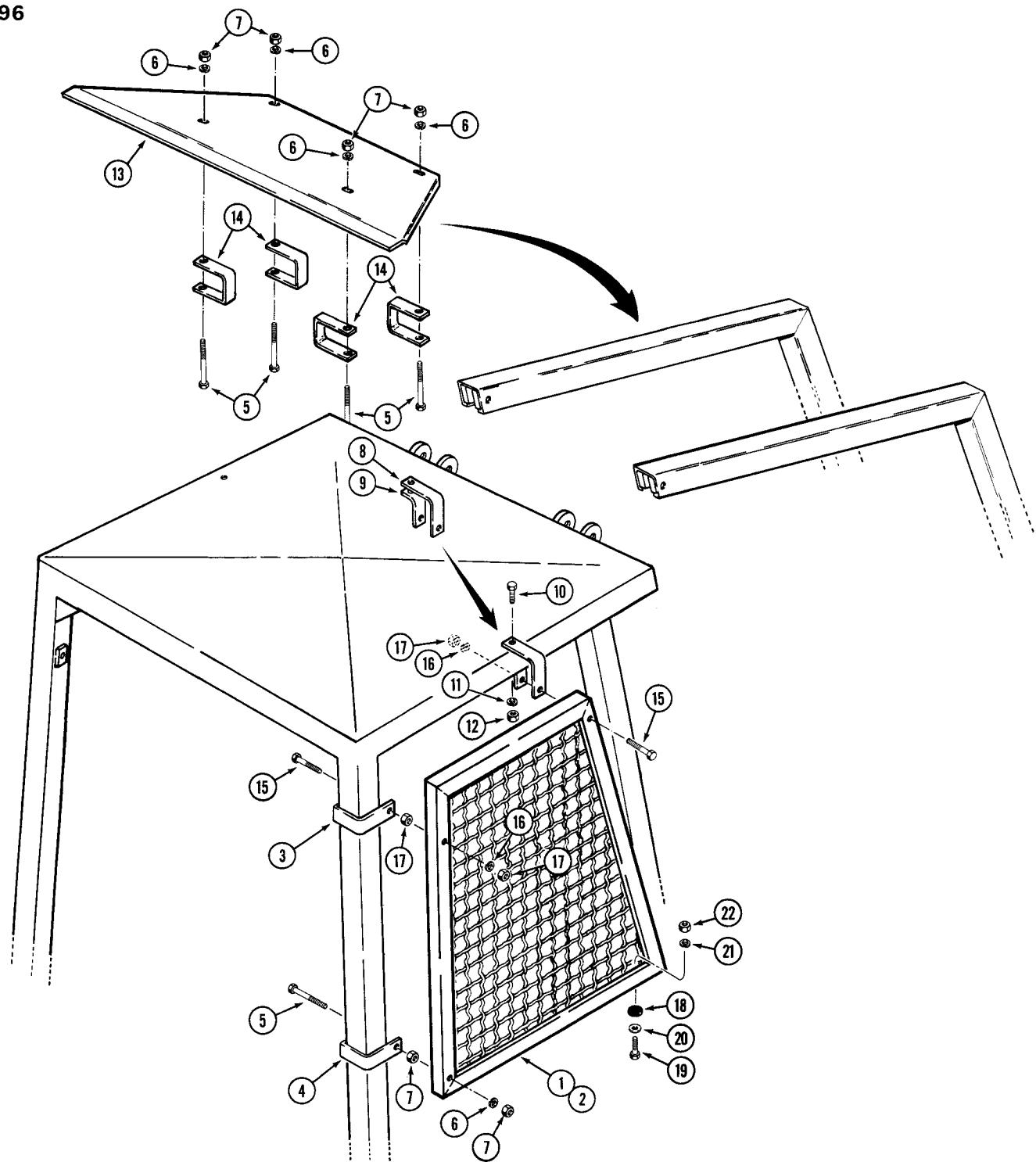
REF.	PART NO.	DESCRIPTION	REQ'D
1	F 42336	BRACKET - guard mount .....	2
2	13- 824	HHCS - 1/2" - 13 NC x 1-1/2" .....	4
3	195- 33	WASHER - flat, 1/2" .....	4
4	92- 6	WASHER - lock, 1/2" .....	4
5	25- 108	NUT - hex , 1/2" - 13 NC.....	4
6	F 93327	GUARD - brush sweeps.....	2
7	F 42435	BRACKET - guard mounts .....	4
8	13- 1068	HHCS - 5/8" - 18 NC x 4-1/2" .....	4
9	131- 14	NUT - hex self lock, 5/8" - 18 NC.....	4
10	F 42418	FOAM RUBBER - vibration dampener, 17-1/2" (545 mm) long, Use F42419 roll for service .....	2
11	F 42417	FOAM RUBBER - vibration dampener, 47" (1192 mm) long, Use F42419 roller for service .....	1
12	F 42428	ROOF - rear, bolted down .....	1
13	111- 512	BOLT - round head sq. shoulder, 1/2" - 13 NC x 1".....	3
14	192- 23	WASHER - lock, 1/2", plated.....	3
15	129- 105	NUT - hex , 1/2" - 13 NC, plated .....	3
16	111- 525	BOLT - round head sq. shoulder, 1/2" - 13 NC x 6".....	2
17	195- 533	WASHER - flat, 1/2", plated .....	2
18	131- 70	NUT - hex., self lock, 1/2" - 13 NC, plated .....	2
19	F 93320	ROOF - rear, hinged .....	1
20	F 93322	HINGE - roof .....	3
21	F 42316	PIN - hinge.....	3
22	132- 46	PIN - cotter, 1/8" - 3/4" .....	6
23	F 50092	ROD - roof retaining.....	2
24	141- 4	PIN - clevis, 3/8" .....	2
25	132- 26	PIN - cotter, 3/32" x 3/4" .....	2
26	195- 10	WASHER - flat, 1/2" .....	2
27	129- 410	NUT - winged, 1/2" - 13 NC .....	2
28	F 93321	SCREEN - rear.....	1
29	13- 824	HHCS - 1/2" - 13 NC x 1-1/2" .....	4
30	195- 33	WASHER - flat, 1/2" .....	4
31	92- 8	WASHER - lock, 1/2" .....	4
32	25- 108	NUT - hex , 1/2" - 13 NC.....	4
33	26- 1280	HHCS - 3/4" - 10 NC x 5" .....	4
34	F 42339	BUSHING - mount .....	4
35	F 42340	INSERT - rubber (Vibration dampener) .....	8
36	131- 16	NUT - hex self lock, 3/4" - 10 NC .....	4

## LOADER MODELS ONLY

- 37 Mach. Item ROLL OVER PROTECTION STRUCTURE - See page 2 or 3 for ordering . 1

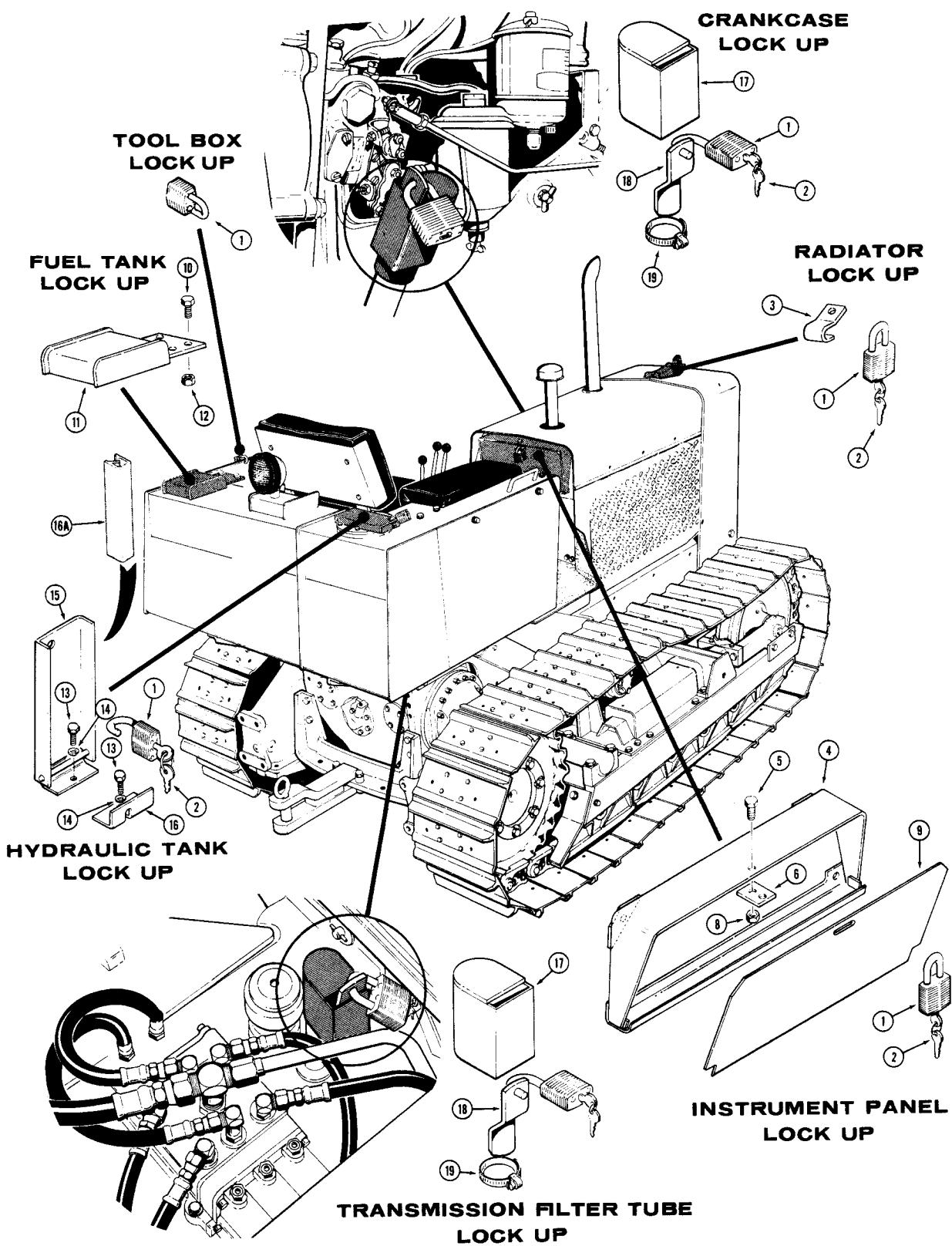
## DOZER AND DRAWBAR MODELS ONLY

- 38 Mach. Item ROLL OVER PROTECTION STRUCTURE - See page 2 or 3 for ordering . 1
- 39 F 93312 BRACKET ASSEMBLY - mounting, L.H..... 1
- 40 F 93313 BRACKET ASSEMBLY - mounting, R.H..... 1
- 41 13- 1036 HHCS - 5/8" - 11 NC x 2-1/4" ..... 10
- 42 92- 10 WASHER - lock, 5/8" ..... 10
- 43 25- 1010 NUT - hex , 5/8" - 11 NC..... 10



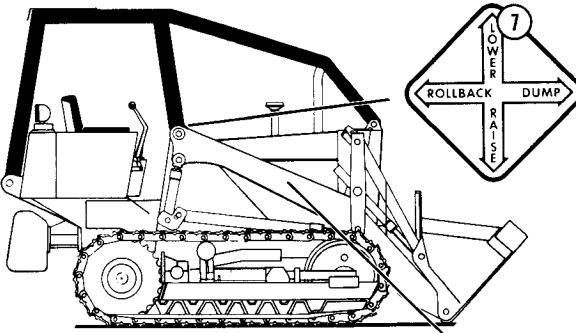
## ROPS SIDE SCREEN AND CANOPY EXTENSION

REF.	PART NO.	DESCRIPTION	REQ'D
1	F 93827	SCREEN - side, L.H. ....	1
2	F 93828	SCREEN - side, R.H. ....	1
3	F 43787	CLAMP - upper.....	2
4	F 43788	CLAMP - lower .....	2
5	113- 2434	HHCS - 1/2" - 13 NC x 6", plated.....	6
6	192- 23	WASHER - lock, 1/2", plated.....	6
7	129- 105	NUT - hex, 1/2" - 13 NC, plated .....	8
8	F 43782	SUPPORT - upper .....	2
9	F 44108	SUPPORT - lower.....	2
10	113- 417	HHCS - 1/2" - 13 NC x 1-1/4", plated.....	2
11	192- 23	WASHER - lock, 1/2", plated.....	2
12	129- 105	NUT - hex, 1/2" - 13 NC, plated .....	2
13	F 43794	CANOPY - extension .....	1
14	F 43788	CLAMP - canopy .....	4
15	113- 2434	HHCS - 1/2" - 13 NC x 6", plated.....	4
16	192- 22	WASHER - lock, 1/2", plated.....	4
17	129- 105	NUT - hex, 1/2" - 13 NC, plated .....	6
18	R 37173	BUMPER .....	2
19	113- 208	HHCS - 3/8" - 16 NC x 1-1/4" .....	2
20	195- 104	WASHER - flat, 3/8", plated .....	2
21	192- 21	WASHER - lock, 3/8", plated.....	2
22	129- 103	NUT - hex, 3/8" - 16 NC, plated .....	2



## LOCK UP PARTS

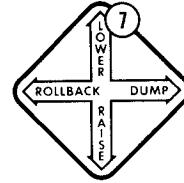
REF.		PART NO.	DESCRIPTION	REQ'D
<b>PADLOCK AND KEYS</b>				
1	R	29556	PADLOCK - crawler lock up (Master no. 500).....	6
2	R	29555	KEY - R29554 lock, set of two .....	1
<b>RADIATOR LOCK UP</b>				
3	D	41254	CLIP - radiator lock up .....	1
<b>INSTRUMENT PANEL LOCK UP</b>				
4	D	41250	SHROUD - instrument panel.....	1
5	13-	512	HHCS - 5/16" - 18 NC x 3/4" .....	1
6	D	41251	TAB - lock .....	1
7			RESERVED	
8	131-	351	NUT - hex self lock, 5/16" - 18 NC.....	1
9	D	41252	GUARD - instrument panel .....	1
<b>FUEL TANK LOCK UP</b>				
10	13-	616	HHCS - 3/8" - 16 NC x 1" .....	2
11	D	41224	GUARD - fuel cap.....	1
12	131-	179	NUT - hex self lock, 3/8" - 16 NC.....	2
<b>HYDRAULIC TANK LOCK UP</b>				
13	13-	614	HHCS - 3/8" - 16 NC x 7/8" .....	2
14	92-	6	WASHER - lock, 3/8" .....	2
15	D	41245	GUARD - hydraulic tank .....	1
16	D	41242	BRACKET - hydraulic tank lock .....	1
16A	R	38772	TRIM .....	1
<b>TRANSMISSION AND CRANKCASE LOCK UP</b>				
17	D	41240	CAP - transmission and crankcase lock .....	2
18	D	41253	STRAP - locking .....	2
19	214-	256	CLAMP - transmission and crankcase lock .....	2


**OPERATORS  
MANUAL**

321-4177



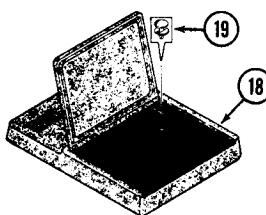
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⑩

**OPERATORS  
MANUAL**

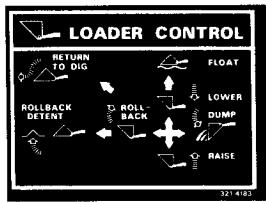
321-4177


**ATTENTION**

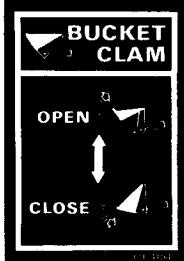
⑪

REINSTALL LOADER SAFETY STRUT AT THIS LOCATION WHEN NOT IN USE.  
REPLACE STRUT IF LOST OR DAMAGED.

