

MICHIGAN

PARTS MANUAL

No. 2876 MODEL 45B Articulated TRACTOR SHOVEL

Information contained herein pertains to
Machine Serial Numbers listed below:

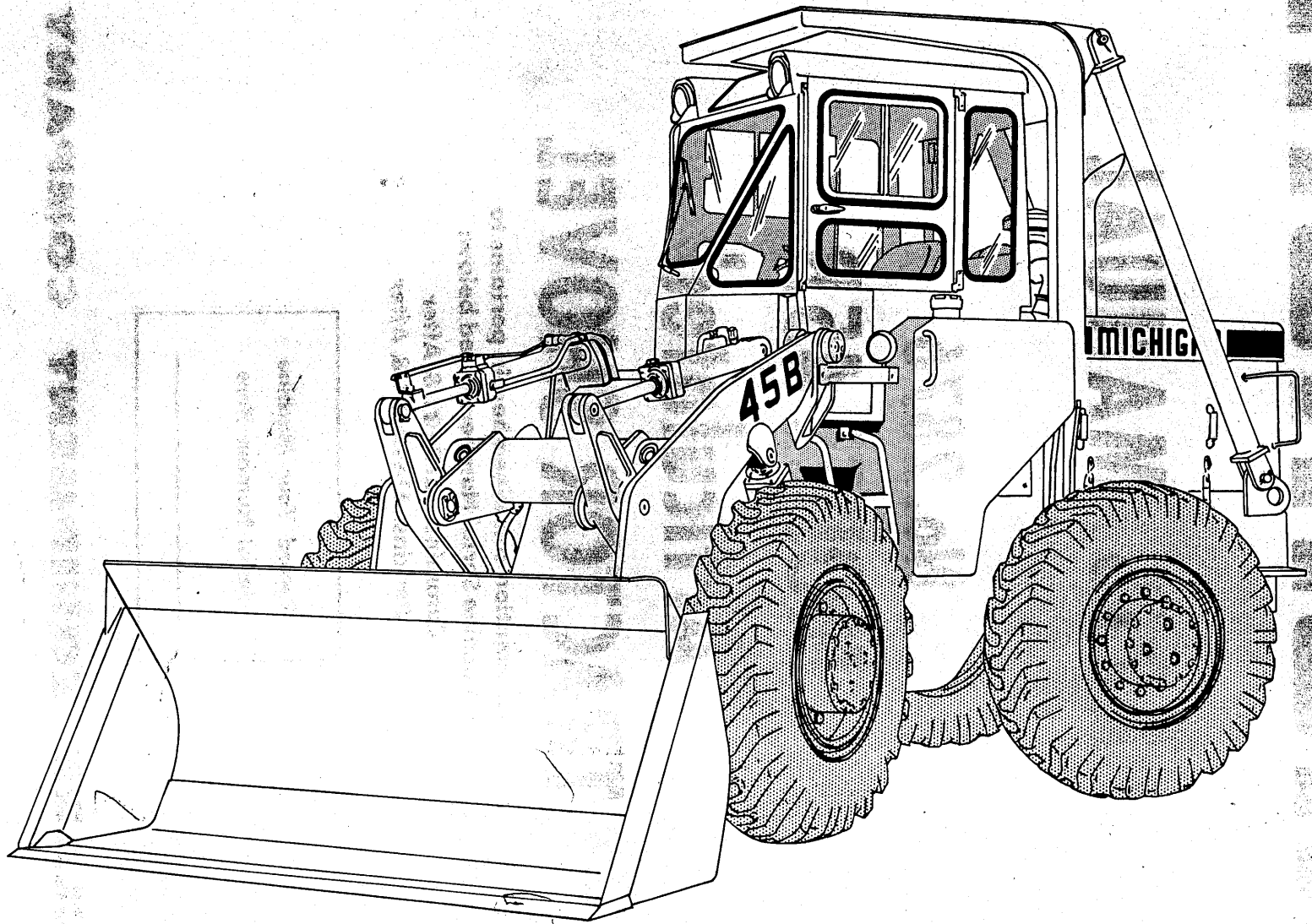
Cummins: 437A101 & After

Perkins: 4189A101 & After

YAC + FSC

Record Your Machine
Serial Number Here

CLARK EQUIPMENT COMPANY



MODEL 45B ARTICULATED TRACTOR SHOVEL

TS-11968 B

WARRANTY

Clark Equipment Company (CLARK) has warranted to the Distributor (Seller) who, pursuant to agreement with CLARK, hereby, on its own behalf, warrants to the Buyer each new CLARK product to be free from defects in material and workmanship under normal use and maintenance as herein provided.

Distributor's sole obligation under this warranty shall be limited to repairing, replacing or allowing credit for, at Distributor's option, any part which under normal and proper use and maintenance proves defective in material or workmanship within six (6) months after delivery to or one thousand (1,000) hours of use by Buyer, whichever shall occur first; provided, however, that (i) the product is placed in use not later than one year after shipment from CLARK'S plant; (ii) that notice of any such defect and satisfactory proof thereof is promptly given by Buyer to Distributor, and (iii) such material shall have been returned to Distributor, with transportation charges prepaid and found by Distributor to have been defective.

This warranty does not apply in respect of damage to or defects in any product caused by overloading or other misuse, neglect or accident, nor does this warranty apply to any product which has been repaired or altered in any way which, in the sole judgment of Distributor, affects the performance, stability or general purpose for which it was manufactured.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESSED OR IMPLIED, AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL DISTRIBUTOR BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

This warranty does not apply to parts or trade accessories not manufactured by CLARK, or attachments not manufactured or sold by CLARK. Buyer shall rely solely on the existing warranties, if any, of the respective manufacturers thereof.

IMPROVEMENTS

It is CLARK'S policy to constantly strive to improve its products. The right therefore is reserved to make changes in design and improvements whenever it is believed the efficiency of the product will be improved thereby, but without incurring any obligation to incorporate such improvements in any product which has been shipped or is in service.

Revised May 1, 1966

Information contained herein pertains to Machines: CUMMINS – 437A101 and After
RECORD YOUR MACHINE SERIAL NO. _____ PERKINS – 4189A101 and After

WHEN ORDERING REPAIR PARTS To assure the best results and to maintain the original quality built into the machine it is important that only Clark-Approved Parts be used when new parts are required.

IMPORTANT: Always furnish the distributor with the machine serial number when ordering parts. Order through your nearest Clark Distributor for THE MICHIGAN LINE.

Always give serial number of machine.

Furnish: Quantity, Part Number and Description.

WHEN PARTS ARE RECEIVED Check immediately for quantity, correctness and condition. Claims for damages, during shipment, should be made to the carrier immediately.

PARTS MANUAL ARRANGEMENT The various parts groups involved in this equipment are arranged in this manual in alphabetical order. Each alphabetical parts group is page numbered separately with the page numbers prefixed by the alphabetical letter designated for that group, i.e., A1, A2, B1, B2, etc. Following the alphabetical and page number designation, and separated therefrom by a hyphen (-), is the page version number, i.e., A1-1, A1-2, etc. This designation indicates the revision numbers assigned to incorporate design changes in the equipment covered by that page.

Parts Groups "A" thru "Y" include all items furnished as standard equipment at date of this publication. All optional and accessory items are listed under Group Z in the rear of this manual. An alphabetical index is given below to permit locating parts and items in addition each alphabetical parts group contains a separate index on the first page thereof, listing the parts groups contained therein.

ABBREVIATIONS

adjusting	.....adj
assembly	.....assy
bearing	.....brg
brake	.....brk
carrier	.....crr
cluster	.....clsr
connecting	.....connctg
converter	.....conv
cylinder	.....cyl
differential	.....diff
engine	.....eng
hydraulic	.....hyd
includes	.....inc.
inlet	.....in
instrument	.....inst
left hand	.....L.H.
mounting	.....mtg
outlet	.....out
planetary	.....planet
power	.....pwr
pressure	.....press
radiator	.....rad
retainer	.....ret
right hand	.....R.H.
ring	.....rg
section	.....sectn
steering	.....strg
temperature	.....temp
windshield	.....wndsh

SYMBOLS

†NOT ILLUSTRATED
\$NOT SOLD SEPARATELY
‡AS REQUIRED

ALPHABETICAL INDEX

MICHIGAN

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Axle Shaft . . . A3, A5

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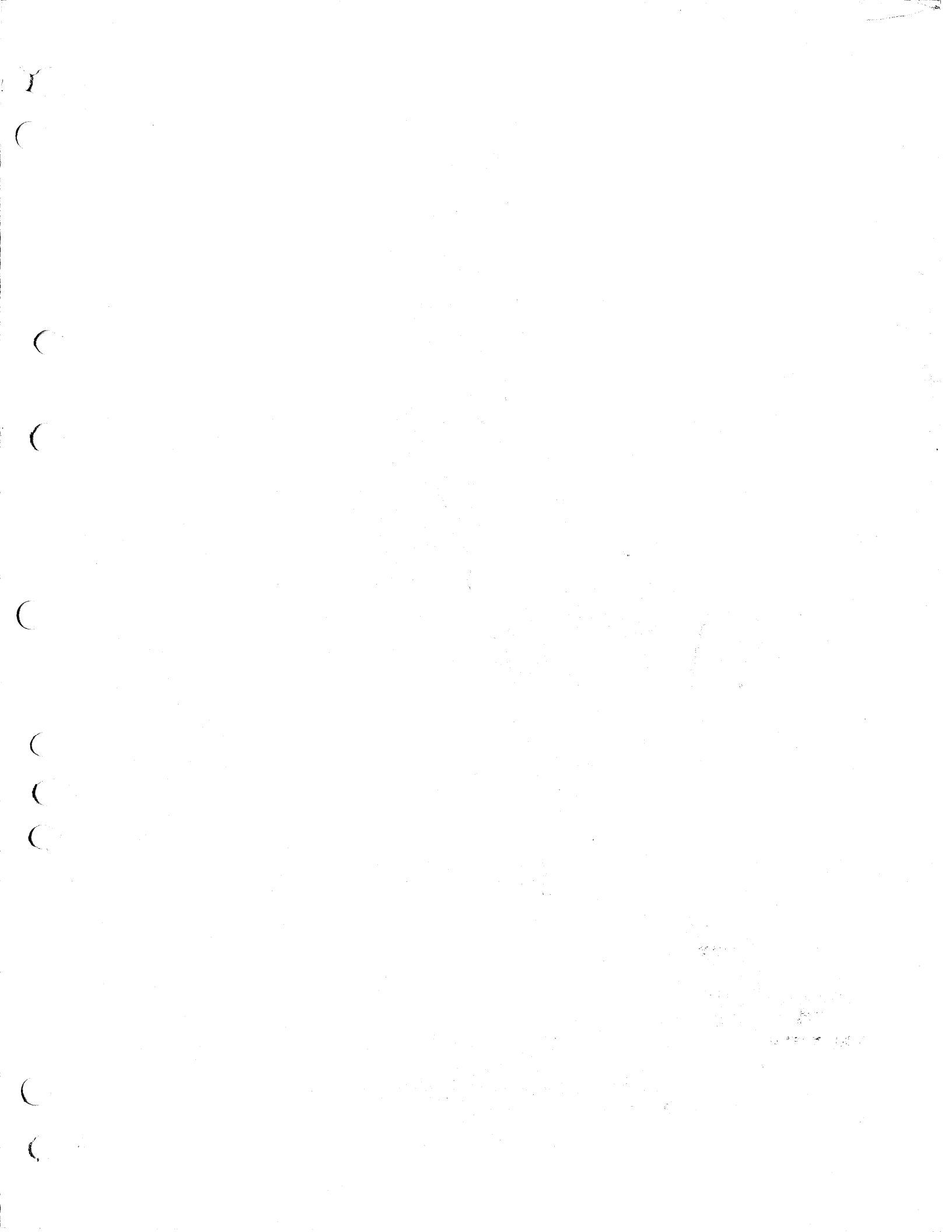
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 Wheel, Steering . . . S12
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CONSTRUCTION MACHINERY GROUP

Clark International Marketing S.A.

Wiesbaden, Germany
Sydney, Australia
Hong Kong

Benton Harbor, Michigan, U.S.A.
Rio de Janeiro, Brazil

9 February 1976

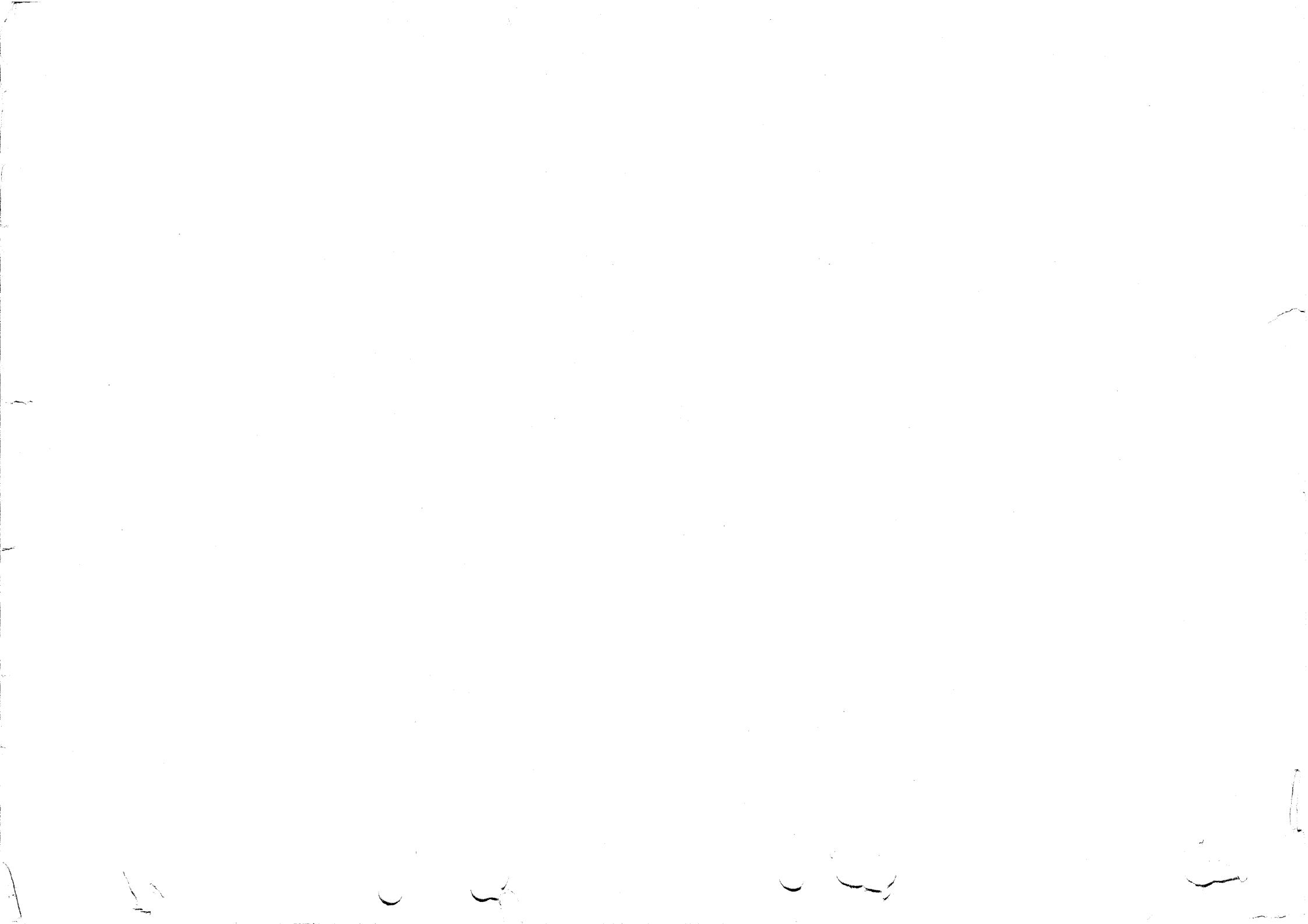
PARTS AND SERVICE BULLETIN M76-2

TO: All Michigan Distributors
SUBJECT: Identification Decals for Michigan Loaders

Gentlemen:

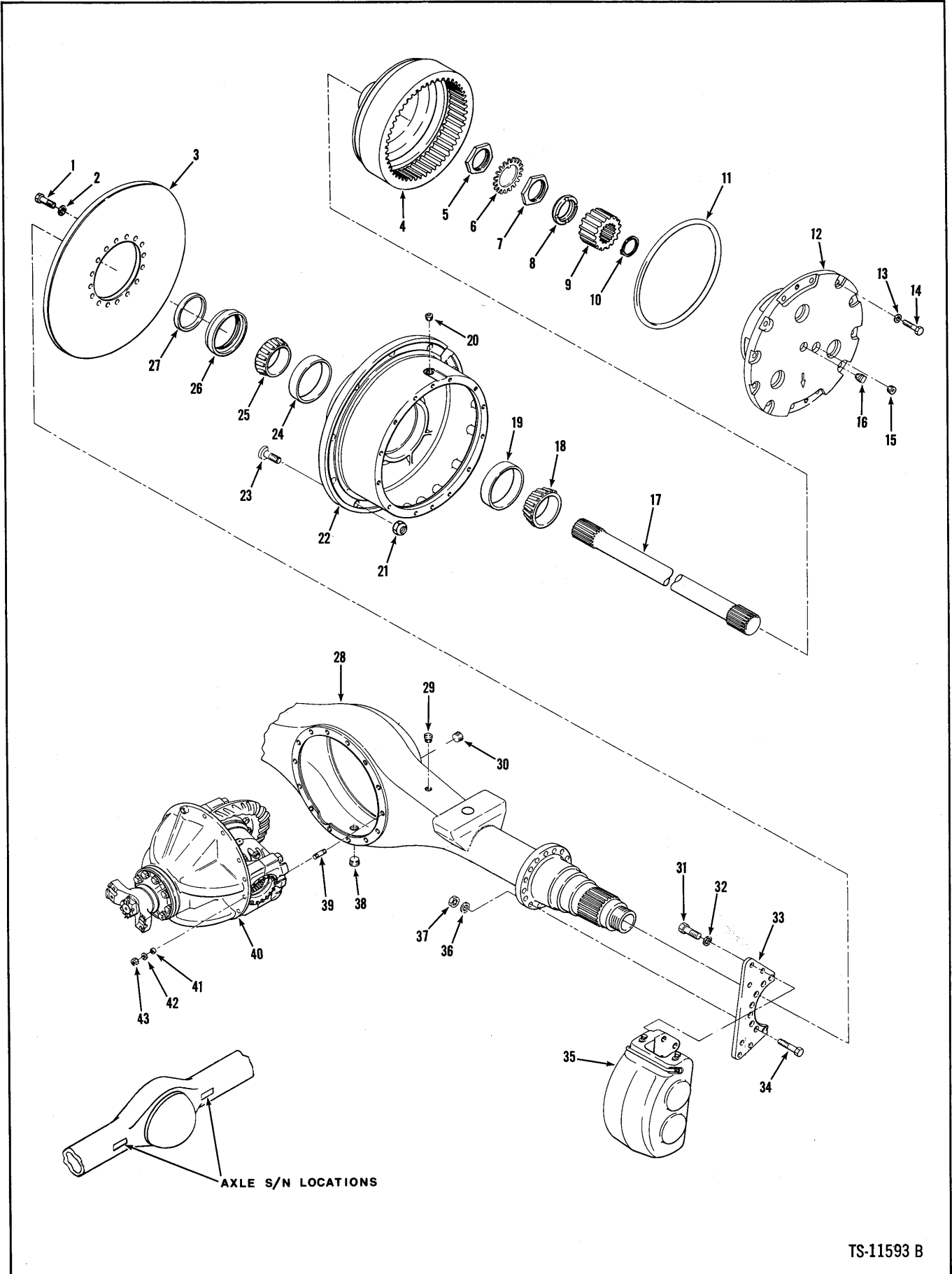
On 1 January 1976 Clark Equipment Company will use the new Clark identification system. If desired, you may rework your machines using the following decals and paint specifications:

<u>Machine</u>	<u>Part Number</u>	<u>Quantity</u>
45B	2513351 (Clark)	2
	2513736 (Clark) (Front)	1
	2513633 (45B)	2
	2513630 (Michigan)	2
55B	2513351 (Clark)	2
	2513628 (Clark) (Front)	1
	2513634 (55B)	2
	2513630 (Michigan)	2
75B	2513351 (Clark)	2
	2513628 (Clark) (Front)	1
	2513635 (75B)	2
	2513631 (Michigan)	2
125B	2513351 (Clark)	2
	2513628 (Clark) (Front)	1
	2513636 (125B)	2
	2513631 (Michigan)	2
175B	2513353 (Clark)	2
	2513628 (Clark) (Front)	1
	2513637 (175B)	2
	2513631 (Michigan)	2



Group A

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Axle Assembly, Rear Drive	A5
Axle Differential Carrier Assembly, Front Drive	A7
Axle Differential Carrier Assembly, Rear Drive	A9
Axle Planet Carrier Assembly, Front & Rear Drive	A10



TS-11593 B

Axle Assembly, Front Drive



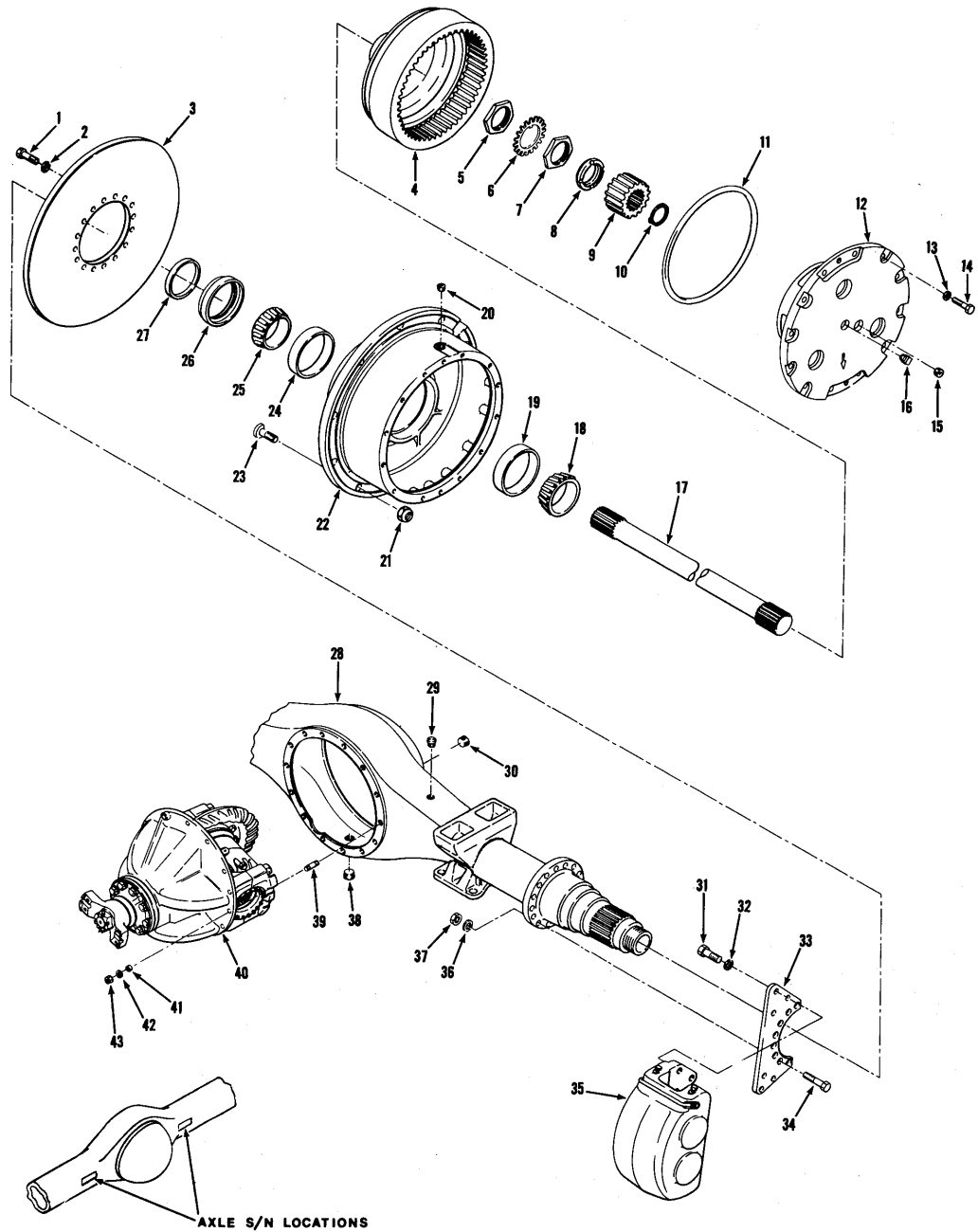
No.	Part No.	Qty.	Description
A	¹ 191640	1	Axle assy
1	124158	32	Bolt
2	104412	32	Washer
3	121776	2	Brake disc
4	123904	2	Gear
5	121013	2	Nut
6	121014	2	Lock
7	121013	2	Nut
8	121015	2	Sleeve
9	121804	2	Gear
10	224028	2	Ring
11	107348	2	O-ring
12	² 124571	2	Planet carrier assy
13	106762	24	Washer
14	100970	24	Bolt
15	10F-02	2	Pipe plug
16	11F-04	2	Pipe plug
17	124260	2	Axle shaft
18	675261	2	Cone roller brg
19	668553	2	Cup roller brg
20	119469	2	Pipe plug
21	103522	24	Nut
22	³ 121785	2	Hub assy
23	121808	24	Stud
24	672004	2	Cup roller brg
25	672005	2	Cone roller brg
26	121012	2	Seal
27	121169	2	Sleeve
28	2105085	1	Housing axle
29	106656	1	Breather
30	11F-12	1	Pipe plug
31	110305	8	Bolt
32	111656	8	Washer
33	122559	2	Brake adapter plate
34	18C-1036	16	Bolt
35	² 122560	1	Brake head assy L.H.
35A	² 122561	1	Brake head assy R.H.
36	104412	16	Washer
37	106998	16	Nut
38	119469	1	Pipe plug
39	119270	14	Stud
40	² 120180	1	Diff carrier assy
41	103216	3	Dowel
42	112278	14	Washer
43	64D-07	14	Nut

¹(D-17800) Inc. 1-43

²See Index

³Inc. 19, 24

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TS-11805 B

Axle Assembly, Rear Drive

MICHIGAN

No.	Part No.	Qty.	Description
A	*192058	1	Axle assy
B	**2191641	1	Axle assy
1	124158	32	Bolt
2	104412	32	Washer
3	121776	2	Brake disc
4	123904	2	Gear
5	121013	2	Nut
6	121014	2	Lock
7	121013	2	Nut
8	121015	2	Sleeve
9	121804	2	Gear
10	224028	2	Ring
11	107348	2	O-Ring
12	³ 124571	2	Planet carrier assy
13	106762	24	Washer
14	100970	24	Bolt
15	10F-02	2	Pipe plug
16	16F-04	2	Pipe plug
17	124260	2	Axle shaft
18	675261	2	Cone roller brg
19	668553	2	Cup roller brg
20	119469	2	Pipe plug
21	103522	24	Nut
22	⁴ 121785	2	Hub assy
23	121808	24	Stud
24	672004	2	Cup roller brg
25	672005	2	Cone roller brg
26	121012	2	Seal
27	121169	2	Sleeve
28	2105120	1	Housing axle
29	106656	1	Breather
30	16F-12	1	Pipe plug
31	110305	12	Bolt
32	111656	12	Washer
33	122559	2	Brake adapter plate
34	18C-1036	16	Bolt
35	*3125472	1	Brake head assy R.H.
35A	*3125473	1	Brake head assy L.H.
35B	**3122560	1	Brake head assy L.H.
35C	**3122561	1	Brake head assy R.H.
36	104412	16	Washer
37	106998	16	Nut
38	119469	1	Pipe plug
39	119270	14	Stud
40	² 120235	1	Diff carrier assy
41	103216	3	Dowel
42	112278	14	Washer
43	64D-07	14	Nut

¹(D-17800) Inc. 1→35A, 36→43

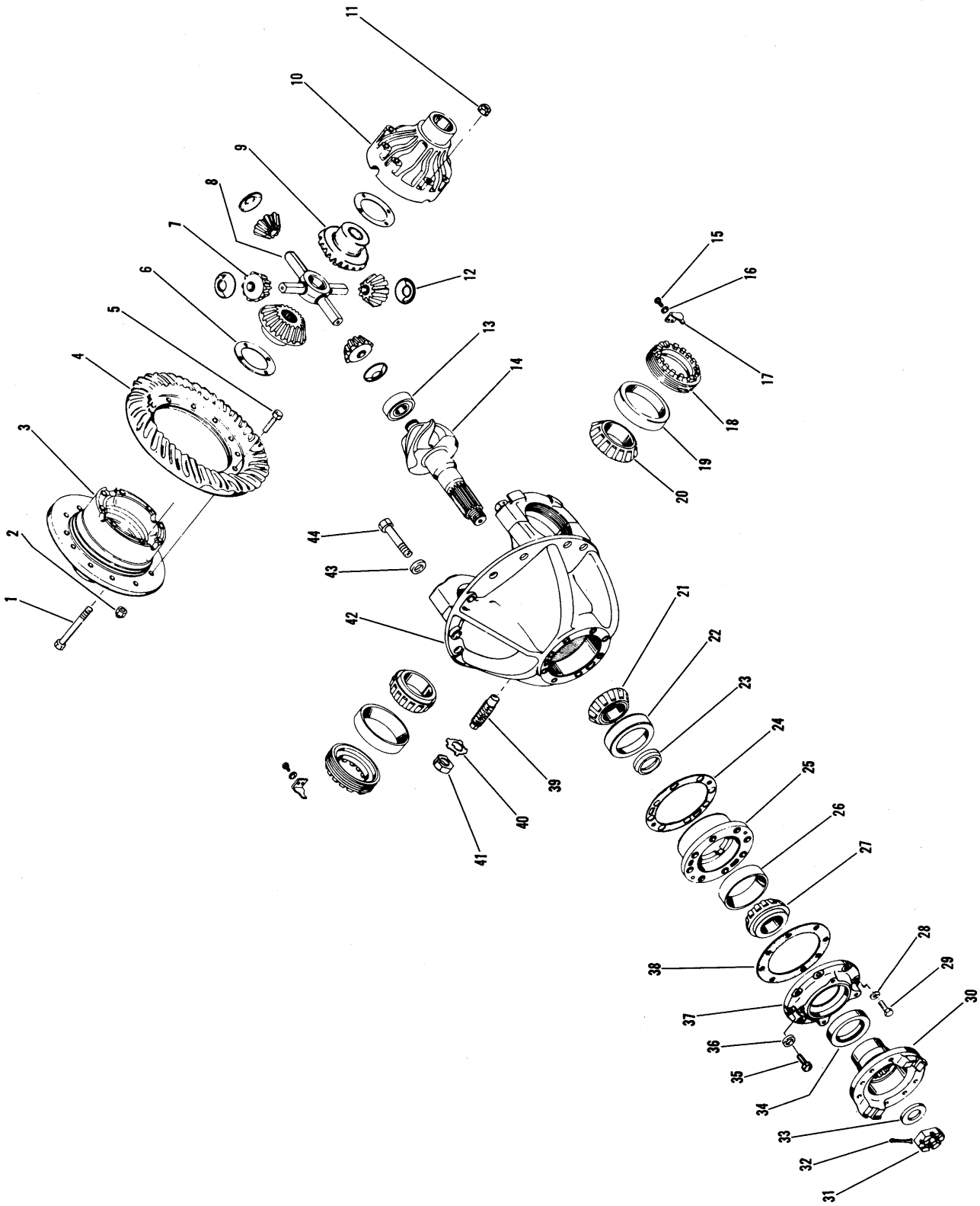
²(D-17800) Inc. 1→34, 35B→43

³See Index

⁴Inc. 21, 24

*Note: For Perkins

**Note: For Cummins



Axle Differential Carrier Assembly, Front Drive

MICHIGAN

No.	Part No.	Qty.	Description
A	¹ 120235	1	Differential assy
1	100174	8	Bolt
2	104182	12	Nut
3	² _____	1	Case
4	³ _____	1	Gear
5	100176	12	Bolt
6	100173	2	Washer
7	815744	1	Pinion kit
8	100171	1	Spider
9	100170	2	Gear
10	² _____	1	Case
11	104182	8	Nut
12	100172	4	Washer
13	675536	1	Bearing
14	³ _____	1	Pinion
15	3C-614	2	Bolt
16	4E-06	2	Lockwasher
17	100941	2	Lock
18	100940	2	Nut
19	675249	2	Cup roller brg
20	675248	2	Cone roller brg
21	667277	1	Cone roller brg
22	667278	1	Cup roller brg
23	100952	1	Spacer
24	⁴ 112356	—	Shim
24A	⁴ ⁵ 112355	—	Shim
24B	⁴ ⁶ 112354	—	Shim
25	⁷ 112350	1	Cage assy
26	675257	1	Cup roller brg
27	710288	1	Cone roller brg
28	4E-08	1	Lockwasher
29	1C-828	1	Bolt
30	106081	1	Flange
31	100950	1	Nut
32	1F-428	1	Pin cotter
33	100951	1	Washer
34	111720	1	Seal
35	1C-928	5	Bolt
36	4E-09	5	Lockwasher
37	112352	1	Retainer
38	112353	1	Gasket
39	123800	1	Screw
40	100954	1	Lock
41	8D-14	1	Nut
42	⁸ 815784	1	Carrier assy
43	100937	4	Bolt
44	111656	4	Washer
45	⁹ 106039	1	Differential assy
46	¹⁰ 100160	1	Body assy
47	¹¹ 110127	1	Gear set
48	¹² 815033	1	Case kit