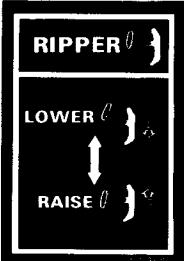
321-4288



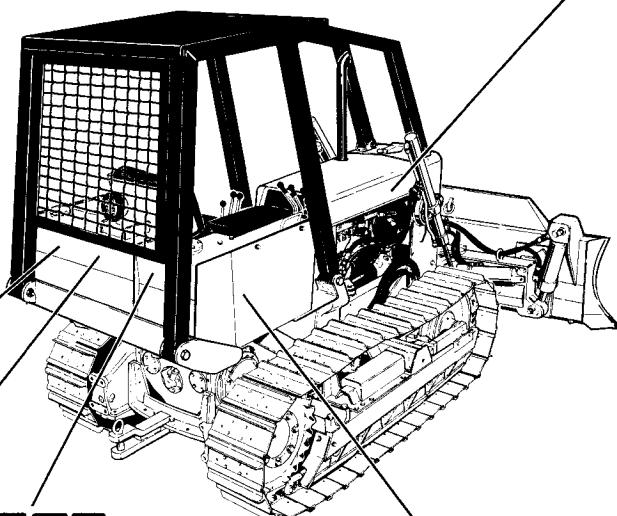
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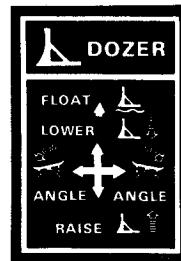
⑬



⑭


**450**

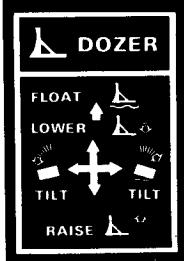
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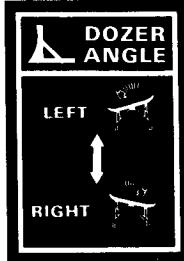
⑯



⑰



⑱

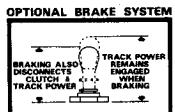


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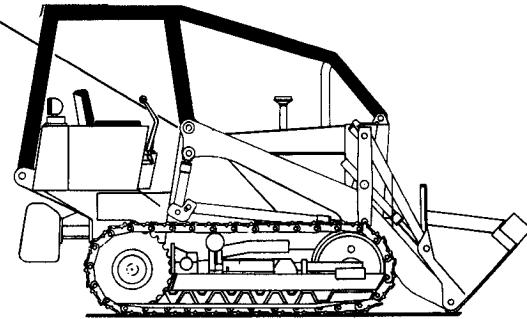
770944

## DECALS

1	321-	3113	DECAL - 450 .....	2
2	321-	3116	DECAL - trademarks .....	1
3	321-	3117	DECAL - Case .....	1
4	321-	912	DECAL - Caution, Winch Models .....	1
5	321-	3090	DECAL - Case, R.H., Loader Model .....	1
6	321-	3091	DECAL - Case, L.H., Loader Model .....	1
7	321-	920	DECAL - loader control, use 321-4183 .....	1
8	321-	4183	DECAL - loader control .....	1
9	321-	4227	DECAL - Warning, safety strut usage .....	2
10	321-	4289	DECAL - strut storage .....	1
11	321-	4184	DECAL - clam position, 4-In-1 Bucket .....	1
12	321-	4185	DECAL - Ripper Control .....	1
13	321-	3110	DECAL - Case, R.H., Drawbar and Dozer Model .....	1
14	321-	3111	DECAL - Case, L.H., Drawbar and Dozer Model .....	1
15	321-	4186	DECAL - Dozer, angle .....	1
16	321-	4181	DECAL - Dozer, tilt .....	1
17	321-	4182	DECAL - Dozer Angle .....	1
18	R	38893	CASE - operators manual .....	1
19	151-	522	RIVET .....	3
20	321-	3587	DECAL - lift instructions .....	4
21	321-	4172	DECAL - operator manual .....	1
	R	35751	KIT - decal .....	1

**IMPORTANT**RELEASE PARKING BRAKE  
BEFORE OPERATING TRACTOR

(24)


**WARNING**  
 LOWER AN BLOCKS HYDRAULICALLY OR  
 MECHANICALLY. ELEVATED COMPONENTS  
 MAY FALL AND CAUSE INJURY OR DEATH.  
 LEAVE THE EQUIPMENT.

(21)

**WARNING**  
 BRAKE CONTROLS ONLY FROM SEAT WITH BRAKE  
 BELT FASTENED  
 LOCK TRANSMISSION CONTROL IN NEUTRAL AND  
 APPLY PARKING BRAKE BEFORE STARTING ENGINE  
 AND BEFORE LEAVING OPERATOR'S SEAT.  
 DO NOT USE EQUIPMENT UNLESS BRAKES ARE  
 SERVICED AND ADJUSTED ACCORDING TO  
 SERVICE AND MAINTENANCE REQUIREMENTS.

(22)

**ALWAYS INSTALL SAFETY STRUT ON RIGHT  
HAND CYLINDER**

321-4806

J.I. Case Company... owns or is  
licensed under the following patents

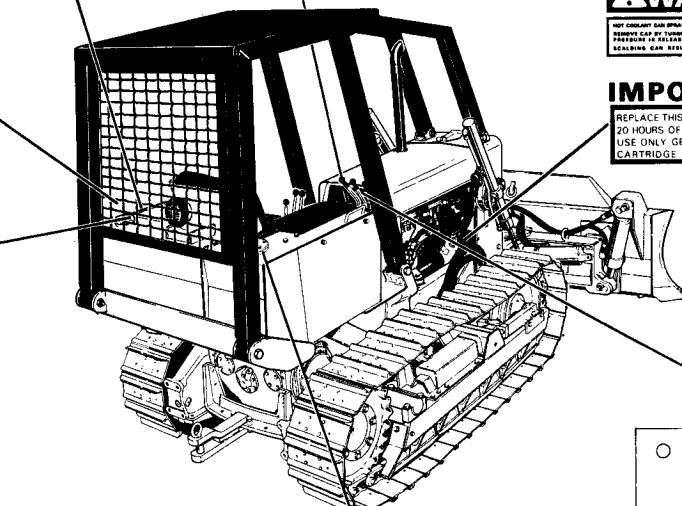
2,812,595	3,206,242	3,412,881	3,521,781
2,745,744	3,231,452	3,427,889	3,539,048
2,943,401	3,277,564	3,429,393	3,539,228
2,761,284	3,285,467	3,430,593	3,546,889
3,087,524	3,306,513	3,433,502	3,548,827
3,087,524	3,306,513	3,433,502	3,548,827
3,195,238	3,298,540	3,436,008	3,549,129
3,195,238	3,298,540	3,436,008	3,549,129
3,197,060	3,298,546	3,466,923	3,606,929
3,216,587	3,303,423	3,469,836	3,609,048
3,216,587	3,303,423	3,469,836	3,609,048
3,229,581	3,316,964	3,469,132	3,612,033
3,231,146	3,321,747	3,470,231	3,614,729
3,241,884	3,402,840	3,519,422	3,621,366

251-680

J.I.CASE COMPANY... owns or is  
licensed under the following patents

2,728,488	3,831,341	3,839,181	3,862,714
2,745,744	3,840,382	3,843,438	3,863,446
2,761,284	3,845,407	3,876,976	3,886,178
2,802,350	3,846,407	3,886,178	3,896,232
2,811,951	3,849,011	3,893,284	3,899,350
2,811,951	3,849,011	3,893,284	3,899,350
2,841,525	3,851,478	3,895,424	3,901,424
2,879,137	3,855,950	3,898,424	3,905,424
2,886,280	3,861,119	3,888,472	3,909,811
2,886,280	3,861,119	3,888,472	3,909,811
2,887,390	3,862,338	3,891,751	3,912,811
2,887,390	3,862,338	3,891,751	3,912,811
2,883,248	3,865,403	3,894,284	3,914,744
2,883,248	3,865,403	3,894,284	3,914,744
2,816,928	3,865,416	3,894,284	3,914,744
2,821,016	3,867,305	3,895,424	3,915,424
2,821,016	3,867,305	3,895,424	3,915,424
2,829,454	3,869,010	3,895,424	3,915,424
2,829,454	3,869,010	3,895,424	3,915,424

251-680

**DIESEL FUEL****WARNING**BEFORE STARTING ENGINE  
STUDY OPERATOR'S MANUAL SAFETY MESSAGE  
READ AND FOLLOW ALL SAFETY INSTRUCTIONS  
LEARN & PRACTICE SAFE USE OF  
CONTROLS BEFORE OPERATING

(20)

**HYDRAULIC  
FLUID****WARNING**NOT CLOSING CAP PROPERLY CAN DAMAGE  
FRESH AIR INTAKE SYSTEM.ROTATING FAN AND BELTS  
CONTACT CAN INJURE  
KEEP CLEAR

(10)

**IMPORTANT**  
REPLACE THIS FILTER AFTER FIRST  
20 HOURS OF ENGINE OPERATION.  
USE ONLY GENUINE CASE FILTER  
CARTRIDGE FOR REPLACEMENT

(13)

**DO NOT**  
 ATTEMPT TO  
 POLARIZE  
 ALTERNATOR  
  
**DO NOT**  
 GROUND  
 FIELD OR  
 OUTPUT  
 TERMINALS

(5)

**WARNING**  
 DO NOT USE ETHER  
 WITH MANIFOLD HEATER

**WARNING**  
 BATTERY EXPLOSION AND / OR DAMAGE  
 TO ELECTRICAL COMPONENTS CAN RESULT  
 FROM INADVERTENTLY SHORTING BATTERIES  
 OR CHARGERS.  
 CONNECT POSITIVE JUMPER CABLE TO  
 CORRECT POSITIVE TERMINAL AND THEN  
 CONNECT NEGATIVE JUMPER CABLE TO  
 CORRECT NEGATIVE TERMINAL.  
 USE NORMAL STARTING PROCEDURE WITH  
 ETHER. ETHER CAN EXTERNALLY CAUSE  
 BURNS AND BLINNERS. AND TAKEN  
 INTERNALLY IT POISON.

(6)

**WARNING**  
 TRACTOR RUNAWAY OR REVERSE IF THE  
 FORWARD REVERSE SWITCH IS  
 NOT FOLLOWED.  
 1. FORWARD REVERSE LEVERS IN NEUTRAL.  
 2. DO NOT CONNECT ACROSS TERMINALS.  
 3. CONNECT POSITIVE JUMPER CABLE TO  
 FORWARD REVERSE LEVER AND THEN  
 CONNECT NEGATIVE JUMPER CABLE TO  
 FORWARD REVERSE LEVER.  
 4. USE NORMAL STARTING PROCEDURE  
 FROM OPERATOR'S SEAT.  
 MAKE SURE FORWARD REVERSE LEVER  
 IS IN NEUTRAL POSITION. FORWARD  
 REVERSE LEVER CAN CAUSE INJURY OR  
 DEATH TO OPERATOR AND BYSTANDERS.

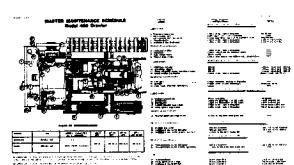
321-4199

(7)

19

**WARNING**DO NOT MISTY DROPS IN ANY MANNER. UNAUTHORIZED PERSONNEL SHOULD NEVER  
 ENTER THE WORK AREA. DROPS CAN CAUSE SERIOUS INJURIES OR DEATH.  
 WEAR THE STRUCTURE AND REMOVE YOUR  
 PROTECTION. REPLACE HOSE IF BROKEN OR  
 DAMAGED. USE EXHAUSTED HOSE  
 FOR REPAIRS. USE EXHAUSTED HOSE  
 FOR REPAIRS.

750450 8

**POISON/DANGER**  
 BATTERY ACID CAUSES SEVERE BURNS  
 AND BLINNERS. AND TAKEN INTERNALLY IT  
 POISON. FORWARD REVERSE LEVER  
 CAN CAUSE INJURY OR DEATH.  
 BATTERIES PRODUCE EXPLOSIVE GASES.  
 BATTERIES PRODUCE EXPLOSIVE GASES.  
 FORWARD REVERSE LEVER CAN CAUSE INJURY  
 AND BLINNERS. AND TAKEN INTERNALLY IT  
 POISON. FORWARD REVERSE LEVER  
 CAN CAUSE INJURY OR DEATH.  
 KEEP OUT OF REACH OF CHILDREN


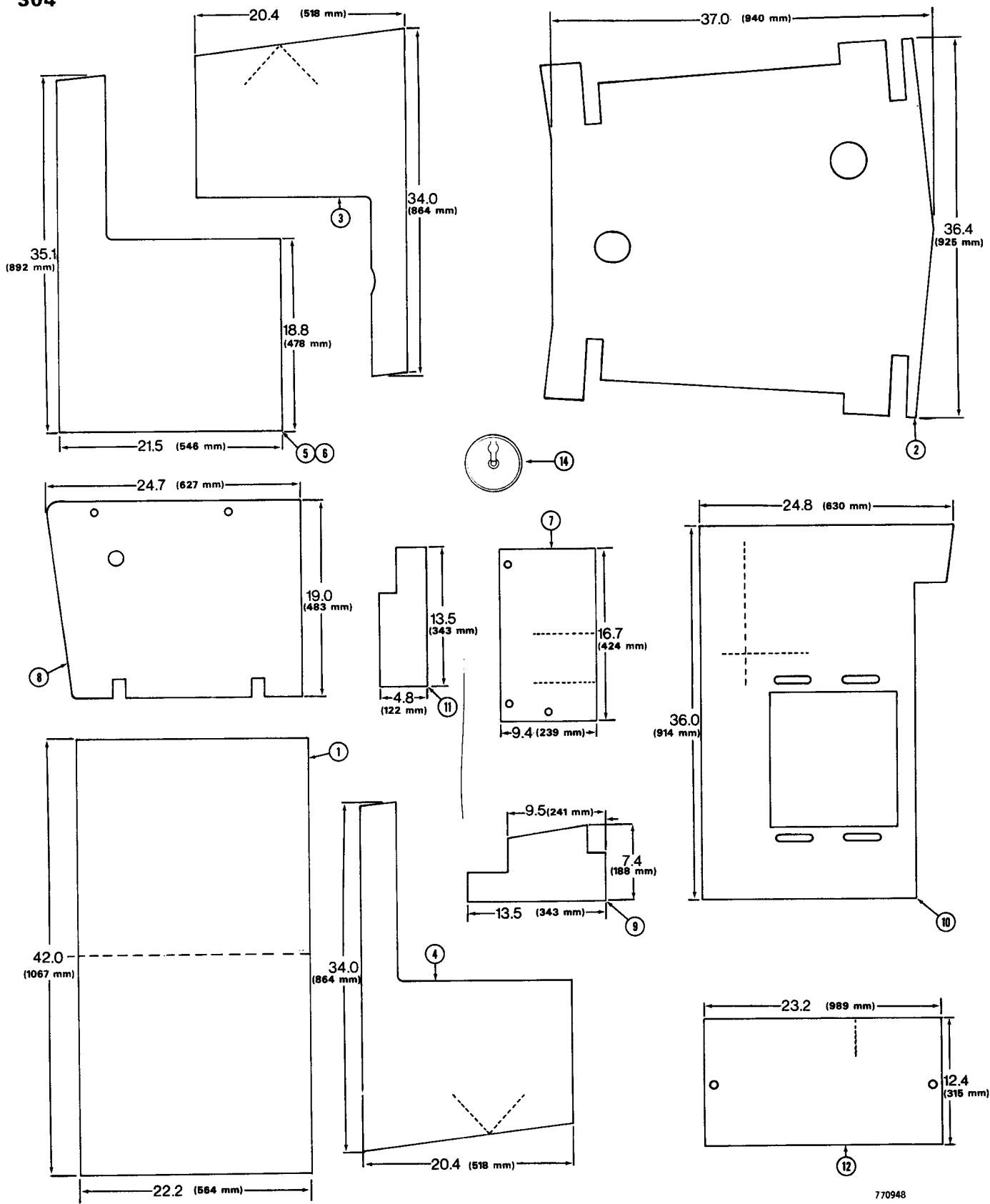
14

**COLD START**  
 TURN IGNITION KEY TO ON POSITION.  
 WAIT 10 SECONDS. TURN IGNITION KEY  
 OFF. CAUTION: USE EXHAUSTED HOSE  
 FOR REPAIRS.