¹Inc. 1 → 44

⁵.007" (0,18 mm)

⁹Inc. 1 → 12, 14

²See 48

⁶.004" (0,10 mm)

¹⁰Inc. 1, 3, 6 → 12

³See 47

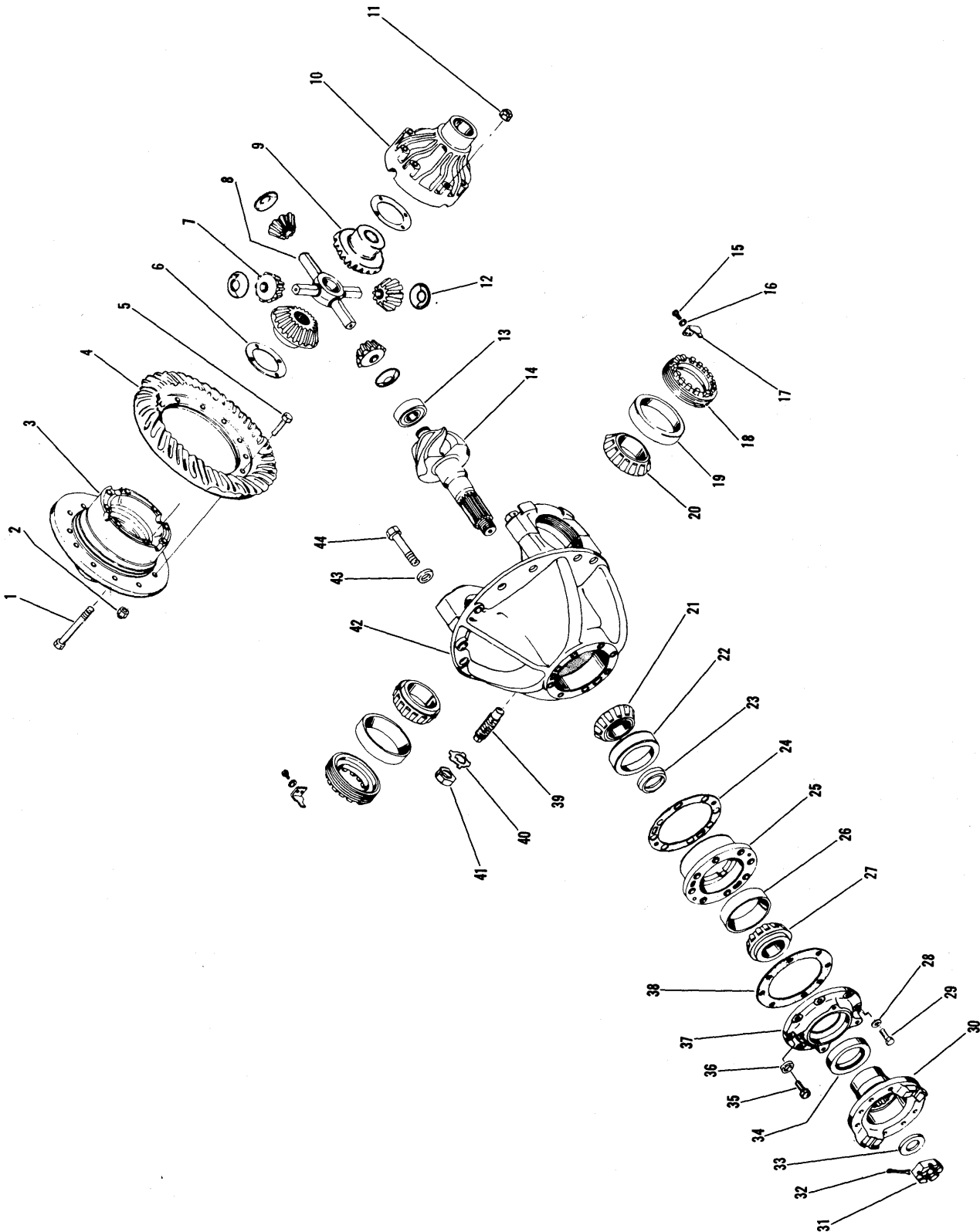
⁷Inc. 26

¹¹Inc. 4, 14

⁴.010" (0,25 mm)

⁸Inc. 43, 44

¹²Inc. 1, 3, 10, 11



Axle Differential Carrier Assembly, Rear Drive

MICHIGAN

No.	Part No.	Qty.	Description
A	¹ 120180	1	Differential assy
1	100174	8	Bolt
2	104182	12	Nut
3	² -----	1	Case
4	³ -----	1	Gear
5	100176	12	Bolt
6	100173	2	Washer
7	815744	1	Pinion kit
8	100171	1	Spider
9	100170	2	Gear
10	² -----	1	Case
11	104182	8	Nut
12	100172	4	Washer
13	675536	1	Bearing
14	³ -----	1	Pinion
15	3C-614	2	Bolt
16	4E-06	2	Lockwasher
17	100941	2	Lock
18	100940	2	Nut
19	675249	2	Cup roller brg
20	675248	2	Cone roller brg
21	667277	1	Cone roller brg
22	667278	1	Cup roller brg
23	100952	1	Spacer
24	⁴ 112356	—	Shim
24A	⁵ 112355	—	Shim
24B	⁶ 112354	—	Shim
25	⁷ 112350	1	Cage assy
26	675257	1	Cup roller brg
27	710288	1	Cone roller brg
28	4E-08	1	Lockwasher
29	1C-828	1	Bolt
30	106081	1	Flange
31	100950	1	Nut
32	1F-428	1	Pin cotter
33	100951	1	Washer
34	111720	1	Seal
35	1C-928	5	Bolt
36	4E-09	5	Lockwasher
37	112352	1	Retainer
38	112353	1	Gasket
39	123800	1	Screw
40	100954	1	Lock
41	8D-14	1	Nut
42	⁸ 815784	1	Carrier assy
43	100937	4	Bolt
44	111656	4	Washer
45	⁹ 119914	1	Differential assy
46	¹⁰ 100160	1	Body assy
47	¹¹ 118150	1	Gear Set
48	¹² 815033	1	Case kit

¹Inc. 1 → 44

⁵.007" (0,18 mm)

⁹Inc. 1 → 12, 14

²See 48

⁶.004" (0,10 mm)

¹⁰Inc. 1, 3, 6 → 12

³See 47

⁷Inc. 26

¹¹Inc. 4, 14

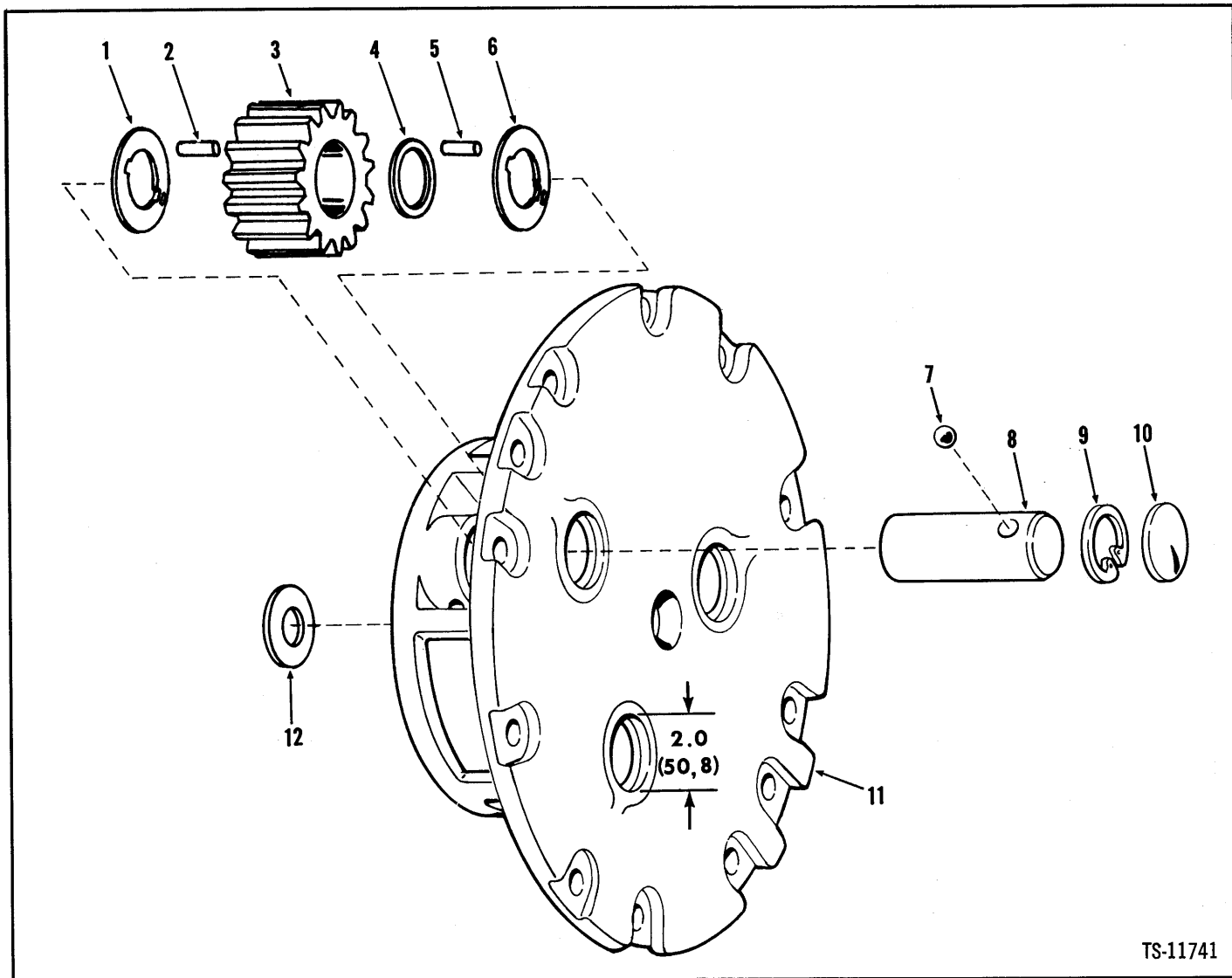
⁴0.10" (0.2 mm)

⁸Inc. 43, 44

¹²Inc. 1, 3, 10, 11

Axle Planet Carrier Assembly, Front & Rear Drive

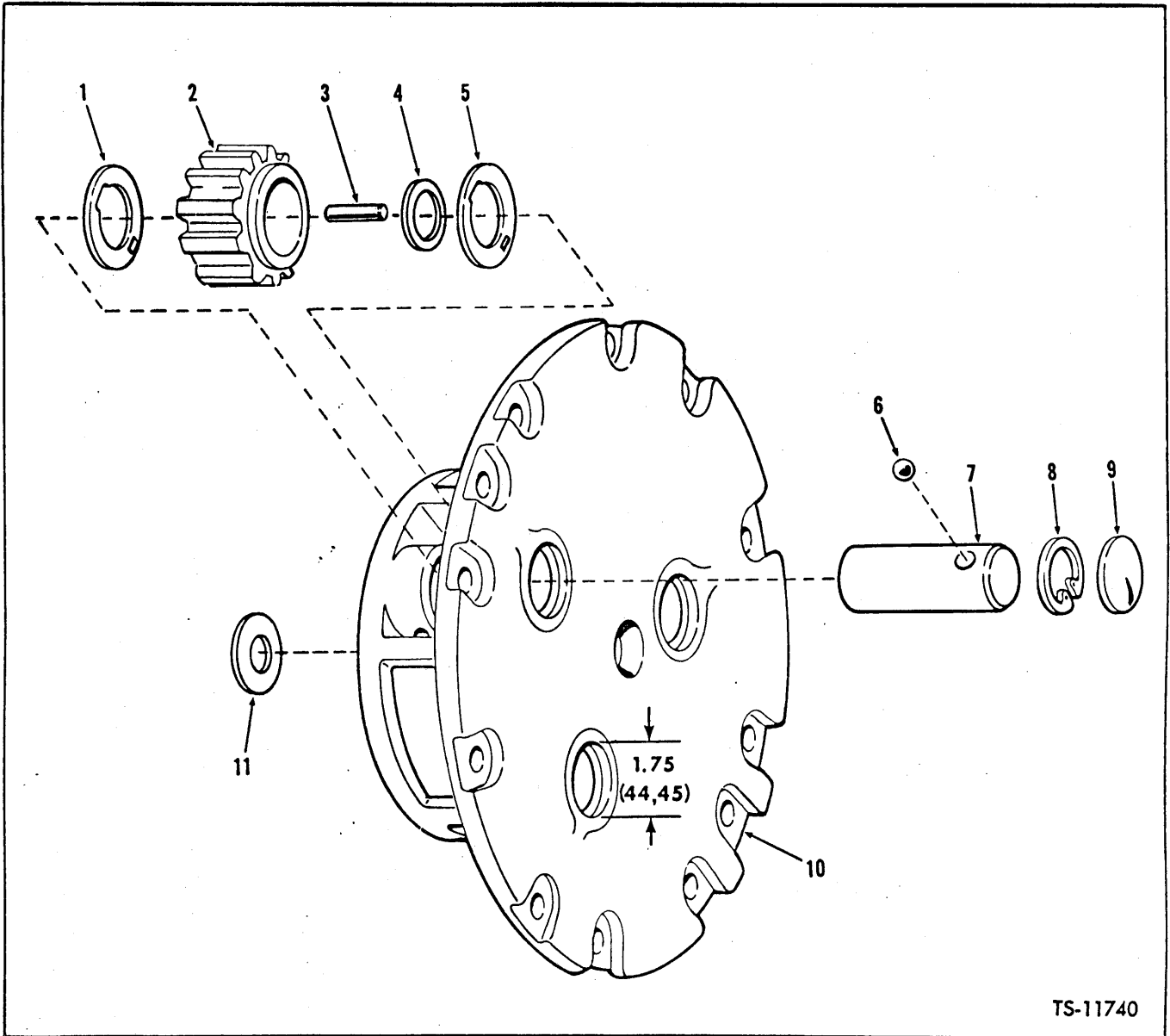
CUMMINS ONLY



No.	Part No.	Qty.	Description
A	*124571	4	Carrier assy
1	124574	3	Washer
2	124576	87	Roller
3	124573	3	Gear
4	124577	3	Spacer
5	124576	87	Roller
6	124574	3	Washer
7	10J-12	3	Ball
8	124575	3	Gear shaft
9	672907	3	Ring snap
10	12F-200	3	Plug
11	124572	1	Carrier
12	121166	1	Washer

¹Inc. 1-12

*Note: Four (4) carriers used on machine. Quantities listed are for one (1) carrier.



AXLE PLANET CARRIER ASSEMBLY – FRONT & REAR – PERKINS

Item No.	Part No.	Description	No. Req'd.
A	123267	*CARRIER ASSY (Inc. 1 thru 12)	4
NOTE: Four (4) Carriers used on machine – Quantities listed are for one (1) Carrier.			
1	106350	WASHER, Pinion Thrust	3
2	121790	GEAR	3
3	121792	ROLLER	174
4	106352	SPACER	3
5	106350	WASHER	3
6	10J-12	BALL	3
7	123270	GEAR SHAFT	3
8	868744	RING SNAP	3
9	12F-112	**PLUG	3
10	123268	*CARRIER	1
11	121166	WASHER	1

**NOTE: Check size of welch plug or welch plug opening on carrier to determined proper Carrier Assembly on Axle.
 * For complete replacement of 123267 or 123268 use 124571 Carrier Assembly. Once replacement has been made refer to page A11-1 for servicing components.

WHEN ORDERING PARTS, ALWAYS STATE MODEL AND SERIAL NO. OF MACHINE

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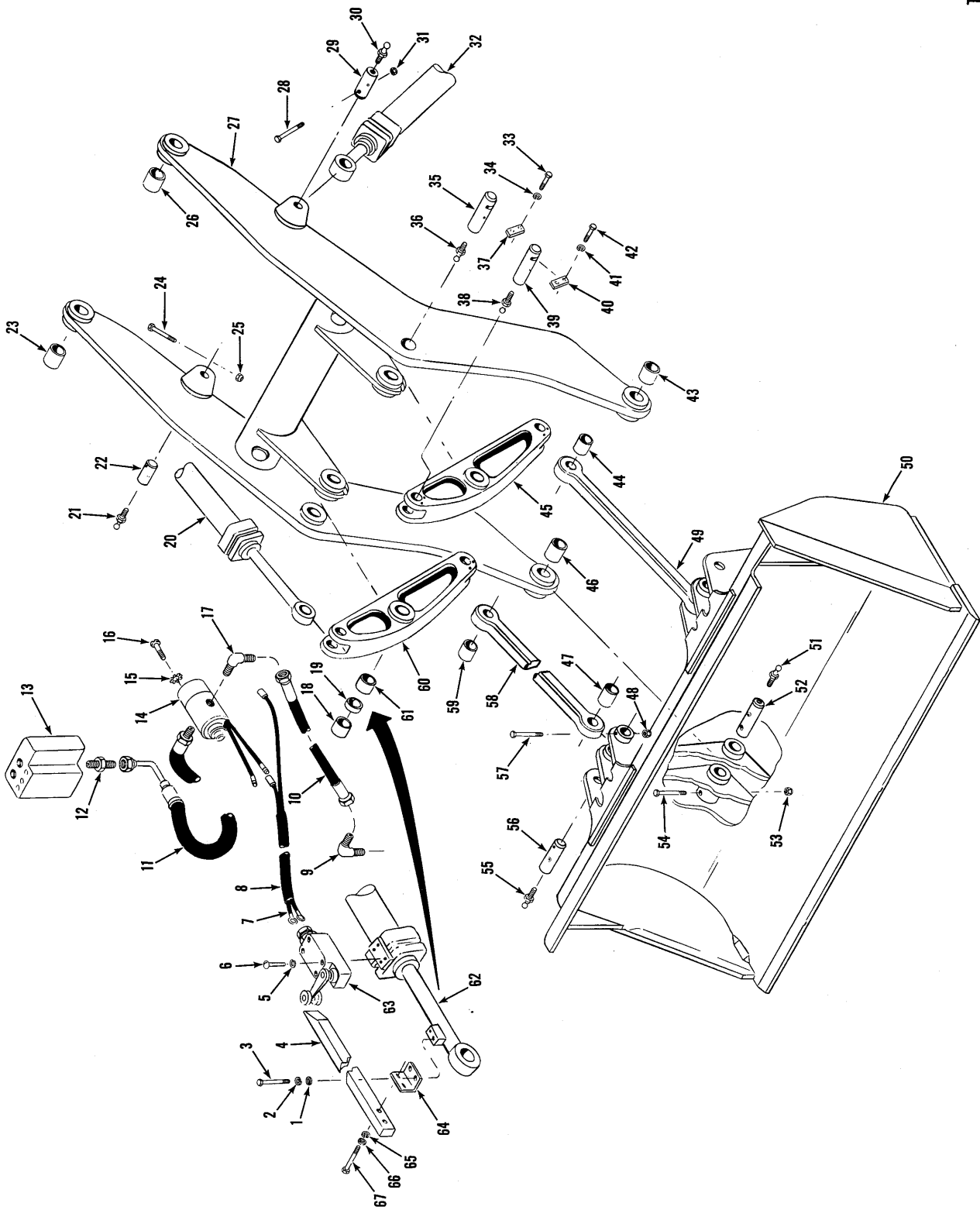
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Group B

Boom, Bellcrank, Pushrod & Bucket Leveler	B3, B5
Brake Air Lines, Front & Rear – Cummins	B7, B9, B11
Brake Air Lines, Front & Rear – Perkins	B13, B15, B17
Brake Assembly, Parking	B18
Brake Controls	B19
Brake Controls, Parking	B21
Brake Head Assembly	B22, B23, B24, B25
Brake Lever Assembly, Parking	B26
Brake Power Cluster Assembly	B27
Bucket Assembly Data	B28



Boom, Bellcrank, Pushrod & Bucket Leveler

MICHIGAN

No.	Part No.	Qty.	Description
1	4E-08	2	Lockwasher
2	25E-21	2	Washer
3	24C-820	2	Bolt
4	3980905	1	Bar
5	12E-10	4	Lockwasher
6	86G-1024	4	Bolt
7	1549756	1	Wire
8	1743563	1	Hose
9	42F-5	1	Elbow
10	2500123	1	Hose
11	2500122	1	Hose
12	38F-6	1	Connector
13	3980667	1	Valve assy main
14	31510310	1	Solenoid valve
14A	3949458	1	Seal kit
15	12E-10	2	Lockwasher
16	86G-1008	2	Screw
17	42F-5	1	Elbow
18	3980060	1	Bushing
19	3980061	2	Spacer
20	3980125	1	Cyl assy bucket L.H.
21	10H-25	1	Fitting grease
22	3980094	1	Pin
23	3980076	1	Bushing
24	18C-660	1	Bolt
25	18D-06	1	Nut
26	3980076	1	Bushing
27	42500920	1	Boom assy
27A	1519218	4	Stop base
27B	3625364	—	Stop plate
27C	3730463	—	Stop plate
27D	3656515	—	Stop plate
27E	3637509	—	Stop plate
28	18C-660	1	Bolt
29	3980094	1	Pin
30	10H-25	1	Fitting grease
31	18D-06	2	Nut
32	3980095	1	Cylinder assy boom
33	24C-716	4	Bolt
34	4E-07	4	Nut
35	3980070	2	Pin
36	10H-25	2	Fitting grease
37	3980071	2	Lockplate
38	10H-25	4	Fitting grease
39	3980064	4	Pin
40	3980065	4	Lockplate
41	4E-06	8	Lockwasher
42	23C-616	8	Bolt
43	3980060	1	Bushing
44	3980068	2	Bushing
45	3980062	1	Bellcrank assy

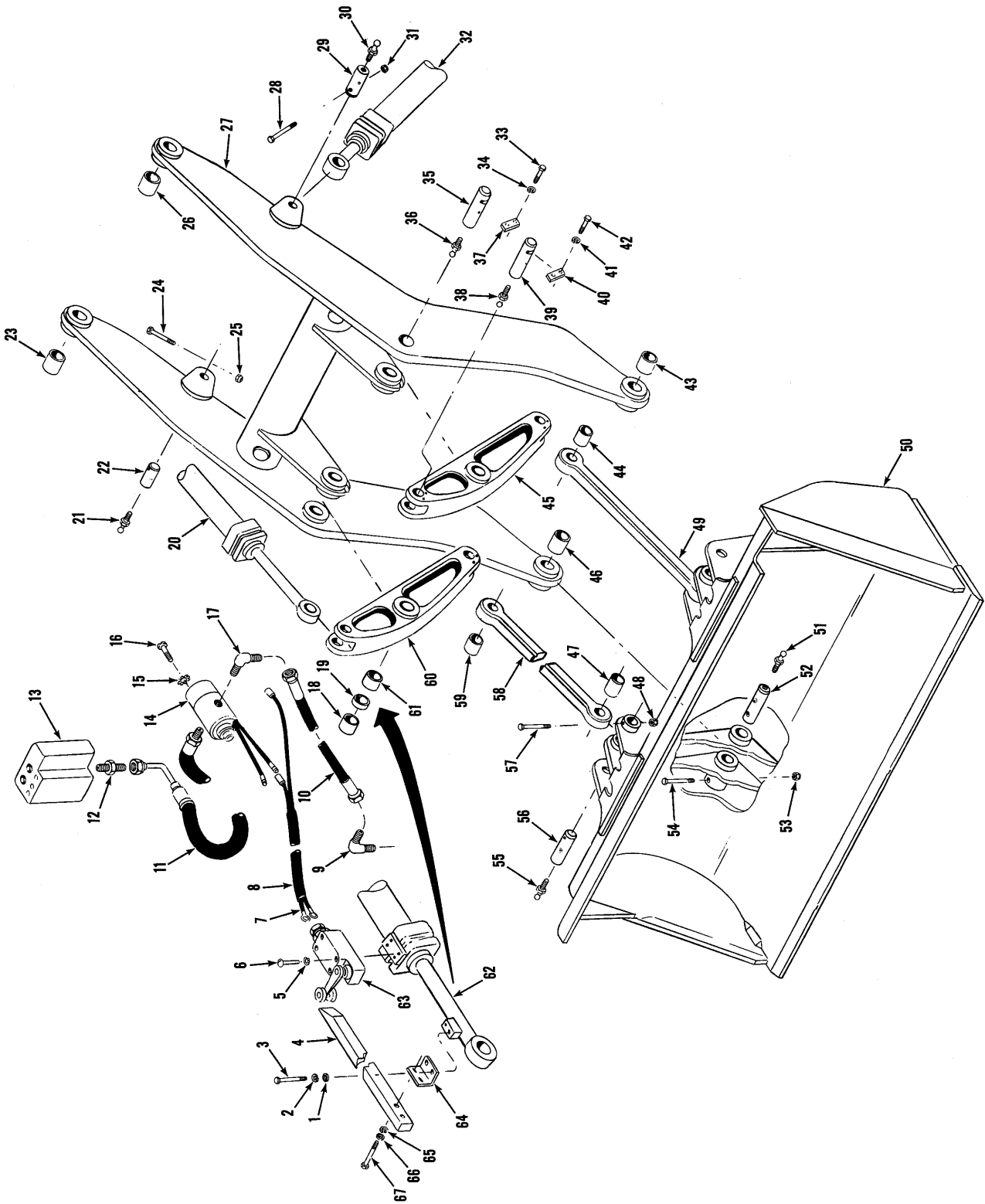
13 ft. (90 cm)

²See Index

³Inc. 14A

⁴Inc. 23, 26, 43, 46

⁵Inc. 18, 19, 61



Boom, Bellcrank, Pushrod & Bucket Leveler

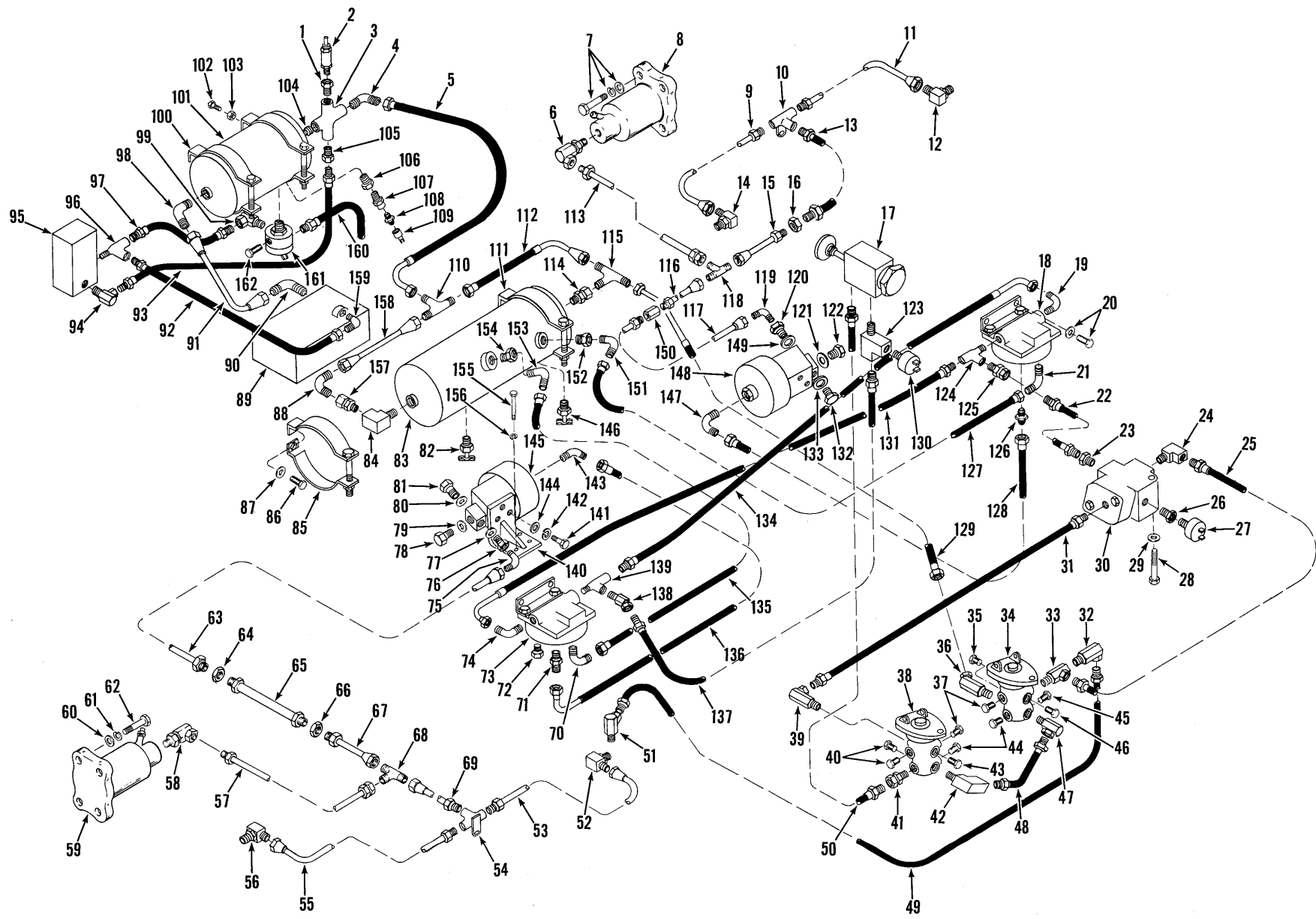


No.	Part No.	Qty.	Description
46	3980060	1	Bushing
47	3980068	1	Bushing
48	18D-08	2	Nut
49	⁶ 3980066	1	Pushrod assy
50	² _____	1	Bucket assy
51	10H-25	2	Fitting grease
52	3980093	2	Pin
53	18D-08	2	Nut
54	18C-876	2	Bolt
55	10H-25	2	Fitting grease
56	3980069	2	Pin
57	24C-872	2	Bolt
58	⁶ 3980066	1	Pushrod assy
59	3980068	1	Bushing
60	⁵ 3980058	1	Bellcrank assy
61	3980060	1	Bushing
62	² 3980108	1	Cyl assy bucket ✓
63	308031	1	Switch limit
64	3980904	1	Bracket
65	25E-18	2	Washer
66	4E-06	2	Lockwasher
67	24C-622	2	Bolt

²See Index

⁵Inc. 18, 19, 61

⁶Inc. 44, 47

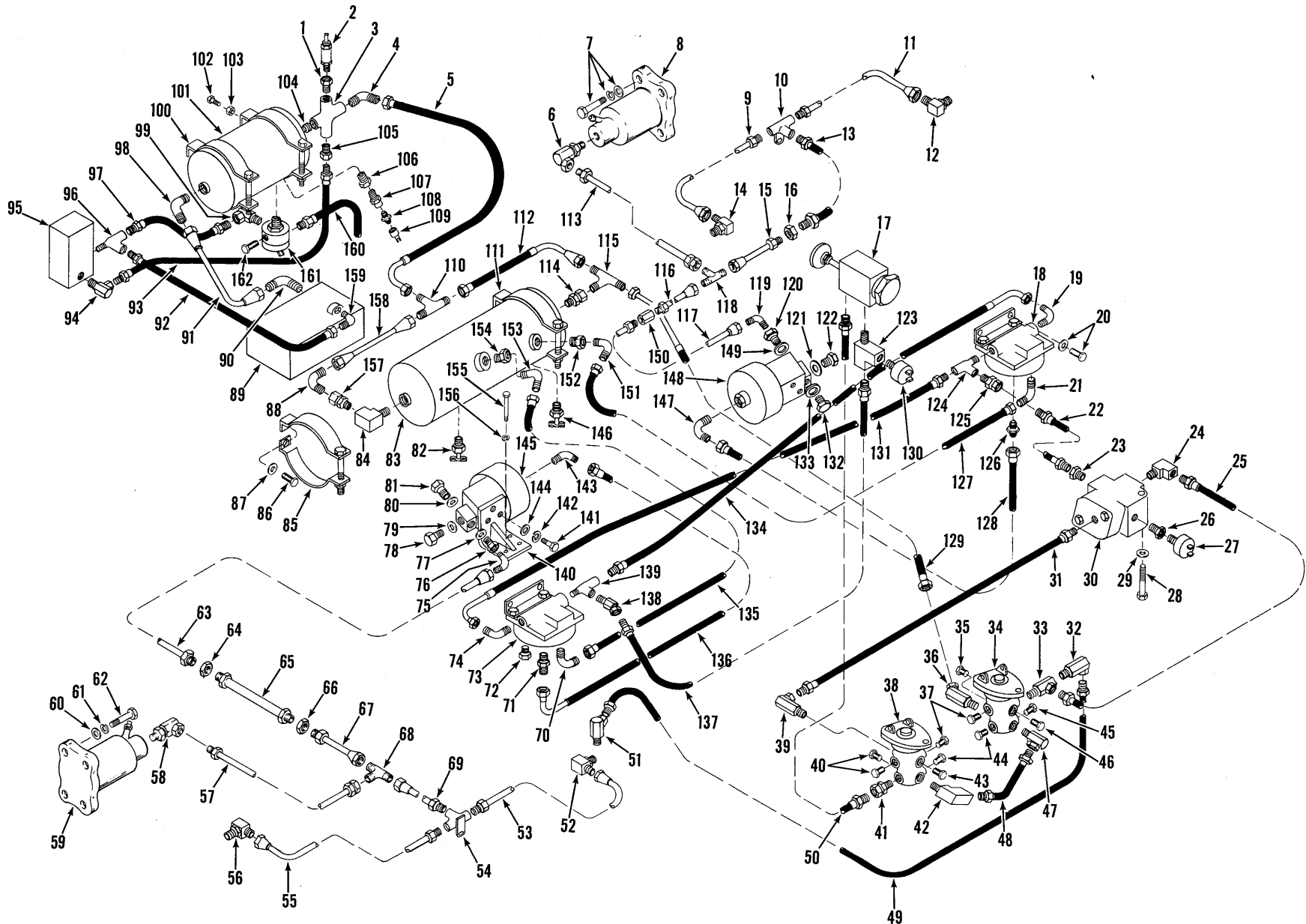


Brake Air Lines, Front and Rear – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
1	19F-5	1	Bushing
2	¹ 507815	1	Valve safety
3	2500148	1	Cross
4	84F-7	1	Elbow
5	2500081	1	Hose
6	2502144	1	Adapter
7	24C-624	2	Bolt
7A	4E-06	2	Lockwasher
7B	25E-17	2	Washer
8	2501983	1	Compensator cylinder
9	3980601	1	Tube
10	114427	1	Tee
11	3980603	1	Tube
12	3980014	1	Fitting
13	533814	1	Hose
14	3980014	1	Fitting
15	2502142	1	Tube
16	8D-10	1	Nut
17	1545790	1	Valve hand brake
18	² 1545789	1	Valve quick release
18A	949959	1	Repair kit
19	940639	1	Elbow
20	24C-616	4	Bolt
20A	4E-06	4	Lockwasher
21	42F-8	1	Elbow
22	593495	1	Hose
23	19F-5	1	Bushing
24	29F-3	1	Elbow
25	593483	1	Hose
26	19F-4	1	Bushing
27	636260	1	Switch
28	24C-640	1	Bolt
29	4E-06	1	Lockwasher
30	³ 1532592	1	Valve check
31	593483	1	Hose
32	31F-1	1	Adapter
33	356609	1	Adapter
34	⁴ _____	—	Valve brake
34A	[†] 24C-520	3	Bolt
34B	[†] 18D-05	3	Locknut
35	40K-08	1	Plug
36	33F-4	1	Adapter
37	40K-08	2	Plug
38	⁴ _____	—	Valve brake
38A	[†] 24C-520	3	Bolt
38B	[†] 18D-05	3	Locknut
39	31F-4	1	Adapter
40	40K-08	2	Plug
41	36F-2	1	Adapter
42	29F-3	1	Elbow
43	40K-08	1	Plug
44	40K-04	2	Plug
45	40K-04	1	Plug
46	40K-08	1	Plug
47	31F-4	1	Adapter