(17)

## DECALS

1	321-	663	DECAL - equipment patent .....	1
2	321-	246	DECAL - tractor patent, no longer used.....	1
3			RESERVED .....	1
4	321-	230	DECAL - Diesel Fuel .....	1
5	321-	1061	DECAL - Do Not, no longer used .....	1
6	321-	4190	DECAL - Warning, battery .....	1
7	321-	4189	DECAL - Warning, tractor runaway can .....	1
8	321-	229	DECAL - Hydraulic Fluid .....	1
9	321-	2387	DECAL - Important, parking brake, use 321-4188.....	1
10	321-	3596	DECAL - Caution, fan .....	2
11	321-	801	DECAL - Shift Pattern, Use 321-4176.....	1
12	321-	4653	DECAL - Transmission Engine .....	1
13	321-	2101	DECAL - Oil Filter .....	1
14	321-	920	Master Maintenance Schedule .....	1
15	321-	3040	DECAL - Warning, do not use ether, no longer used .....	1
16	321-	2435	DECAL - Ether Starting Aid.....	1
17	321-	1841	DECAL - Cold Start .....	1
18	321-	2996	DECAL - Poison/Danger .....	1
19	321-	4192	DECAL - Warning, ROPS modification .....	1
20	321-	3705	DECAL - Warning, before starting engine.....	1
21	321-	3042	DECAL - Warning, lower or block, use 321-4188 .....	1
22	321-	4188	DECAL - Warning, operate from seat .....	1
23	321-	3708	DECAL - radiator pressure.....	1
24	321-	2114	DECAL - optional brake system .....	1
25	321-	4606	DECAL - always install safety strut.....	2
		REF.	KIT - decal, see page 301 .....	1



**MODEL 450 CRAWLER TRACTOR**

305

**NOISE REDUCTION PADS**

REF.	PART NO.	DESCRIPTION	REQ'D
1	R 26143	PAD - ROPS roof .....	1
2	REF.	PAD - hood (Cut from R30870) .....	1
3	REF.	PAD - side screen, L.H. (Dozer and Drawbar Models) Cut from R30870 ..	1
4	REF.	PAD - side screen, R.H. (Dozer and Drawbar Models) Cut from R30870 ..	1
5	REF.	PAD - side screen, L.H.(Loader Models) Cut from R30870 .....	1
6	REF.	PAD - side screen R.H. (Loader Models) Cut from R30870 .....	1
7	REF.	PAD - floor plate, front (Cut from R30870) .....	1
8	REF.	PAD - cover, hydraulic tank (R.H.) Cut from R30870 .....	1
9	REF.	PAD - heel plate, R.H. (Cut from R30870) .....	1
10	REF.	PAD - plate, under seat (Cut from R30870) .....	1
11	REF.	PAD - heel plate, L.H. (Cut from R30870) .....	1
12	REF.	PAD - floor plate, rear (Cut from R30870) .....	1
13	R 30870	PAD - noise reduction, bulk (54" x 72" x 1") Not shown .....	1
14	R 37160	RETAINERS - pad, hood - 18, and side screen - 6 .....	UAR

## HOSE AND FITTING ASSEMBLIES

ORIGINAL EQUIPMENT ASS'Y NO.	BULK HOSE NO.	CUT HOSE LENGTH	USE FITTING NO.	USE FITTING NO.	ADDITIONAL PARTS REQUIRED
19178	A21573	30"	220-205	220-205	
36547	A21572	15-3/4"	220-204	220-251	
A50295	A21570	13-3/4"	220-214	220-221	
D25823	A21572	13"	220-261	220-204	218-5007 O-Ring
D27484	A21572	16"	220-204	220-261	218-5007 O-Ring
D27978	A21572	27-1/4"	220-204	220-204	
D32284	A21572	36-3/4"	220-251	220-204	
D34759	A21572	22"	220-261	220-251	218-5007 O-Ring
D34780	A21572	15-5/8"	220-204	220-251	R22152-12-1/2" Spring Guard
D34782	A21572	17-5/8"	220-261	220-204	218-5007 O-Ring
D34834	A21572	19-3/4"	220-204	220-204	R22152 - 19" Spring Guard
D34836	A21572	45-3/4"	220-204	220-204	R22152 - 45" Spring Guard
D35040	A21574	10-1/2"	220-246	220-211	
D35045	A21569	18-7/8"	220-129	220-107	
D35069	A21572	44-3/4"	220-261	220-204	218-5007 O-Ring
D35133	A21572	12-1/2"	220-204	220-204	218-457 Adapter
D35136	A21572	35"	220-251	220-204	
D35869	A21572	34-1/8"	220-251	220-204	R22152 - 31" Spring Guard
D35873	A21572	49-7/8"	220-261	220-251	218-5007 O-Ring
D35875	A21572	45-1/2"	220-261	220-251	218-5007 O-Ring
D36128	A21572	138-3/8"	220-239	220-212	
D37343	A21572	40-1/4"	220-261	220-204	218-5007 O-Ring
D37601	A21574	39-1/8"	220-206	220-246	
D38533	A21572	8-1/2"	220-204	220-251	
D38702	A21572	30"	220-263	220-204	218-5006 O-Ring
D40186	Order Original Equipment Hose No. D40186				
D40247	A21572	24"	220-224	220-261	218-5007 O-Ring
D40257	A21572	38"	220-224	220-261	218-5007 O-Ring
D40258	A21572	34"	220-224	220-261	218-5007 O-Ring
D45396	Order Original Equipment No. D45396				
D45617	Order Original Equipment No. D45617				
D49253	Order Original Equipment No. D49253				
D49254	Order Original Equipment No. D49254				
D49255	Order Original Equipment No. D49255				
D49256	Order Original Equipment No. D49256				
D95111	A21561	21-1/2"	220-11	220-11	
D95112	A21561	26-1/2"	220-11	220-11	
D95114	A21561	37-1/2"	220-11	220-11	
D95115	A21561	40"	220-11	220-11	
D95116	A21561	42-1/2"	220-11	220-11	
D95117	A21561	55-1/2"	220-11	220-11	
L13750	A21572	31"	220-261	220-251	218-5007 O-Ring
L46723	A21572	38-1/2"	220-204	220-204	
L51198	A21572	25"	220-261	220-204	218-5007 O-Ring
R24230	A21572	10"	220-251	220-412	
R30835	A21571	15-3/4"	220-212	220-212	
R30836	A21571	24-3/4"	220-212	220-212	
R30879	A21571	18-3/4"	220-212	220-212	D43808 - 12" Armor Guard
R30953	A21571	53-3/4"	220-212	220-212	D43808 - 12" Armor Guard
T31063	A21566	27-1/4"	220-125	220-125	

## MODEL 450 CRAWLER TRACTOR

307

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
10839	67	7	49859	67	3	A 14527	235	2
10940	283	1	49859	259	33	A 14529	243	10
16792	265	62	49885	85	33	A 14533	243	6
16917	237	3	49885	87	7	A 14533	247	22
16917	239	4	49891	69	19	A 14534	243	8
16917	241	4	70213	81	30	A 14535	243	5
19178	159	28	70213	157	27	A 14535	247	3
23098	285	6	70213	165	19	A 14723	95	6
30613	183	3	70213	167	29	A 14924	39	17
30613	185	2	70523	267	32	A 14944	39	17A
30634	187	3	70523	267	32	A 16672	143	23
30634	187	14	70523	271	13	A 16674	143	27
30634	189	2	71119	121	16	A 16679	143	29
30634	189	12	71120	121	15	A 16882	235	12
30634	191	2	71121	121	13	A 17526	247	4
30634	193	2	71121	121	20	A 18673	255	46
30634	195	3	71125	121	9	A 20916	13	10
30634	197	2	71131	121	22	A 20916	13	25
30634	209	3	71133	121	14	A 20916	77	17
30634	209	14	71141	121	11	A 20916	79	7
30634	211	2	71146	121	4	A 20917	13	9
30634	211	12	71421	63	31	A 20917	13	24
30785	109	2	72125	119	13	A 22317	11	23
30785	109	2	73452	55	21	A 22317	97	25
30785	109	2	73453	55	22	A 22317	99	4
30785	109	2	73514	55	23	A 22317	101	4
31719	95	3	73613	55	41	A 22768	167	8
32105	277	1	73621	55	18	A 22758	169	8
32601	101	13	73651	55	40	A 22873	91	40A
33260	119	12	73666	55	13	A 22877	63	7
33261	119	10	74244	55	6	A 23870	259	31
33263	119	11	74916	121	10	A 23870	291	41
34395	101	14	A 7044	101	41	A 24572	73	9
35665	121	3	A 7156	125	13	A 25139	149	12
36547	255	35	A 7156	129	5	A 25213	73	8
38188	255	23A	A 7249	33	30	A 25285	247	25
38331	157	10	A 7552	291	19	A 25286	243	7
40025	105	6	A 7623	235	8	A 25286	247	23
40025	105	27	A 7827	43	12	A 25291	237	7
40027	103	11	A 7915	81	39	A 25291	243	7
40027	105	13	A 7982	199	13	A 25304	59	2
40027	105	34	A 8767	43	11	A 25356	59	9
40031	105	8	A 9155	15	3	A 25359	59	8
40031	105	29	A 9634	171	1	A 25379	59	11
40590	99	11	A 9634	171	7	A 25385	59	35
40591	99	12	A 10329	43	33	A 25387	61	37
41931	45	2	A 11161	171		A 25391	59	20
41932	45	3	A 11200	45	4	A 25547	59	26
41933	45	7	A 11208	45	6	A 25548	59	19
49799	69	15	A 11209	45	7	A 25552	61	44
49832	45	26	A 11210	45	9	A 25590	223	15
49832	69	31	A 11211	45	5	A 25590	223	15
49832	69	34	A 11212	45	8	A 25590	225	15
49838	65	24	A 11324	171	1	A 25594	93	1
49838	67	24	A 11324	171	10	A 26215	171	2
49838	69	22	A 11768	63	13	A 26215	171	9
49851	45	14	A 11768	71	69	A 26411	215	19
49851	45	31	A 12018	259	4	A 26411	217	13
49853	69	30	A 12018	259	18	A 26411	217	27
49853	259	36	A 12864	119	9	A 26411	221	15
49854	71	50	A 12864	143	5A	A 26411	221	29
49859	45		A 13240	39	4	A 26537	101	21
49859	47	48	A 13240	41	6	A 26719	107	8
49859	65	3	A 13240	41	15	A 26946	101	38

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
A 27020	243	9	A 29068	35	2	A 36486	23	3
A 27085	91	9	A 29259	23	9	A 36487	23	3
A 27085	91	11	A 29260	29	10	A 36488	23	3
A 27085	107	6	A 29268	21	28	A 36489	23	3
A 27085	125	13	A 29279	29	8	A 36490	23	4
A 27138	103	10	A 29290	19	5	A 36491	23	4
A 27146	115	19	A 29363	25	11	A 36492	23	4
A 27173	97	12	A 29431	13	37	A 36493	23	4
A 27233	109	6	A 29431	15	15	A 36494	23	4
A 27233	109	6	A 29433	11	2	A 36495	23	2
A 27233	109	6	A 29438	19	9	A 36496	23	2
A 27233	109	6	A 29442	33	5	A 36497	23	2
A 27328	47	50	A 29880	275	7	A 36498	23	2
A 27328	69	20	A 30004	17	27	A 36499	23	2
A 27342	57	10	A 30013	25	4	A 36596	35	1
A 27342	235	9	A 30013	35	11C	A 36615	17	5
A 27342	243	2	A 30013	151	6	A 36782	29	28
A 27342	243	4	A 30025	17	24	A 36815	15	1
A 27349	171	5	A 30042	31	29	A 36902	15	20
A 27351	171	2	A 30042	93	20	A 36902	21	12
A 27351	171	6	A 30043	53	3	A 37149	21	22
A 27352	171	7	A 30056	19	6	A 37191	11	26
A 27352	171	8	A 30058	17	11	A 37191	37	25
A 27352	213	2	A 30063	19	10	A 37206	21	9
A 27353	171	9	A 30076	103	4	A 37206	29	2
A 27354	171	8	A 30095	179	10	A 37775	77	16
A 27355	171	10	A 30095	181	8	A 37837	49	31
A 27356	171	7	A 30095	183	10	A 37839	49	32
A 27358	171	3	A 30095	185	8	A 37850	49	21
A 27358	171	5	A 30095	187	10	A 37851	49	22
A 27360	167	12	A 30095	189	8	A 38083	11	19
A 27360	169	12	A 30095	209	10	A 38083	31	6
A 27365	29	19	A 30095	211	8	A 38083	31	25
A 27365	235	4	A 30095	213	4	A 38084	11	5
A 27384	91	21	A 30135	25	10	A 38084	31	7
A 27417	101	27	A 30135	35	7	A 38160	49	47
A 27423	167	15	A 30504	115	21	A 38161	49	11
A 27423	169	15	A 30897	111	15	A 38181	17	3
A 27507	89	11	A 30898	111	16	A 38188	13	31
A 27507	89	11	A 30975	113	8	A 38303	21	23
A 27507	201	10	A 31107	115	26	A 38372	29	7
A 27507	203	8	A 31205	259	26	A 38390	23	18
A 27508	171	4	A 31264	107	4	A 38534	21	5
A 27508	171	4	A 33964	171	2	A 38644	49	38
A 27577	89	6	A 33964	171	3	A 38931	19	8
A 27744	167	6	A 33964	171	5	A 39013	19	1
A 27744	169	6	A 34125	111	28	A 39035	29	22
A 27744	171		A 34827	31	36	A 39037	29	21
A 27891	13	21	A 35028	13	39	A 39046	15	23
A 27891	31	14	A 35558	151	4	A 39046	21	15
A 27994	151	5	A 35673	23	13	A 39047	15	19
A 28090	55	16	A 35673	151	9	A 39047	21	11
A 28318	99	8	A 35771	27	13	A 39048	15	19
A 28318	191	8	A 35955	93	12	A 39048	21	11
A 28318	193	8	A 35958	93	9	A 39049	15	19
A 28318	195	9	A 36272	91	24	A 39049	21	11
A 28318	197	7	A 36273	91	23	A 39079	77	4
A 28318	199	8	A 36278	91	31	A 39110	23	10
A 28541	167		A 36480	23	5	A 39110	33	4
A 28541	169		A 36481	23	5	A 39123	25	1
A 28541	171		A 36482	23	5	A 39123	35	
A 28542	167	7	A 36483	23	5	A 39129	13	38
A 28542	169	7	A 36484	23	5	A 39129	15	14
A 28542	171		A 36485	23	3	A 39188	23	19

**MODEL 450 CRAWLER TRACTOR**  
**NUMERICAL INDEX**

309

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
A 39188	31	24	A 43397	57	2	A 50035	105	15
A 39233	13	30	A 43399	57	20	A 50035	105	36
A 39241	21	7	A 43401	57	18	A 50036	105	7
A 39268	15	13	A 43403	57	8	A 50036	105	28
A 39268	17	21	A 43404	57	3	A 50046	103	8
A 39288	23	8	A 43405	57	32	A 50048	103	9
A 39321	29	12	A 43409	57	31	A 50053	99	10
A 39570	15	4	A 43506	51	23	A 50055	99	9
A 39867	51	3	A 43599	51	16	A 50055	111	7
A 39868	51	5	A 43600	51	18	A 50056	97	23
A 39925	31	23	A 43602	51	17	A 50057	97	22
A 39925	33	19	A 43733	51	20	A 50058	99	2
A 39936	21	26	A 43867	55	17	A 50060	99	1
A 40215	59	28	A 43868	55	19	A 50061	111	5
A 40217	59	6	A 43869	55	12	A 50062	111	5
A 40218	61	45	A 43870	55	14	A 50063	111	5
A 40220	61	41	A 43871	55	15	A 50071	101	37
A 40221	61	51	A 44083	27	22	A 50077	101	25
A 40222	61	47	A 44369	51	21	A 50092	101	10
A 40225	59	22	A 44423	57	16	A 50093	101	9
A 40459	171	1	A 44425	57	6	A 50094	101	8
A 40520	61	42	A 44495	61	36	A 50096	117	6
A 41035	57	35	A 44587	57	7	A 50099	107	2
A 41038	57	28	A 44653	55	8	A 50099	117	2
A 41041	57	15	A 44678	57	38	A 50100	115	18
A 41052	57	5	A 44702	21	1	A 50103	117	12
A 41060	57	25	A 44710	55	2	A 50108	117	3
A 41244	149	10	A 44758	31		A 50109	97	18
A 41391	49	17	A 44763	57	24	A 50110	97	17
A 41392	49	18	A 44764	57	9	A 50113	119	2
A 41393	49	19	A 44765	57	11	A 50116	97	13
A 41394	49	20	A 44767	57	12	A 50119	111	39
A 41402	31	11	A 44768	57	13	A 50139	115	29
A 41402	51	25	A 44769	57	19	A 50140	115	28
A 41403	31	12	A 44770	57	22	A 50143	117	16
A 41403	51	24	A 44772	57	39	A 50144	117	18
A 41436	57	14	A 44787	57	23	A 50145	117	17
A 41489	113	3	A 44814	21	33	A 50167	117	13
A 41490	113	5	A 44815	21	32	A 50179	115	22
A 41491	113	4	A 45152	59	3	A 50184	111	1
A 41726	17	35	A 45216	151	12	A 50193	117	5
A 41727	17	32	A 45565	59	32	A 50197	117	11
A 41917	59	27	A 46013	27	2	A 50198	117	7
A 41959	59	30	A 46014	27		A 50199	117	7
A 41979	59	4	A 46015	27	12	A 50206	111	25
A 41980	59	23	A 46016	27		A 50207	111	25
A 42023	61	61	A 46037	21		A 50214	115	3
A 42059	61	53	A 50011	115	6	A 50215	115	20
A 42060	61	54	A 50014	115	9	A 50216	115	24
A 42061	61	52	A 50018	97	10	A 50218	115	5
A 42315	51	4	A 50021	115	32	A 50224	115	24
A 42424	51	19	A 50028	109	5	A 50225	97	11
A 42494	59	17	A 50028	109	5	A 50247	97	5
A 42746	19		A 50029	109	4	A 50249	97	4
A 42746	21	10	A 50029	109	4	A 50255	101	26
A 42874	113	9	A 50030	109	3	A 50258	101	30
A 42875	113		A 50030	109	3	A 50264	107	9
A 43030	15	2	A 50030	109	3	A 50268	101	7
A 43030	31	2	A 50030	109	3	A 50269	101	2
A 43048	15	32	A 50033	105	18	A 50271	99	14
A 43048	17	33	A 50033	105	39	A 50272	99	16
A 43193	31		A 50034	103	14	A 50275	107	1
A 43198	31		A 50034	105	16	A 50288	109	13
A 43394	57	4	A 50034	105	37	A 50288	109	13

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
A 50290	109	13	A 50571	109	9	A 51927	101	22
A 50290	109	13	A 50571	109	9	A 51928	101	33
A 50293	103	12	A 50574	105	5	A 51930	107	3
A 50295	119	8	A 50574	105	26	A 51981	33	1
A 50332	101	31	A 50575	107	7	A 54107	99	7
A 50333	101	32	A 50578	99	5	A 54107	103	16
A 50345	117	19	A 50581	101	15	A 54108	103	1
A 50346	117	20	A 50589	111	36	A 54111	99	6
A 50347	99	17	A 50820	33	11	A 54112	119	16
A 50348	99	15	A 50820	33	21	A 54115	97	
A 50356	119	4	A 50820	33	29	A 54116	97	
A 50358	119	15	A 50962	23	11	A 57641	11	12
A 50362	97	19	A 50962	151	10	A 57641	37	16
A 50365	101	24	A 50975	27	23	A 58608	29	30
A 50389	105	33	A 50976	27	23	A 58608	31	36
A 50392	111	32	A 50977	27	23	A 58608	115	10
A 50393	111	31	A 50978	27	23	A 58613	97	9
A 50395	111	34	A 50979	27	23	A 58709	49	24
A 50411	109	1	A 51054	21	19	A 58960	49	39
A 50412	109	1	A 51055	21	17	A 58961	49	33
A 50414	109	10	A 51056	21	18	A 58962	49	34
A 50414	109	10	A 51057	21	16	A 59450	293	
A 50414	109	10	A 51084	17	8	A 60765	89	9
A 50414	109	10	A 51114	15	22	A 61276	39	1
A 50415	109	12	A 51114	21	13	A 65854	89	
A 50415	109	12	A 51148	17	2	A 136474	27	9
A 50415	109	12	A 51149	17	1	A 136860	115	4
A 50415	109	12	A 51271	15	21	A 140222	29	29
A 50416	109	11	A 51271	21	14	A 140828	51	14
A 50416	109	11	A 51339	23	20	A 140924	13	5
A 50416	109	11	A 51469	101	40	A 140924	13	18
A 50416	109	11	A 51499	13	6	A 140924	15	16
A 50418	111	6	A 51499	13	19	A 142098	15	24
A 50419	117	8	A 51499	15	17	A 142098	31	3
A 50420	101	18	A 51500	13	7	A 142906	49	43
A 50421	93	8	A 51500	13	20	A 143381	79	
A 50421	101	17	A 51500	15	18	A 145584	11	18
A 50455	121	19	A 51529	31	22	A 146696	29	1
A 50457	121	21	A 51529	33	7	A 148070	95	1
A 50467	97		A 51649	33	2	A 148745	15	27
A 50471	119	19	A 51737	115	13	A 148745	31	4
A 50502	101	35	A 51738	51	2	A 150385	15	8
A 50505	103	15	A 51739	51	1	A 150569	25	8
A 50506	103	13	A 51784	45	42	A 152530	13	1
A 50508	105	3	A 51784	49	7	A 152801	11	1
A 50509	105	14	A 51806	101	34	B 15768	259	13
A 50509	105	35	A 51825	109	8	B 17072	79	24
A 50511	105	24	A 51825	109	9	B 18208	111	33
A 50512	107	3	A 51825	109	8	B 18274	91	8
A 50514	111	30	A 51825	109	8	B 18274	105	17
A 50515	101	22	A 51841	103	3	B 18274	105	38
A 50516	101	33	A 51876	13	15	D 3454	263	2
A 50517	101	36	A 51885	151	11	D 3479	267	8
A 50521	105	1	A 51886	101	39	D 3479	267	8
A 50521	105	21	A 51904	27	21	D 13470	139	
A 50557	113	1	A 51907	33	26	D 20302	65	21
A 50562	115	1	A 51908	33	18	D 20302	67	21
A 50563	115	1	A 51911	27	3	D 20302	69	43
A 50564	115	1	A 51913	27	18	D 20302	71	47
A 50565	115	1	A 51914	27	20	D 21006	89	5
A 50566	115	14	A 51916	27	10	D 21262	125	11
A 50567	115	15	A 51917	23	1	D 22200	191	15
A 50571	109	9	A 51924	97		D 22200	193	10
A 50571	109	9	A 51925	97		D 22768	65	7

## MODEL 450 CRAWLER TRACTOR

311

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 22853	65	9	D 26918	275	29	D 32117	129	2
D 22853	67	10	D 26919	251	58	D 32119	91	45
D 23691	173	2	D 27045	265	46	D 32284	155	31
D 23692	173	3	D 27258	245	7	D 32481	59	10
D 23693	173	4	D 27259	245	9	D 32802	263	30
D 23694	173	6	D 27260	245	11	D 32865	179	14
D 24508	265	48	D 27261	245	8	D 32865	181	12
D 24508	267	17	D 27484	155	5	D 32865	183	14
D 24516	267	16	D 27705	191	6	D 32865	185	12
D 24516	267	16	D 27705	193	6	D 32865	201	3
D 24663	157	14	D 27705	195	8	D 32865	201	14
D 25022	271	20	D 27706	199	7	D 32865	203	2
D 25075	263	34	D 27833	191	16	D 32865	203	12
D 25075	263	40	D 27833	193	17	D 32865	205	3
D 25277	265	60	D 27978	155	16	D 32865	205	14
D 25279	249	33	D 28205	163	28	D 32865	207	2
D 25279	251	49	D 28364	191	11	D 32865	207	12
D 25279	251	60	D 28364	195	14	D 32890	271	1A
D 25280	249	25	D 28366	187	16	D 32919	255	3
D 25823	157	29	D 28366	209	19	D 33023	249	2
D 25823	165	22	D 28367	175	18	D 33023	267	2
D 25823	167	19	D 28367	205	16	D 33023	267	2
D 25826	37	2	D 28370	201	16	D 33023	267	3
D 25826	37	2	D 28481	263	44	D 33023	267	3
D 25993	273	8	D 28481	267	12	D 33027	291	22
D 25993	273	19	D 28481	267	12	D 33028	291	23
D 25993	273	29	D 28797	63	24	D 33047	175	14
D 25993	275	14	D 28798	63	23	D 33047	175	16
D 26265	275	28	D 28896	179	16	D 33047	177	12
D 26265	237	13	D 28896	183	16	D 33047	177	14
D 26265	239	4	D 29570	65	13	D 33182	73	2
D 26265	239	14	D 29570	67	13	D 33212	63	28
D 26265	241	14	D 30074	285	4	D 33316	87	14
D 26265	241	14	D 30382	127	7	D 33316	155	27
D 26266	237	11	D 30383	127	5	D 33316	157	15
D 26266	243	11	D 30384	127	4	D 33316	161	6
D 26267	245	5	D 30863	145	10	D 33365	83	4
D 26267	237	6	D 30929	249	14	D 33503	41	5
D 26267	243	6	D 30929	251	52	D 33503	41	14
D 26268	237	5	D 30931	251	55	D 33552	153	9
D 26268	243	5	D 31140	249	15	D 33552	153	12
D 26268	245	12	D 31140	251	51	D 33552	155	28
D 26270	237	2	D 31140	251	54	D 33552	157	13
D 26270	243	2	D 31142	249	17	D 33552	159	13
D 26726	157	20	D 31142	267	34	D 33552	159	21
D 26726	165	13	D 31142	267	34	D 33554	255	34
D 26726	167	22	D 31204	277	1	D 33557	87	15
D 26872	173		D 31212	89	14	D 33659	147	28
D 26872	241	16	D 31212	89	14	D 33678	255	4
D 26872	241	16	D 31214	89	9	D 33805	253	7
D 26918	263	10	D 31403	149	13	D 33805	273	14
D 26918	263	35	D 31511	179	3	D 33805	275	18
D 26918	263	37	D 31511	181	2	D 33805	275	32
D 26918	263	41	D 31512	249	35	D 33829	161	7
D 26918	263	43	D 31512	249	37	D 33829	161	18
D 26918	267	23	D 31512	249	39	D 33856	235	10
D 26918	267	23	D 31512	249	41	D 33857	235	7
D 26918	271	26	D 31747	291	20	D 33858	247	20
D 26918	273	10	D 31782	159	6	D 33958	285	22
D 26918	273	21	D 32013	91	44	D 33982	249	7
D 26918	273	31	D 32014	91	50	D 33982	281	14
D 26918	275	15	D 32117	91	20	D 34003	281	21
							83	22

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 34299	265		D 34694	271		D 35022	291	34
D 34300	263	1	D 34705	271	8	D 35038	147	7
D 34303	263	25	D 34706	271	11	D 35040	147	6
D 34304	263	38	D 34715	271	16	D 35044	147	31
D 34305	263	11	D 34717	37	20	D 35045	147	20
D 34306	263		D 34718	37	20	D 35063	175	2
D 34308	263	17	D 34722	271	28	D 35063	177	1
D 34309	263		D 34722	281	22	D 35064	175	2
D 34311	263	24	D 34737	279	1	D 35064	177	1
D 34312	263		D 34743	271	22	D 35065	63	12
D 34313	263	6	D 34744	271	23	D 35069	165	7
D 34314	263	16	D 34745	159	37	D 35071	175	3
D 34315	263	9	D 34747	159	31	D 35071	177	2
D 34316	263	36	D 34749	159	18	D 35078	67	9
D 34316	263	42	D 34753	159	4	D 35078	69	13
D 34317	265	59	D 34759	159	2	D 35079	63	20
D 34318	265	69	D 34768	155	22	D 35091	39	
D 34319	265	70	D 34774	153	4	D 35092	63	5
D 34337	265	68	D 34780	153	15	D 35092	77	
D 34340	265	67	D 34782	153	2	D 35092	77	1
D 34354	249	16	D 34789	267	36	D 35093	191	1
D 34359	265	55	D 34789	267	36	D 35093	193	1
D 34359	265	55	D 34794	267	7	D 35102	179	2
D 34360	263	26	D 34794	267	7	D 35102	181	1
D 34361	263	28	D 34795	267	27	D 35103	179	2
D 34364	263	12	D 34795	267	27	D 35103	181	1
D 34385	199	12	D 34796	267	29	D 35108	37	3
D 34506	249	13	D 34796	267	29	D 35116	287	21
D 34625	279	1	D 34830	153	5	D 35120	287	12
D 34642	249	34	D 34834	161	11	D 35121	287	13
D 34647	249	36	D 34836	161	12	D 35123	209	2
D 34650	251	53	D 34838	161	2	D 35123	211	1
D 34651	251	50	D 34868	267	35	D 35129	183	2
D 34652	249	3	D 34868	267	35	D 35129	185	1
D 34653	251	44	D 34880	81	11	D 35136	83	15
D 34654	251	59	D 34885	81	17	D 35137	83	6
D 34655	251	57	D 34898	81	14	D 35138	83	2
D 34656	249	32	D 34915	141	41	D 35144	83	7
D 34656	251	48	D 34924	69	37	D 35144	89	
D 34658	249	24	D 34924	75	1	D 35149	83	9
D 34659	249	18	D 34924	79	1	D 35151	83	17
D 34660	249	26	D 34933	69	27	D 35157	283	5
D 34661	249	27	D 34934	69	26	D 35159	283	4
D 34662	249	28	D 34934	73		D 35162	283	9
D 34663	249	6	D 34938	199	14	D 35164	159	24
D 34663	271	27	D 34941	291	7	D 35167	287	8
D 34663	281	11	D 34943	291	11	D 35169	287	9
D 34663	281	20	D 34945	291	18	D 35177	281	10
D 34664	249	20	D 34975	291	21	D 35190	285	14
D 34666	123	29	D 34977	291	14	D 35198	293	4
D 34666	281	3	D 34980	69	40	D 35202	273	13
D 34666	281	7	D 34989	45	15	D 35202	275	17
D 34666	281	16	D 34990	45	32	D 35202	275	31
D 34666	281	19	D 34993	45	17	D 35210	285	9
D 34666	283	19	D 34994	45	13	D 35211	159	14
D 34666	283	28	D 34996	285	28	D 35211	161	8
D 34667	249	10	D 34997	285	29	D 35218	287	1
D 34667	271	30	D 35009	35	25	D 35226	293	8
D 34667	281	13	D 35010	35	29	D 35228	159	7
D 34667	281	24	D 35013	95	1	D 35229	159	8
D 34668	249	19	D 35016	83	1	D 35232	35	29A
D 34671	199	2	D 35016	93		D 35264	281	1
D 34678	271	6	D 35017	35	30	D 35265	127	15
D 34693	271		D 35020	147	37	D 35266	125	19