¹BW 205105
²inc. 18A
³BW 223869
⁴See Index



Brake Air Lines, Front and Rear – Cummins

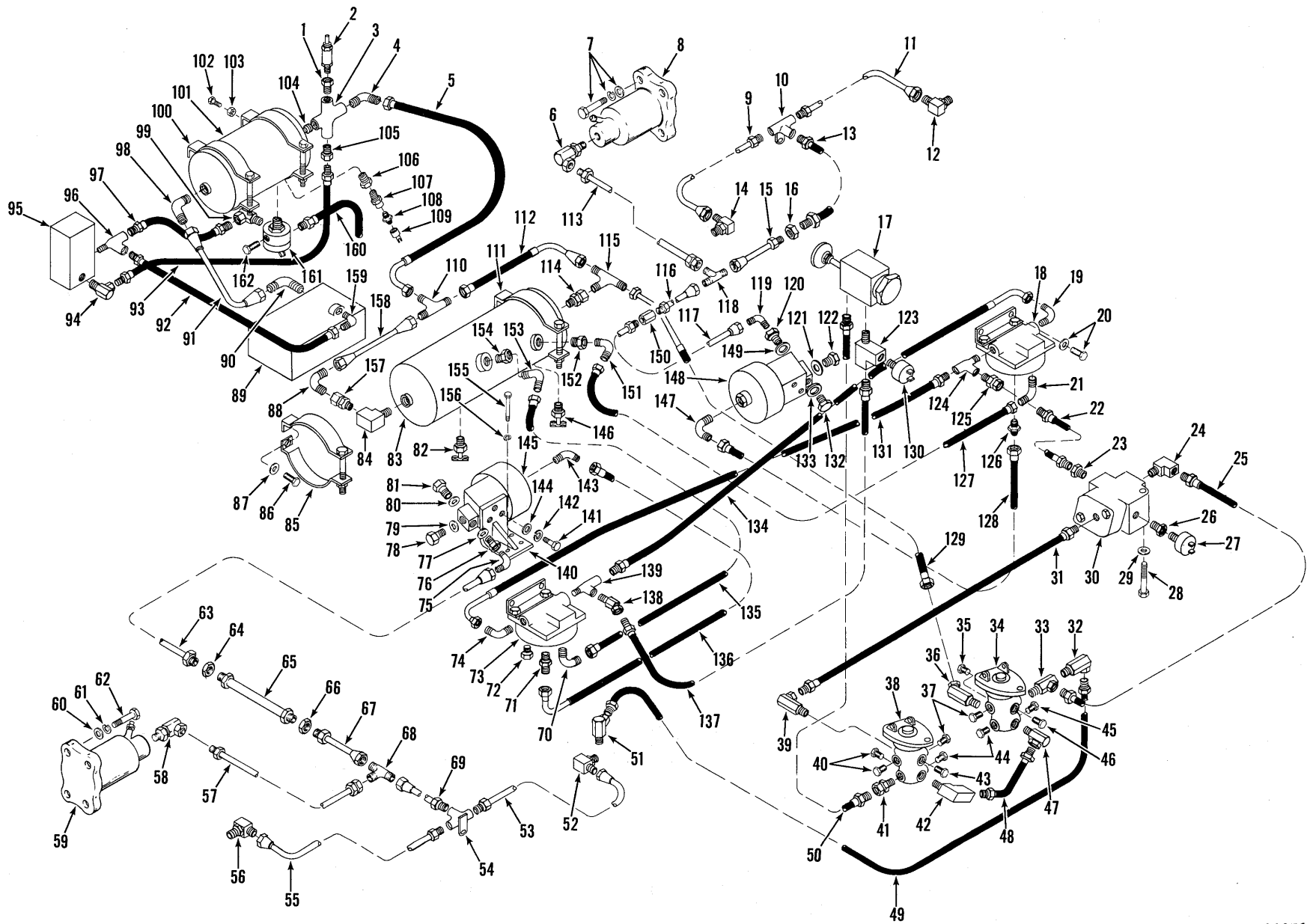
MICHIGAN

48	593483	1	Hose
49	1519974	1	Hose
50	1519973	1	Hose
51	33F-1	1	Adapter
52	3980014	1	Fitting
53	3980607	1	Tube
54	550319	1	Tee
55	3980609	1	Tube
56	3980014	1	Fitting
57	2502143	1	Hose
58	2502144	1	Adapter
59	2501983	1	Compensator cylinder
60	25E-17	2	Washer
61	4E-06	2	Lockwasher
62	24C-624	2	Bolt
63	1519997	1	Tube
64	8D-10	1	Nut
65	552374	1	Hose
66	8D-10	1	Nut
67	2502146	1	Tube
68	44F-3	1	Tee
69	2502147	1	Tube
70	42F-8	1	Elbow
71	38F-7	1	Connector
72	40K-04	6	Plug
73	⁵ 1545789	1	Valve quick release
73A	949959	1	Repair kit
74	940639	1	Elbow
75	42F-3	1	Elbow
76	1543879	1	Adapter
77	613750	1	Gasket
78	874007	1	Plug
79	613750	1	Gasket
80	613750	1	Gasket
81	874007	1	Plug
82	72F-2	1	Draincock
83	3981022	1	Air tank
84	29F-3	1	Elbow
85	527685	1	Bracket
86	24C-616	4	Bolt
87	4E-06	4	Lockwasher
88	42F-9	1	Elbow
89	⁶ _____	1	Compressor
90	42F-9	1	Elbow
91	1519981	1	Tube
92	1540126	1	Hose
93	540915	1	Hose
94	31F-1	1	Adapter
95	⁶ _____	1	Governor
96	1549038	1	Tee
97	2500078	1	Hose
98	42F-9	1	Elbow
99	31F-2	1	Elbow
100	941214	2	Bracket
101	3981021	1	Air tank
102	24C-620	4	Bolt
103	18D-06	4	Locknut
104	5K-409	1	Nipple pipe

2511 014 ventil
2511 198 hållare

⁵Incl. 73A

⁶Furnished with Engine

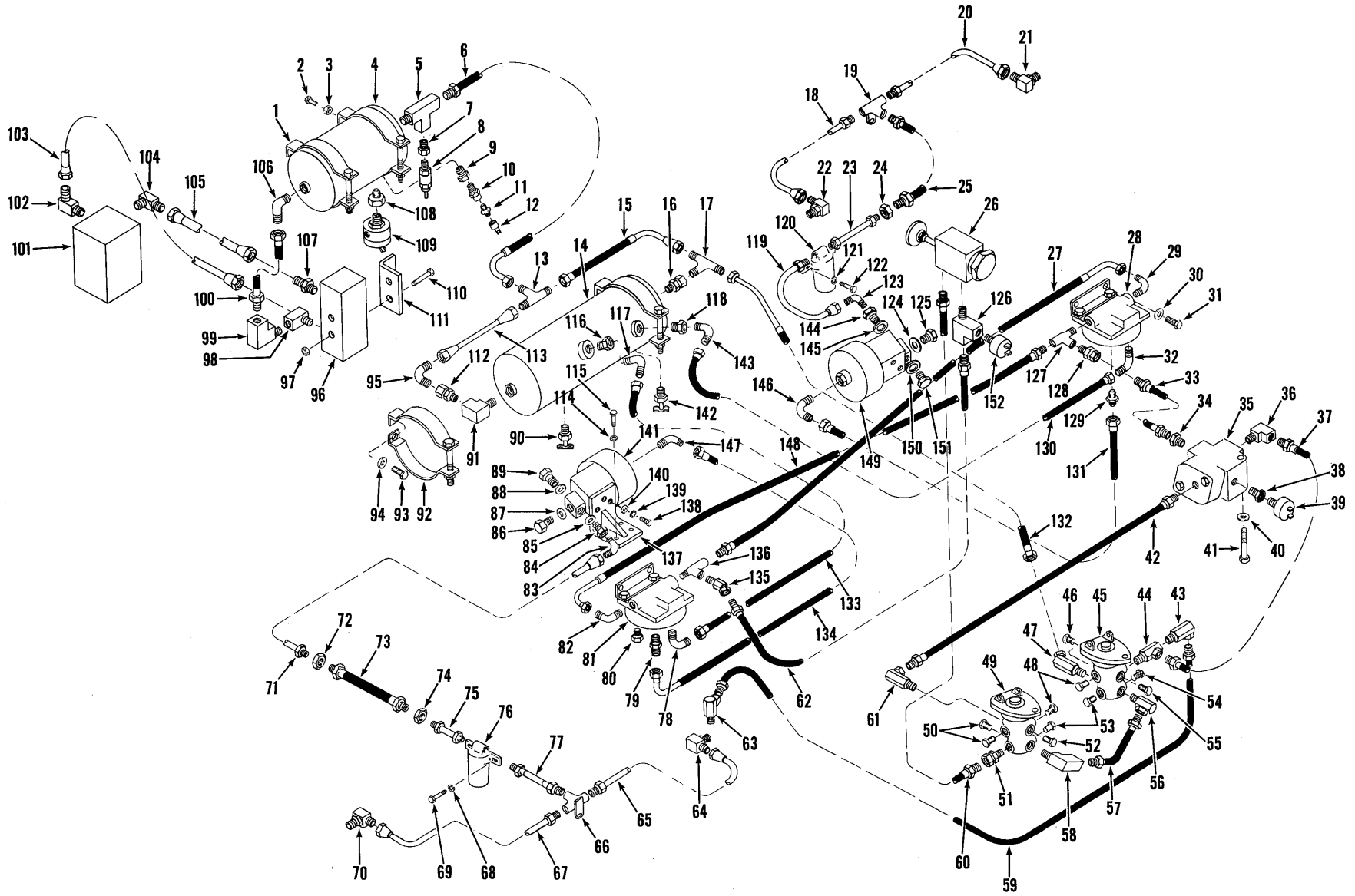


Brake Air Lines, Front and Rear – Cummins

MICHIGAN

105	19F-4	1	Bushing
106	19F-1	1	Bushing
107	573618	1	Stem
108	551684	1	Adapter
109	551685	1	Cap
110	44F-8	1	Tee
111	527685	1	Bracket
112	1519976	1	Hose
113	2502143	1	Hose
114	593370	1	Valve check
115	45F-9	1	Tee
116	2502145	1	Tube
117	1519980	1	Tube
118	44F-3	1	Tee
119	42F-3	1	Elbow
120	1543879	1	Adapter
121	613750	1	Gasket
122	874007	1	Plug
123	1549038	1	Tee
124	30F-1	1	Tee
125	36F-2	1	Adapter
126	38F-7	1	Connector
127	1519971	1	Hose
128	514341	1	Hose
129	1519968	1	Hose
130	1537354	1	Switch
131	1519975	1	Hose
132	874007	1	Plug
133	613750	1	Gasket
134	1519975	1	Hose
135	1519969	1	Hose
136	1519970	1	Hose
137	1519972	1	Hose
138	33F-2	1	Adapter
139	30F-1	1	Tee
140	3980985	2	Mounting plate
141	24C-716	6	Bolt
142	4E-07	6	Lockwasher
143	42F-6	1	Elbow
144	25E-20	6	Washer
145	4-----	1	Pwr clr assy brk
146	72F-2	1	Draincock
147	42F-6	1	Elbow
148	4-----	1	Pwp clr assy brk
149	613750	1	Gasket
150	61F-3	1	Union
151	42F-8	1	Elbow
152	19F-6	1	Bushing
153	42F-8	1	Elbow
154	19F-6	1	Bushing
155	23C-620	8	Bolt
156	4E-06	8	Lockwasher
157	593370	1	Valve check
158	2500080	1	Tube
159	42F-3	1	Elbow
160	2500147	1	Hose
161	1519191	1	Valve condensate
162	40K-4	1	Plug

⁴See Index



TS-11965 D

Brake Air Lines, Front and Rear — Perkins



No.	Part No.	Qty.	Description
1	941214	2	Bracket
2	24C-620	4	Bolt
3	18D-06	4	Locknut
4	3981021	1	Air tank
5	30F-3	1	Tee
6	1510153	1	Hose
7	19F-5	1	Reducer fitting
8	*1507815	1	Valve safety
9	19F-2	1	Reducer fitting
10	573618	1	Stem
11	551684	1	Valve stem
12	551685	1	Cap
13	44F-8	1	Tee
14	3981022	1	Air tank
15	1519976	1	Hose
16	593370	1	Valve check
17	45F-9	1	Tee
18	3980601	1	Tube
19	114427	1	Tee
20	3980603	1	Tube
21	3980014	1	Fitting
22	3980014	1	Fitting
23	2502362	1	Tube
24	8D-10	1	Nut
25	533814	1	Hose
26	1545790	1	Valve hand brake
27	1519975	1	Hose
28	² 1545789	1	Valve quick release
28A	949959	1	Repair kit
29	940639	1	Elbow
30	4E-06	4	Lockwasher
31	24C-616	4	Bolt
32	42F-8	1	Elbow
33	593495	1	Hose
34	19F-5	1	Reducer fitting
35	* ³ 1532592	1	Valve check
36	29F-3	1	Elbow
37	593483	1	Hose
38	19F-4	1	Reducer fitting
39	636260	1	Switch
40	4E-06	1	Lockwasher
41	24C-640	1	Bolt
42	593483	1	Hose
43	31F-1	1	Adapter union
44	356609	1	Adapter union
45	⁴ -----	1	Valve brake
45A	24C-520	3	Bolt
45B	18D-05	3	Locknut
46	40K-08	1	Plug
47	33F-4	1	Adapter union
48	40K-08	2	Plug
49	⁴ -----	1	Valve brake
49A	24C-520	3	Bolt

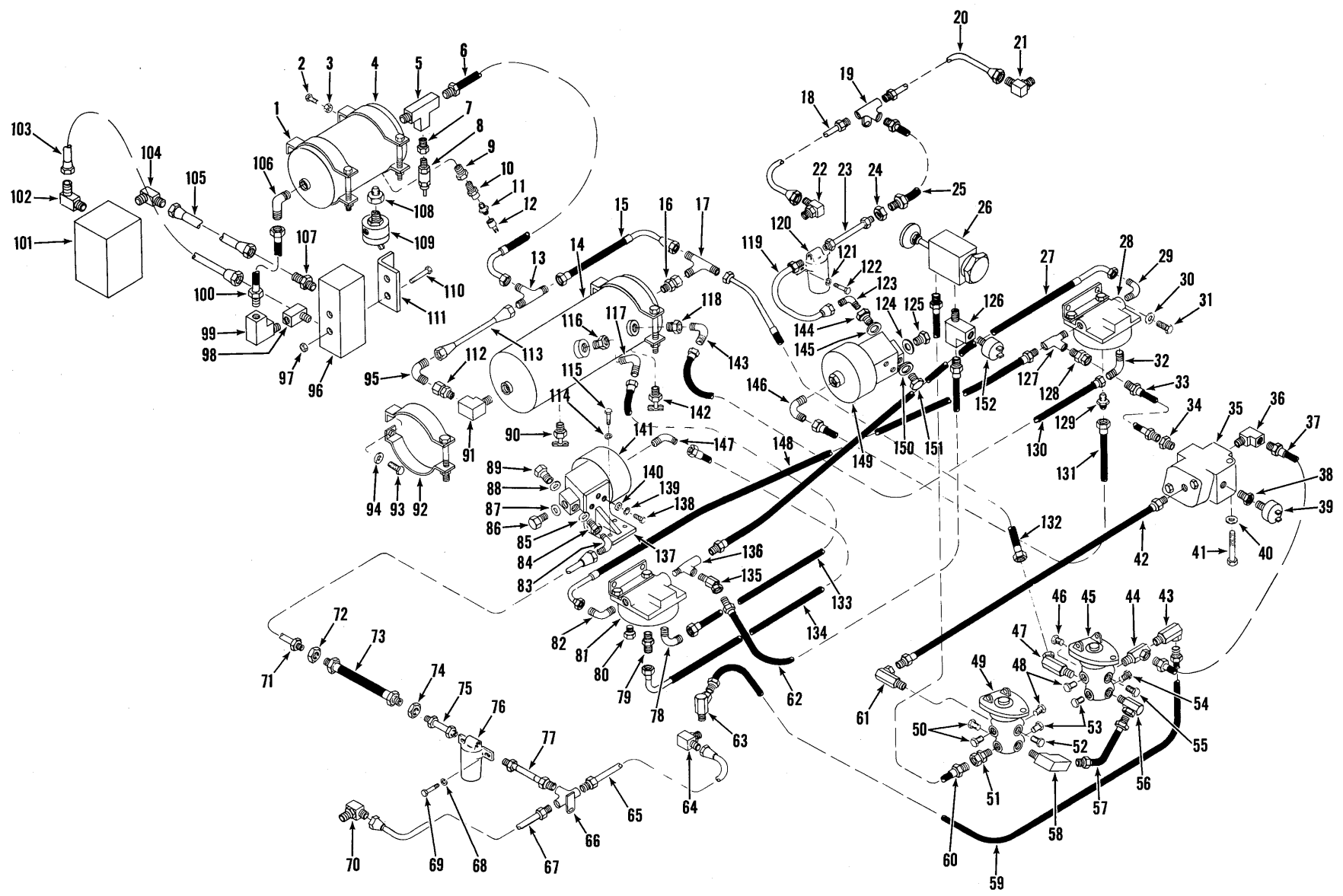
¹B.W. 205105

²Inc. 28A

³B.W. 223869

⁴See Index

*Note: Your local authorized Bendix-Westinghouse Distributor is equipped to service components of these parts.



Brake Air Lines, Front and Rear – Perkins

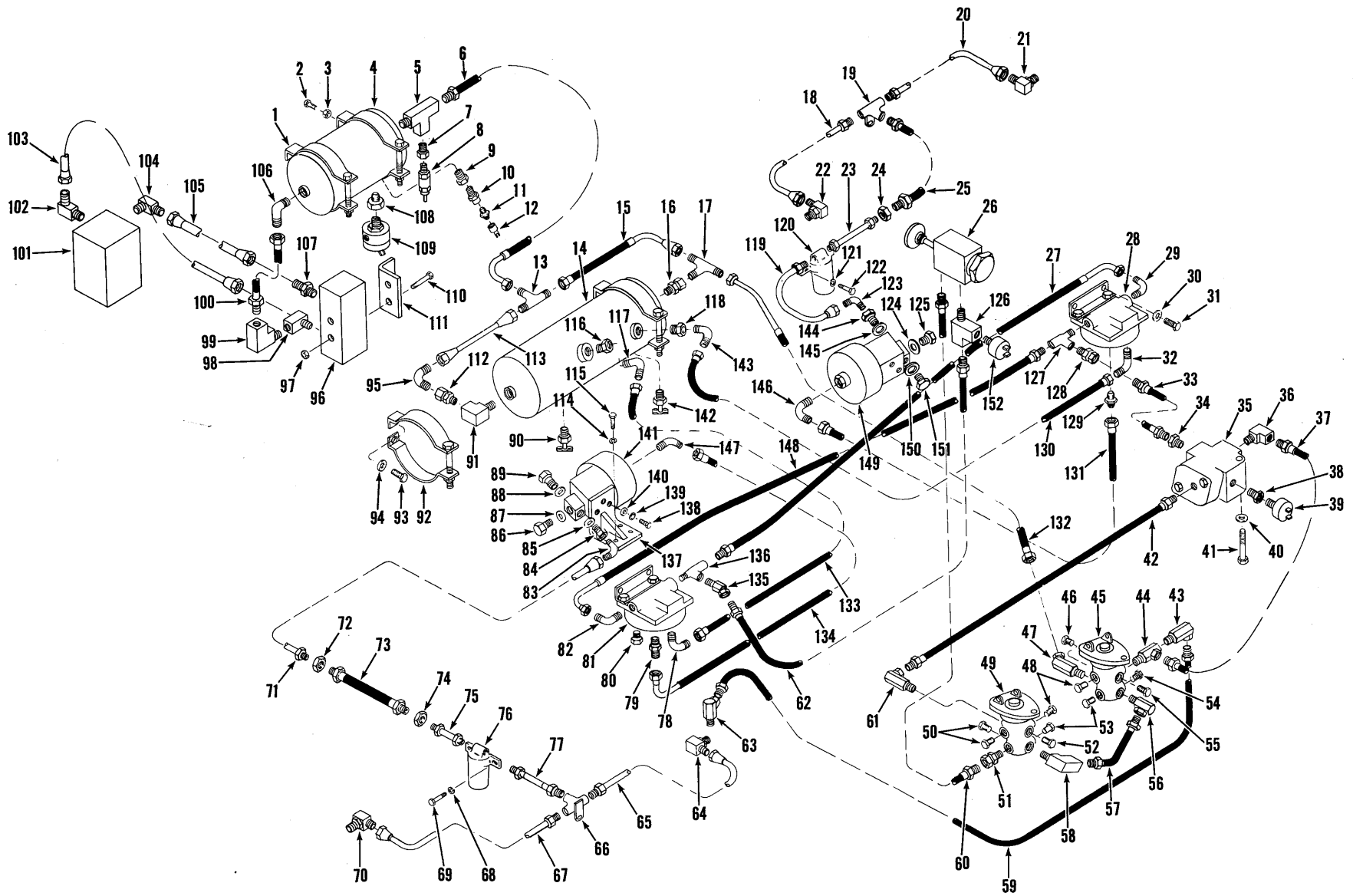
MICHIGAN

No.	Part No.	Qty.	Description
49B	18D-05	3	Locknut
50	40K-08	2	Plug
51	36F-2	1	Adapter union
52	40K-08	1	Plug
53	40K-04	2	Plug
54	40K-04	1	Plug
55	40K-08	1	Plug
56	31F-4	1	Adapter union
57	593483	1	Hose
58	29F-3	1	Elbow
59	1519974	1	Hose
60	1519973	1	Hose
61	31F-4	1	Adapter union
62	1519972	1	Hose
63	33F-1	1	Adapter union
64	3980014	1	Fitting
65	3980607	1	Tube
66	550319	1	Tee
67	3980609	1	Tube
68	4E-06	2	Lockwasher
69	24C-616	2	Bolt
70	3980014	1	Fitting
71	1519997	1	Tube
72	8D-10	1	Nut
73	552374	1	Hose
74	8D-10	1	Nut
75	2502359	1	Tube
76	3953120	1	Compensator cylinder
77	2502361	1	Tube
78	42F-8	1	Elbow
79	38F-7	1	Connector
80	40K-4	6	Plug
81	⁵ 1545789	1	Valve quick release
81A	949959	1	Repair kit
82	940639	1	Elbow
83	42F-3	1	Elbow
84	1543879	1	Adapter
85	613750	1	Gasket
86	874007	1	Plug
87	613750	1	Gasket
88	613750	1	Gasket
89	874007	1	Plug
90	72F-2	1	Draincock
91	29F-3	1	Elbow
92	527685	2	Bracket
93	24C-616	4	Bolt
94	4E-06	4	Lockwasher
95	42F-9	1	Elbow
96	⁶ _____	1	Governor
97	18D-05	2	Nut
98	3951507	1	Tee
99	29F-3	1	Elbow
100	1510153	1	Hose

⁵Inc. 81A

⁶Furnished with Engine

*Note: Your local authorized Bendix-Westinghouse Distributor is equipped to service components of these parts.



Brake Air Lines, Front and Rear – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
101	6-----	1	Compressor
102	3951982	1	Elbow
103	3951983	1	Tube
104	3951981	1	Elbow
105	3951974	1	Tube
106	42F-9	1	Elbow
107	38F-3	1	Fitting
108	3980023	1	Reducer fitting
109	*71505580	1	Valve drain
109A	*+949132	1	Filter
110	24C-548	2	Bolt
111	3951508	1	Bracket
112	593370	1	Valve check
113	2500080	1	Tube
114	4E-06	8	Lockwasher
115	23C-620	8	Bolt
116	19F-6	1	Reducer fitting
117	42F-8	1	Elbow
118	19F-6	1	Reducer fitting
119	2502360	1	Tube
120	3953120	1	Compensator cylinder
121	4E-06	2	Lockwasher
122	24C-616	2	Bolt
123	42F-3	1	Elbow
124	613750	1	Gasket
125	874007	1	Plug
126	1549038	1	Tee
127	30F-1	1	Tee
128	36F-2	1	Adapter union
129	38F-7	1	Connector
130	1519971	1	Hose
131	514341	1	Hose
132	1519968	1	Hose
133	1519969	1	Hose
134	1519970	1	Hose
135	33F-2	1	Adapter union
136	30F-1	1	Tee
137	3980985	2	Mounting plate
138	24C-716	6	Bolt
139	4E-07	6	Lockwasher
140	25E-20	6	Washer
141	4-----	1	Pwr clr assy brk
142	72F-2	1	Draincock
143	42F-8	1	Elbow
144	1543879	1	Adapter
145	613750	1	Gasket
146	42F-6	1	Elbow
147	42F-6	1	Elbow
148	1519975	1	Hose
149	4-----	1	Pwr clr assy brk
150	613750	1	Gasket
151	874007	1	Plug
152	1537354	1	Switch

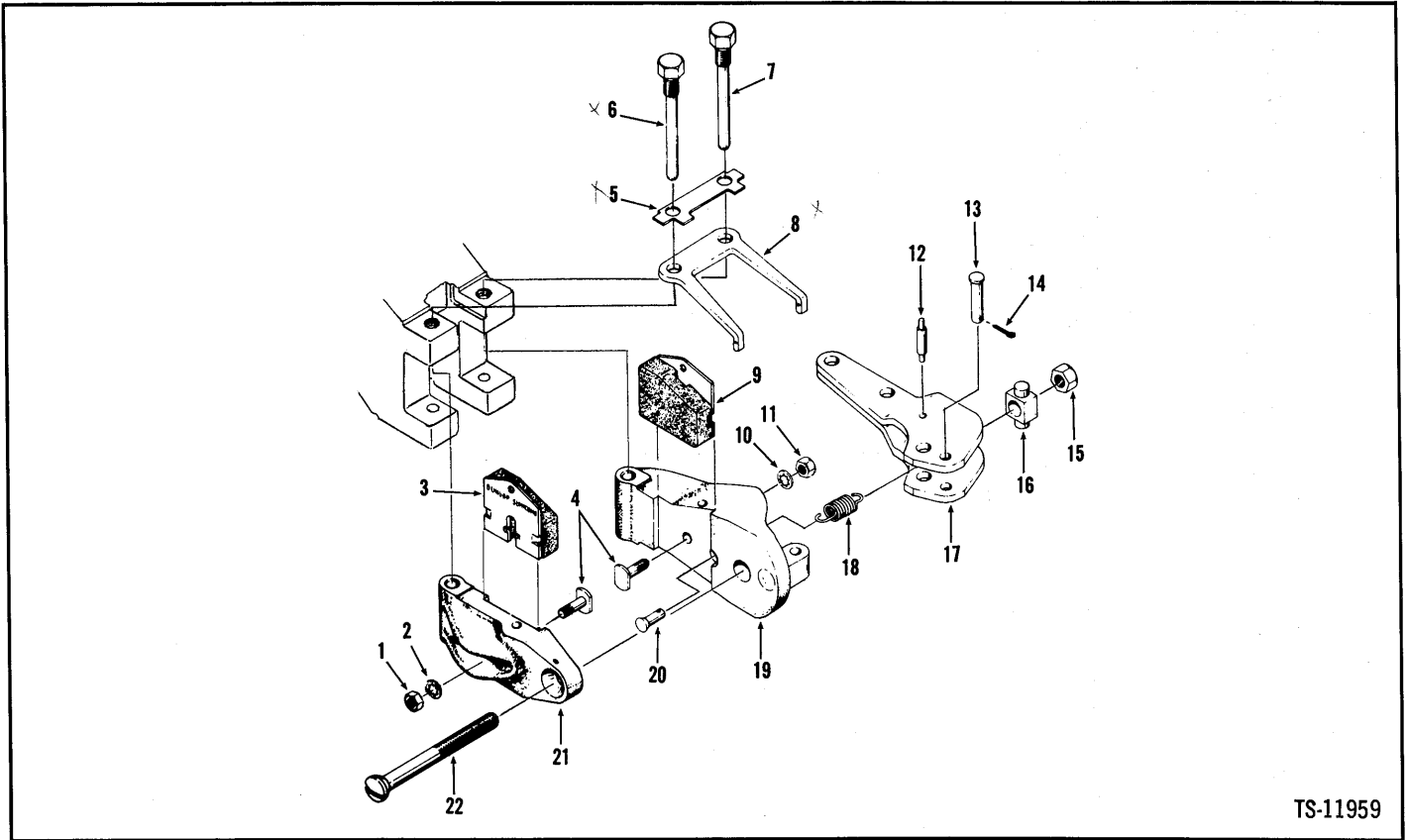
4See Index

6Furnished with Engine

7Inc. 109A B.W. 281923

8B.W. 281925

*Note: Your local authorized Bendix-Westinghouse Distributor is equipped to service components of these parts.



TS-11959

No.	Part No.	Qty.	Description
A	3953108	1	Brake assy
B	3908090	1	Pad kit
1	1DM5	1	Nut
2	11EM5	1	Washer
3	3908092	1	Pad assy – B
4	3908101	2	Bolt
5	3908096	1	Tab washer
6	3908097	1	Bolt
7	3908097	1	Bolt
8	3908093	1	Retract plate
9	3908091	1	Pad assy – A
10	11EM5	1	Washer <i>11EM-50 Metalogphib</i>
11	1DM5	1	Nut
12	§ ³ _____	1	Pin
13	3908100	1	Pin
14	13JM-16010	1	Pin cotter
15	1DM8	1	Nut
16	3908099	1	Trunnion
17	3908094	1	Lever assy
18	3908095	1	Spring
19	§ ⁵ _____	1	Plate
20	_____	1	Pin
21	§ ⁵ _____	1	Plate
22	3908098	1	Bolt

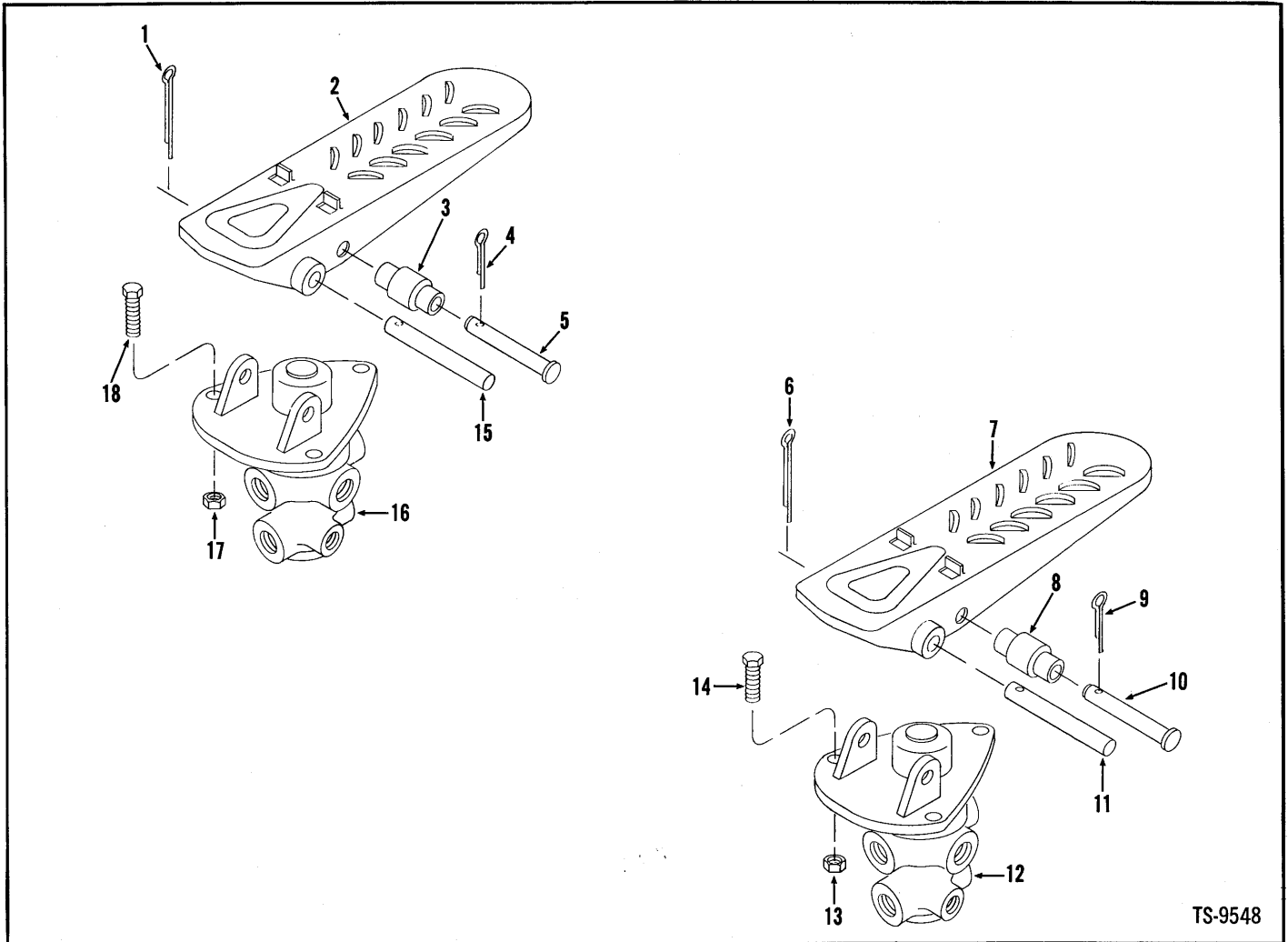
¹Inc. 1 → 22

²Inc. 1 → 8, 11

³See 17

⁴Inc. 12, 16

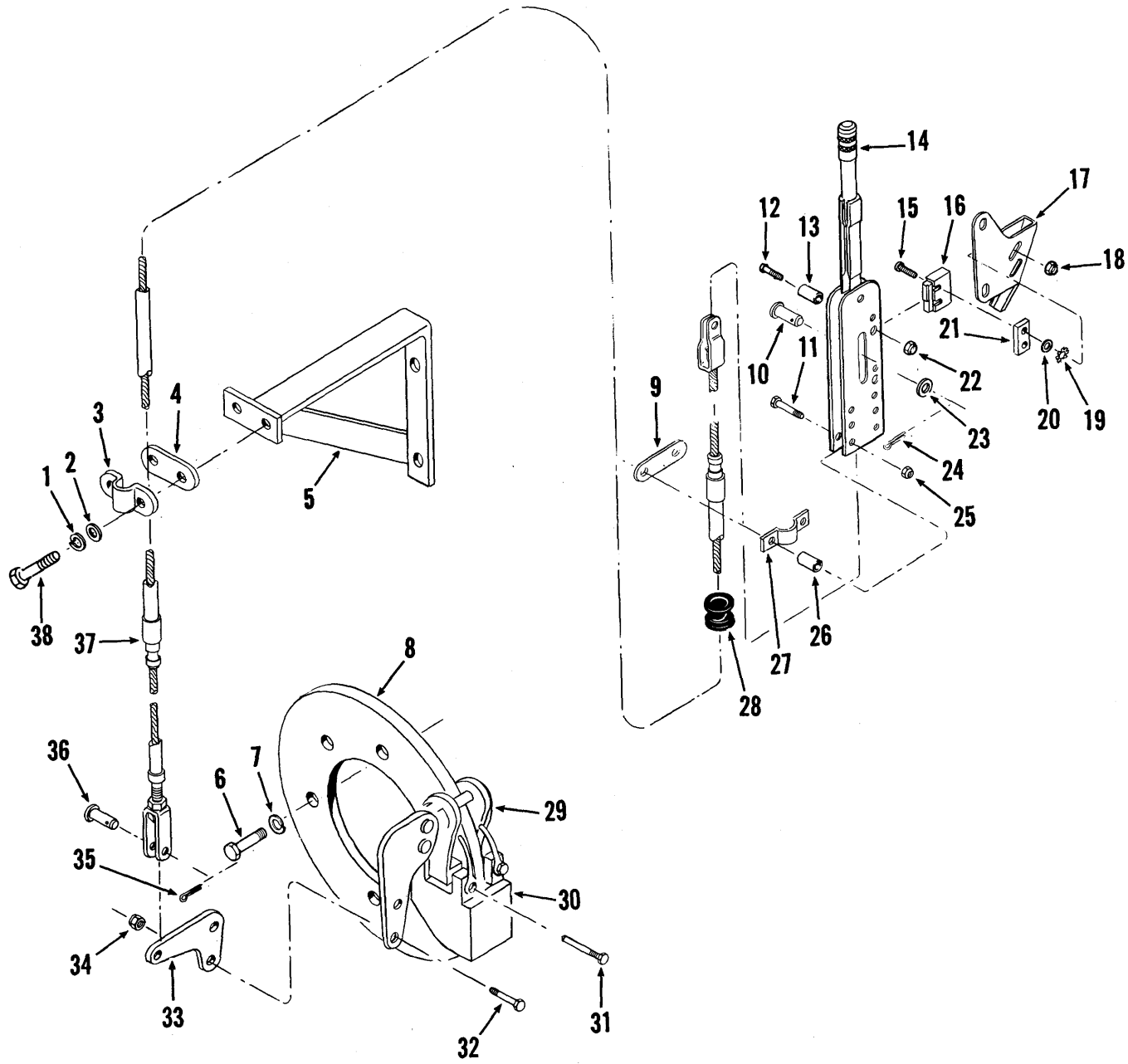
⁵See A



TS-9548

No.	Part No.	Qty.	Description
1	1F-320	1	Pin cotter
2	513930	1	Pedal brake
3	518259	1	Roller
4	1F-312	1	Pin cotter
5	875766	1	Pin
6	1F-320	1	Pin cotter
7	513930	1	Pedal brake
8	518259	1	Roller
9	1F-312	1	Pin cotter
10	875766	1	Pin
11	875767	1	Pin mounting
12	-----	1	Valve brake
13	18D-05	3	Nut
14	24C-520	3	Bolt
15	875767	1	Pin mounting
16	-----	1	Valve brake
17	18D-05	3	Nut
18	24C-520	3	Bolt

¹See Index

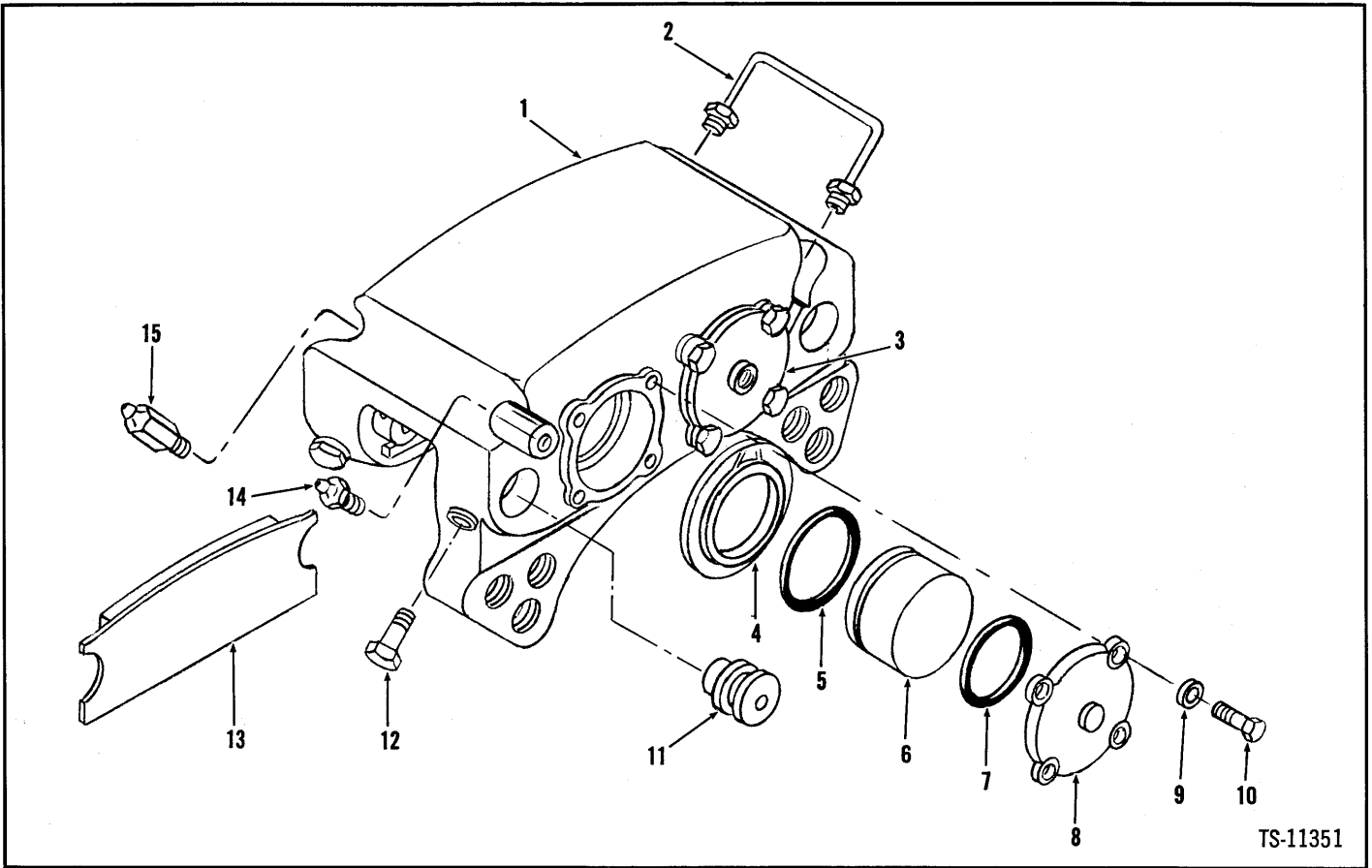


Brake Controls, Parking

MICHIGAN

No.	Part No.	Qty.	Description
1	4E-05	2	Lockwasher
2	619019	2	Washer
3	544512	1	Clamp
4	645092	1	Spacer
5	2500141	1	Bracket
6	18C-616	6	Bolt
7	4E-06	6	Lockwasher
8	3953017	1	Disc
9	645092	1	Spacer
10	862738	1	Pin
11	24C-528	2	Bolt
12	24C-644	2	Bolt
13	3950692	2	Spacer
14	3951954	1	Lever assy
15	86G-620	4	Screw
16	3951644	1	Switch
17	3968090	1	Bracket
18	14D-06	2	Nut
19	14E-06	2	Lockwasher
20	3980961	4	Washer
21	3968085	1	Spacer
22	18D-06	2	Nut
23	619019	1	Washer
24	1F-316	1	Pin cotter
25	18D-05	2	Nut
26	3950692	2	Spacer
27	3957514	1	Clamp
28	3980532	1	Grommet
29	3953108	1	Brake assy
30	2500170	1	Carrier
31	1500167	2	Bolt
32	24C-524	2	Bolt
33	2500142	1	Bellcrank
34	18D-05	2	Nut
35	1F-312	1	Pin cotter
36	4F-06106	1	Pin
37	1531660	1	Cable
38	24C-512	2	Bolt

¹See Index



TS-11351

No.	Part No.	Qty.	Description
A	*122560	1	Brake head assy
B	†2949847	1	Kit
1	840257	1	Plate
2	947926	1	Tube
3	947933	1	Cap
4	§ ³ -----	4	Boot
5	§ ³ -----	4	Packing
6	947935	4	Piston
7	§ ³ -----	4	Packing
8	947934	1	Cap
9	103293	8	Washer
10	1C-620	8	Bolt
11	947931	4	Pin
12	947930	4	Bolt
13	947932	2	Lining brake
14	947927	1	Bleeder valve
15	947928	1	Bleeder valve

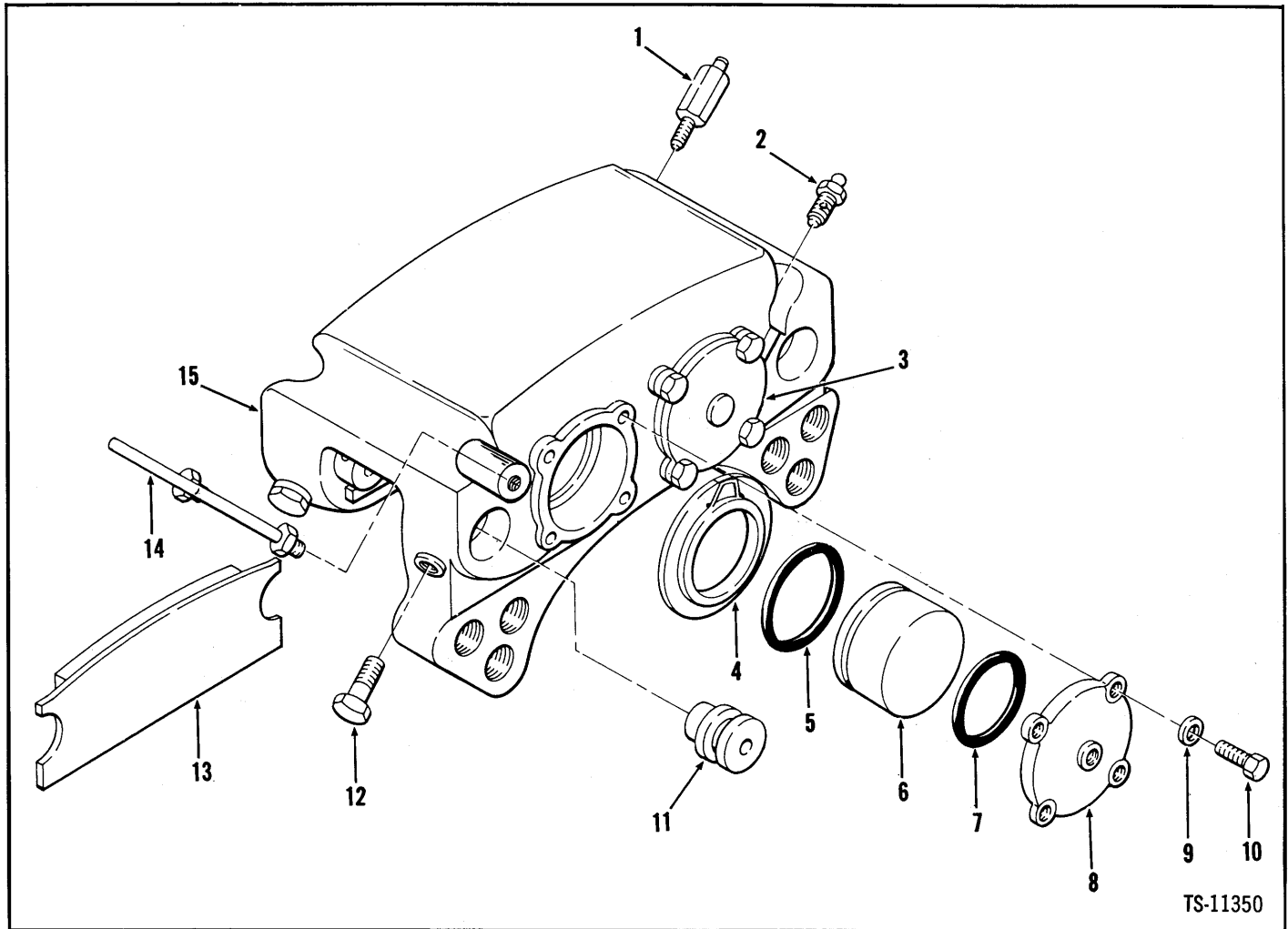
¹Incl. 1-15

²Incl. 4, 5, 7

³See, Voir, Siehe, Veja, Véase B

*Note: L. H. Front

Brake Head Assembly



TS-11350

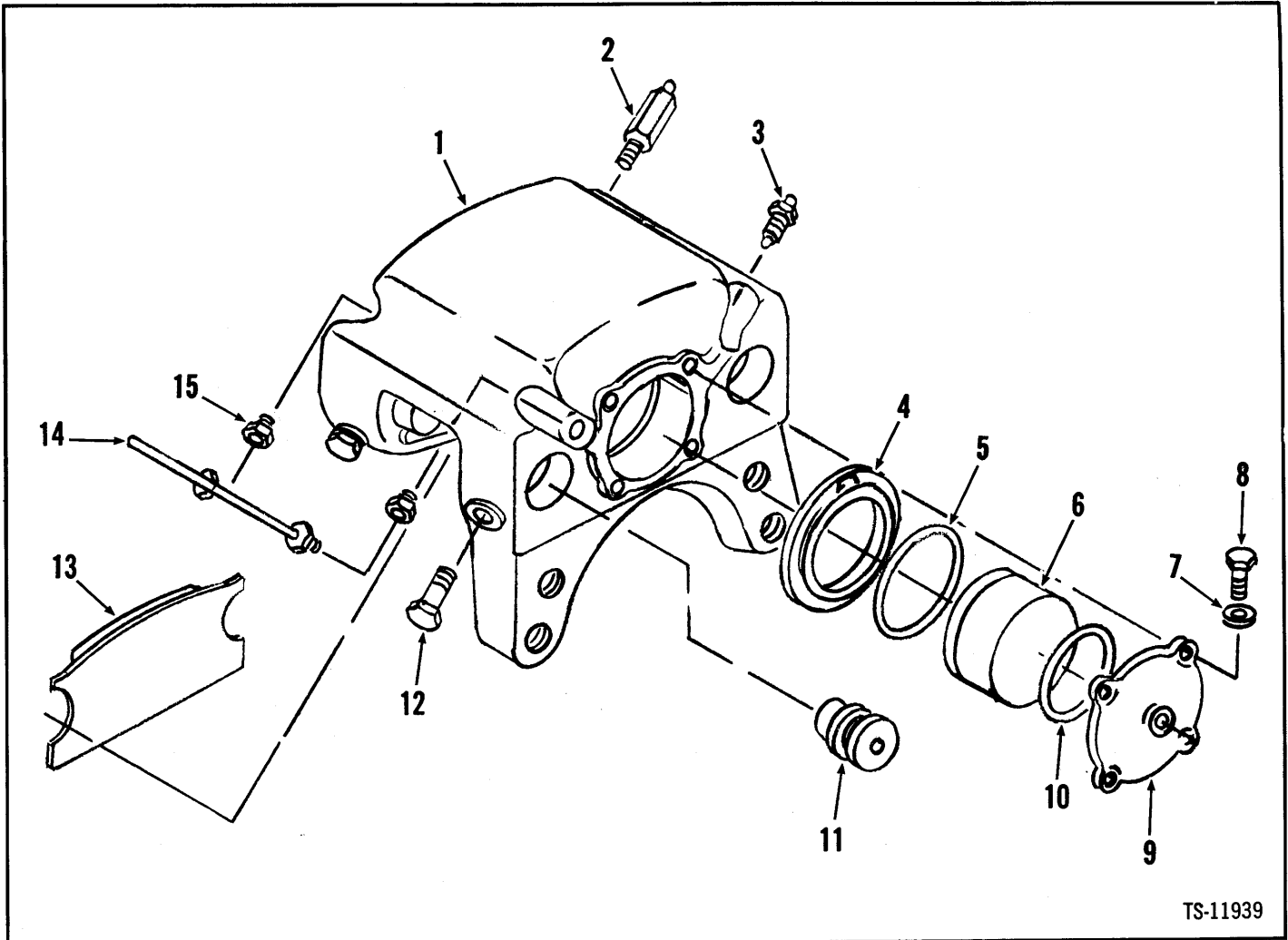
No.	Part No.	Qty.	Description
A	*122561	1	Brake head assy
B	†2949847	1	Kit
1	947928	1	Bleeder valve
2	§3947927	1	Bleeder valve
3	947934	1	Cap
4	§3-----	4	Boot
5	§3-----	4	Packing
6	947935	4	Piston
7	§3-----	4	Packing
8	947933	1	Cap
9	103293	8	Washer
10	1C-620	8	Bolt
11	947931	4	Pin
12	947930	4	Bolt
13	947932	2	Lining brake
14	947926	2	Tube
15	840258	1	Plate

†Inc. 1-15

‡Inc. 4, 5, 7

§See, Voir, Siehe, Veja, Véase B

*Note: R. H. Front



No.	Part No.	Qty.	Description
A	125472	1	Brake head assy R.H.
B	949867	1	Kit
1	949869	1	Plate
2	947928	1	Bleeder valve
3	947927	1	Bleeder valve
4	S ³ -----	2	Boot
5	S ³ -----	2	Packing
6	947935	2	Piston
7	103293	4	Washer
8	1C-620	4	Bolt
9	947933	1	Cap
10	S ³ -----	1	Packing
11	947931	4	Pin
12	947930	4	Bolt
13	840472	2	Lining brake
14	947926	1	Tube
15	949866	2	Insert

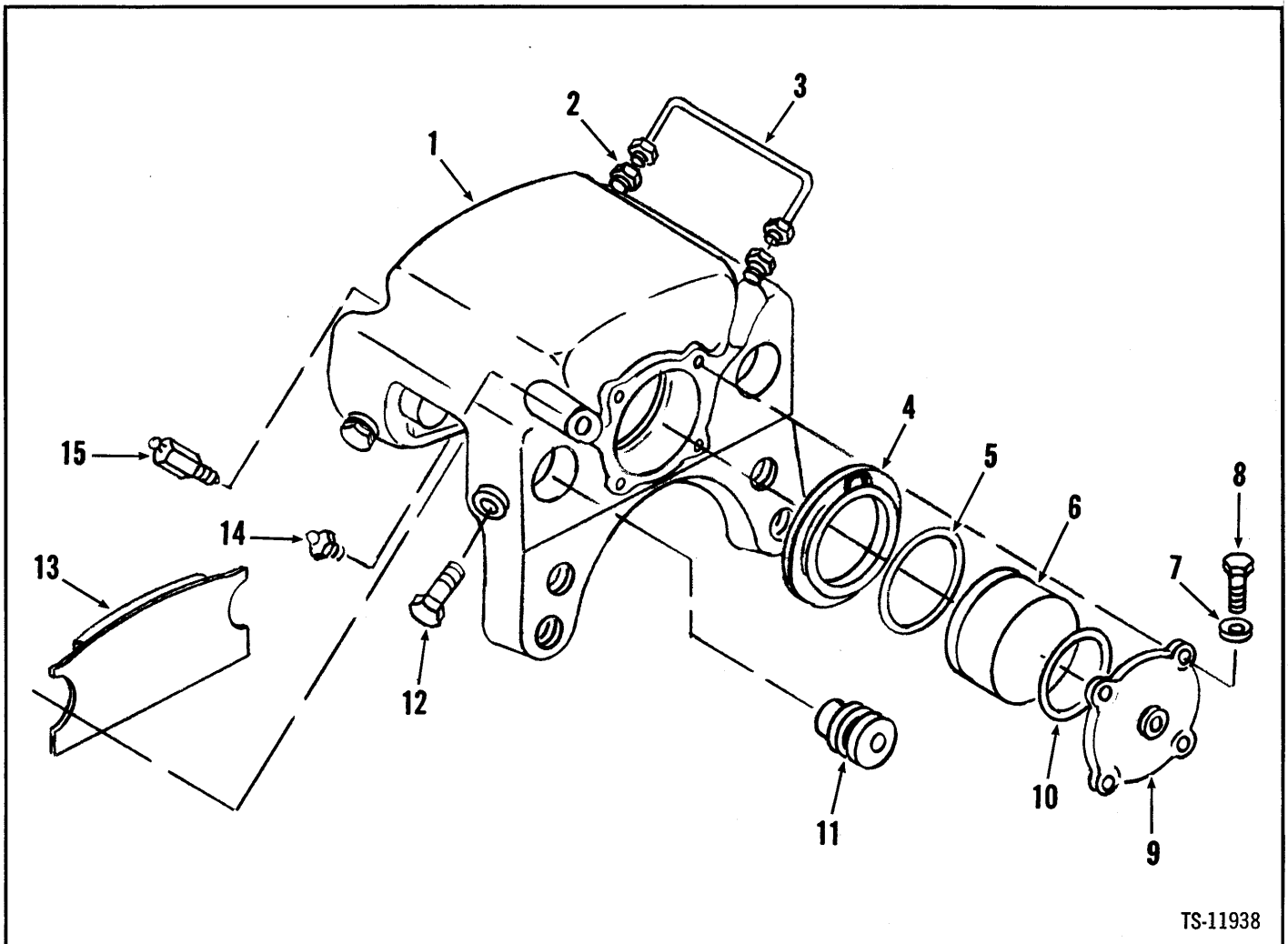
¹Inc. 1-15

²Inc. 4, 5, 10

³See B

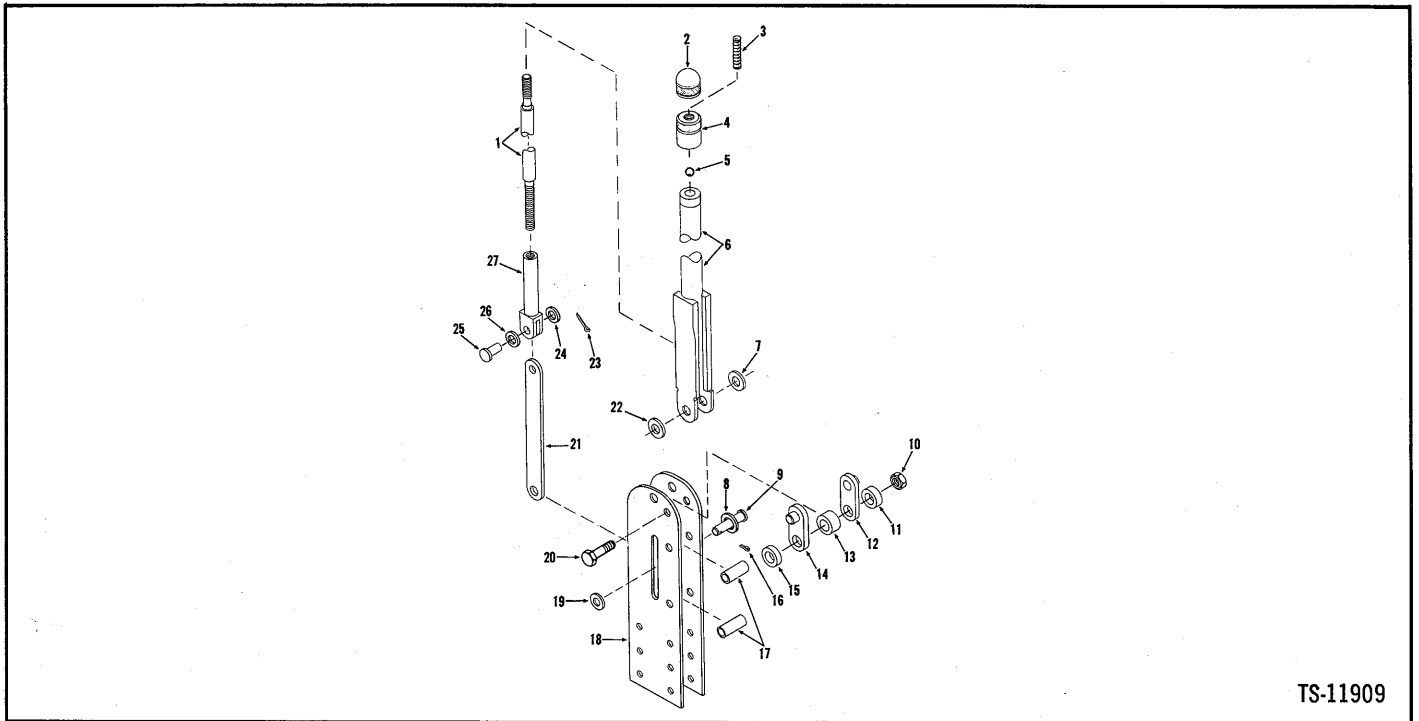
Brake Head Assembly – Perkins

MICHIGAN



No.	Part No.	Qty.	Description
A	¹ 125473	1	Brake head assy L.H.
B	² 949867	1	Kit
1	949868	1	Plate
2	949866	2	Insert
3	947926	1	Tube
4	§ ² -----	2	Boot
5	§ ³ -----	2	Packing
6	947935	2	Piston
7	103293	4	Washer
8	1C-620	4	Bolt
9	947933	1	Cap
10	§ ² -----	1	Packing
11	947931	4	Pin
12	947930	4	Bolt
13	840472	2	Lining brake
14	947927	1	Bleeder valve
15	947928	1	Bleeder valve

¹Inc. 1-15
²Inc. 4, 5, 10
³See B



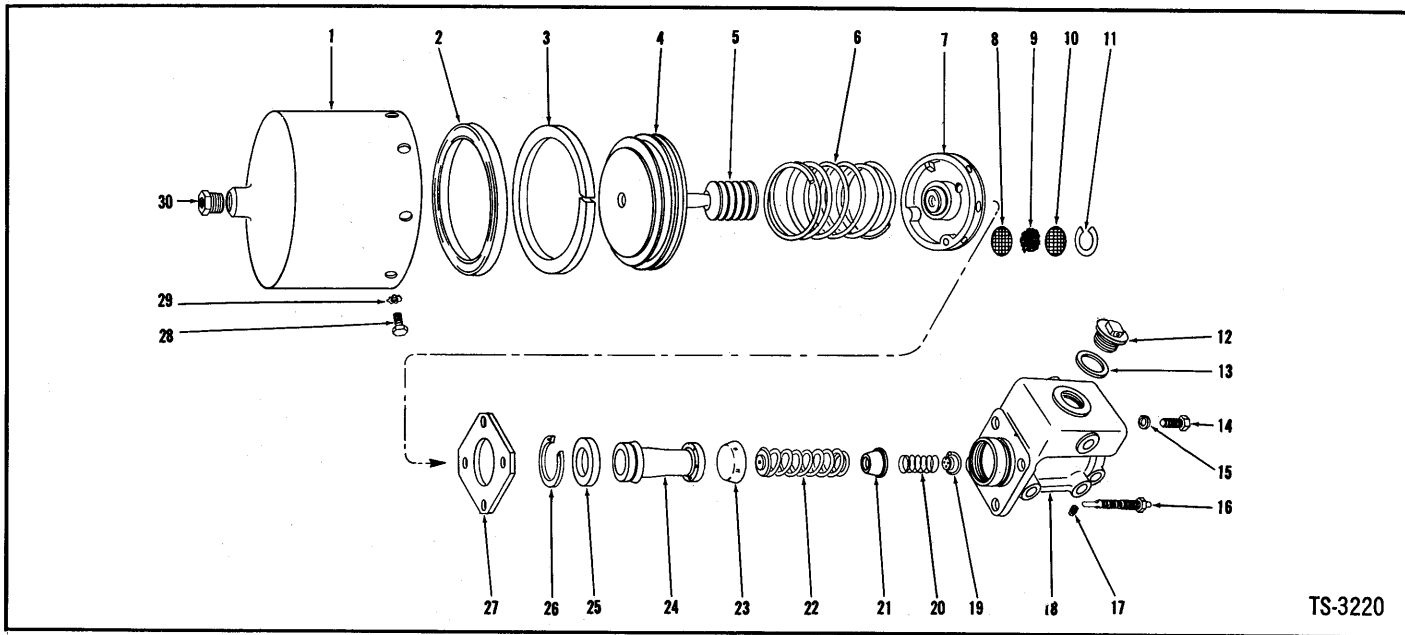
TS-11909

No.	Part No.	Qty.	Description
A	3951954	1	Hand lever assy
1	3981931	1	Screw
2	3981932	1	Cap
3	3981934	1	Spring
4	3981933	1	Base
5	3981935	1	Ball
6	3981936	1	Body
7	3981937	1	Washer
8	3981939	1	Washer
9	3981938	1	Pin
10	3981945	1	Nut
11	3981941	1	Spacer
12	3981942	1	Bracket
13	3981943	1	Spacer
14	3981942	1	Bracket
15	3981941	1	Spacer
16	3981940	1	Pin cotter
17	3981946	2	Spacer
18	3981947	2	Bracket
19	3981939	1	Washer
20	3981944	1	Bolt
21	3981948	1	Link
22	3981937	1	Washer
23	3981951	1	Pin cotter
24	3981950	1	Washer
25	3981949	1	Pin
26	3981950	1	Washer
27	3981952	1	Tube

Inc. 1-27

Brake Power Cluster Assembly

MICHIGAN



TS-3220

No.	Part No.	Qty.	Description
A	*1526879	1	Pwr clr assy brk
B	2945041	1	Repair kit
1	945034	1	Shell
2	S ³ -----	1	Cup
3	S ² -----	1	Wiper
4	S ³ 945035	4	Piston
5	S ³ -----	1	Boot
6	945036	1	Spring
7	945037	1	Piston head assy
8	945029	1	Screen
9	992163	1	Filter fiber mat
10	945029	1	Screen
11	992164	1	Ring
12	892287	1	Cap
13	857933	1	Gasket
14	1C-624	3	Bolt
15	4E-06	4	Lockwasher
16	945038	1	Indicator
17	10F-02	1	Plug
18	947740	1	Housing
19	S-----	1	Valve check
20	945026	1	Spring
21	945042	1	Retainer
22	955321	1	Spring
23	S ³ -----	1	Cup
24	S ³ -----	1	Piston
25	955326	1	Plate
26	955323	1	Ring
27	945040	1	Plate
28	1C-510	8	Bolt
29	6E-05	8	Lockwasher
30	356612	1	Bushing