## MODEL 450 CRAWLER TRACTOR

313

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 35266	127	5	D 36530	265	54	D 37050	231	2
D 35267	127	6	D 36531	265	54	D 37050	231	2
D 35267	127	10	D 36614	271	24	D 37050	233	6
D 35268	123	10	D 36822	63	6	D 37050	233	7
D 35269	123	9	D 36822	77	2	D 37050	243	
D 35275	39	24	D 36825	91	27	D 37051	223	2
D 35275	79	12	D 36826	127		D 37051	223	2
D 35276	123	5	D 36826	127		D 37051	225	6
D 35287	125	2	D 36835	91	30	D 37051	227	2
D 35288	127	2	D 36892	35	19	D 37051	227	2
D 35290	123	4	D 36893	35	18	D 37051	229	2
D 35324	289	32	D 36911	187	2	D 37051	229	7
D 35328	289	22	D 36911	189	1	D 37051	231	2
D 35330	289	25	D 36968	191	5	D 37051	231	2
D 35332	289	36	D 36968	193	5	D 37051	233	6
D 35333	289	37	D 36968	195	7	D 37051	233	7
D 35387	131	14	D 36968	197	5	D 37051	243	
D 35395	217	11	D 36969	187	9	D 37052	223	2
D 35395	221	13	D 36969	189	7	D 37052	223	2
D 35397	217	12	D 36969	199	6	D 37052	225	6
D 35397	221	12	D 36969	209	9	D 37052	227	2
D 35397	221	14	D 36969	211	7	D 37052	227	2
D 35399	43	37	D 36970	179	9	D 37052	229	2
D 35400	43	28	D 36970	181	7	D 37052	229	7
D 35401	223	13	D 36970	183	9	D 37052	231	2
D 35401	223	13	D 36970	185	7	D 37052	231	2
D 35401	225	13	D 36971	175	9	D 37052	233	6
D 35402	43	36	D 36971	177	7	D 37052	233	7
D 35403	43	23	D 36971	201	9	D 37052	243	
D 35415	43	8	D 36971	203	7	D 37053	223	2
D 35424	289	3	D 36971	205	9	D 37053	223	2
D 35424	289	14	D 36971	207	7	D 37053	225	6
D 35424	291	42	D 37009	91	25	D 37053	227	2
D 35430	289	12	D 37010	91	26	D 37053	227	2
D 35431	289	13	D 37012	91	49	D 37053	229	2
D 35432	289	1	D 37015	91	14	D 37053	229	7
D 35433	289	2	D 37016	91	41	D 37053	231	2
D 35443	263	33	D 37017	91	28	D 37053	231	2
D 35443	263	39	D 37018	91	48	D 37053	233	6
D 35503	125	9	D 37020	91	35	D 37053	233	7
D 35516	285	15	D 37021	91	10	D 37053	243	
D 35723	285	5	D 37026	91	6	D 37062	243	13
D 35865	157	8	D 37027	91	18	D 37063	237	14
D 35866	157	7	D 37028	91	1	D 37063	243	14
D 35869	157	9	D 37033	89	1	D 37064	237	17
D 35873	157	5	D 37034	89	2	D 37064	243	17
D 35875	157	3	D 37035	89	7	D 37065	237	18
D 35885	271	31	D 37036	89	8	D 37065	243	18
D 35886	271	15	D 37037	95	8	D 37066	239	1
D 35900	271	33	D 37038	95	9	D 37067	237	16
D 36086	221	11	D 37041	95	7	D 37067	239	7
D 36128	163	4	D 37043	245	12	D 37067	239	17
D 36130	163	19	D 37045	245	1	D 37067	241	17
D 36131	163	5	D 37046	93	14	D 37067	241	17
D 36132	163	17	D 37047	93	15	D 37068	237	17
D 36134	163	13	D 37048	73	10	D 37068	239	8
D 36138	159		D 37049	73	11	D 37068	239	18
D 36155	267	14	D 37050	223	2	D 37068	241	18
D 36155	267	14	D 37050	223	2	D 37068	241	18
D 36264	39	20	D 37050	225	6	D 37069	237	18
D 36346	291	38	D 37050	227	2	D 37069	239	9
D 36505	273	27	D 37050	227	2	D 37069	239	19
D 36524	157	17	D 37050	229	2	D 37069	241	19
D 36529	265	56	D 37050	229	7	D 37069	241	19

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 37070	237	14	D 38435	147	26	D 39824	141	6
D 37070	239	5	D 38471	289	8	D 39969	261	9
D 37070	239	15	D 38471	289	18A	D 40114	279	1
D 37070	241	15	D 38472	289	7	D 40170	213	7
D 37070	241	15	D 38472	289	18	D 40171	213	8
D 37071	237	12	D 38500	291	39	D 40172	213	16
D 37071	239	3	D 38501	275	3	D 40173	261	2
D 37071	239	13	D 38501	275	8	D 40174	261	3
D 37071	241	13	D 38516	275	3	D 40175	261	5
D 37071	241	13	D 38523	275	4	D 40178	261	15
D 37072	237	10	D 38524	155	19	D 40179	261	11
D 37072	239	11	D 38529	85	38	D 40180	261	13
D 37072	241	11	D 38533	85	37	D 40182	261	32
D 37072	241	11	D 38533	87	12	D 40183	261	31
D 37073	239	5	D 38540	275	22	D 40186	261	23
D 37073	241	5	D 38542	275	21	D 40236	255	31
D 37073	241	5	D 38570	245		D 40247	167	31
D 37074	239	9	D 38620	141	25	D 40249	165	26
D 37074	241	9	D 38648	159	30	D 40249	167	35
D 37074	241	9	D 38648	255	41	D 40250	165	28
D 37075	237	9	D 38662	215	12	D 40250	167	37
D 37075	239	10	D 38662	217	20	D 40251	167	9
D 37075	241	10	D 38662	221	22	D 40257	167	2
D 37075	241	10	D 38702	85	29	D 40257	169	2
D 37076	235	6	D 38913	157	24	D 40258	167	4
D 37118	163	2	D 38913	165	17	D 40258	169	4
D 37134	277	7	D 38913	167	26	D 40286	289	30
D 37135	277	8	D 38914	157	26	D 40354	237	1
D 37147	237	5	D 38914	165	18	D 40354	239	1
D 37148	237	7	D 38914	167	28	D 40354	241	1
D 37148	239	8	D 38916	157	32	D 40355	237	3
D 37148	241	8	D 38916	165	24	D 40355	239	3
D 37149	237	15	D 38916	167	33	D 40355	241	3
D 37149	239	6	D 39093	253	15	D 40356	239	7
D 37149	239	16	D 39094	253	9	D 40356	241	7
D 37150	237	4	D 39094	253	16	D 40356	241	7
D 37151	237	8	D 39284	63		D 40357	239	6
D 37152	235	3	D 39285	63	17	D 40357	241	6
D 37153	235	1	D 39288	91	17	D 40357	241	6
D 37156	235	5	D 39303	255	47	D 40406	85	43
D 37157	93		D 39304	251	62	D 40449	253	
D 37172	93		D 39306	255	5	D 40462	289	26
D 37173	93	10	D 39310	255	17	D 40609	241	8
D 37174	93	11	D 39311	255	8	D 40684	145	11
D 37175	93	13	D 39312	255	18	D 40685	145	7
D 37176	39	22	D 39314	251	63	D 40687	145	
D 37203	63	8	D 39315	251	64	D 40793	161	14
D 37207	89	13	D 39316	255	2	D 40908	215	16
D 37207	89	13	D 39519	273	25	D 40908	217	24
D 37251	291		D 39530	123	30	D 40908	221	26
D 37289	125	11	D 39560	131	5	D 41075	71	67
D 37343	165	2	D 39696	165	11	D 41075	259	42
D 37362	39	23	D 39720	213	1	D 41076	71	66
D 37534	277	6	D 39720	261	10	D 41224	299	11
D 37548	217	14	D 39721	213		D 41240	299	17
D 37548	221	16	D 39722	213	9	D 41242	299	16
D 37549	215	17	D 39723	213	13	D 41245	299	15
D 37549	217	25	D 39724	213	14	D 41250	299	4
D 37549	221	27	D 39725	213	12	D 41251	299	6
D 37550	215	13	D 39726	213	11	D 41252	299	9
D 37550	217	21	D 39727	213	15	D 41253	299	18
D 37550	221	23	D 39728	213	3	D 41254	299	3
D 37601	147	9	D 39729	213	5	D 41321	149	8
D 37976	39	9	D 39730	213	6	D 41322	149	7

## MODEL 450 CRAWLER TRACTOR

315

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 41390	147	1	D 44146	273	18	D 46027	231	3
D 41390	149	1	D 44148	275	2	D 46027	231	3
D 41390	151	1	D 44152	273	18	D 46027	233	8
D 41525	245	13	D 44169	293	9	D 46027	233	9
D 41740	13	8	D 44178	69	1	D 46027	235	
D 41740	13	22	D 44203	69	8	D 46034	235	
D 41764	245	13	D 44233	147	44	D 46035	235	
D 41913	45	36	D 44500	65	17	D 46036	235	
D 42402	267	45	D 44628	249	38	D 46037	235	
D 42402	267	45	D 45039	215	1	D 46130	89	15
D 42439	151	6	D 45039	223	1	D 46132	89	
D 42442	141		D 45388	215	23	D 46258	143	6
D 42443	141	18	D 45388	219	31	D 46277	143	26
D 42444	141	11	D 45388	221	33	D 46396	127	8
D 42445	141	13	D 45392	287	7	D 46466	267	24
D 42446	141	12	D 45396	141	5	D 46466	267	24
D 42448	141	7	D 45617	85	39	D 46467	267	22
D 42458	145	2	D 46024	223	3	D 46467	267	22
D 42811	283	14	D 46024	223	3	D 46851	255	
D 42840	141	32	D 46024	225	6	D 46873	255	1
D 43188	259	41	D 46024	225	8	D 46885	257	48
D 43266	139	11	D 46024	227	3	D 46899	255	
D 43365	277	14	D 46024	227	3	D 46901	255	23
D 43367	277	3	D 46024	229	3	D 46903	255	22
D 43368	277	2	D 46024	229	9	D 46905	255	21
D 43373	277	8	D 46024	231	3	D 46907	255	29
D 43403	291	40	D 46024	231	3	D 46909	255	30
D 43406	265		D 46024	233	8	D 46910	187	2
D 43407	265		D 46024	233	9	D 46910	189	1
D 43450	215	9	D 46024	235		D 46913	255	11
D 43450	217	15	D 46025	223	3	D 46914	255	19
D 43450	217	17	D 46025	223	3	D 46917	255	12
D 43450	221	19	D 46025	225	6	D 46955	255	39
D 43451	215	7	D 46025	225	8	D 46957	255	38
D 43451	221	17	D 46025	227	3	D 46973	255	13
D 43452	215	5	D 46025	227	3	D 47216	217	5
D 43452	219	33	D 46025	229	3	D 47216	221	5
D 43452	221	35	D 46025	229	9	D 47217	39	28
D 43453	215	8	D 46025	231	3	D 47251	255	6
D 43453	217	16	D 46025	231	3	D 47252	255	9
D 43453	221	18	D 46025	233	8	D 47764	267	43
D 43454	215	21	D 46025	233	9	D 47764	267	43
D 43454	217	29	D 46025	235		D 47851	283	20
D 43454	221	31	D 46026	223	3	D 47851	283	29
D 43459	217	10	D 46026	223	3	D 47852	283	21
D 43490	221	10	D 46026	225	6	D 47852	283	30
D 43567	147	22	D 46026	225	8	D 47853	283	34
D 43567	151	1	D 46026	227	3	D 47854	283	35
D 43620	215	10	D 46026	227	3	D 47858	283	22
D 43620	217	18	D 46026	229	3	D 47858	283	31
D 43620	221	20	D 46026	229	9	D 47911	267	44
D 43640	291	1	D 46026	231	3	D 47911	267	44
D 43660	63	1	D 46026	231	3	D 48019	81	32
D 43660	65	1	D 46026	233	8	D 48070	169	9
D 43660	67	1	D 46026	233	9	D 48604	141	29
D 43668	285	8	D 46026	235		D 48605	141	39
D 43674	39	3	D 46027	223	3	D 48684	127	
D 43800	151		D 46027	223	3	D 48879	149	2
D 43802	145	17	D 46027	225	6	D 48883	149	4
D 43839	79	11	D 46027	225	8	D 48888	149	11
D 44005	67	17	D 46027	227	3	D 49100	127	14
D 44006	145		D 46027	227	3	D 49105	143	
D 44012	277	7	D 46027	229	3	D 49105	143	1
D 44013	277	6	D 46027	229	9	D 49115	143	

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
D 49251	143	5	D 95142	189	5	G 2068	17	19
D 49253	143	15	D 95142	199	5	G 2069	15	11
D 49254	143	13	D 95142	209	7	G 2069	17	22
D 49255	143	8	D 95142	211	5	G 2076	53	10
D 49256	143	10	D 95143	179	7	G 2100	17	9
D 49258	143	4	D 95143	181	5	G 2101	17	7
D 49260	143	3	D 95143	183	7	G 2144	11	10
D 49371	149	3	D 95143	185	5	G 10414	115	23
D 49373	149	17	D 95144	125	10	G 10418	105	4
D 49499	37	18	D 95144	175	7	G 10418	105	25
D 49945	127	9	D 95144	177	5	G 10928	81	16
D 49996	43	1	D 95144	201	7	G 11204	33	3
D 49996	81	31	D 95144	203	5	G 11204	53	2
D 50013	143	32	D 95144	205	7	G 11337	29	20
D 50014	143	28	D 95144	207	5	G 11338	29	20
D 50015	143	33	D 95382	125	12	G 11339	11	27
D 50016	143	31	F 9803	117	9	G 11339	37	24
D 50017	143	21	F 9804	117	10	G 11710	25	2
D 50018	143	19	F 10140	287	34	G 11710	35	11
D 50237	43	2	F 18390	93	2	G 11726	53	13
D 50240	81	12	F 21342	79	2	G 11728	53	16
D 50547	291	15	F 22312	39	10	G 11729	53	16
D 50550	291	16	F 42236	293	19	G 11730	53	16
D 50780	253		F 42316	295	21	G 11731	53	16
D 51517	91	7	F 42336	295	1	G 11732	53	15
D 51735	45	29	F 42339	295	34	G 11746	53	17
D 51736	45	25	F 42340	295	35	G 11852	53	14
D 51750	253	10	F 42417	295	11	G 11927	17	37
D 51886	253	2	F 42418	295	10	G 11929	17	38
D 51989	77	15	F 42428	295	12	G 11945	15	31
D 51991	69	32	F 42435	295	7	G 11945	17	36
D 51992	69	12	F 43782	297	8	G 11946	15	30
D 52015	293	23	F 43787	297	3	G 11946	17	34
D 52319	237	12	F 43788	297	4	G 13606	91	12
D 52319	243	12	F 43788	297	14	G 15202	103	5
D 52422	35	15	F 43794	297	13	G 15457	91	408
D 52422	91		F 44108	297	9	G 15457	175	10
D 52481	91	36	F 50092	295	23	G 15457	177	8
D 52482	91	37	F 60482	285	23	G 15457	205	10
D 52483	91	38	F 62007	107	5	G 15457	207	8
D 52484	91	39	F 62075	11	6	G 32122	179	11
D 52929	149		F 62075	31	13	G 32122	181	9
D 57287	73	1	F 62075	31	27	G 32122	183	11
D 57288	73	3	F 62114	247	16	G 32122	185	9
D 58199	151	3	F 77868	111	19	G 32122	187	11
D 59656	149		F 84514	39	5	G 32122	189	9
D 61903	151		F 84998	39	7	G 32122	209	11
D 72856	91	46	F 84999	39	11	G 32122	211	9
D 72857	91	47	F 91760	39	12	G 32126	175	11
D 73652	95		F 91761	39	8	G 32126	177	9
D 73739	91	42	F 93312	287	38	G 32126	205	11
D 73740	91	22	F 93312	295	39	G 32126	207	9
D 78379	91	34	F 93313	287	39	G 32129	191	7
D 95111	65	15	F 93313	295	40	G 32129	193	7
D 95112	65	20	F 93314	281	1B	G 32129	195	10
D 95114	67	15	F 93320	295	19	G 32129	197	8
D 95115	65	22	F 93321	295	28	G 32129	199	9
D 95116	67	20	F 93322	295	20	G 32176	89	10
D 95117	67	23	F 93325	287	31	G 32176	89	10
D 95141	191	4	F 93326	287	32	G 32176	201	11
D 95141	193	4	F 93327	295	6	G 32176	203	9
D 95141	195	6	F 93827	297	1	G 32295	191	
D 95141	197	4	F 93828	297	2	G 32295	195	
D 95142	187	7	G 2068	15	12	G 32303	175	23