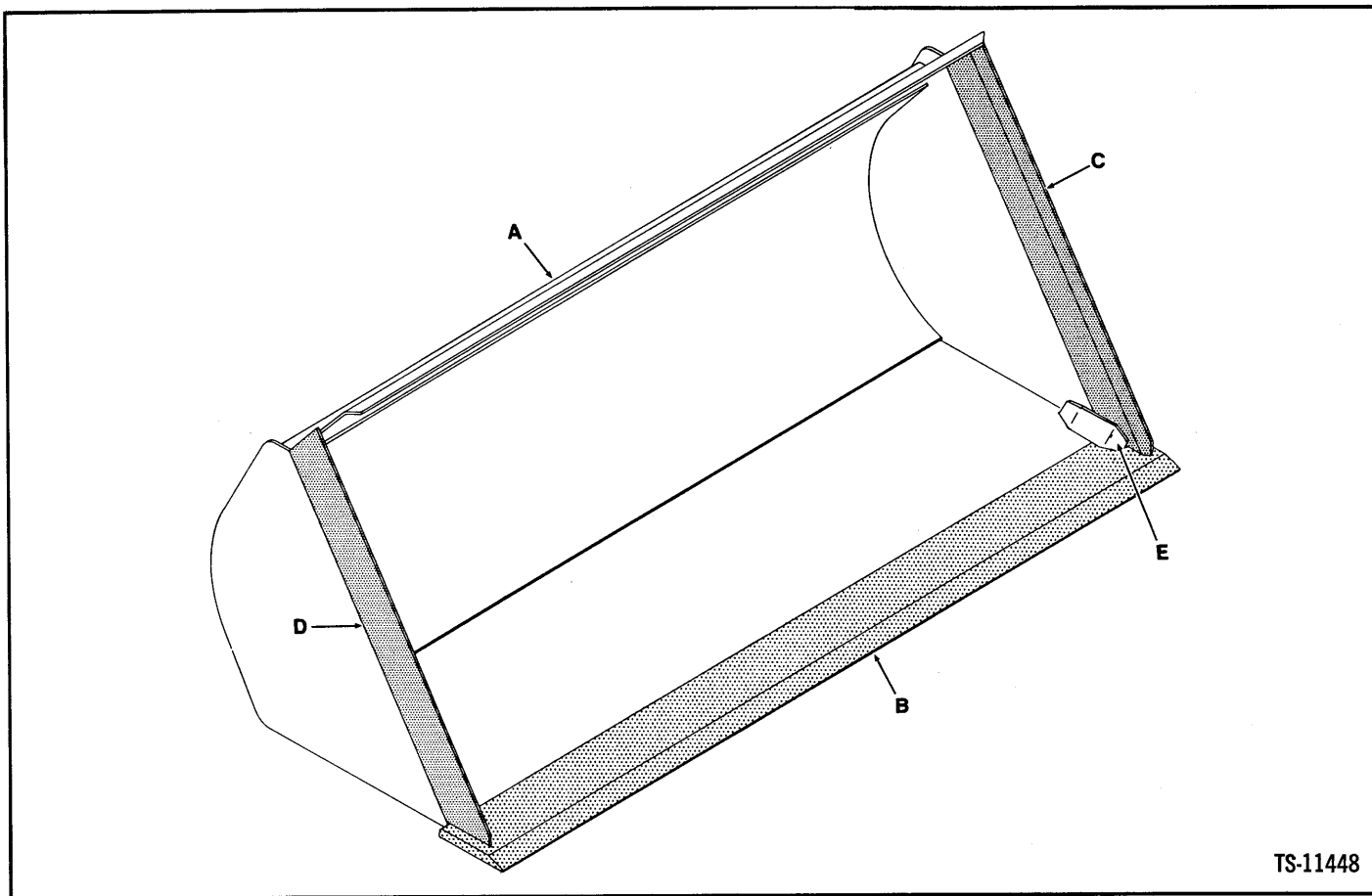
¹Inc. 1-30

²Inc. 2, 3, 5, 19, 23, 24

³See, Voir, Siehe, Veja, Véase B

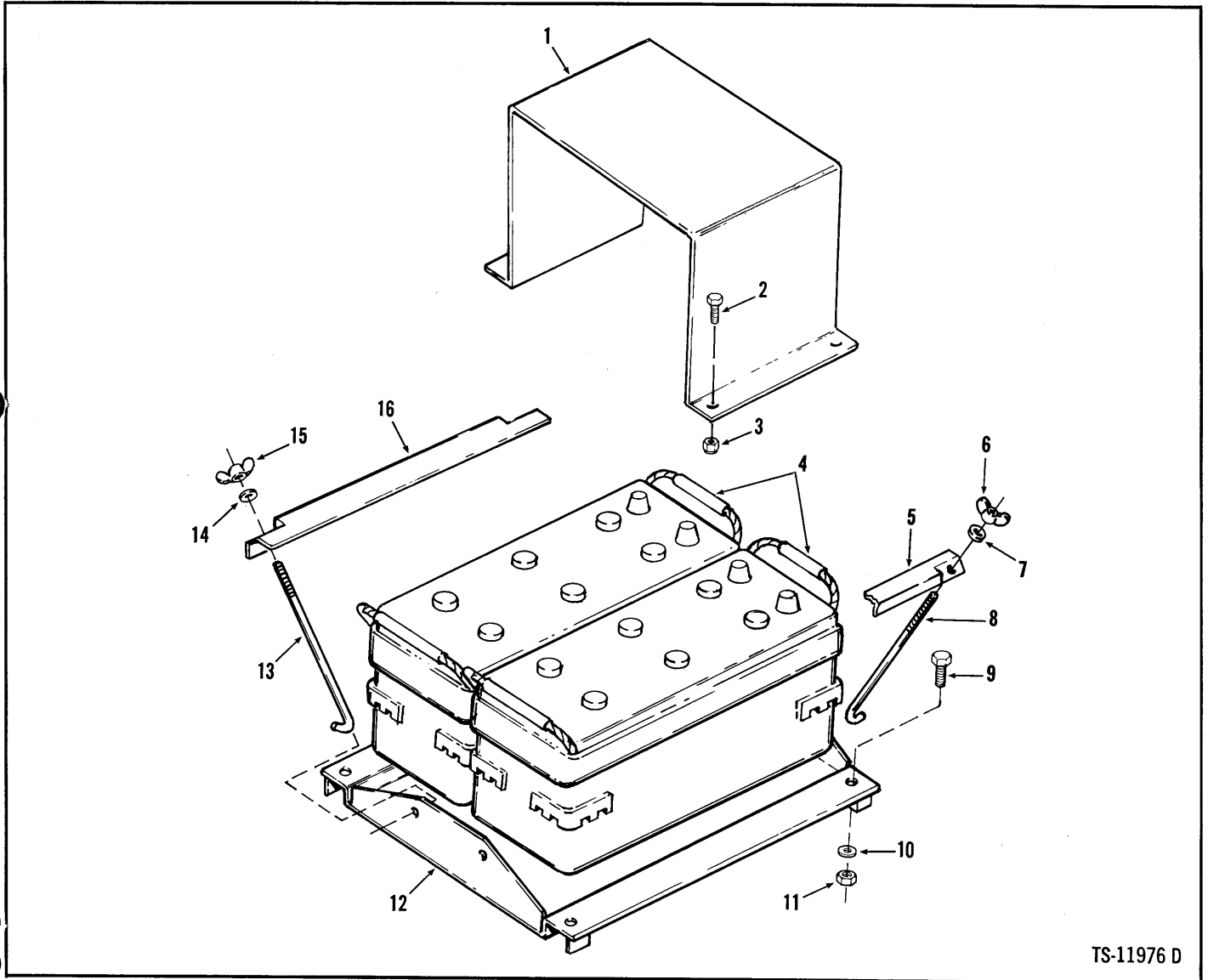
⁴Inc. 8-11

*2 used per machine. Quantities listed are for (1).



BUCKET		MAIN CUTTING EDGE			SIDE CUTTING EDGES			GUSSET	
Item	SAE Heaped Capacity M3	Width	A Part No.	B Part No.	Size	C Part L.H.	D Part R.H.	Size	E Part No.
1	1 0,8	87.40 2179	3983933	3980399	1 x 9 x 87.40 25 x 229 x 2179	---	---	---	3980384
2	1.308 0,9	87.40 2179	3980387	3980399	1 x 9 x 87.40 25 x 229 x 2179	3980406	3980402	3/4 x 6 x 36.89 19 x 130 x 807	3980384
3	1.504 1,2	92.83 2306	3980358	3980373	1 x 9 x 92.83 25 x 229 x 2306	3980376	3980378	3/4 x 6 x 39.37 19 x 130 x 978	3980384
4	1.750 1,4	92.83 2306	3980414	3980373	1 x 9 x 92.83 25 x 229 x 2306	3980421	3980419	3/4 x 6 x 41.61 19 x 130 x 1027	3980384
5	2 1,5	99 2425	3983951	551765	1 x 9 x 97 25 x 229 x 2425	1508729	1508730	3/4 x 6 x 40 3/8 19 x 130 x 1011	1536140

¹2 required
²Japan built machines only



TS-11976 D

No.	Part No.	Qty.	Description
1	3981171	1	Battery cover
2	24C-616	2	Bolt
3	18D-06	2	Nut
4	1310121	2	Battery
5	3980896	1	Battery hold down
6	16D-05	2	Wing nut
7	25E-15	2	Washer
8	3980897	2	Stud
9	23C-632	4	Bolt
10	619021	4	Washer
11	18D-06	4	Nut
12	3980891	1	Base
13	3980897	2	Stud
14	25E-15	2	Washer
15	16D-05	2	Wing nut
16	3980896	1	Battery hold down

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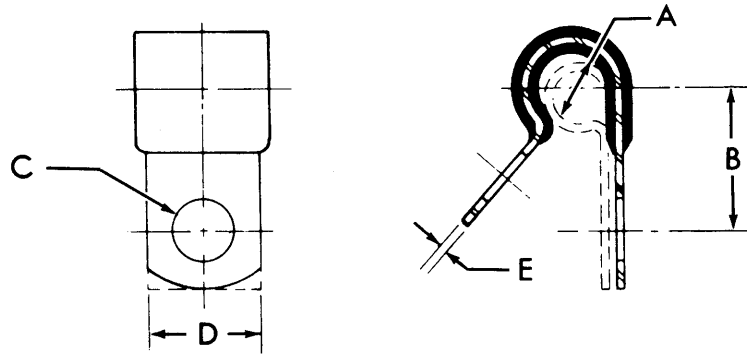
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2000

Group C

Clips – Wiring Pipe & Hose	C2
Insulated Clip	C3
Cockpit Assembly – Cummins	C4
Cockpit Assembly – Perkins	C5
Cockpit Sound Proofing	C6
Cylinder Assembly, Boom	C7
Cylinder Assembly, Bucket	C8
Cylinder Assembly, Steering	C9

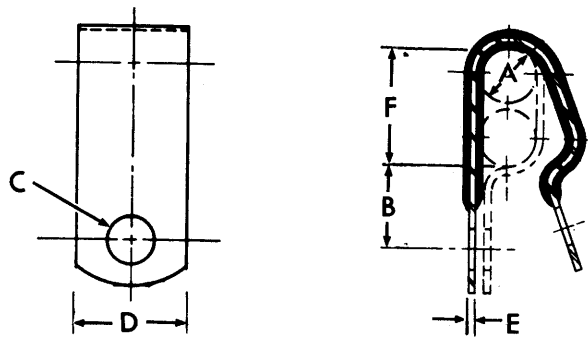


TS-5008

Insulated Clip

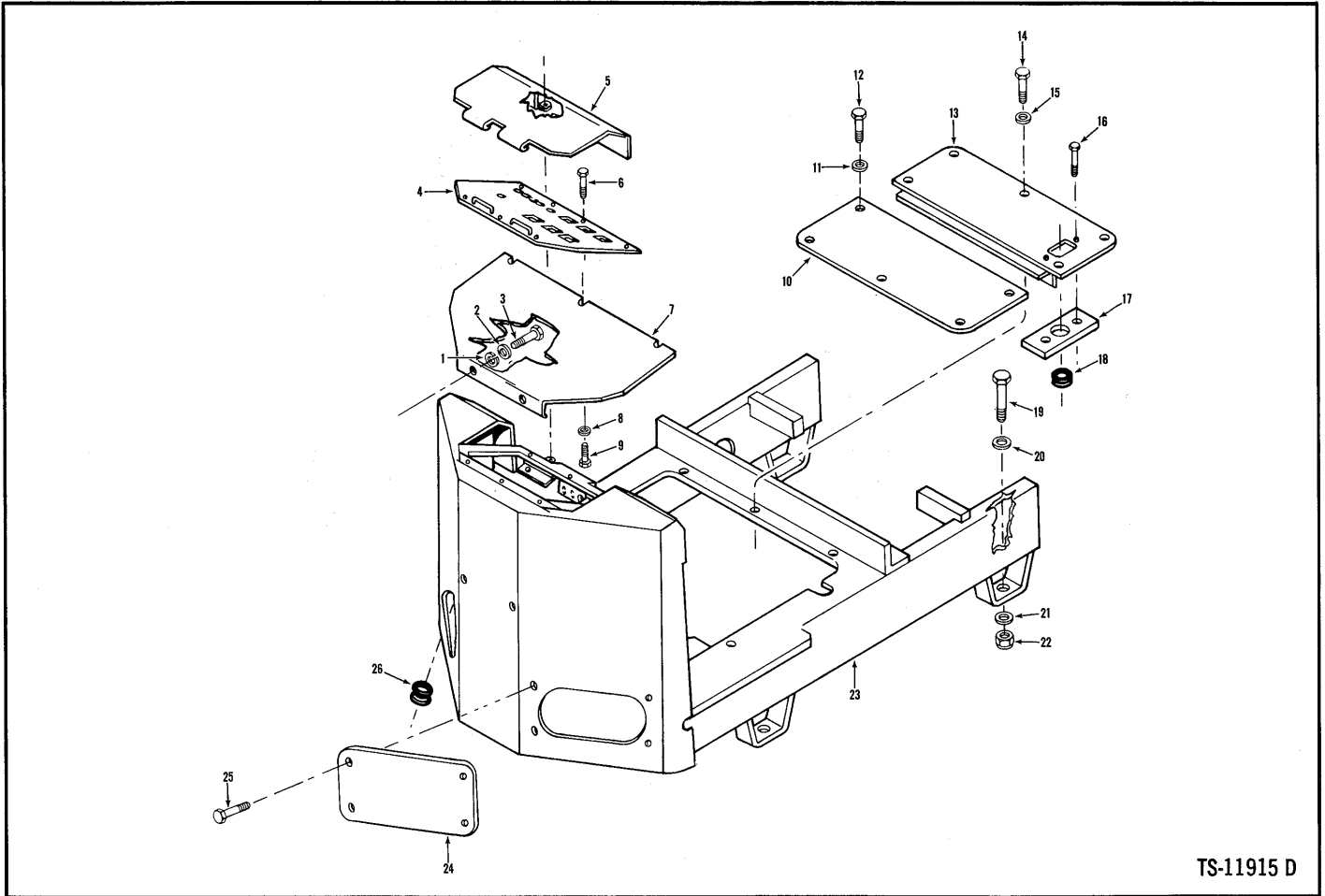
No.	Part No.	A		B		C		D		E	
1	30H-16	1/4	6.4	2 1/32	15.7	1 1/32	10.3	3/4	19.1	.032	.8
2	30H-20	5/16	7.9	1 1/16	17.5	1 1/32	10.3	3/4	19.1	.032	.8
3	30H-23	3/8	9.5	2 1/4	18.2	1 1/32	10.3	3/4	19.1	.032	.8
4	30H-24	3/8	9.5	2 3/32	20.6	1 1/32	11.9	7/8	22.2	.032	.8
5	30H-31	1/2	12.7	2 5/32	20.6	1 1/32	10.3	3/4	19.1	.050	1.3
6	30H-46	1 1/16	20.6	1 1/16	23.8	1 1/32	10.3	3/4	19.1	.050	1.3
7	30H-50	5/8	7.9	1	25.4	1 1/32	10.3	3/4	19.1	.050	1.3

Insulated Clip



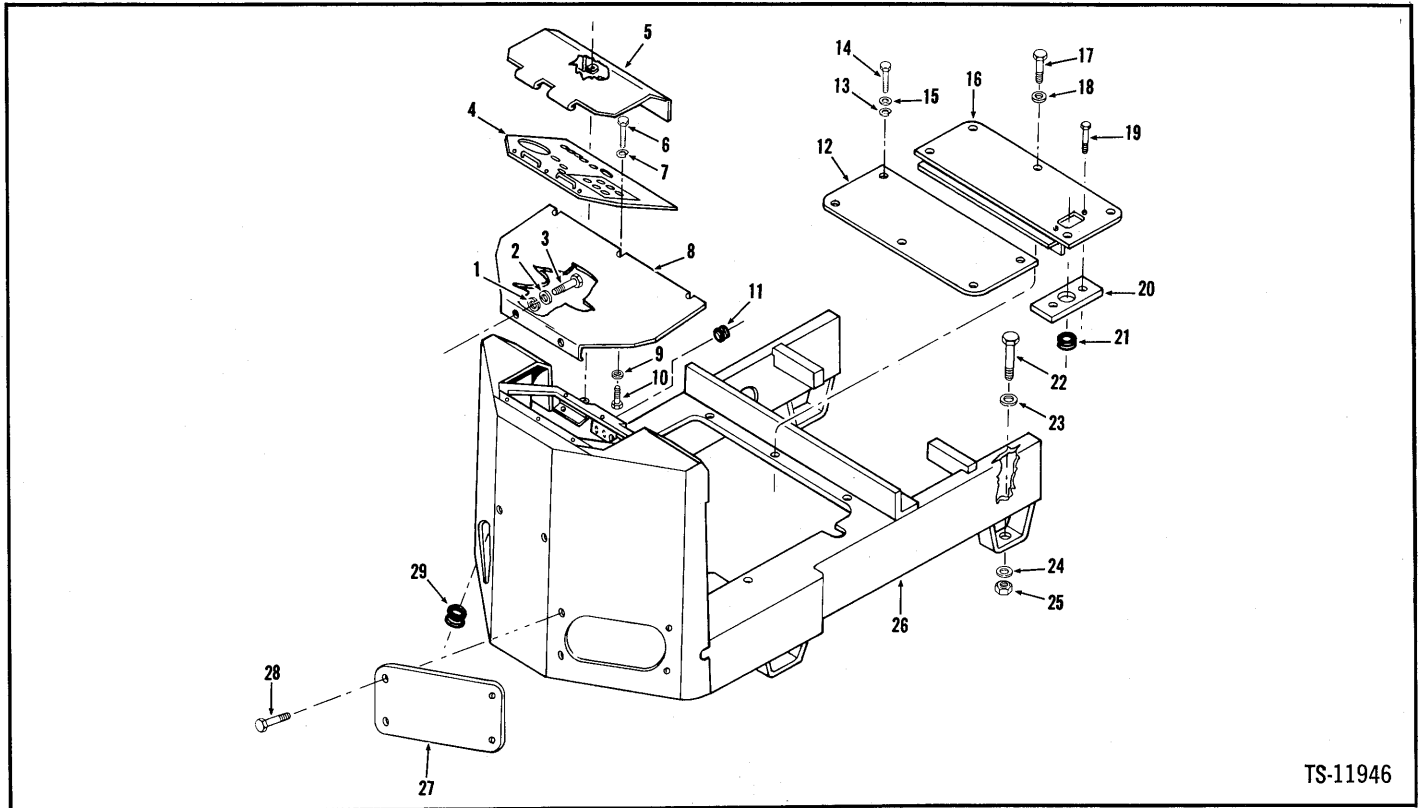
TS-6372

No.	Part No.	A	B	C	D	E					
1	31H-34	5/8	15.8	7/32	21.4	13/32	10.3	3/4	19.1	.050	1.3



TS-11915 D

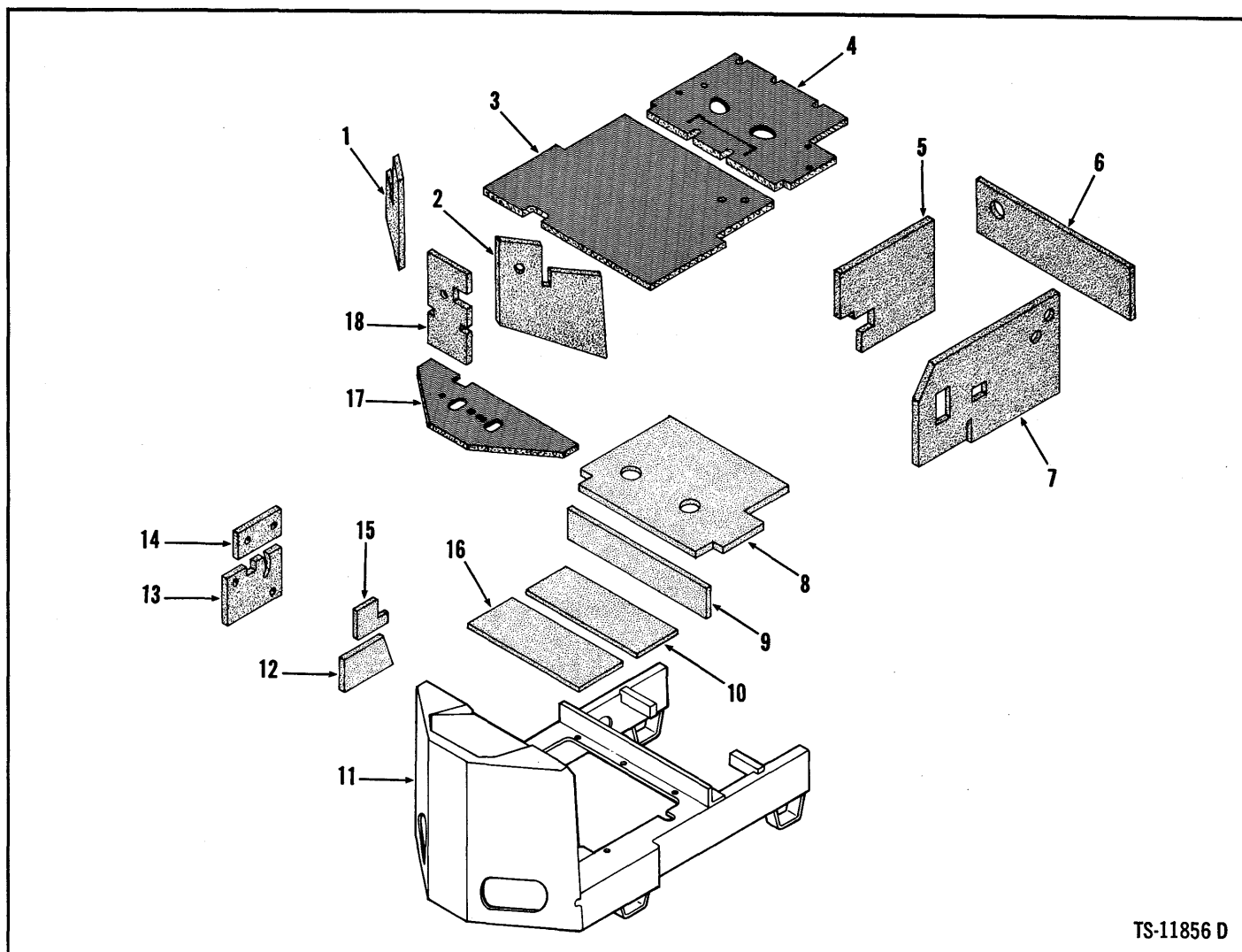
No.	Part No.	Qty.	Description
1	4E-06	2	Lockwasher
2	25E-17	2	Washer
3	24C-610	2	Bolt
4	2500076	1	Inst panel
5	3980746	1	Cover
6	23C-710	7	Bolt
7	3980751	1	Cover
8	25E-15	3	Washer
9	23C-516	3	Bolt
10	1519904	1	Cover front
11	25E-17	5	Washer
12	23C-612	5	Bolt
13	1519905	1	Cover rear
14	23C-612	5	Bolt
15	25E-17	5	Washer
16	23C-616	2	Bolt
17	1519877	1	Bracket
18	2501805	1	Grommet
19	24C-840	4	Bolt
20	1522284	4	Washer
21	1522284	4	Washer
22	18D-08	4	Nut
23	3981025	1	Cockpit
24	3980701	2	Cover front
25	23C-510	8	Bolt
26	2501805	2	Grommet



TS-11946

No.	Part No.	Qty.	Description
1	4E-06	2	Lockwasher
2	25E-17	2	Washer
3	24C-610	2	Bolt
4	3981963	1	Inst panel assy
5	3980746	1	Cover
6	23C-510	7	Bolt
7	4E-05	7	Lockwasher
8	3980751	1	Cover
9	25E-15	3	Washer
10	23C-516	3	Bolt
11	565073	1	Grommet
12	1519904	1	Cover – front
13	4E-06	10	Lockwasher
14	23C-612	5	Bolt
15	25E-17	5	Washer
16	1519905	1	Cover – rear
17	23C-612	5	Bolt
18	25E-17	5	Washer
19	23C-616	2	Bolt
20	1519877	1	Bracket
21	560640	1	Grommet
22	24C-840	4	Bolt
23	1522284	4	Washer
24	1522284	4	Washer
25	18D-08	4	Nut
26	3981025	1	Cockpit
27	3980701	2	Cover – front
28	23C-510	8	Bolt
29	3980752	3	Grommet

¹See Index



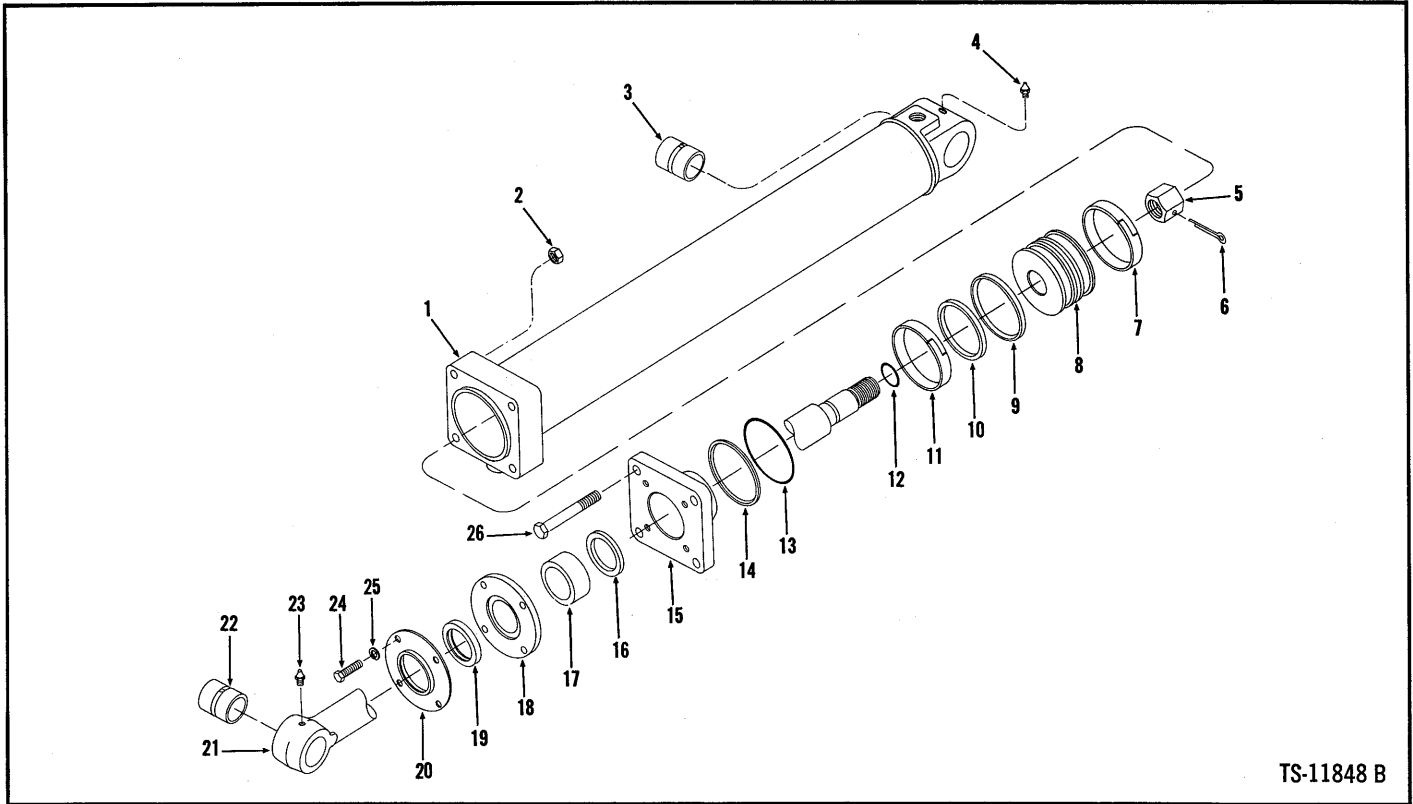
TS-11856 D

No.	Part No.	Qty.	Description
1	2500830	1	Kickplate panel L.H.
2	2500827	1	Kickplate panel R.H.
3	2500828	1	Floormat
4	2500835	1	Floormat
5	2500824	1	Panel oil tank
6	2500825	1	Panel hood
7	2500833	1	Panel fuel tank
8	2500826	1	Panel seat plate
9	2500821	1	Panel seat plate
10	2500823	1	Floormat front
11	1	—	Cockpit
12	³ 2500820	1	Panel valve cover
13	² 2500829	1	Panel valve cover
14	² 2500818	1	Panel valve cover
15	² 2500819	1	Panel valve cover
16	2500822	1	Floormat rear
17	2500834	1	Floormat front
18	2500831	1	Cockpit panel front

¹See Index
²Upper
³Lower

Cylinder Assembly, Boom – 4.5" (114,3 mm)

MICHIGAN



TS-11848 B

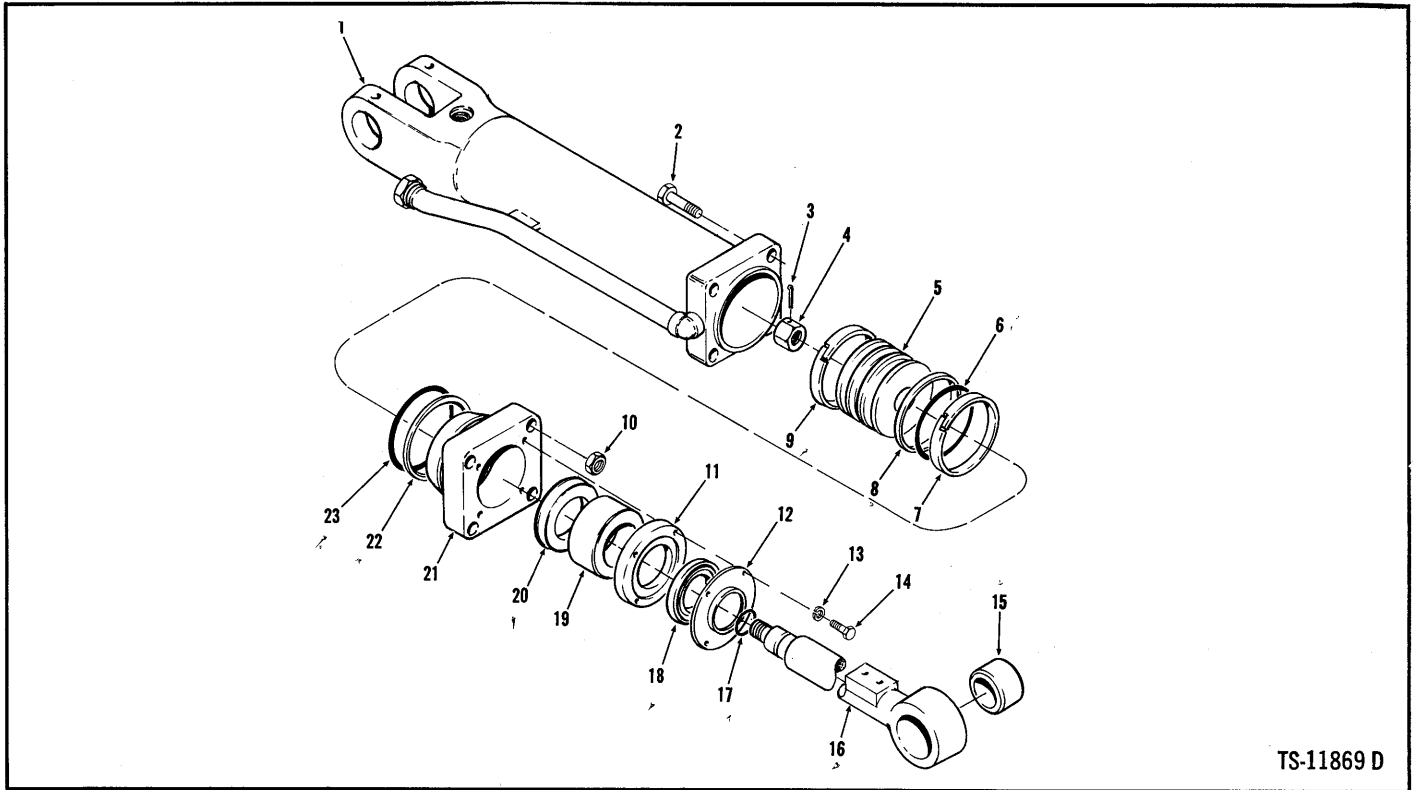
No.	Part No.	Qty.	Description
A	*13980095	2	Cylinder assy
1	3980096	1	Cylinder
2	18D-08	4	Nut
3	3980101	1	Bushing
4	12H-25	1	Fitting
5	1519948	1	Nut
6	1F-844	1	Pin cotter
7	1523263	1	Wear ring
8	1503026	1	Piston
9	1536073	1	Outer ring
10	1503464	1	Inner ring
11	1523263	1	Wear ring
12	25K-40112	1	O-ring
13	1512904	1	O-ring
14	3950716	1	Ring back-up
15	3980104	1	Cap
16	3980105	1	Seal
17	3980106	1	Sleeve
18	3980107	1	Gland
19	587250	1	Wiper seal
20	550089	1	Retainer
21	*2500614	1	Rod assy
22	1519949	1	Bushing
23	12H-25	1	Fitting
24	18C-620	4	Bolt
25	4E-06	4	Lockwasher
26	18C-856	4	Bolt

paclm. sets 2516271

¹Inc. 1-26

²Inc. 22

*Used per machine. Quantities listed are for 1.