## MODEL 450 CRAWLER TRACTOR

317

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
G 32303	177	20	G 33765	199	18	G 44891	61	49
G 32303	179	21	G 33766	199	11	G 45337	55	32
G 32303	181	18	G 33770	187	1	G 45338	55	26
G 32303	183	21	G 33771	187	1	G 46702	27	8
G 32303	185	18	G 34302	187	8	G 46851	17	26
G 32303	205	21	G 34302	189	6	G 46851	31	5
G 32303	207	18	G 34302	209	8	G 46852	29	13
G 32317	187	21	G 34302	211	6	G 46852	31	26
G 32317	189	18	G 34322	175	8	G 46853	13	32
G 32317	191	12	G 34322	177	6	G 46853	41	2
G 32317	193	13	G 34322	201	8	G 46853	41	11
G 32317	195	19	G 34322	203	6	G 46853	41	19
G 32317	197	16	G 34322	205	8	G 46854	31	28
G 32317	209	21	G 34322	207	6	G 46859	31	30
G 32317	211	18	G 34328	187		G 46871	13	4
G 32351	201	21	G 34328	189		G 46871	13	17
G 32351	203	18	G 34328	209		G 46871	31	9
G 32459	199		G 34328	211		G 46872	13	36
G 33150	187	15	G 34331	201		G 46872	31	8
G 33150	209	18	G 34331	203		G 46907	11	11
G 33151	179		G 34332	187		G 47077	17	13
G 33151	183		G 34332	209		G 47079	17	12
G 33151	187		G 34343	201	1	G 48500	29	9
G 33151	209		G 34343	267	26	G 48501	17	4
G 33159	201	15	G 34343	267	26	G 48502	55	7
G 33167	175	17	G 34344	195	1	G 48505	55	27
G 33167	205	15	G 34344	267	15	G 49065	17	23
G 33193	191	10	G 34344	267	15	G 49067	17	6
G 33193	195		G 34345	205	1	G 49068	31	15
G 33201	199		G 34345	267	28	G 49070	21	3
G 33237	175		G 34345	267	28	G 49080	51	6
G 33237	205		G 34346	195	2	G 49088	55	39
G 33239	201		G 34346	197	1	G 49400	15	25
G 33331	179	15	G 34348	195	12	G 49407	31	10
G 33331	183	15	G 34348	197	10	G 49407	49	23
G 33347	191	9	G 34402	201	2	G 49407	55	42
G 33347	195	13	G 34402	203	1	G 49608	21	8
G 33359	191		G 34405	201	13	G 49621	55	28
G 33360	191	14	G 34405	203	11	G 100318	111	11
G 33360	193	15	G 34409	205	13	G 100439	203	14
G 33466	209	1	G 34409	207	11	G 100440	203	15
G 33467	187	13	G 34411	205	2	G 100442	189	13
G 33467	189	11	G 34411	207	1	G 100442	211	13
G 33467	209	13	G 34621	179	8	G 100444	181	15
G 33467	211	11	G 34621	181	6	G 100444	185	15
G 33487	199		G 34621	183	8	G 100444	189	15
G 33555	183	1	G 34621	185	6	G 100444	211	15
G 33556	183	13	G 34629	175		G 100448	203	16
G 33556	185	11	G 34629	177		G 100449	181	16
G 33561	179	1	G 34629	205		G 100449	185	16
G 33562	179	1	G 34629	207		G 100449	189	16
G 33563	179	13	G 34630	175		G 100449	211	16
G 33563	181	11	G 34630	205		G 100694	177	15
G 33578	191		G 34633	179		G 100694	207	13
G 33578	193		G 34633	181		G 100704	181	13
G 33578	195		G 34633	183		G 100704	185	13
G 33578	197		G 34633	185		G 100708	193	9
G 33599	175	1	G 34642	183		G 100708	197	11
G 33600	175	15	G 34643	179		G 100710	177	17
G 33602	175	1	G 34647	201		G 100710	207	15
G 33603	175	1	G 35206	97		G 100711	177	18
G 33604	175	13	G 35334	97	15	G 100711	207	16
G 33604	177	11	G 36905	151	5	G 100713	193	11
G 33764	199	1	G 44017	63	27	G 100713	197	13

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
G 100714	193	12	G 102376	109	1	R 13911	83	12
G 100714	197	14	G 102401	203		R 13911	147	29
G 100775	191		G 102402	177		R 13911	147	35
G 100775	193		G 102402	207		R 13911	147	39
G 100775	195		G 102404	189		R 13941	121	
G 100775	197		G 102404	211		R 14098	147	32
G 100776	187		G 102405	181		R 14098	147	38
G 100776	189		G 102405	185		R 14605	111	27
G 100776	199		G 102407	193		R 14668	65	23
G 100776	209		G 102407	197		R 14668	67	25
G 100776	211		H 260935	149	9	R 14668	147	8
G 100777	179		H 756221	149	14A	R 14711	55	3
G 100777	181		L 10283	79	6	R 14771	43	5
G 100777	183		L 11247	39	13	R 14777	97	8
G 100777	185		L 13142	37	11	R 14780	39	2
G 100778	175		L 13737	155	36	R 15023	61	38
G 100778	177		L 13750	155	29	R 15027	59	7
G 100778	201		L 15141	229	3	R 15035	59	16
G 100778	203		L 15141	229	4	R 15038	59	29
G 100778	205		L 15141	229	5	R 15041	61	40
G 100778	207		L 15141	229	7	R 15043	59	31
G 101220	181		L 15141	233	3	R 15048	59	34
G 101221	181		L 15141	241		R 15049	59	33
G 101223	177		L 30443	237	8	R 15071	43	4
G 101224	177		L 30443	237	16	R 15257	155	18
G 101225	185		L 30443	243	8	R 15364	101	23
G 101226	189		L 30443	243	16	R 15369	111	21
G 101227	189		L 30443	245	3	R 15370	111	20
G 101228	207		L 30444	237	9	R 15372	111	22
G 101229	197		L 30444	237	15	R 15389	271	25
G 101230	211		L 30444	243	9	R 15536	291	37
G 101231	193		L 30444	243	15	R 15538	291	36
G 101232	203		L 30444	245	2	R 15953	65	18
G 101518	115		L 30454	235	17	R 15953	67	18
G 101519	115		L 30455	235	13	R 16916	159	20
G 101520	115		L 30456	235	15	R 17319	153	8
G 101521	115		L 30458	235	18	R 17319	153	11
G 101530	115	13	L 30626	235	16	R 17319	159	12
G 101531	115	3	L 30744	243	1	R 17319	101	17
G 101711	109	5	L 30744	247	2	R 17364	43	24
G 101711	109	5	L 36038	247	11	R 17607	279	5
G 101985	177	13	L 36039	247	8	R 18531	111	12
G 102017	97	6	L 36040	247	9	R 18533	111	18
G 102079	89	15	L 36042	247	15	R 18586	35	28
G 102080	89		L 36045	247	17	R 18748	65	8
G 102108	115	25	L 36046	247	18	R 18748	67	8
G 102126	97	21	L 36047	247	26	R 19576	159	32
G 102126	111	2	L 36048	247	24	R 20724	119	1
G 102128	99	18	L 36049	247	19	R 20724	121	
G 102141	115	11	L 36050	247	14	R 20786	103	6
G 102243	99	5	L 46723	155	15	R 20839	165	9
G 102244	97	22	L 51198	155	4	R 21384	121	2
G 102285	203	13	L 54683	75	5	R 22232	63	30
G 102286	177	16	M 20611	31	40	R 22237	63	29
G 102286	207	14	R 5627	139		R 22755	81	36
G 102288	181	14	R 10831	101	42	R 24105	273	11
G 102288	185	14	R 10831	115	27	R 24105	273	22
G 102288	189	14	R 11016	109	7	R 24105	273	32
G 102288	211	14	R 11016	109	7	R 24127	163	19A
G 102289	193	10	R 11016	109	7	R 24134	215	1
G 102289	197	12	R 11016	109	7	R 24134	225	1
G 102354	109	4	R 12586	83	16	R 24135	217	1
G 102354	109	4	R 12586	147	12	R 24135	225	1
G 102375	109	1	R 13804	101	20	R 24136	221	1

## MODEL 450 CRAWLER TRACTOR

319

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
R 24136	233	1	R 24644	125	12	R 29705	225	7
R 24190	271	1	R 24646	63	16	R 29705	229	8
R 24230	87	3	R 24647	269	50	R 29705	233	7
R 24231	87	4	R 24688	135	9	R 29705	233	8
R 24232	87	5	R 24694	135	5	R 29705	247	
R 24323	125	6	R 24694	135	15	R 29706	225	5
R 24491	267	46	R 24694	135	18	R 29706	225	7
R 24491	267	46	R 24694	135	25	R 29706	229	8
R 24524	131	15	R 24703	153	19	R 29706	233	7
R 24525	131	16	R 24703	155	35	R 29706	233	8
R 24526	131	13	R 24718	133	4	R 29706	247	
R 24527	131	11	R 24718	133	18	R 29707	225	5
R 24530	131	1	R 24720	293	12	R 29707	225	7
R 24531	131	2	R 24722	131	24	R 29707	229	8
R 24534	131	10	R 24723	87	10	R 29707	233	7
R 24535	131	12	R 24725	137	2	R 29707	233	8
R 24542	125	2	R 24726	137	2	R 29707	247	
R 24542	127	2	R 24727	137	2	R 29709	123	13
R 24544	127	4	R 24741	135		R 29709	125	
R 24545	127	11	R 24742	135		R 29725	37	
R 24546	127	1	R 24743	135		R 29731	269	53
R 24547	127		R 25287	45	1	R 29741	269	54
R 24561	125	1	R 25288	45		R 29742	265	61
R 24569	123	27	R 25522	41	1	R 29742	269	55
R 24570	123	27	R 26121	287	26	R 29749	267	33
R 24571	135		R 26125	287	27	R 29749	267	33
R 24572	135	2	R 26140	291	43	R 29752	141	30
R 24572	135	13	R 26143	305	1	R 29752	141	40
R 24572	135	24	R 26169	83	23	R 29755	77	11
R 24573	135	1	R 26191	63	2	R 29761	37	
R 24573	135	12	R 26338	81	6	R 29794	79	3
R 24573	135	23	R 26338	81	9	R 29817	217	1
R 24574	135	7	R 26338	81	13	R 29817	229	1
R 24575	135	6	R 26338	81	33	R 29818	221	1
R 24575	135	11	R 27578	291	25	R 29818	233	1
R 24575	135	21	R 27954	123	28	R 29819	217	1
R 24576	135	3	R 27961	263	3	R 29819	229	1
R 24576	135	14	R 27963	263	21A	R 29870	59	1
R 24576	135	16	R 27967	267	11	R 29870	61	
R 24577	135	4	R 27967	267	11	R 29870	69	23
R 24577	135	17	R 27990	281	4	R 29966	143	
R 24577	135	26	R 27991	281	4	R 30043	215	1
R 24578	135	10	R 29288	127	3	R 30043	223	1
R 24581	281	9	R 29555	299	2	R 30044	217	1
R 24583	281	9	R 29556	299	1	R 30044	227	1
R 24586	137	1	R 29581	123	17	R 30045	221	1
R 24587	137	1	R 29582	123	16	R 30345	231	1
R 24588	137	1	R 29597	71	63	R 30046	217	1
R 24589	137	1	R 29668	267	1	R 30046	227	1
R 24590	137	1	R 29668	267	1	R 30272	273	2
R 24591	137	1	R 29669	125	8	R 30305	65	2
R 24592	137	1	R 29682	123	1	R 30306	67	2
R 24593	137	1	R 29683	123	1	R 30381	71	57
R 24594	137	1	R 29684	123	1	R 30382	69	41
R 24595	137	1	R 29685	123	1	R 30382	77	3
R 24605	139	5	R 29686	123	1	R 30384	39	19
R 24606	139	5	R 29690	123	15	R 30401	37	14
R 24607	139	5	R 29704	225	5	R 30438	281	1A
R 24616	135	15A	R 29704	225	7	R 30508	215	18
R 24616	135	19	R 29704	229	8	R 30508	217	26
R 24617	135	20	R 29704	233	7	R 30508	221	28
R 24617	135	22	R 29704	233	8	R 30524	249	40
R 24626	125	1	R 29704	247		R 30528	155	23
R 24642	125	7	R 29705	225	5	R 30530	155	24

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
R 30785	79	22	R 33257	259	17	R 37173	297	18
R 30786	79	21	R 33258	259	8	R 37190	273	24
R 30812	79	23	R 33259	259	15	R 37272	273	1
R 30818	57		R 33260	259	25	R 37272	275	1
R 30818	71	54	R 33265	259	12	R 37273	273	1
R 30819	69	2	R 33370	141	26	R 37282	271	18
R 30835	163	27	R 33407	247		R 37292	273	24
R 30836	163	31	R 33408	247	7	R 37296	275	19
R 30870	305	13	R 33411	241	3	R 37297	275	20
R 30879	163	22	R 33556	129	8	R 37981	285	21
R 30914	163	23	R 33557	129	9	R 37996	289	12
R 30953	163	36	R 33564	129		R 37997	289	13
R 31034	35	26	R 33565	129		R 38001	289	1
R 31035	35	27	R 33567	129		R 38002	289	2
R 31100	263	21	R 33568	129	2	R 38089	285	26
R 31181	75	4	R 33569	129	6	R 38117	249	1
R 31184	75	12	R 33570	129	1	R 38654	215	13
R 31214	139	7	R 33607	129		R 38654	217	21
R 31222	139	6	R 33802	221	1	R 38654	221	23
R 31289	285	1	R 33802	231	1	R 38655	215	12
R 31290	285	1A	R 33808	39	32	R 38655	217	20
R 31299	81	1	R 33815	271	32	R 38655	221	22
R 31303	81	22	R 33936	35	33	R 38663	215	9A
R 31304	81	26	R 33951	129	7	R 38663	217	15A
R 31306	81	8	R 33958	129	8	R 38663	221	19A
R 31307	81	5	R 33959	129	3	R 38707	37	20
R 31352	153	17A	R 33960	129	4	R 38720	39	19A
R 31353	153	17	R 33962	129	10	R 38772	299	16A
R 31355	153	16	R 33964	129	5	R 38788	279	8
R 31439	141	1	R 33965	129		R 38862	139	9
R 31452	291	35	R 33967	129		R 38891	41	16
R 31454	81	24	R 33969	129		R 38893	301	18
R 31488	259	3	R 34556	41	10	R 38895	251	65
R 32489	267	5A	R 34956	75	13	R 39063	293	18
R 32489	267	5A	R 34959	75	2	R 39200	249	12
R 32490	267		R 35751	301		R 39273	125	14
R 32490	267		R 35978	279	2	R 39289	75	8
R 32712	279	1	R 35979	279	3	R 39338	291	26
R 32724	123	27A	R 35997	283	34	R 39339	291	27
R 32765	123	27A	R 35998	283	35	R 39375	291	1
R 32782	37	23	R 36356	283	25	R 39425	273	2
R 32889	137	3	R 36488	293	18	R 39516	75	14
R 32890	137	3	R 36606	123	1	R 39653	69	4
R 32891	137	3	R 36607	123	1	R 39761	35	36
R 32892	137	3	R 36608	123	1	R 40342	293	1
R 32893	137	3	R 36609	123	1	R 40343	291	11
R 32894	137	3	R 36610	123	1	R 40379	69	11
R 32895	137	3	R 36613	125	9	R 40432	69	37
R 32896	139	4	R 36614	125	8	R 40436	69	32A
R 32897	139	4	R 36629	125		R 40564	35	
R 32898	139	4	R 36665	133	17	R 40831	69	32A
R 32899	139	4	R 36667	133	1	S 78662	267	5
R 32900	139	4	R 36667	133	2	S 78662	267	5
R 32901	139	4	R 36673	133	7	S 223033	75	9
R 32902	139	4	R 36674	133	8	T 25683	141	27
R 32966	285	21	R 36675	133	9	T 29173	273	6
R 33014	259	19	R 36676	133	5	T 29173	275	12
R 33015	259	30	R 36677	133	6	T 29173	275	26
R 33016	259	29	R 36874	37	18A	T 31063	261	21
R 33017	259	23	R 36920	79		T 53681	279	10
R 33018	259	32	R 36922	63	1	W 16129	229	2
R 33023	259	14	R 36926	287	1	W 16129	229	4
R 33246	259	11	R 36927	69	41	W 16129	233	2
R 33253	259	5	R 37160	305	14	W 16129	237	

# MODEL 450 CRAWLER TRACTOR

321

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
W 16130	237	13	13- 616	41	17	13- 724	151	7
<b>HARDWARE PART NUMBERS</b>								
13- 48	35	3	13- 616	83	10	13- 812	271	19
13- 48	65	4	13- 616	85	42	13- 814	291	5
13- 48	67	4	13- 616	99	13	13- 816	123	20
13- 48	75	10	13- 616	217	6	13- 816	125	4
13- 58	85	31	13- 616	221	6	13- 816	147	23
13- 410	259	6	13- 616	259	37	13- 816	269	51
13- 412	29	15	13- 616	287	14	13- 816	289	23
13- 412	35	20	13- 616	287	28	13- 816	291	8
13- 412	111	41	13- 618	293	10	13- 816	291	12
13- 412	293	2	13- 618	299	10	13- 820	69	33
13- 420	29	15	13- 620	35	16	13- 820	81	2
13- 424	89	3	13- 620	97	24	13- 820	127	1
13- 472	163	8	13- 620	99	13	13- 820	131	17
13- 510	147	33	13- 620	13	33	13- 820	133	3
13- 512	39	14	13- 620	33	8	13- 820	133	10
13- 512	41	7	13- 620	37	4	13- 820	169	10
13- 512	71	46	13- 620	43	16	13- 820	249	29
13- 512	81	27	13- 620	69	42	13- 820	263	18
13- 512	299	5	13- 620	85	42	13- 820	269	47
13- 514	49	2	13- 620	97	24	13- 820	283	15
13- 514	91	29	13- 620	115	30	13- 820	285	30
13- 514	91	40	13- 620	163	6	13- 820	287	2
13- 514	255	24	13- 620	167	10	13- 820	287	10
13- 514	71	60	13- 624	259	9	13- 820	289	4
13- 516	79	13	13- 624	33	8	13- 820	289	9
13- 516	87	6	13- 624	33	28	13- 820	289	15
13- 516	167	13	13- 624	41	12	13- 820	289	19
13- 516	169	13	13- 624	93	16	13- 824	69	14
13- 516	293	13	13- 624	99	3	13- 824	81	1A
13- 518	157	11	13- 624	141	19	13- 824	83	21
13- 520	11	28	13- 624	141	34	13- 824	147	2
13- 520	153	6	13- 624	287	33	13- 824	151	2
13- 522	159	11	13- 626	111	37	13- 824	289	33
13- 524	159	19	13- 626	163	20	13- 824	291	2
13- 528	87	13	13- 628	11	7	13- 824	295	2
13- 528	153	10	13- 630	255	32	13- 824	295	29
13- 540	159	11	13- 630	53	18	13- 828	131	6
13- 540	161	15	13- 632	69	24	13- 828	163	24
13- 544	161	4	13- 632	91	19	13- 828	283	2
13- 556	157	16	13- 632	99	13	13- 828	285	33
13- 610	259	34	13- 632	155	17	13- 828	287	4
13- 612	45	27	13- 632	261	30	13- 828	287	17
13- 612	45	33	13- 632	263	14	13- 828	287	22
13- 612	127	6	13- 636	71	64	13- 828	291	2
13- 612	159	25	13- 644	11	7	13- 832	43	26
13- 612	163	11	13- 644	11	22	13- 832	157	25
13- 612	163	15	13- 644	33	9	13- 832	165	20
13- 612	249	4	13- 648	11	7	13- 832	167	27
13- 614	33	14	13- 648	33	9	13- 836	71	55
13- 614	69	7	13- 648	69	18	13- 836	141	36
13- 614	71	58	13- 648	157	21	13- 836	257	50
13- 614	147	43	13- 648	165	14	13- 836	271	7
13- 614	299	13	13- 652	167	23	13- 840	159	5
13- 616	11	13	13- 652	265	49	13- 840	253	18
13- 616	33	20	13- 656	267	18	13- 840	257	49
13- 616	41	3	13- 656	33	10	13- 848	123	23
			13- 668	93	18	13- 848	261	6
			13- 668	265	71	13- 856	47	49
			13- 668	17	10	13- 856	111	24
			13- 668	215	2	13- 856	253	17
			13- 668	217	2	13- 864	261	4
			13- 668	221	2	13- 1020	123	16

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
13- 1020	123	6	13- 1272	283	23	25- 106	221	4
13- 1020	131	3	13- 1296	279	9	25- 106	221	8
13- 1020	131	20	13- 1464	281	12	25- 106	259	39
13- 1020	139	10	13- 1480	249	8	25- 106	261	34
13- 1020	267	30	13- 1648	273	26	25- 106	265	51
13- 1020	267	30	13- 1680	277	4	25- 106	265	73
13- 1020	271	2	13- 5160	69	3	25- 106	267	20
13- 1020	271	12	13-10120	279	2	25- 106	267	20
13- 1024	123	7	13-12104	249	43	25- 106	287	16
13- 1024	263	4	13-14120	249	9	25- 106	287	30
13- 1024	283	6	13-14120	271	29	25- 106	287	37
13- 1024	285	19	13-14120	281	23	25- 106	289	29
13- 1028	141	2	13-14128	283	18	25- 107	37	8
13- 1028	263	22	13-14128	283	27	25- 108	39	34
13- 1028	267	9	13-16104	277	4	25- 108	47	52
13- 1028	267	9	13-16168	277	2	25- 108	69	17
13- 1028	267	41	14- 68	69	28	25- 108	69	36
13- 1028	267	41	14- 68	69	38	25- 108	81	4
13- 1032	35	31	14- 824	293	5	25- 108	83	26
13- 1032	283	11	14- 828	43	3	25- 108	111	4
13- 1036	267	25	14- 828	91	15	25- 108	123	25
13- 1036	267	25	15- 8136	133	16	25- 108	131	9
13- 1036	277	12	15- 8148	131	23	25- 108	131	26
13- 1036	287	40	15-10104	265	57	25- 108	141	38
13- 1036	295	41	19- 24	63	19	25- 108	159	10
13- 1040	35	37	19- 828	265	63	25- 108	163	26
13- 1040	123	14	19- 828	269	56	25- 108	253	20
13- 1040	271	4	22- 112	49	46	25- 108	257	51
13- 1040	275	5	25- 102	283	38	25- 108	261	8
13- 1040	277	9	25- 104	163	10	25- 108	261	18
13- 1040	283	10	25- 105	39	16	25- 108	265	65
13- 1044	35	38	25- 105	41	9	25- 108	269	58
13- 1048	285	16	25- 105	71	49	25- 108	287	6
13- 1056	35	23	25- 105	79	16	25- 108	287	20
13- 1056	251	66	25- 105	87	9	25- 108	287	25
13- 1060	35	22	25- 105	87	17	25- 108	289	11
13- 1068	295	8	25- 105	145	9	25- 108	289	21
13- 1096	279	2	25- 105	159	16	25- 108	291	4
13- 1220	125	10	25- 105	159	23	25- 108	295	5
13- 1220	275	23	25- 105	255	26	25- 108	295	32
13- 1224	123	11	25- 105	293	16	25- 114	43	30
13- 1224	279	4	25- 106	11	21	25- 114	43	35
13- 1224	285	2	25- 106	13	23	25- 114	247	10
13- 1224	285	3	25- 106	15	26	25- 115	43	20
13- 1228	161	13	25- 106	33	13	25- 115	81	18
13- 1228	273	3	25- 106	43	18	25- 116	91	43
13- 1228	281	2	25- 106	45	35	25- 116	215	14
13- 1228	283	32	25- 106	53	5	25- 116	217	22
13- 1228	283	36	25- 106	69	10	25- 116	221	24
13- 1232	289	38	25- 106	69	45	25- 117	35	13
13- 1236	267	38	25- 106	81	29	25- 118	43	6
13- 1236	267	38	25- 106	85	45	25- 119	55	5
13- 1236	275	9	25- 106	97	20	25- 146	85	34
13- 1236	275	25	25- 106	99	19	25- 146	141	35
13- 1236	277	15	25- 106	111	38	25- 148	43	27
13- 1236	283	36	25- 106	141	21	25- 155	111	17
13- 1240	279	6	25- 106	147	46	25- 155	237	3
13- 1240	281	15	25- 106	157	23	25- 155	243	3
13- 1244	273	5	25- 106	159	27	25- 156	215	27
13- 1244	275	11	25- 106	165	16	25- 156	219	37
13- 1248	279	6	25- 106	167	25	25- 156	221	39
13- 1248	281	6	25- 106	215	4	25- 157	141	22
13- 1260	275	24	25- 106	217	4	25- 158	43	7
13- 1264	281	18	25- 106	217	8	25- 159	53	12

## MODEL 450 CRAWLER TRACTOR

323

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
25- 1010	35	35	92- 4	35	4	92- 6	215	3
25- 1010	141	4	92- 4	35	21	92- 6	215	15
25- 1010	253	13	92- 4	43	34	92- 6	217	3
25- 1010	265	58	92- 4	65	5	92- 6	217	7
25- 1010	277	11	92- 4	67	5	92- 6	217	23
25- 1010	285	18	92- 4	75	11	92- 6	221	3
25- 1010	287	42	92- 4	89	4	92- 6	221	7
25- 1010	295	43	92- 4	111	42	92- 6	221	25
25- 1012	273	7	92- 4	163	9	92- 6	249	5
25- 1012	275	10	92- 4	259	7	92- 6	255	33
25- 1012	275	13	92- 4	293	3	92- 6	259	10
25- 1012	281	8	92- 5	11	29	92- 6	259	35
25- 1016	273	28	92- 5	37	22	92- 6	259	38
25- 1110	25	13	92- 5	39	15	92- 6	261	33
25- 1110	35	6	92- 5	41	8	92- 6	263	15
25- 1110	35	9	92- 5	49	3	92- 6	265	50
25- 1224	267	38	92- 5	71	48	92- 6	265	72
25- 1224	267	38	92- 5	71	61	92- 6	267	10
25- 1412	275	27	92- 5	79	15	92- 6	267	10
25- 1510	63	35	92- 5	81	28	92- 6	267	19
25- 1510	245	10	92- 5	85	32	92- 6	267	19
25- 2316	263	31	92- 5	87	8	92- 6	287	15
26- 412	23	21	92- 5	87	16	92- 6	287	29
26- 416	23	21	92- 5	145	8	92- 6	287	36
26- 526	145	6	92- 5	147	34	92- 6	293	11
26- 528	37	21	92- 5	153	7	92- 6	295	4
26- 872	21	20	92- 5	155	26	92- 6	299	14
26- 882	21	21	92- 5	157	12	92- 7	35	12
26- 1036	253	11	92- 5	159	15	92- 7	37	9
26- 1040	253	12	92- 5	159	22	92- 7	151	8
26- 1280	295	33	92- 5	161	16	92- 8	39	33
28- 520	35	11A	92- 5	255	25	92- 8	47	51
28- 1240	187	20	92- 5	293	15	92- 8	69	16
28- 1240	189	17	92- 6	11	8	92- 8	69	35
28- 1240	191	13	92- 6	11	14	92- 8	71	56
28- 1240	193	14	92- 6	11	20	92- 8	81	3
28- 1240	195	18	92- 6	35	17	92- 8	83	25
28- 1240	197	15	92- 6	41	4	92- 8	111	3
28- 1240	209	20	92- 6	41	18	92- 8	123	22
28- 1240	211	17	92- 6	43	17	92- 8	123	24
28- 1640	175	22	92- 6	45	28	92- 8	131	8
28- 1640	177	19	92- 6	45	34	92- 8	131	18
28- 1640	179	20	92- 6	53	4	92- 8	131	25
28- 1640	181	17	92- 6	69	9	92- 8	133	11
28- 1640	183	20	92- 6	69	25	92- 8	141	37
28- 1640	185	17	92- 6	69	29	92- 8	147	3
28- 1640	205	20	92- 6	69	39	92- 8	147	24
28- 1640	207	17	92- 6	69	44	92- 8	151	3
28- 2040	201	20	92- 6	71	59	92- 8	159	9
28- 2040	203	17	92- 6	83	11	92- 8	163	25
41- 1016	15	9	92- 6	85	44	92- 8	249	30
41- 1016	21	6	92- 6	93	19	92- 8	253	19
41- 1016	29	3	92- 6	115	31	92- 8	261	7
41- 1028	15	10	92- 6	125	5	92- 8	261	17
47- 47	49	42	92- 6	141	20	92- 8	263	19
61- 612	117	21	92- 6	147	45	92- 8	265	64
73- 410	29	17	92- 6	157	22	92- 8	269	48
74- 612	59	21	92- 6	159	26	92- 8	269	57
83- 54	215	11	92- 6	163	7	92- 8	271	21
83- 54	217	19	92- 6	163	12	92- 8	283	3
83- 54	221	21	92- 6	163	16	92- 8	283	16
92- 3	293	27	92- 6	163	21	92- 8	285	31
92- 4	23	22	92- 6	165	15	92- 8	285	34
92- 4	29	16	92- 6	167	24	92- 8	287	3

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
92-	8	287	5	113-	417	297	10	131-
92-	8	287	11	113-	472	285	10	131-
92-	8	287	18	113-	473	285	12	131-
92-	8	287	24	113-	2434	297	5	131-
92-	8	289	5	113-	2434	297	15	131-
92-	8	289	10	121-	300	25	3	131-
92-	8	289	16	121-	300	35	11B	131-
92-	8	289	20	125-	1012	283	26	131-
92-	8	289	24	126-	12	19	11	131-
92-	8	289	34	126-	109	93	5	131-
92-	8	291	3	126-	111	57	33	131-
92-	8	291	6	126-	216	23	12	131-
92-	8	291	9	129-	5	259	28	131-
92-	8	291	13	129-	6	167	18	131-
92-	8	293	6	129-	6	169	18	131-
92-	8	295	31	129-	7	293	28	131-
92-	10	35	5	129-	15	63	11	131-
92-	10	35	8	129-	15	75	7	131-
92-	10	35	24	129-	16	61	57	131-
92-	10	35	32	129-	17	57	29	131-
92-	10	35	34	129-	17	59	15	131-
92-	10	123	8	129-	17	73	6	131-
92-	10	131	4	129-	37	63	15	131-
92-	10	131	21	129-	77	57	17	131-
92-	10	141	3	129-	101	57	26	131-
92-	10	263	5	129-	101	77	18	131-
92-	10	263	23	129-	103	297	22	131-
92-	10	267	31	129-	105	295	15	132-
92-	10	267	31	129-	105	297	7	132-
92-	10	267	42	129-	105	297	12	132-
92-	10	267	42	129-	105	297	17	132-
92-	10	271	3	129-	122	145	16	132-
92-	10	271	5	129-	124	293	22	132-
92-	10	271	14	129-	143	61	59	132-
92-	10	275	6	129-	143	71	53	132-
92-	10	277	10	129-	143	77	12	132-
92-	10	277	13	129-	162	77	8	132-
92-	10	277	16	129-	162	145	16	132-
92-	10	279	4	129-	167	143	20	132-
92-	10	283	7	129-	410	295	27	132-
92-	10	283	12	129-	514	237	1	132-
92-	10	285	17	129-	514	243	1	132-
92-	10	285	20	131-	4	61	43	132-
92-	10	287	41	131-	4	69	6	132-
92-	10	295	42	131-	4	153	14	132-
95-	4	259	7A	131-	4	157	19	132-
95-	5	43	10	131-	4	161	9	132-
95-	5	43	13	131-	4	167	14	132-
95-	5	145	3	131-	4	169	14	132-
95-	6	33	11	131-	6	155	20	132-
95-	8	83	24	131-	6	167	11	132-
95-	20	273	9	131-	9	73	12	132-
95-	20	273	20	131-	10	169	11	132-
95-	20	273	30	131-	14	295	9	132-
95-	20	275	16	131-	16	295	36	132-
95-	20	275	30	131-	17	213	10	132-
95-	24	267	37	131-	37	101	12	132-
95-	24	267	37	131-	70	295	18	132-
111-	512	295	13	131-	139	63	4	132-
111-	525	295	16	131-	148	281	17	132-
113-	1	77	5	131-	156	97	7	132-
113-	3	77	6	131-	156	115	33	132-
113-	208	297	19	131-	179	37	7	135-
113-	273	289	27	131-	179	299	12	136-