TS-11869 D

No.	Part No.	Qty.	Description
A	*13980108	1	Cylinder assy R.H.
B	*3980125	1	Cylinder assy L.H.
1	3980109	1	Cylinder R.H.
1A	3980126	1	Cylinder L.H.
2	18C-864	4	Bolt
3	1F-844	1	Pin cotter
4	1535960	1	Nut
5	1503639	1	Piston
6	1503629	1	Inner ring
7	1530264	1	Wear ring
8	1503631	1	Outer ring
9	1530264	1	Wear ring
10	68D-08	4	Nut
11	3980123	1	Retainer
12	3980124	1	Retainer
13	4E-06	4	Lockwasher
14	18C-616	4	Bolt
15	3980068	1	Bushing
16	*2500738	1	Rod assy R.H.
16A	*2500737	1	Rod assy L.H.
17	25K-40104	1	O-ring
18	3970123	1	Seal
19	3980122	1	Gland
20	3980121	1	Seal
21	3980120	1	Cap
22	3980192	1	Ring back-up
23	1512901	1	O-ring

2576270

¹Inc. 1, 2-16, 17-23

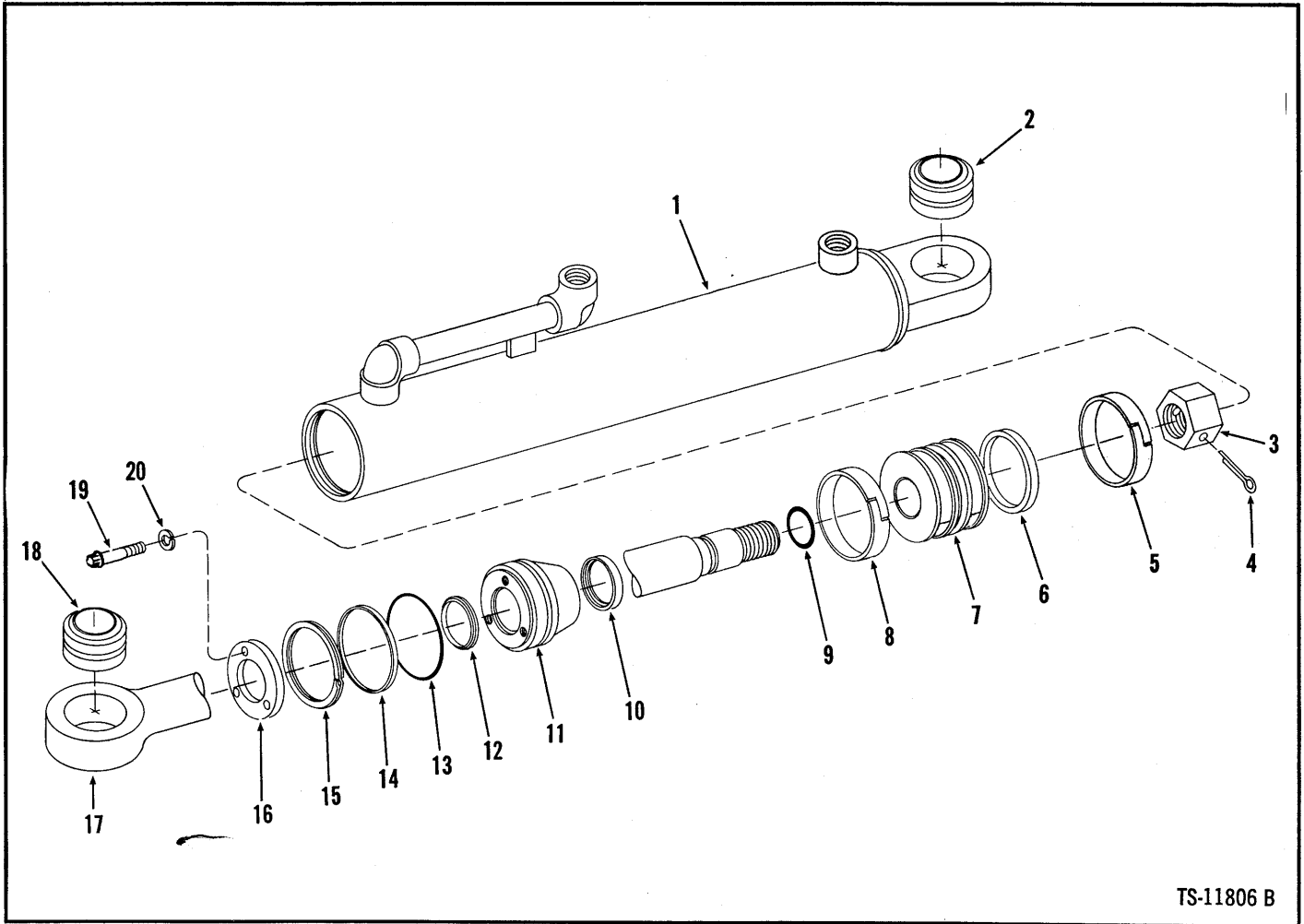
²Inc. 1A, 2-15, 16A-23

³Inc. 15

*2 used per machine. Quantities listed are for 1.

Cylinder Assembly, Steering – 2.5" (63.5 mm)

MICHIGAN



TS-11806 B

No.	Part No.	Qty.	Description
A	*13980906	2	Cylinder assembly
1	3980908	1	Cylinder
2	669928	1	Bushing
3	2500079	1	Nut
4	1F-428	1	Pin cotter
5	3980141	1	Wear ring
6	1524560	1	Seal
7	3980913	1	Piston
8	3980141	1	Wear ring
9	893267	1	O-ring
10	713286	1	T-ring
11	3980911	1	Cap
12	3980839	1	Wiper seal
13	1306625	1	O-ring
14	3950711	1	Ring back-up
15	791424	1	Ring snap
16	3980916	1	Retainer
17	3980907	1	Rod
18	669928	1	Bushing
19	93G-512	3	Bolt
20	4E-05	3	Lockwasher

P-sats 2516272

†Inc. 1-20
 *2 used per machine. Quantities listed are for 1.

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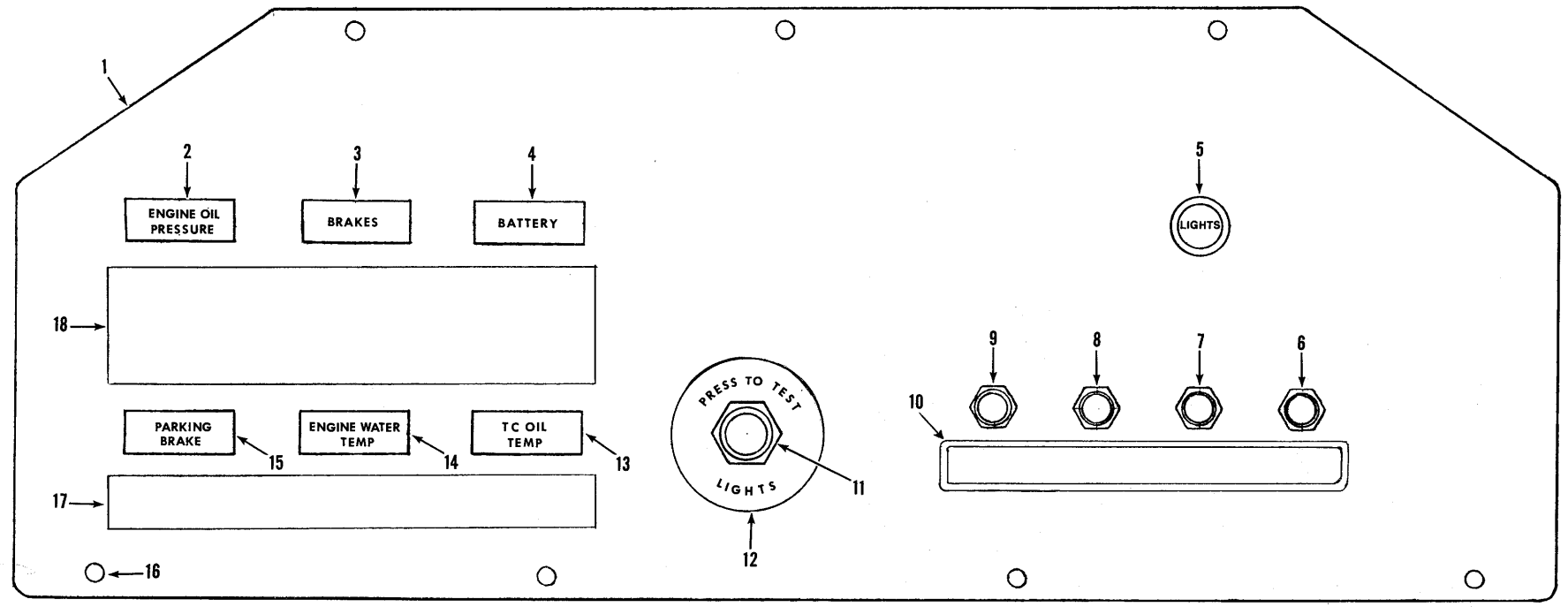
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Group E

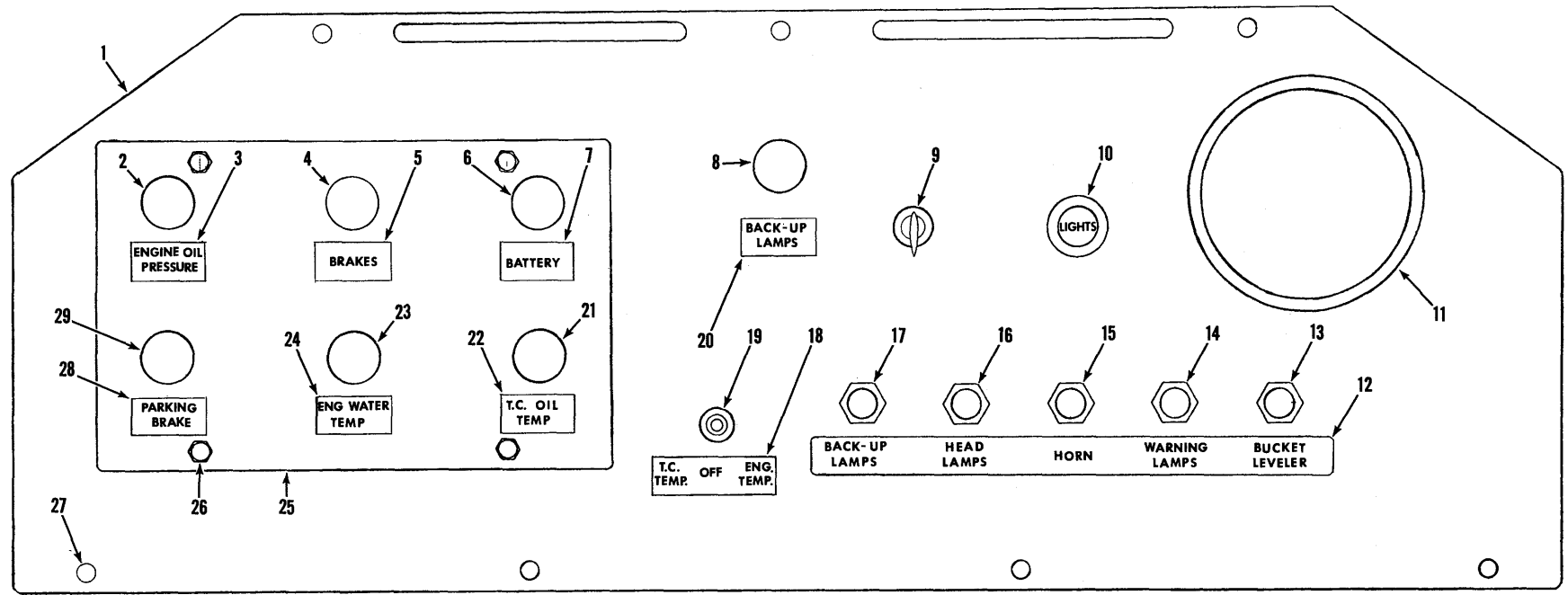
Electrical Lights & Instrument Panel – Cummins	E3
Electrical Lights & Instrument Panel – Perkins	E5
Electrical System – Cummins	E7
Electrical System – Perkins	E9
Electrical Wiring & Battery Cables – Cummins	E11
Electrical Wiring & Battery Cables – Perkins	E13
Electrical Wiring Color Code – Cummins	E15
Electrical Wiring Color Code – Perkins	E17
Engine Accessories – Cummins	E18
Engine Accessories – Perkins	E19
Engine Air Cleaner & Connections – Cummins	E20
Engine Air Cleaner & Connections – Perkins	E21
Engine Belts – Cummins	E22
Engine Belts – Perkins	E23
Engine & Hydraulic System – Cummins	E22
Engine & Hydraulic System – Perkins	E23
Engine & Transmission Mountings – Cummins	E25
Engine & Transmission Mountings – Perkins	E27
Engine Controls – Cummins	E29
Engine Controls – Perkins	E31
Engine Exhaust System – Cummins	E32
Engine Exhaust System – Perkins	E33
Engine Oil By-Pass Filter & Lines – Cummins	E34



Electrical Lights & Instrument Panel – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
1	2500076	1	Panel instrument
2	2501640	1	Light pilot
3	2501640	1	Light pilot
4	2501640	1	Light pilot
5	1513544	1	Switch light
6	1513546	1	Circuit braker
7	1513546	1	Circuit braker
8	1513547	1	Circuit braker
9	1513548	1	Circuit braker
10	1513843	1	Decal circuit braker
11	1513543	1	Switch
12	1513447	1	Plate instruction
13	2501640	1	Light pilot
14	2501640	1	Light pilot
15	2501640	1	Light pilot
16	23C-510	7	Bolt panel mount
17	2501183	1	Decal precaution
18	2501744	1	Plate indicating light
19	†2501739	1	Wiring harness – inst panel
20	†2501769	1	Wire warning light to relay



Electrical Lights & Instrument Panel – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	3981962	1	Panel instrument
2	3950965	1	Light eng oil press
3	3981969	1	Decal eng oil press
4	3950965	1	Light brake
5	3951029	1	Decal brake
6	3950965	1	Light battery
7	3981965	1	Decal battery
8	3950965	1	Light highbeam
9	3980691	1	Switch dimmer
10	1513544	1	Switch light
11	3950769	1	Speedometer
11A	†3950757	1	Cable speedometer
11B	†3950900	1	Socket back meter
11C	†3966347	1	Adapter speedometer dr
11D	†3966352	1	Nut speedometer drive
11E	†3966353	1	Key speedometer drive
12	3981121	1	Decal circuit breaker
13	1513546	1	Circuit braker
14	1513546	1	Circuit braker
15	1513547	1	Circuit braker
16	1513548	1	Circuit braker
17	1513548	1	Circuit braker
18	3981971	1	Decal test switch
19	3981972	1	Switch test
20	3951031	1	Decal warning light
21	3950965	1	Light tc oil temp
22	3981967	1	Decal tc oil temp
23	3950965	1	Light eng water temp
24	3981968	1	Decal eng water temp
25	3981964	1	Plate lights
26	23C-408	4	Bolt plate mount
26A	4E-04	4	Lockwasher
27	23C-510	7	Bolt panel mount
28	3981966	1	Decal parking brake
29	3950965	1	Light parking brake



Complete data on this parts group not available at date of this printing. Where parts are required, order from your MICHIGAN Distributor furnishing complete description of items required, together with machine model and serial number.

Electrical System – Cummins



No.	Part No.	Qty.	Description
1	6001501	1	Circuit breaker – 70 amp
2	2501712	1	Bracket
3	85G-1218	2	Screw
4	50D-12	2	Nut
5	551530	1	Switch relay
6	24C-412	2	Bolt
7	25E-13	2	Washer
8	18D-04	2	Nut
9	24C-612	1	Bolt, bracket to frame
10	4E-06	1	Lockwasher, bracket to frame
11	546921	2	Light back-up
12	946389	2	Retainer back-up light
13	944907	2	Sealed unit
14	§-----	2	Housing light
15	85G-1012	6	Screw
16	50D-10	6	Nut
17	1509211	2	Brake & tail light
18	942746	2	Bulb
19	1632311	1	Relay, generator
20	24C-412	2	Bolt
21	4E-04	2	Lockwasher
22	1516257	1	Buzzer
23	3981108	1	Bracket, buzzer
24	85G-304	3	Screw
25	50D-3	3	Nut
26	24C-610	1	Bolt
27	4E-06	1	Lockwasher
28	1517532	1	Wire
29	1310121	2	Battery – 12 V
30	547529	2	Head light assy – 12 V
31	944907	2	Sealed unit
32	946389	2	Retainer head light
33	§-----	2	Housing light
34	652448	2	Spacer
35	17D-06	2	Nut
36	733624	1	Horn
37	3950689	1	Bracket, horn
38	3968049	1	Plate, horn
39	24C-516	4	Bolt
40	18D-05	4	Nut
41	647310	1	Relay, horn
42	85G-1008	3	Screw
43	50D-10	3	Nut
44	1515065	1	Switch, Starter
45	1537354	1	Switch, emergency brake pressure
46	636260	1	Switch, pressure – check valve
47	1513839	1	Switch, converter temp
48	1767969	1	Switch, engine water temp
49	1513841	1	Switch, engine oil pressure

¹Inc. 12, 13, 14

²Inc. 31, 32, 33

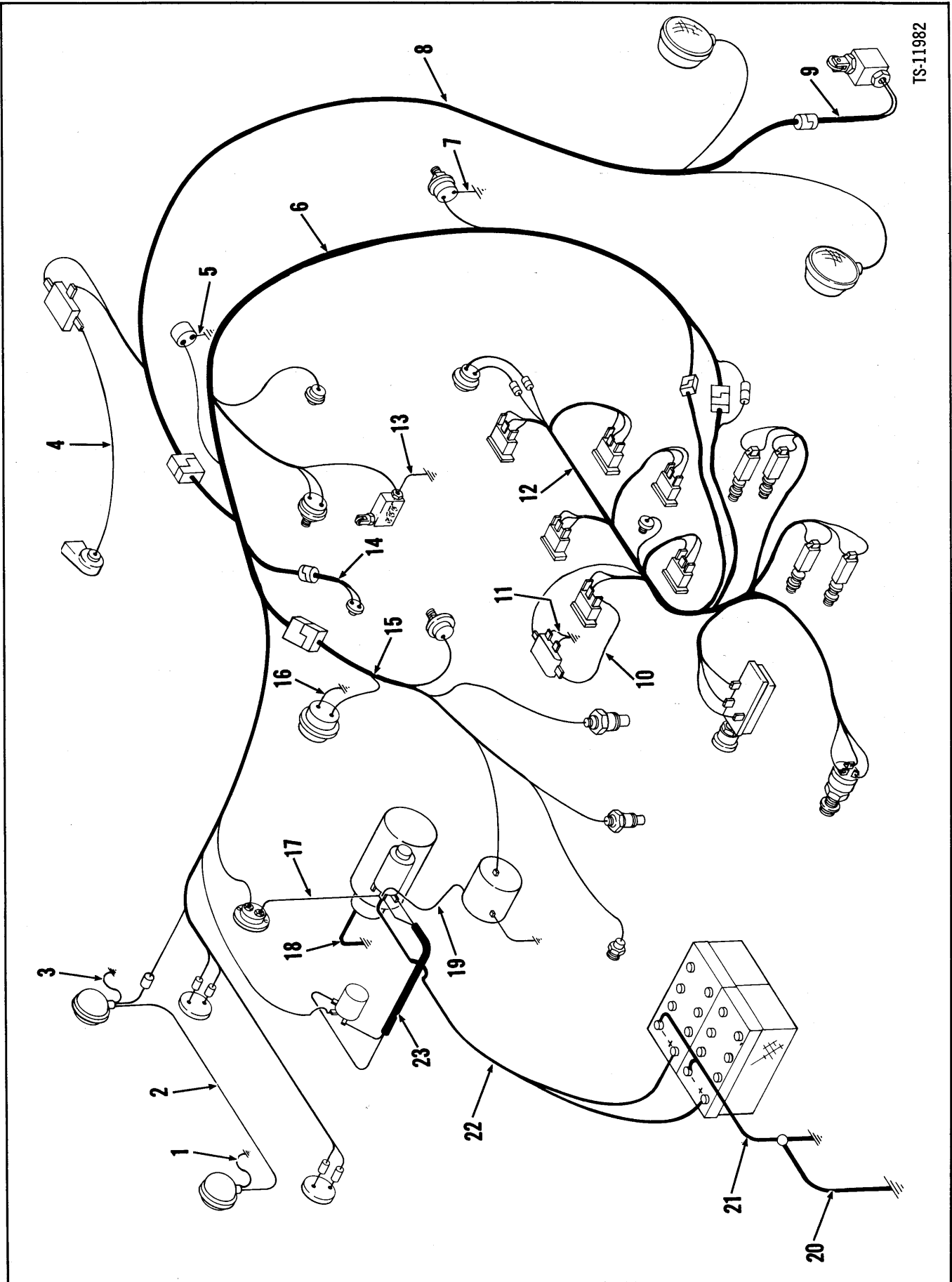
Complete data on this parts group not available at date of this printing.
Where parts are required, order from your MICHIGAN Distributor furnishing
complete description of items required, together with machine model and
serial number.

Electrical System – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	3980240	2	Lamp, tail & stop
2	3950972	2	Lamp, back-up
3	85G-810	6	Screw
4	17E-08	6	Lockwasher
5	3981052	1	Fuse – 5 amp
6	3951607	1	Holder, fuse
7	3968001	1	Regulator
8	86G-1014	2	Bolt
9	51D-10	2	Nut
10	3963640	3	Cover, terminal
11	x 1515839	1	Gauge, converter temp
12	1767969	1	Gauge, engine water temp
13	1513841	1	Gauge, engine oil pressure
14	3950272	2	Battery – 12 V
15	3980681	1	Relay, battery
16	18C-508	2	Bolt
17	4E-05	2	Lockwasher
18	3963429	2	Lamp, head
19	3950968	1	Horn
20	3950689	1	Bracket, horn
21	3968049	1	Plate, horn
22	19C-516	4	Bolt
23	10D-05	4	Nut
24	2E-05	4	Lockwasher
25	3950967	1	Relay, horn
26	85G-1208	3	Screw
27	12D-12	3	Nut
28	17E-12	3	Lockwasher
29	18C-610	2	Bolt
30	5E-06	2	Lockwasher
31	636260	1	Switch, stop light
32	1537354	1	Switch, pressure
33	1515065	1	Switch, starter
34	3981611	1	Wiring diagram

x 1513841 1 Sender - Oil - pressure



TS-111982

Electrical Wiring & Battery Cables – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
1	696048	1	Wire
2	2501771	1	Wire
3	696048	1	Wire
4	557438	1	Wire
5	2501768	1	Wire
6	2501740	1	Harness, Main
7	1549382	1	Wire
8	2501737	1	Harness headlight
9	2501747	1	Harness bucket leveler
10	2501769	1	Wire
11	1514296	1	Harness alternator relay
12	2501739	1	Harness inst. panel
13	2502004	1	Wire
14	1517533	1	Wire
15	2501738	1	Harness engine
16	1517532	1	Wire
17	2501434	1	Wire
18	532549	1	Cable
19	2501770	1	Wire
20	2502352	1	Cable
21	2501773	1	Cable
22	2501782	1	Cable
23	1530361	1	Harness

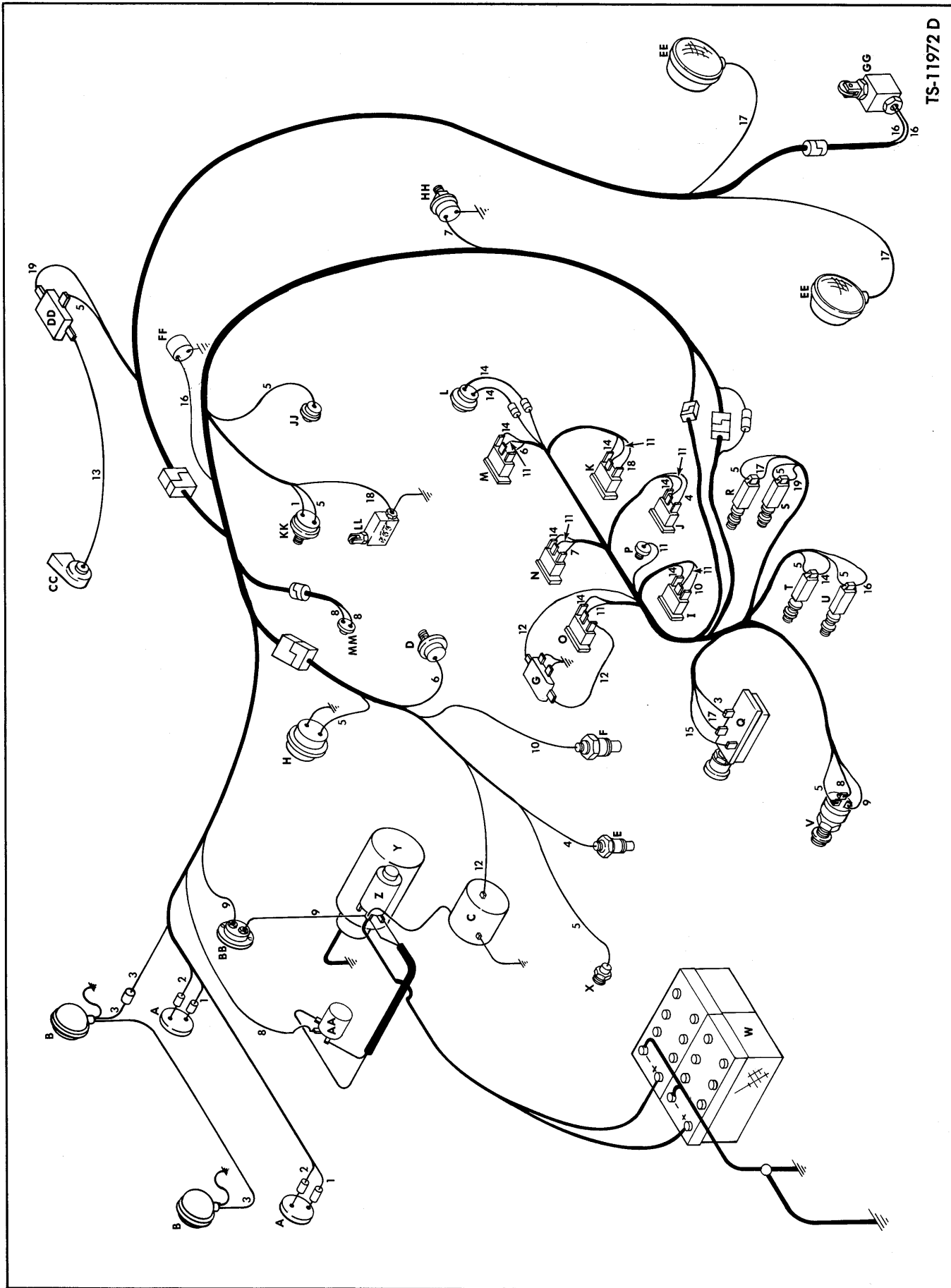


Complete data on this parts group not available at date of this printing.
Where parts are required, order from your MICHIGAN Distributor furnishing
complete description of items required, together with machine model and
serial number.

Electrical Wiring & Battery Cables – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	3981597	1	Wire, starter ground
2	3981114	1	Wire, ground
3	3950961	2	Cable, battery to battery
4	3962147	2	Cable, battery to relay
5	3981144	1	Cable, relay to starter



TS-11972 D

ELECTRICAL WIRING COLOR CODE – CUMMINS

Ref. No.	Color	Color Code
1.	Tan	Stoplights to Brake Light Switch
2.	Yellow	Tail Lights to Instrument Panel Plug (Joins Pink)
3.	Dark Blue	Rear Floodlamps to Light Switch
4.	Brown	Engine Temp. Sender to Engine Temp. Warning Light
5.	Red & White	Ignition Switch to Circuit Breakers, Hourmeter & Switches
6.	Dark Green	Engine Oil Press. Sender to Engine Oil Press. Warning Light
7.	Light Green	Air Press. Sender to Brake Warning Light
8.	White	Ignition Switch to Neutral Start Switch to Solenoid
9.	Red #10	Ignition Switch to 70 Amp. Circuit Breaker to Starter Solenoid
10.	Grey	Converter Temp. Sender to Converter Temp. Warning Light
11.	Orange & Black	Test Switch to Warning Lights
12.	Purple & White	Alternator to Alternator Relay to Battery Warning Light
13.	Black	Horn Relay to Horn
14.	Purple	1 Amp Circuit Breaker to Warning Lights & Buzzer
15.	Violet	10 Amp Circuit Breaker to Light Switch
16.	Pink & Black	1 Amp Circuit Breaker to Bucket Leveler to Bucket Leveler Solenoid
17.	Pink	Light Switch to Head Lamps
18.	Black & White	Parking Brake Switch to Parking Brake Warning Light
19.	Light Blue	2 Amp Circuit Breaker to Horn Relay

45B – CUMMINS

A – Stop & Tail Lamps
 B – Back-Up Lamps
 C – Alternator
 D – Engine Oil Pressure Sender
 E – Engine Temperature Sender
 F – Converter Temperature Sender
 G – Alternator Relay
 H – Hourmeter
 I – Converter Temp. Warning Light
 J – Engine Temp. Warning Light
 K – Parking Brake Warning Light
 L – Buzzer
 M – Engine Oil Press. Warning Light

N – Brake Warning Light
 O – Battery Warning Light
 P – Test Switch
 Q – Light Switch
 R – 10 Amp Circuit Breaker
 S – 2 Amp Circuit Breaker
 T – 1 Amp Circuit Breaker
 U – 1 Amp Circuit Breaker
 V – Ignition Switch
 W – Batteries
 X – Fuel Solenoid
 Y – Starter
 Z – Starter Solenoid

AA – Solenoid
 BB – 70 Amp Circuit Breaker
 CC – Horn
 DD – Horn Relay
 EE – Head Lamps
 FF – Bucket Leveler Solenoid
 GG – Bucket Leveler
 HH – Air Press. Sender
 JJ – Horn Switch
 KK – Brake Light Switch
 LL – Parking Brake Switch
 MM – Neutral Start Switch

Complete data on this parts group not available at date of this printing.
Where parts are required, order from your MICHIGAN Distributor furnishing
complete description of items required, together with machine model and
serial number.

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All orders for engine assembly or components thereof should be placed with the nearest Cummins Distributor. To obtain proper items, it is necessary to provide your engine model, serial number and necessary group type number for the equipment required. This data is stamped on the options and accessories plate on the rocker cover of engine.

No.	Part No.	Qty.	Description
1	*1_____	1	Air compressor
2	*2_____	1	Alternator
3	*3_____	1	Engine by-pass filter
4	*4_____	1	Engine fuel filter
5	*5_____	1	Engine full flow filter
6	*6_____	1	Fan
7	*7_____	1	Fan spacer
8	*8_____	1	Resistor corrosion
9	*9_____	1	Starter

¹Cummins 553918

²Cummins 213298

³Cummins 250826

⁴Cummins 156164

⁵Cummins 551322

⁶Cummins 651073

⁷Cummins 62583

⁸Cummins 209606

⁹Cummins 186397

*Note: The above listed accessory items are serviced by the engine manufacturer. Specifications on these items are subject to change without notice. It is, therefore, recommended that complete model, specifications and serial number of the engine be provided to your Cummins Engine Distributor when ordering these parts.

Engine Accessories – Perkins

MICHIGAN

All orders for engine assembly or components thereof should be placed with the nearest Perkins Distributor. To obtain proper items, it is necessary to provide your engine model, serial number and necessary group type number for the equipment required. This data is stamped on the options and accessories plate on the rocker cover of engine.