## MODEL 450 CRAWLER TRACTOR

325

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
136- 112	271	34	178- 655	121	17	193- 89	75	6
138- 61	215	6	178- 821	33	6	193- 91	55	35
138- 61	215	20	182- 519	57	21	193- 99	55	37
138- 61	217	28	187- 1031	175	12	193- 511	121	1
138- 61	219	34	187- 1031	177	10	193- 514	29	31
138- 61	221	30	187- 1031	179	12	193- 1000	77	10
138- 61	221	36	187- 1031	181	10	193- 1002	71	51
138- 62	29	11	187- 1031	183	12	193- 1002	77	14
138- 63	35	14	187- 1031	185	10	195- 3	269	52
138- 65	25	9	187- 1031	187	12	195- 5	157	18
138- 68	103	2	187- 1031	189	10	195- 7	75	3A
138- 93	61	46	187- 1031	191	18	195- 10	295	26
138- 96	81	7	187- 1031	193	19	195- 21	69	5
138- 96	81	10	187- 1031	195	11	195- 21	71	62
138- 96	217	9	187- 1031	197	9	195- 21	79	14
138- 96	221	9	187- 1031	199	10	195- 21	153	13
138- 98	81	15	187- 1031	201	12	195- 21	161	5
138- 130	91	16	187- 1031	203	10	195- 21	293	14
138- 136	259	16	187- 1031	205	12	195- 25	13	34
138- 137	81	23	187- 1031	207	10	195- 25	13	40
138- 224	91	33	187- 1031	209	12	195- 25	33	12
138- 2012	247	21	187- 1031	211	10	195- 25	37	6
141- 2	43	31	187- 1090	57	30	195- 25	93	4
141- 2	145	19	192- 6	167	17	195- 25	163	7A
141- 3	43	21	192- 6	169	17	195- 25	285	24
141- 3	81	20	192- 15	63	10	195- 25	287	35
141- 3	141	31	192- 15	63	22	195- 28	37	5
141- 4	81	37	192- 16	61	58	195- 32	37	10
141- 4	295	24	192- 18	59	14	195- 33	81	2A
141- 5	141	24	192- 18	59	25	195- 33	123	21
141- 6	259	20	192- 18	73	5	195- 33	131	7
151- 522	301	19	192- 19	57	27	195- 33	131	19
163- 7	55	38	192- 19	61	62	195- 33	133	12
164- 81	267	40	192- 20	71	65	195- 33	263	20
164- 81	267	40	192- 20	77	9	195- 33	269	49
165- 1	55	34	192- 21	61	60	195- 33	285	32
165- 30	55	36	192- 21	71	52	195- 33	287	19
165- 124	55	29	192- 21	77	13	195- 33	287	23
166- 24	91	32	192- 21	297	21	195- 33	289	17
166- 45	111	40	192- 22	293	21	195- 33	289	35
166- 46	101	3	192- 22	297	16	195- 33	291	10
166- 49	119	3	192- 23	295	14	195- 33	295	3
166- 54	149	15	192- 23	297	6	195- 33	295	30
166- 55	149	16	192- 23	297	11	195- 36	37	12
166- 86	115	8	192- 24	53	11	195- 41	81	34
166- 88	115	7	192- 24	55	4	195- 41	131	22
166- 131	271	2A	192- 25	57	34	195- 41	279	3
166- 132	279	7	192- 42	285	11	195- 41	283	8
169- 71	259	24	192- 42	285	13	195- 41	283	13
169- 143	75	3	192- 43	289	28	195- 45	141	28
173- 26	247	5	192- 153	247	6	195- 45	259	2
173- 79	167	16	192- 307	105	10	195- 45	283	24
173- 79	169	16	192- 307	105	31	195- 45	283	33
173- 96	293	26	192- 516	73	4	195- 45	283	37
173- 107	49	25	193- 6	63	14	195- 53	289	6
173- 202	39	31	193- 6	259	27	195- 104	297	20
173- 203	63	9	193- 9	19	7	195- 529	293	20
173- 203	63	18	193- 10	33	15	195- 533	295	17
173- 203	63	21	193- 10	173	7	195- 2028	93	17
173- 212	59	13	193- 14	25	12	195- 2065	215	25
173- 221	59	24	193- 14	143	22	195- 2065	219	35
174- 212	63	3	193- 34	63	34	195- 2065	221	37
176- 296	237	4	193- 52	29	18	211- 7	103	1A
176- 296	243	4	193- 60	77	7	211- 7	105	1A

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
211- 7	105	22	218- 902	261	24	218- 5007	165	23
211- 7	171	6	218- 923	261	20	218- 5007	165	25
211- 8	235	14	218- 1237	255	27	218- 5007	165	27
211- 11	103	18	218- 1251	255	28	218- 5007	165	29
211- 13	101	11	218- 5002	51	7	218- 5007	167	3
211- 17	263	45	218- 5002	51	9	218- 5007	167	5
211- 17	267	13	218- 5004	91	5	218- 5007	167	20
211- 17	267	13	218- 5005	119	7	218- 5007	167	32
211- 19	111	14	218- 5005	119	18	218- 5007	167	34
211- 100	143	30	218- 5005	119	21	218- 5007	167	36
211- 312	149	14	218- 5006	85	30	218- 5007	167	38
211- 843	11	3	218- 5006	85	40	218- 5007	169	3
213- 2	43	29	218- 5006	91	3	218- 5007	169	5
213- 3	43	19	218- 5006	119	14	218- 5007	237	11
213- 3	81	19	218- 5006	223	8	218- 5007	239	2
213- 6	259	22	218- 5006	223	8	218- 5007	239	12
214- 253	15	5	218- 5006	225	8	218- 5007	241	12
214- 253	87	11	218- 5006	225	10	218- 5007	241	12
214- 256	299	19	218- 5006	227	9	218- 5007	255	37
214- 257	83	5	218- 5006	227	9	218- 5007	255	43
214- 257	147	27	218- 5006	229	10	218- 5008	83	14
214- 257	147	30	218- 5006	229	11	218- 5008	83	20
214- 257	147	36	218- 5006	231	9	218- 5008	101	6
214- 257	147	40	218- 5006	231	9	218- 5008	147	11
214- 258	37	17	218- 5006	233	10	218- 5008	147	19
214- 260	33	31	218- 5006	233	11	218- 5008	165	12A
214- 260	37	15	218- 5006	237	2	218- 5008	223	10
214- 260	39	18	218- 5006	237	10	218- 5008	223	10
214- 260	147	13	218- 5006	237	20	218- 5008	225	10
214- 264	159	29	218- 5006	239	2	218- 5008	225	12
214- 267	155	34	218- 5006	241	2	218- 5008	227	10
214- 267	255	40	218- 5006	241	2	218- 5008	227	11
214- 268	153	18	218- 5006	243	10	218- 5008	229	12
214- 269	163	35	218- 5006	243	20	218- 5008	229	13
214- 300	45	16	218- 5006	245	4	218- 5008	231	11
214- 301	45	30	218- 5007	85	28	218- 5008	231	11
217- 10	65	10	218- 5007	85	36	218- 5008	233	12
217- 10	67	11	218- 5007	119	5	218- 5008	233	13
217- 55	269	59	218- 5007	153	3	218- 5010	83	3
217- 81	291	29	218- 5007	153	21	218- 5010	147	5
217- 92	37	19	218- 5007	155	3	218- 5010	223	12
217- 94	45	21	218- 5007	155	7	218- 5010	223	12
217- 136	147	25	218- 5007	155	9	218- 5010	223	14
217- 317	147	41	218- 5007	155	12	218- 5010	223	14
217- 363	101	5	218- 5007	155	14	218- 5010	225	12
217- 1162	261	25	218- 5007	155	30	218- 5010	225	14
218- 441	65	16	218- 5007	155	37	218- 5010	225	14
218- 441	67	16	218- 5007	157	4	218- 5010	227	12
218- 441	67	22	218- 5007	157	6	218- 5010	227	13
218- 443	119	22	218- 5007	157	30	218- 5010	229	14
218- 444	87	2	218- 5007	159	3	218- 5010	229	15
218- 445	261	29	218- 5007	159	33	218- 5010	231	13
218- 461	67	14	218- 5007	159	36	218- 5010	231	13
218- 461	67	19	218- 5007	161	3	218- 5010	233	14
218- 481	65	12	218- 5007	161	20	218- 5010	233	15
218- 494	157	28	218- 5007	163	3	218- 5011	147	42
218- 494	165	21	218- 5007	163	30	218- 5040	157	31
218- 494	167	21	218- 5007	163	33	218- 5040	165	12
218- 511	65	14	218- 5007	163	38	218- 5040	167	30
218- 511	65	19	218- 5007	163	40	218- 5057	119	20
218- 595	155	21	218- 5007	165	3	218- 5060	163	29
218- 595	159	17	218- 5007	165	5	218- 5060	163	37
218- 595	161	10	218- 5007	165	8	218- 5062	85	27
218- 902	261	22	218- 5007	165	10	218- 5062	153	20

## MODEL 450 CRAWLER TRACTOR

327

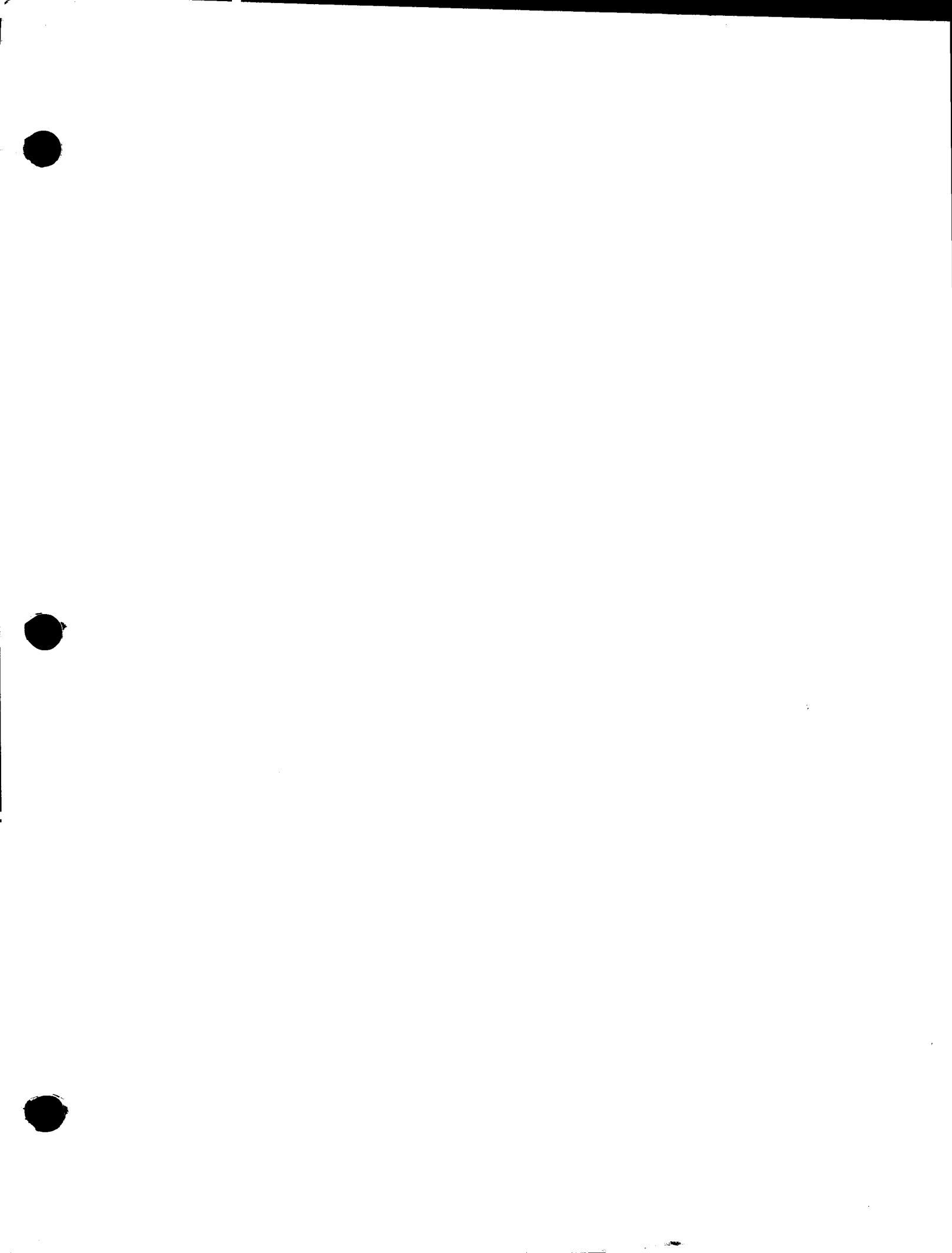
## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	
218- 5062	155	2	219-	1	141	42	222-	23	
218- 5063	83	19	219-	1	175	24	222-	24	
218- 5105	119	6	219-	1	177	21	222-	45	
218- 5105	119	17	219-	1	183	22	222-	45	
218- 5107	155	8	219-	1	185	19	222-	47	
218- 5107	155	13	219-	1	187	22	222-	47	
218- 5107	159	35	219-	1	189	19	222-	72	
218- 5107	161	19	219-	1	191	17	222-	72	
218- 5107	255	42	219-	1	193	18	222-	100	
218- 5121	163	32	219-	1	201	22	222-	100	
218- 5124	147	18	219-	1	203	19	222-	101	
218- 5137	85	35	219-	1	205	22	222-	102	
218- 5137	165	4	219-	1	207	19	222-	102	
218- 5137	255	36	219-	1	209	22	222-	102	
218- 5138	147	10	219-	1	211	19	222-	102	
218- 5140	147	4	219-	1	249	21	222-	103	
218- 5146	163	39	219-	1	255	15	222-	103	
218- 5149	83	13	219-	1	261	12	222-	103	
218- 5152	51	8	219-	1	261	19	222-	103	
218- 5154	91	4	219-	1	263	29	222-	104	
218- 5156	91	2	219-	1	265	52	222-	104	
218- 5158	259	19A	219-	1	267	21	222-	104	
218- 5184	155	11	219-	1	267	21	222-	110	
218- 5210	223	7	219-	1	281	5	222-	110	
218- 5210	223	7	219-	4	215	26	222-	112	
218- 5210	225	7	219-	4	219	36	222-	112	
218- 5210	225	9	219-	4	221	38	222-	112	
218- 5210	227	7	219-	20	95	4	222-	113	
218- 5210	227	8	219-	36	179	22	222-	113	
218- 5210	229	9	219-	36	181	19	222-	113	
218- 5210	229	10	219-	46	43	15	222-	114	
218- 5210	231	8	219-	55	251	56	222-	114	
218- 5210	231	8	219-	55	265	52A	222-	114	
218- 5210	233	9	221-	1	291	31	222-	615	
218- 5210	233	10	221-	3	291	30	222-	1011	
218- 5210	237	19	221-	4	291	24	222-	1062	
218- 5210	241	1	221-	11	13	3	222-	1070	
218- 5210	243	19	221-	11	13	16	222-	1075	
218- 5212	223	9	221-	11	141	10	222-	5390	
218- 5212	223	9	221-	11	159	34	223-	50	
218- 5212	225	9	221-	29	125	14	223-	80	
218- 5212	225	11	221-	42	121	7	223-	207	
218- 5212	227	9	221-	56	261	27	223-	325	
218- 5212	227	10	221-	58	97	14	223-	326	
218- 5212	229	11	221-	89	45	9A	321-	92	
218- 5212	229	12	221-	161	261	26	321-	229	
218- 5212	231	10	221-	239	83	8	321-	230	
218- 5212	231	10	221-	239	147	47	321-	246	
218- 5212	233	11	221-	338	261	28	321-	563	
218- 5212	233	12	221-	379	147	48	321-	801	
218- 5214	223	11	221-	416	147	21	321-	912	
218- 5214	223	11	221-	662	21	27	321-	920	
218- 5214	225	11	221-	841	125	3	321-	1061	
218- 5214	225	13	221-	841	127	3	321-	1751	
218- 5214	227	11	221-	843	33	27	321-	1841	
218- 5214	227	12	221-	844	11	4	321-	2101	
218- 5214	229	13	221-	849	121	8	321-	2114	
218- 5214	229	14	221-	1011	89	16	321-	2387	
218- 5214	231	12	221-	1032	21	4	321-	2435	
218- 5214	231	12	221-	1041	59	5	321-	2990	
218- 5214	233	13	221-	1041	61	39	321-	3040	
218- 5214	233	14	221-	1841	21	2	321-	3042	
218- 5241	155	6	221-	1841	55	20	321-	3090	
219-	1	125	7	221-	1849	143	18	321-	3091

## MODEL 450 CRAWLER TRACTOR

## NUMERICAL INDEX

PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.	PART NO.	PAGE NO.	REF. NO.
321- 3110	301	13	321- 4182	301	17	321- 4403	303	3
321- 3111	301	14	321- 4183	301	8	321- 4616	303	25
321- 3113	301	1	321- 4184	301	11	321- 4653	303	12
321- 3116	301	2	321- 4185	301	12	341-	1	39
321- 3117	301	3	321- 4186	301	15	353-	16	291
321- 3587	301	20	321- 4188	303	22	353-	21	291
321- 3596	303	10	321- 4189	303	7	353-	407	63
321- 3705	303	20	321- 4190	303	6	391-	618	267
321- 3708	303	23	321- 4192	303	19	391-	618	267
321- 4172	301	21	321- 4227	301	9	513-	704	129
321- 4181	301	16	321- 4289	301	13			1



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