No.	Part No.	Qty.	Description
1	*1_____	1	Alternator
2	*2_____	1	Starter
3	*3_____	1	Air compressor
4	*4_____	1	Fan
5	*5_____	1	Filter
6	*6_____	1	Regulator

¹Perkins 2871711

²Perkins 2873002

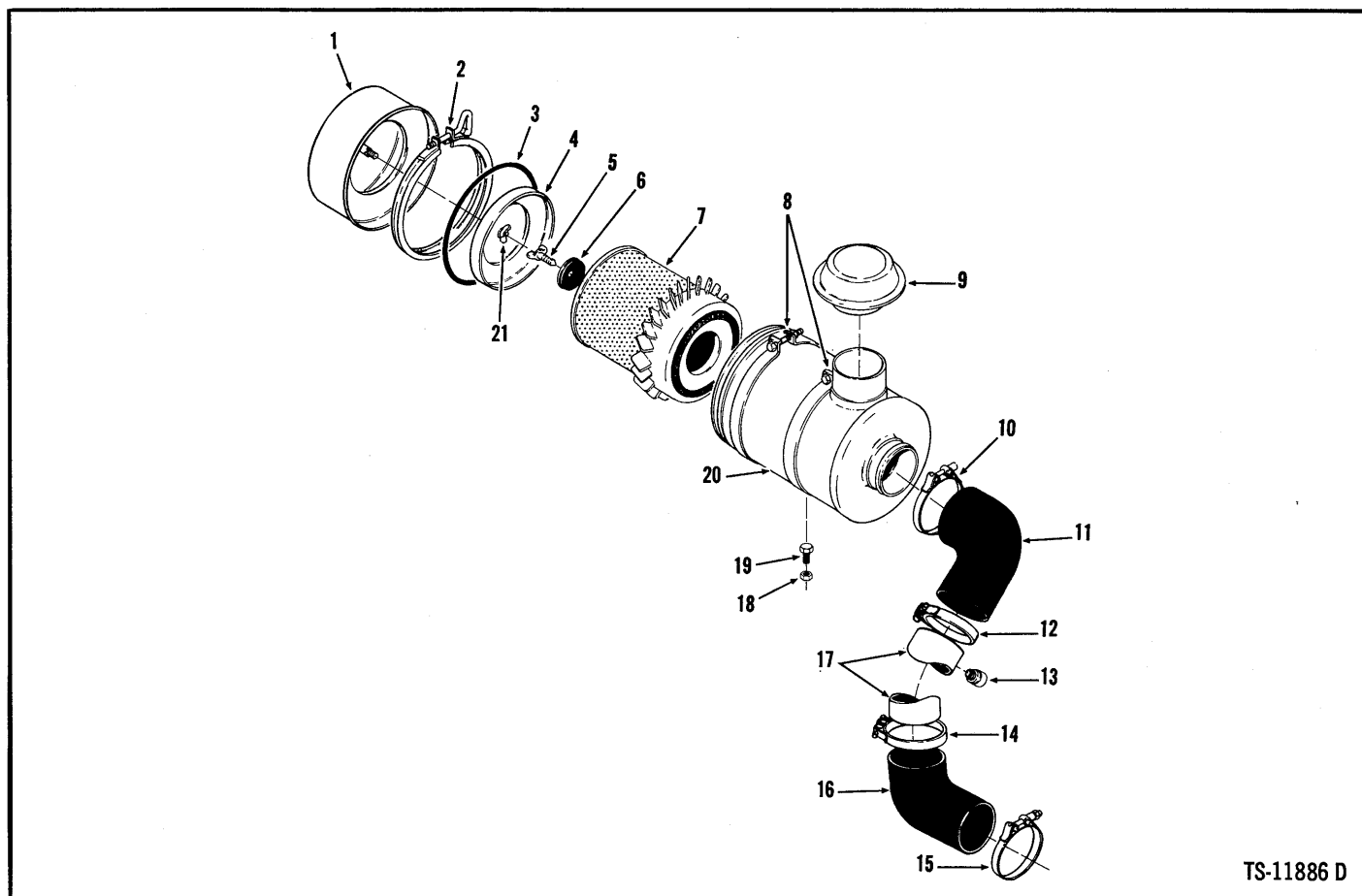
³Perkins 2488664

⁴Perkins 31258155

⁵Perkins 2654347

⁶Perkins 2872508

*Note: The above listed accessory items are serviced by the engine manufacturer. Specifications on these items are subject to change without notice. It is, therefore, recommended that complete model, specifications and serial number of the engine be provided to your Perkins Engine Distributor when ordering these parts.



TS-11886 D

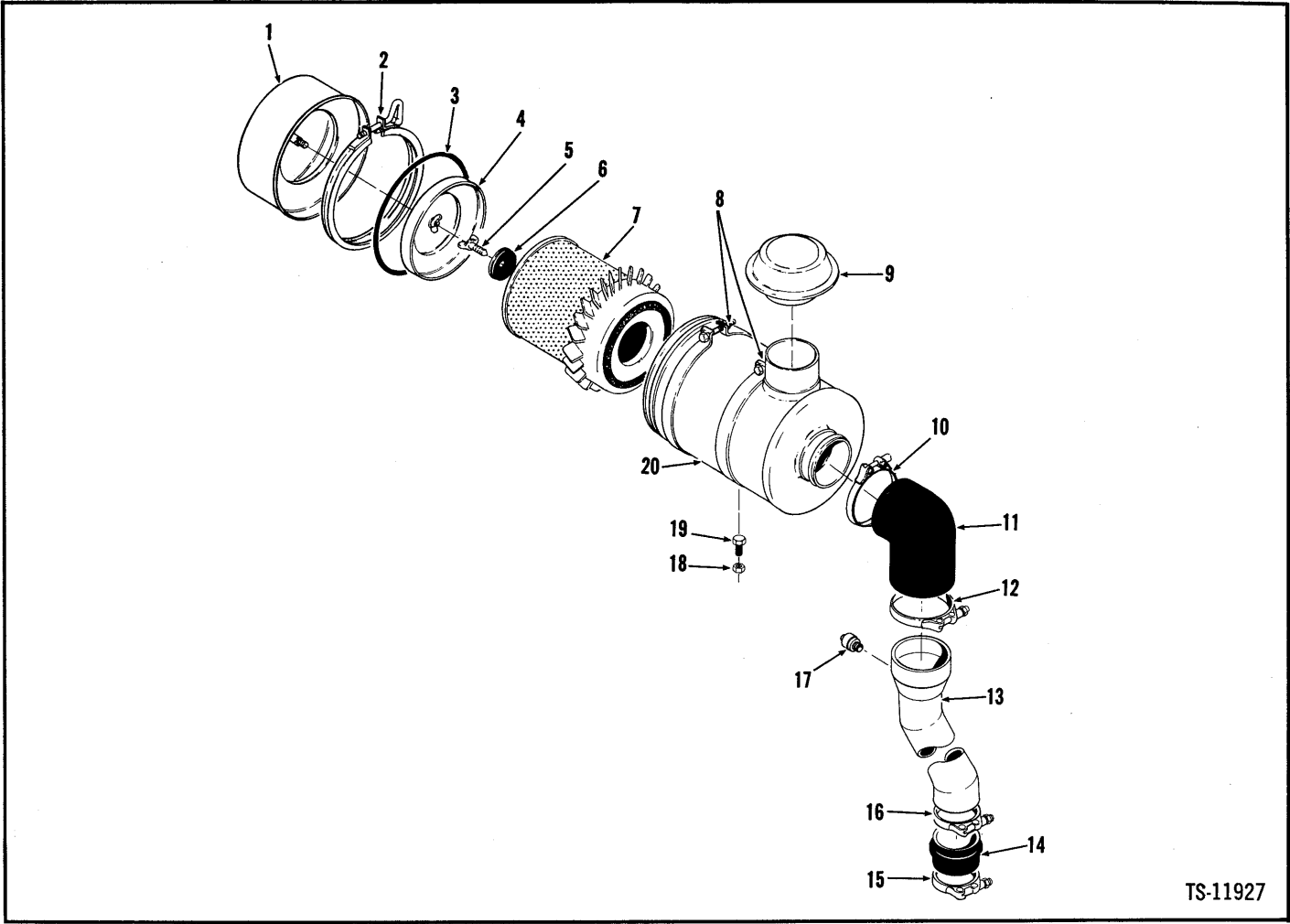
No.	Part No.	Qty.	Description
A	1632441	1	Air cleaner assy
1	894652	1	Cup
2	947242	1	Clamp
3	886288	1	Gasket
4	894653	1	Baffle
5	886285	1	Bolt
6	886287	1	Washer
7	944954	1	Element
8	420945	2	Bank
9	568391	1	Cap
10	585183	1	Clamp
11	2500605	1	Hose
12	585183	1	Clamp
13	1721628	1	Service indicator
14	543531	1	Clamp
15	543531	1	Clamp
16	2500518	1	Hose
17	2500935	1	Tube
18	18D-06	4	Nut
19	24C-620	4	Bolt
20	§ ³ ----	—	Body
21	§ ⁴ ----	—	Wing nut

¹Inc. 1-7, 20, 21

²Inc. 21

³See A

⁴See 4



TS-11927

No.	Part No.	Qty.	Description
A	1632441	1	Air cleaner assy
1	894652	1	Cup
2	947242	1	Clamp
3	886288	1	Gasket
4	894653	1	Baffle
5	886285	1	Bolt
6	886287	1	Washer
7	944954	1	Element
8	420945	2	Band
9	568391	1	Cap
10	3971076	1	Clamp
11	515425	1	Adapter
12	3971076	1	Clamp
13	3981584	1	Pipe
14	3981585	1	Adapter
15	3951444	1	Clamp
16	3951444	1	Clamp
17	1721628	1	Indicator
18	18D-06	4	Nut
19	24C-620	4	Bolt
20	§²-----	—	Body

¹Inc. 1-7, 20
²See A

No.	Part No.	Qty.	Description
1	*949985	2	Belt alternator match set
2	*3679692	2	Belt fan match set

Engine & Hydraulic System (Cummins) – Filter Replacement Elements

No.	Part No.	Qty.	Description
3	944954	1	Engine air cleaner
4	*949098	1	Eng oil by-pass
5	*949418	2	Eng corr resistor
6	*3679734	2	Eng fuel
7	*946011	1	Eng oil full flow
8	1530600	1	Hyd oil rsvr press

*Note: The above listed accessory items are serviced by the engine manufacturer. Specifications on these items are subject to change without notice. It is, therefore, recommended that complete model, specifications and serial number of the engine be provided to your Cummins Engine Distributor when ordering these parts.

Engine Belts – Perkins

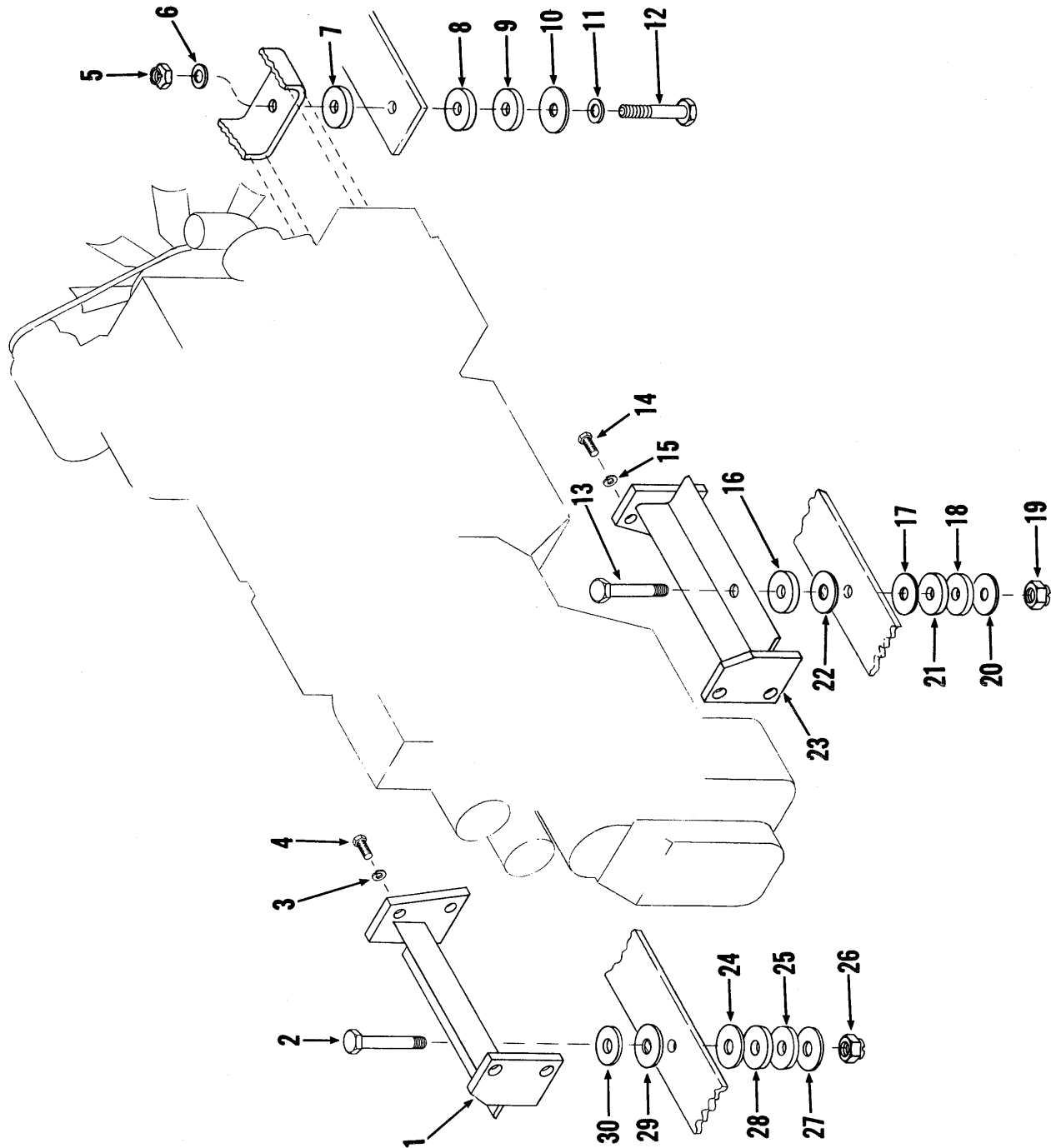


No.	Part No.	Qty.	Description
1	*3981921	2	Belt fan match set

Engine & Hydraulic System (Perkins) – Filter Replacement Elements

No.	Part No.	Qty.	Description
2	944954	1	Engine air cleaner
3	1530600	1	Hyd oil rsrv press
4	*3981922	1	Eng fuel
5	*3981923	1	Eng oil full flow

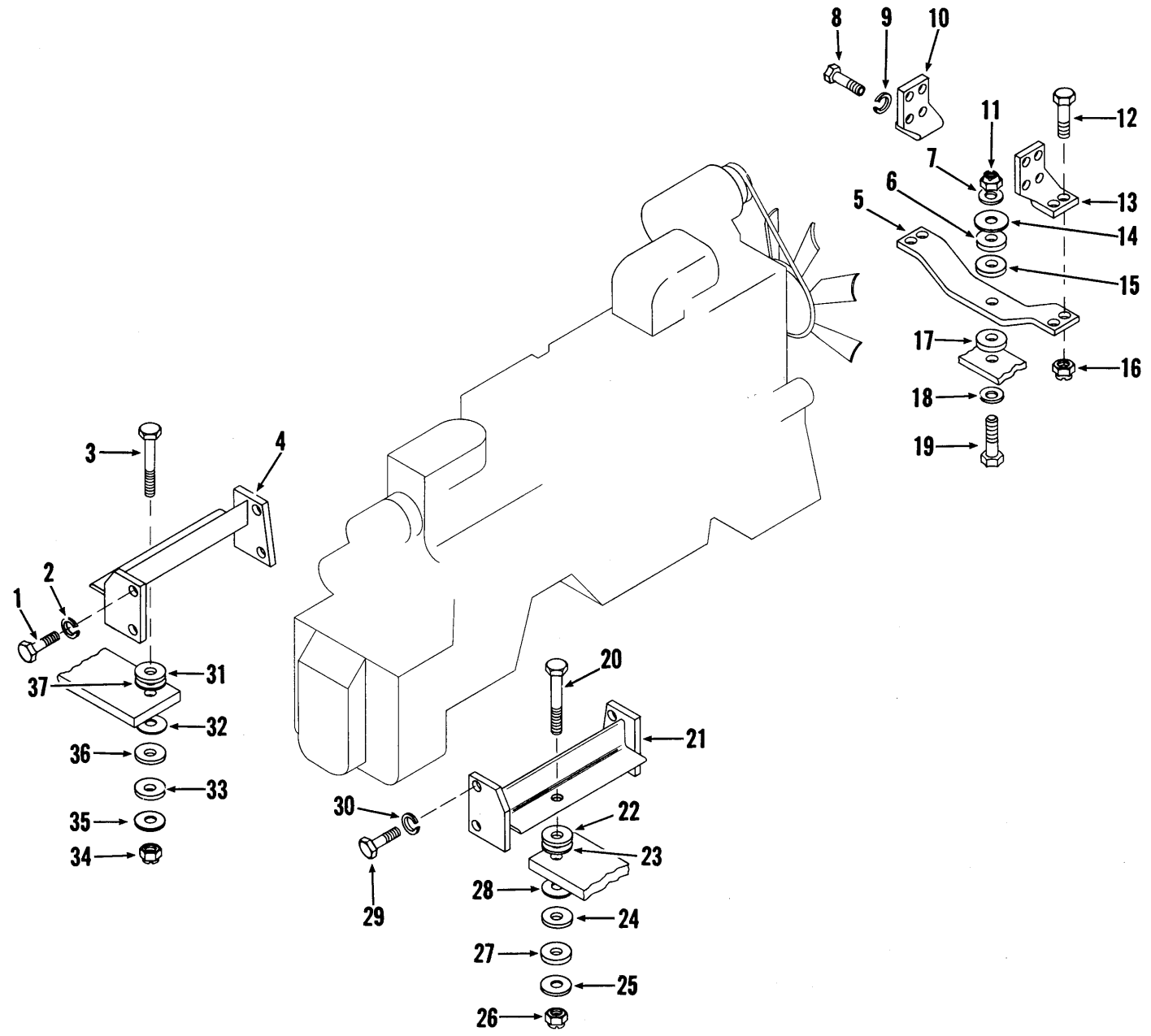
*Note: The above listed accessory items are serviced by the engine manufacturer. Specifications on these items are subject to change without notice. It is, therefore, recommended that complete model, specifications and serial number of the engine be provided to your Perkins Engine Distributor when ordering these parts.



Engine & Transmission Mountings – Cummins

MICHIGAN

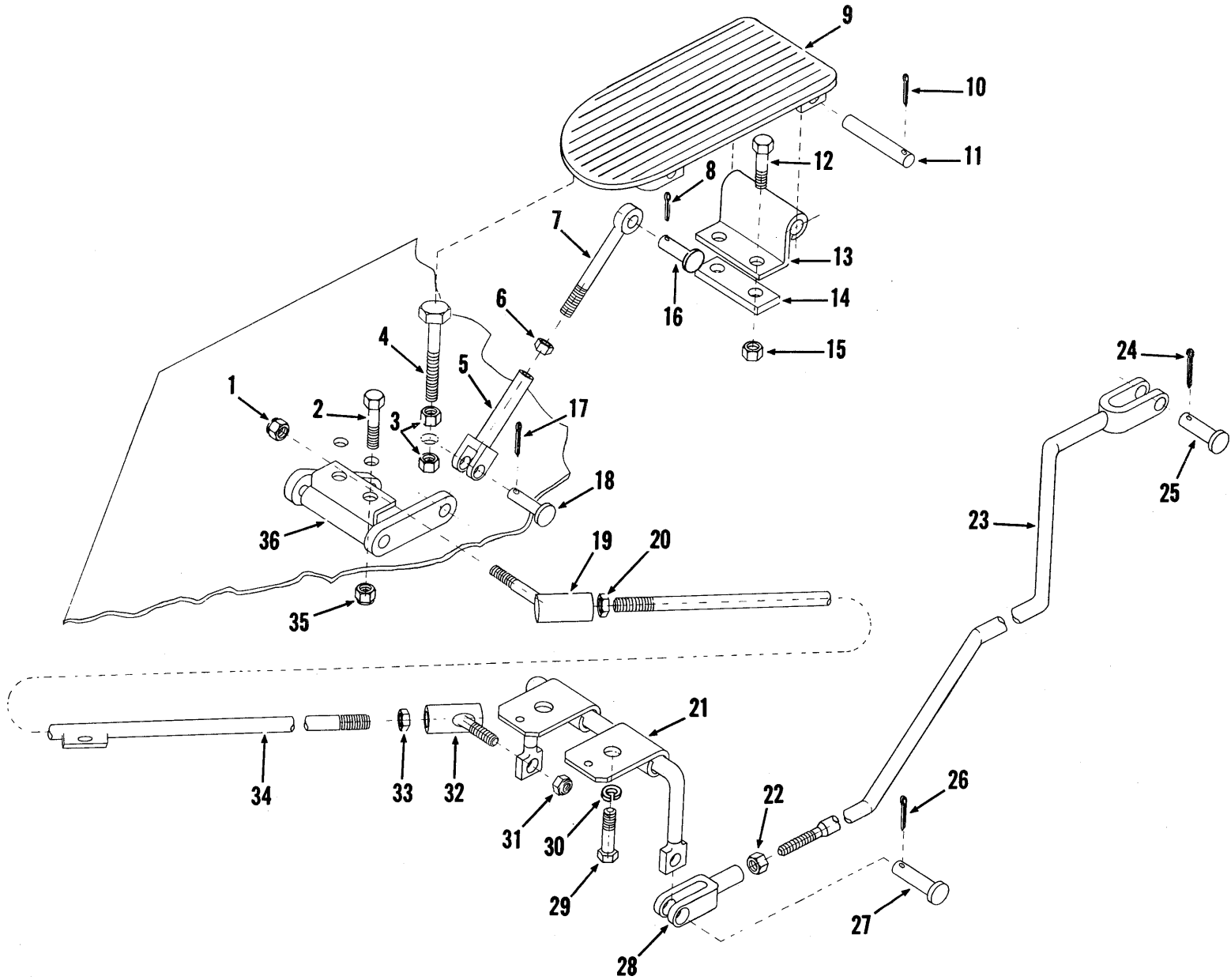
No.	Part No.	Qty.	Description
1	3980902	1	Mount transm R.H.
2	24C-1256	1	Bolt
3	4E-12	4	Lockwasher
4	23C-1228	4	Bolt
5	18D-10	1	Locknut
6	25E-25	1	Washer
7	3980479	1	Pad vibration
8	3980479	1	Pad vibration
9	3980479	1	Pad vibration
10	3980478	1	Spacer
11	25E-25	1	Washer
12	24C-1044	1	Bolt
13	24C-1256	1	Bolt
14	23C-1228	4	Bolt
15	4E-12	4	Lockwasher
16	3980260	1	Pad vibration
17	3980454	1	Spacer
18	3980260	1	Pad vibration
19	68D-12	1	Locknut
20	3980454	1	Spacer
21	3980260	1	Pad vibration
22	3980454	1	Spacer
23	3980502	1	Mount transm L.H.
24	3980454	1	Spacer
25	3980260	1	Pad vibration
26	68D-12	1	Locknut
27	3980454	1	Spacer
28	3980260	1	Pad vibration
29	3980454	1	Spacer
30	3980260	1	Pad vibration



Engine & Transmission Mountings – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	23C-1228	4	Bolt
2	4E-12	4	Lockwasher
3	24C-1256	1	Bolt
4	3980902	1	Mount transm R.H.
5	3981552	1	Support
6	3980479	1	Pad vibration
7	25E-25	1	Washer
8	24C-732	8	Bolt
9	4E-07	8	Lockwasher
10	3981551	1	Bracket L.H.
11	18D-10	1	Locknut
12	24C-832	4	Bolt
13	3981553	1	Bracket R.H.
14	3980478	1	Spacer
15	3980479	1	Pad vibration
16	18D-08	4	Locknut
17	3980479	1	Pad vibration
18	25E-25	1	Washer
19	24C-1052	1	Bolt
20	24C-1256	1	Bolt
21	3980502	1	Mount transm L.H.
22	3980260	1	Pad vibration
23	3980454	1	Spacer
24	3980260	1	Pad vibration
25	3980454	1	Spacrr
26	68D-12	1	Locknut
27	3980260	1	Pad vibration
28	3980454	1	Spacer
29	23C-1228	4	Bolt
30	4E-12	4	Lockwasher
31	3980260	1	Pad vibration
32	3980454	1	Spacer
33	3980260	1	Pad vibration
34	68D-12	1	Locknut
35	3980454	1	Spacer
36	3980260	1	Pad vibration
37	3980454	1	Spacer



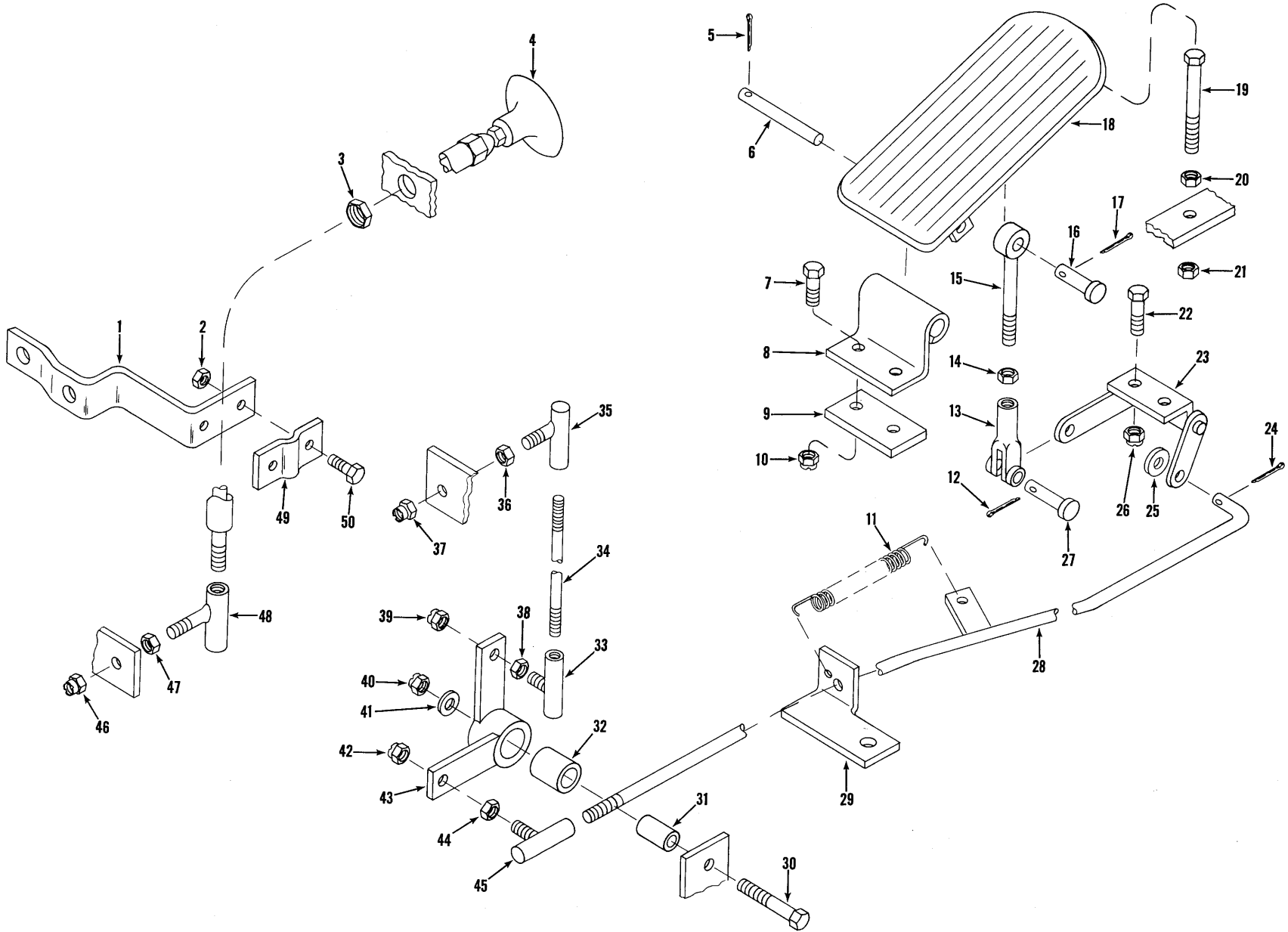
Engine Controls – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
1	66D-04	1	Nut
2	24C-412	2	Bolt
3	8D-04	2	Nut
4	24C-432	1	Bolt
5	2J-4200	1	Clevis
6	8D-04	1	Nut
7	550619	1	Rod
8	1F-207	1	Pin cotter
9	623829	1	Pedal
10	1F-316	1	Pin Cotter
11	623762	1	Pin
12	24C-416	2	Bolt
13	1544695	1	Bracket
14	572556	1	Bar
15	18D-04	2	Nut
16	4F-04051	1	Pin
17	1F-207	1	Pin cotter
18	4F-04051	1	Pin
19	1301360	1	Ball joint
20	8D-04	1	Nut
21	1519994	1	Link assy
22	8D-04	1	Nut
23	2500152	1	Rod assy
24	1F-308	1	Pin cotter
25	4F-05062	1	Pin
26	1F-308	1	Pin cotter
27	4F-05062	1	Pin
28	2J-4200	1	Clevis
29	24C-616	2	Bolt
30	4E-06	2	Lockwasher
31	66D-04	1	Nut
32	1301360	1	Ball joint
33	8D-04	1	Nut
34	2500151	1	Rod assy
35	18D-04	2	Nut
36	3980430	1	Bellcrank

¹Inc. 22, 28

²Inc. 19, 20, 32, 33



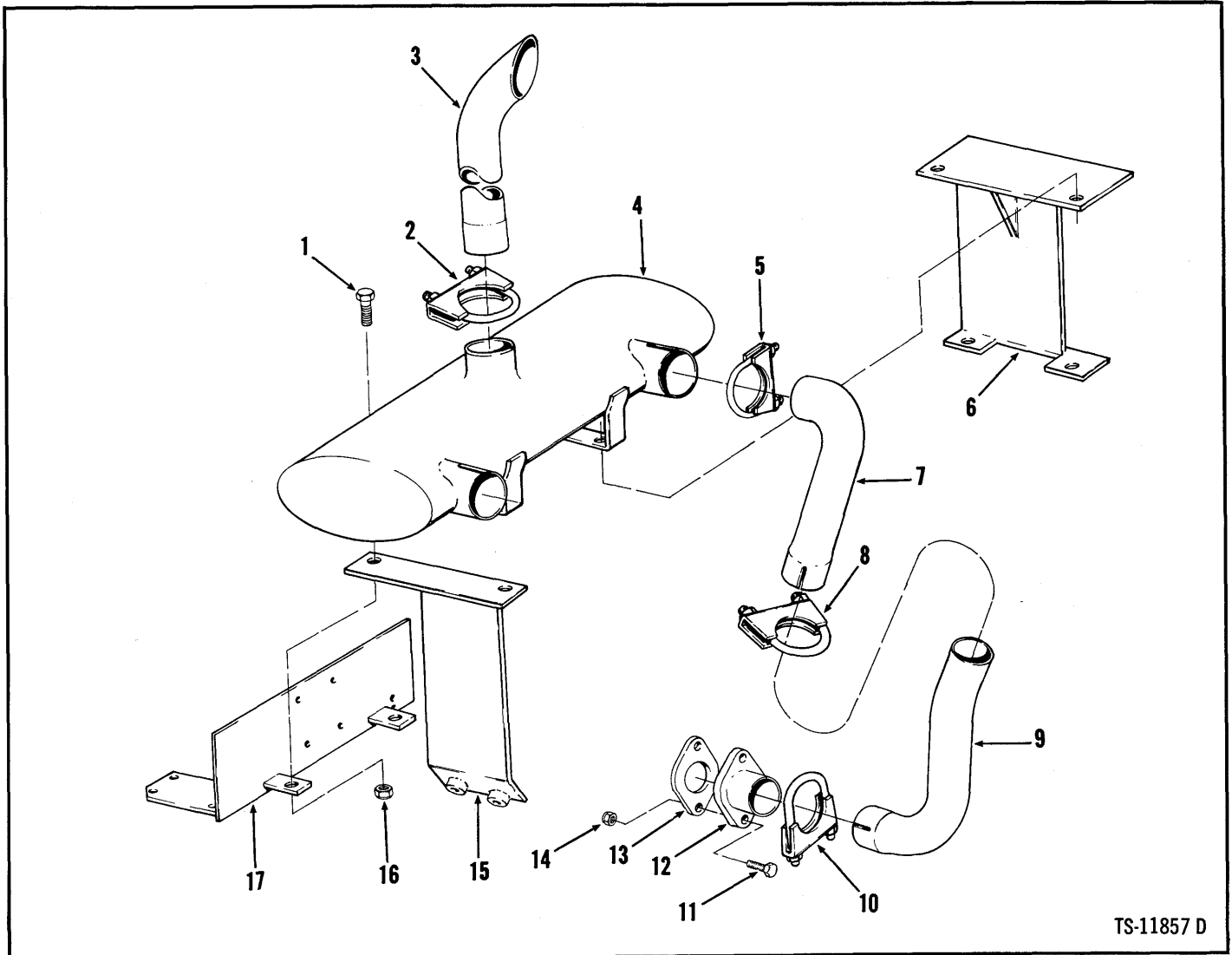
Engine Controls – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	3981582	1	Bracket
2	18D-04	2	Nut
3	§1	—	Nut
4	²3981575	1	Cable
5	1F-316	1	Pin cotter
6	623762	1	Pin
7	24C-416	2	Bolt
8	623760	1	Bracket
9	572556	1	Bar
10	18D-04	2	Locknut
11	3950079	1	Spring
12	1F-207	1	Pin cotter
13	2J-4200	1	Clevis
14	8D-04	1	Nut
15	550619	1	Rod
16	4F-04051	1	Pin clevis
17	1F-207	1	Pin cotter
18	623829	1	Pedal
19	24C-440	1	Bolt
20	8D-04	1	Nut
21	8D-04	1	Nut
22	24C-412	2	Bolt
23	3980430	1	Bellcrank
24	1F-108	1	Pin cotter
25	774337	1	Washer
26	18D-04	2	Locknut
27	4F-04051	1	Pin clevis
28	3981573	1	Rod
29	3981574	1	Bracket
30	24C-632	1	Bolt
31	3981602	1	Sleeve
32	3200076	1	Bushing
33	1301360	1	Ball joint
34	3224167	1	Rod
35	1301360	1	Ball joint
36	8D-04	1	Nut
37	18D-04	1	Locknut
38	8D-04	1	Nut
39	18D-04	1	Locknut
40	18D-06	1	Locknut
41	25E-17	1	Washer
42	18D-04	1	Locknut
43	3208861	1	Bellcrank
44	8D-04	1	Nut
45	1301360	1	Ball joint
46	18D-04	1	Locknut
47	8D-04	1	Nut
48	1301360	1	Ball joint
49	3981576	1	Clamp
50	24C-410	2	Bolt

¹See 4

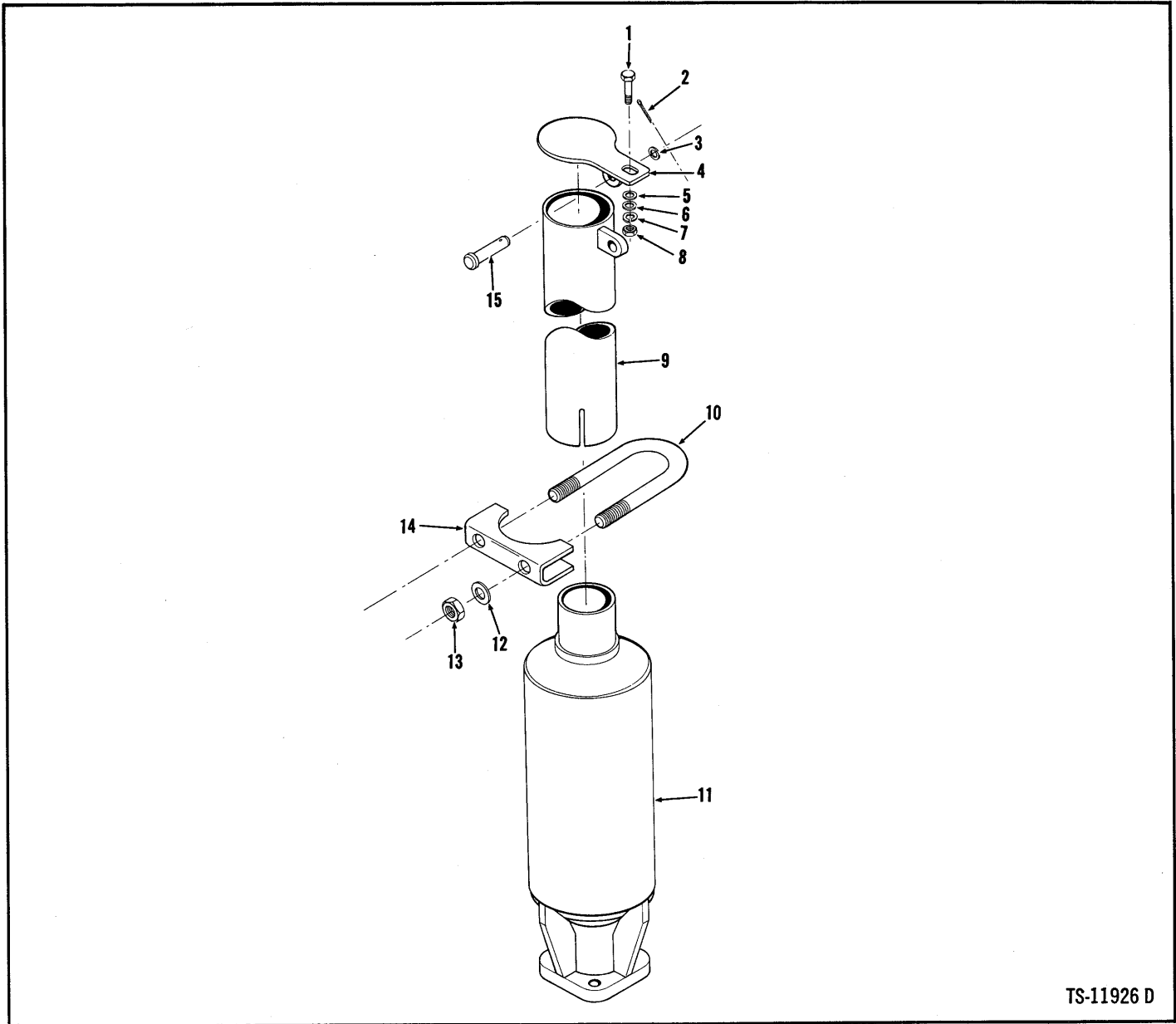
²Inc. 3



TS-11857 D

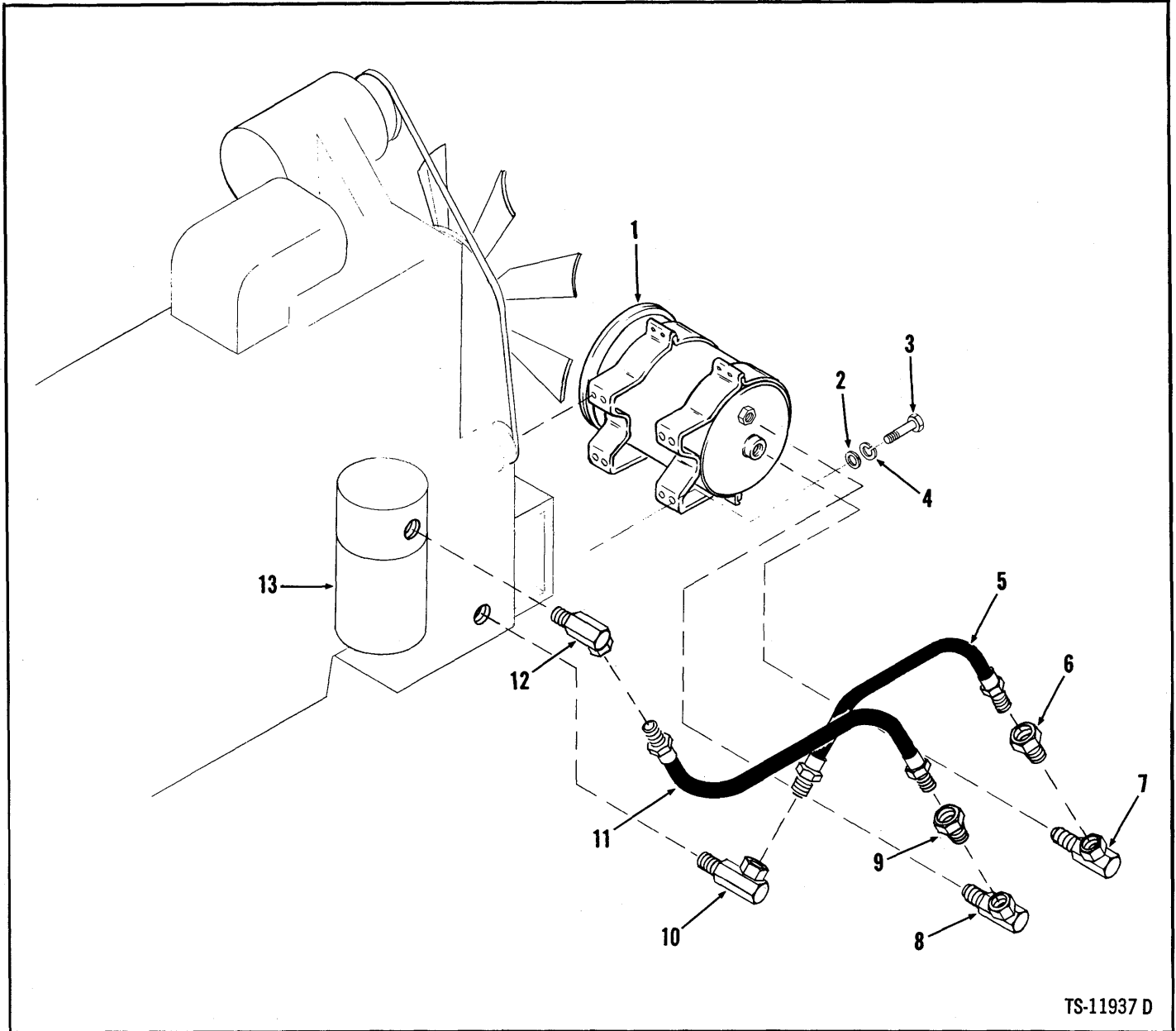
No.	Part No.	Qty.	Description
1	24C-620	4	Bolt
2	556289	1	Clamp
3	1545432	1	Tailpipe
4	2500507	1	Muffler
5	1524082	2	Clamp
6	2501024	1	Bracket
7	¹ 1519686	2	Exhaust pipe
8	1524082	2	Clamp
9	² 1519687	2	Exhaust pipe
10	1524082	2	Clamp
11	24C-632	4	Bolt
12	1542976	2	Flange
13	1990274	2	Gasket
14	18D-06	4	Nut
15	2501023	1	Bracket
16	18D-06	4	Nut
17	2501022	1	Bracket

¹Upper
²Lower



TS-11926 D

No.	Part No.	Qty.	Description
1	24C-824	1	Bolt
2	1F-208	1	Pin cotter
3	24E-13	1	Washer
4	3981134	1	Cap
5	25E-21	1	Washer
6	25E-21	1	Washer
7	4E-08	2	Lockwasher
8	8D-08	1	Nut
9	3981135	1	Tailpipe
10	3950598	1	U-bolt
11	3951458	1	Muffler
12	25E-16	2	Washer
13	15D-05	4	Nut
14	3950394	1	Clamp
15	2F-04051	1	Pin



TS-11937 D

No.	Part No.	Qty.	Description
1	_____	1	Filter oil by-pass
2	25E-15	8	Washer
3	24C-514	8	Bolt
4	4E-05	8	Lockwasher
5	1524878	1	Hose
6	19F-6	1	Bushing
7	31F-3	1	Adapter union
8	31F-3	1	Adapter union
9	19F-6	1	Bushing
10	31F-3	1	Adapter union
11	1524878	1	Hose
12	31F-3	1	Adapter union
13	_____	—	Filter

*Furnished with Engine

Group F

Frame, Front & Rear – Cummins

F3, 4

Frame, Front & Rear – Perkins

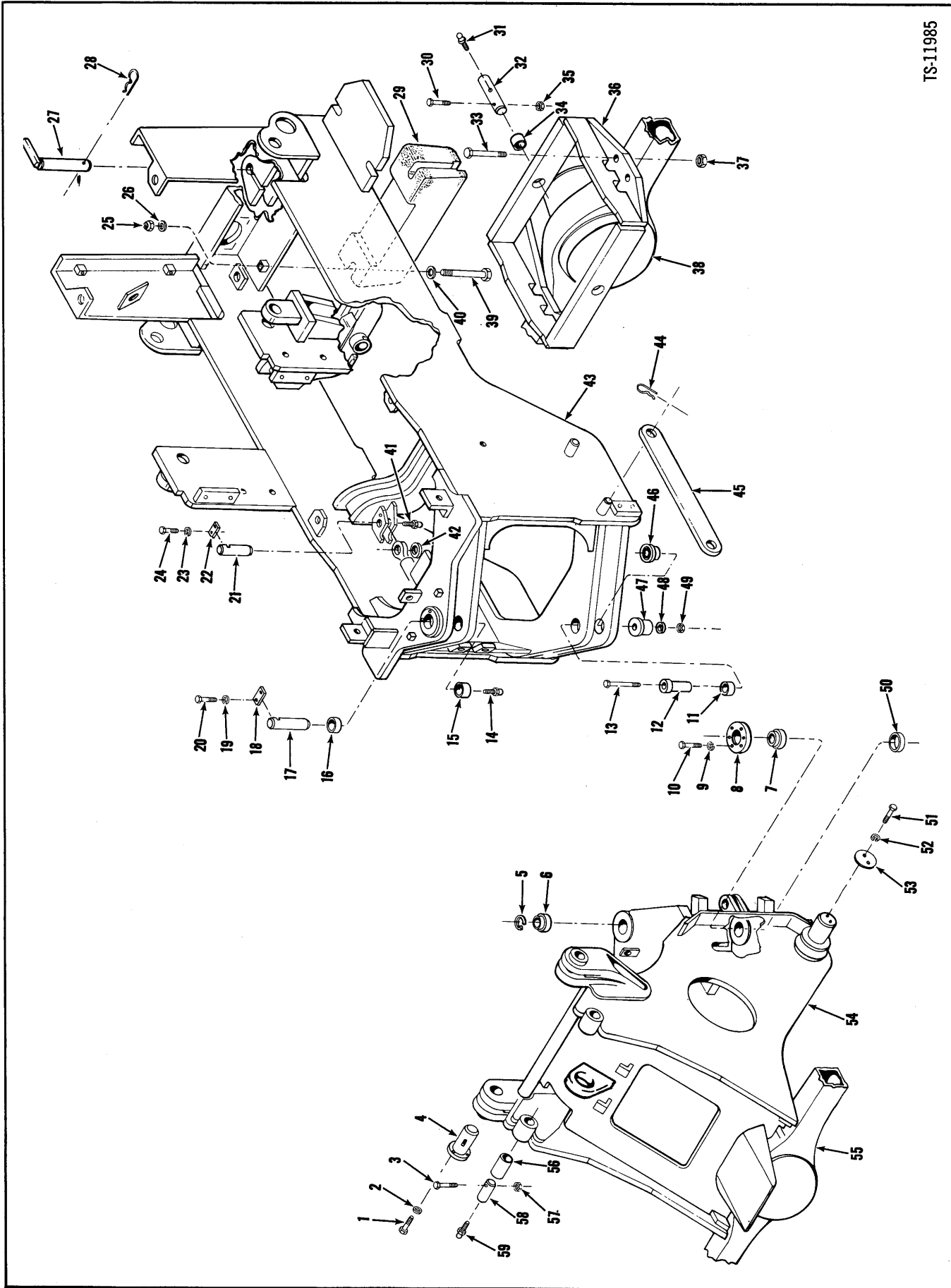
F7, 8

Fuel Tank & Lines – Cummins

F9

Fuel Tank & Lines – Perkins

F10



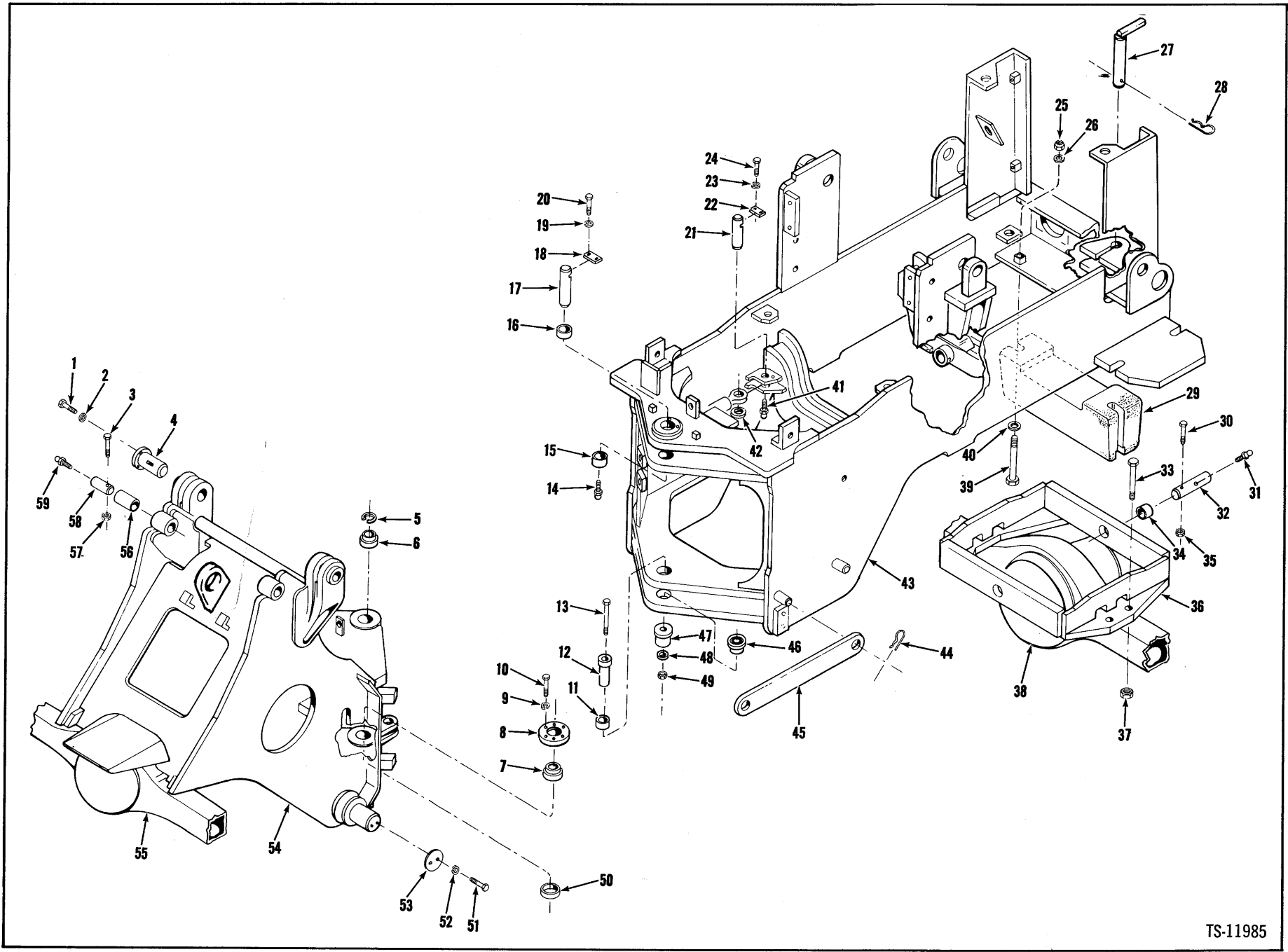
Frame, Front & Rear – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
1	23C-1022	2	Bolt
2	4E-10	2	Lockwasher
3	24C-872	1	Bolt
4	3980204	2	Pin
5	663724	1	Ring
6	2500121	1	Bushing
7	2500121	1	Bushing
8	3980218	1	Cap
9	4E-06	6	Lockwasher
10	24C-620	6	Bolt
11	3980771	1	Bushing
12	3980212	1	Pin
13	24C-12112	1	Bolt
14	12H-15	1	Fitting, grease
15	3980766	1	Bushing
16	3980766	1	Bushing
17	3980208	1	Pin
18	3980211	1	Lockplate
19	4E-08	2	Lockwasher
20	24C-816	2	Bolt
21	3980219	4	Pin
22	3980221	4	Lockplate
23	4E-06	8	Lockwasher
24	24C-614	8	Bolt
25	*68D-12	2	Nut
25A	**18D-12	2	Nut
26	*25E-27	2	Washer
26A	**25E-28	2	Washer
27	2501008	1	Pin drawbar
28	3968048	1	Pin set
29	*3981138	1	Counterweight
29A	**2501156	1	Counterweight
30	24C-856	2	Bolt
31	10H-25	1	Fitting, grease
32	3980823	2	Pin
33	24C-1244	8	Bolt
34	3980792	2	Bushing
35	18D-08	2	Nut
36	3980818	1	Cradle assy axle
37	68D-12	8	Nut
38	² _____	1	Axle assy – rear
39	*24C-12136	2	Bolt
39A	**24C-12160	2	Bolt
40	*25E-27	2	Washer
40A	**25E-28	2	Washer
41	12H-15	1	Fitting, grease
42	3980220	4	Spacer
43	3980755	1	Frame – rear
44	3968029	2	Pin set
45	3980223	1	Link

- 3960829

*Optional in lieu of Hydro – for machines with ROPS.
 **Optional in lieu of Hydro – for machines without ROPS.
¹Incl. 34
²See Index
³Incl. 11, 15, 16, 46



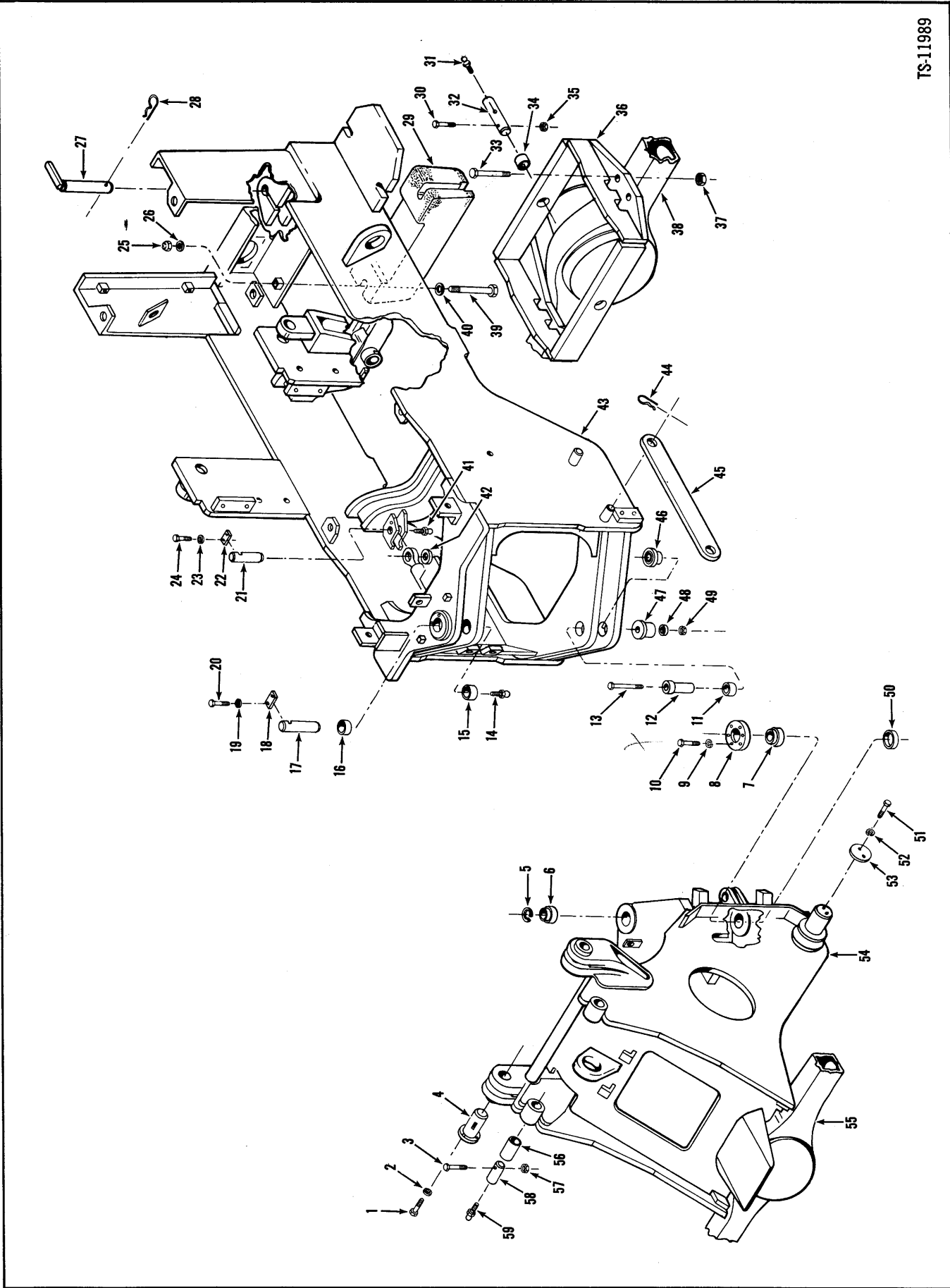
Frame, Front & Rear – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
46	3980772	1	Bushing
47	3980213	1	Plate
48	3980216	1	Washer
49	68D-12	1	Nut
50	3980217	1	Spacer
51	23C-820	4	Bolt
52	4E-08	4	Lockwasher
53	3980207	2	Plate
54	⁴ 3980153	1	Frame – front
55	⁵ _____	1	Axle assy – front
56	3980103	2	Bushing
57	18D-08	2	Nut
58	3980222	2	Pin
59	10H-25	1	Fitting, grease

⁴Inc. 56

⁵See Index



Frame, Front & Rear – Perkins

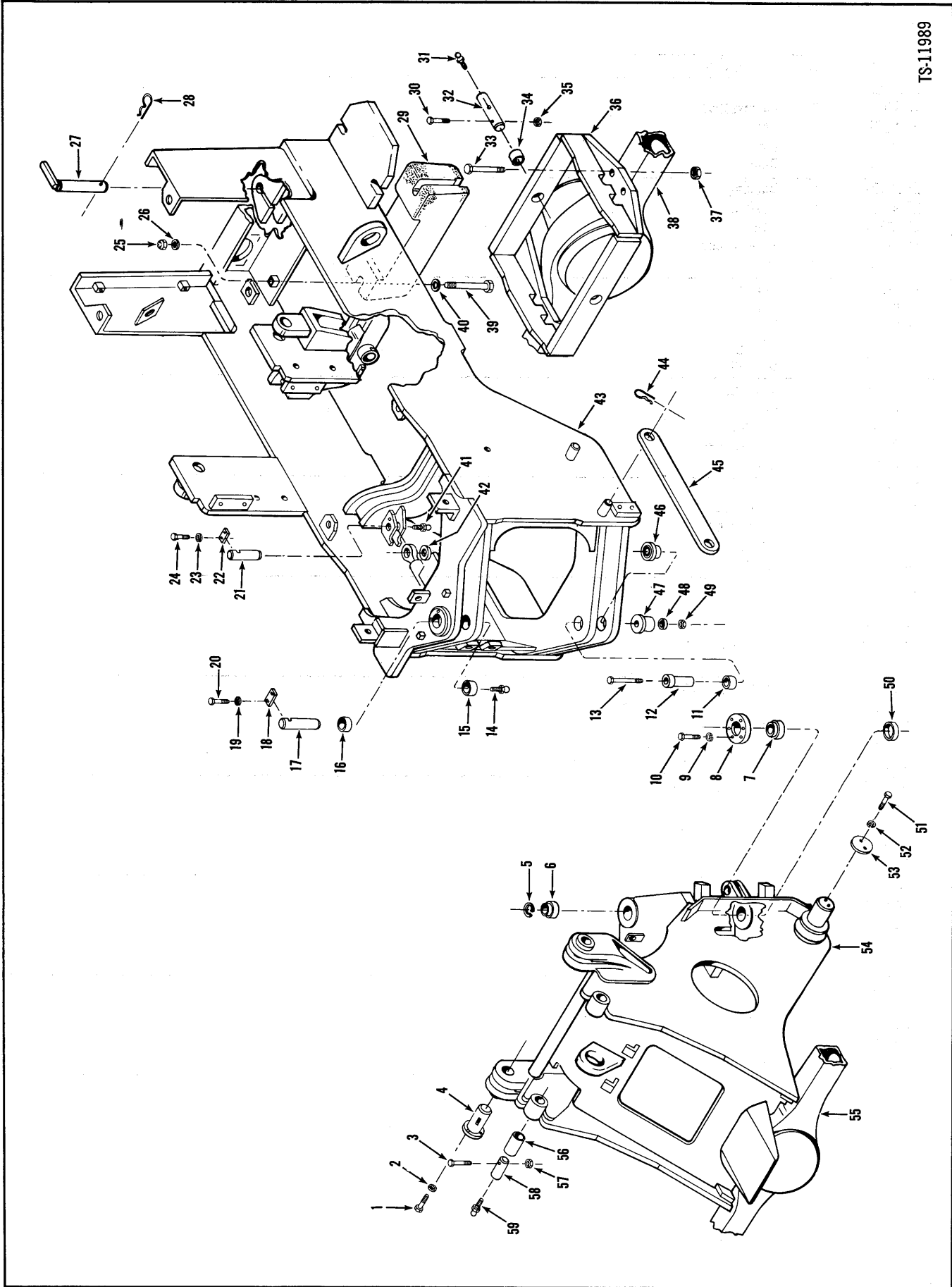
MICHIGAN

No.	Part No.	Qty.	Description
1	23C-1022	2	Bolt
2	4E-10	2	Lockwasher
3	24C-872	1	Bolt
4	3980204	2	Pin
5	663724	1	Ring
6	2500121	1	Bushing
7	2500121	1	Bushing
8	3980218	1	Cap
9	4E-06	6	Lockwasher
10	24C-620	6	Bolt
11	3980771	1	Bushing
12	3980212	1	Pin
13	24C-12112	1	Bolt
14	12H-15	1	Fitting, grease
15	3980766	1	Bushing
16	3980766	1	Bushing
17	3980208	1	Pin
18	3980211	1	Lockplate
19	4E-08	2	Lockwasher
20	24C-816	2	Bolt
21	3980219	4	Pin
22	3980221	4	Lockplate
23	4E-06	8	Lockwasher
24	24C-614	8	Bolt
25	68D-12	2	Nut
26	25E-27	2	Washer
27	2501008	1	Pin drawbar
28	3968048	1	Pin set
29	3981138	1	Counterweight
30	24C-856	2	Bolt
31	10H-25	1	Fitting, grease
32	3980823	2	Pin
33	24C-1244	8	Bolt
34	3980792	2	Bushing
35	18D-08	2	Nut
36	3980818	1	Cradle assy axle
37	68D-12	8	Nut
38	² _____	1	Axle assy – rear
39	24C-12136	2	Bolt
40	25E-27	2	Washer
41	12H-15	2	Fitting, grease
42	3980220	4	Spacer
43	3981598	1	Frame – rear
44	3968029	2	Pin set
45	3980223	1	Link
46	3980772	1	Bushing
47	3980213	1	Plate
48	3980216	1	Washer
49	68D-12	1	Nut
50	3980217	1	Spacer

¹Inc. 34

²See Index

³Inc. 11, 15, 16, 46



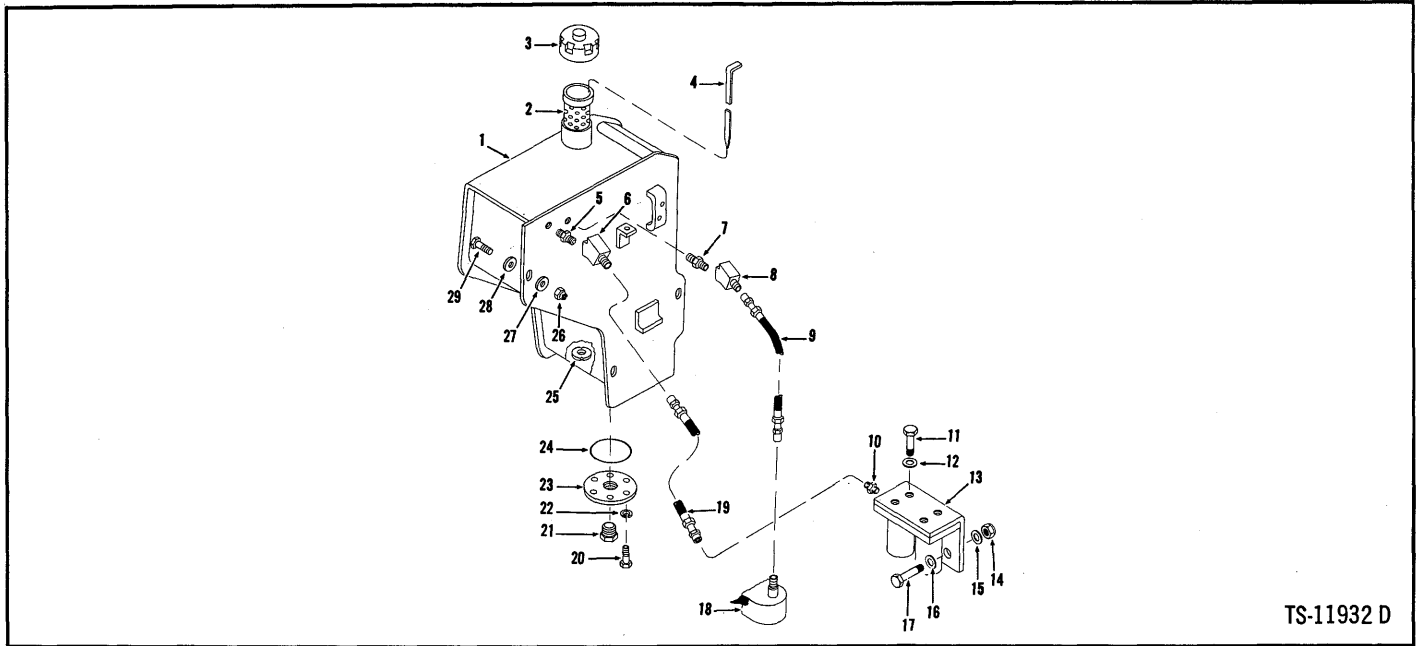
Frame, Front & Rear – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
51	23C-820	4	Bolt
52	4E-08	4	Lockwasher
53	3980207	2	Plate
54	⁴ 3980153	1	Frame – front
55	⁵ _____	1	Axle assy – front
56	3980103	2	Bushing
57	18D-08	2	Nut
58	3980222	2	Pin
59	10H-25	1	Fitting, grease

⁴Inc. 56

⁵See Index



TS-11932 D

No.	Part No.	Qty.	Description
1	13980292	1	Fuel tank
1A	†21509027	1	Latch assy
1B	†1H-414	1	Rivet
2	943957	1	Screen
3	31558644	1	Cap
3A	†946953	1	Gasket
3B	†946954	1	Plate
4	3980303	1	Dipstick
5	38F-10	1	Connector
6	81F-3	1	Elbow
7	38F-9	1	Connector
8	81F-2	1	Elbow
9	1519977	1	Hose
10	38F-10	1	Connector
11	23C-612	4	Bolt
12	25E-17	4	Washer
13	2500934	1	Bracket
14	18D-06	2	Locknut
15	25E-17	2	Washer
16	25E-17	2	Washer
17	24C-624	2	Bolt
18	---	---	Engine
19	1519979	1	Hose
20	24C-612	6	Bolt
21	40K-16	1	Plug
22	4E-06	6	Lockwasher
23	587613	1	Cover
24	25K-40428	1	O-ring
25	525293	1	Magnet
26	18D-08	3	Locknut
27	25E-22	3	Washer
28	25E-22	3	Washer
29	24C-832	3	Bolt

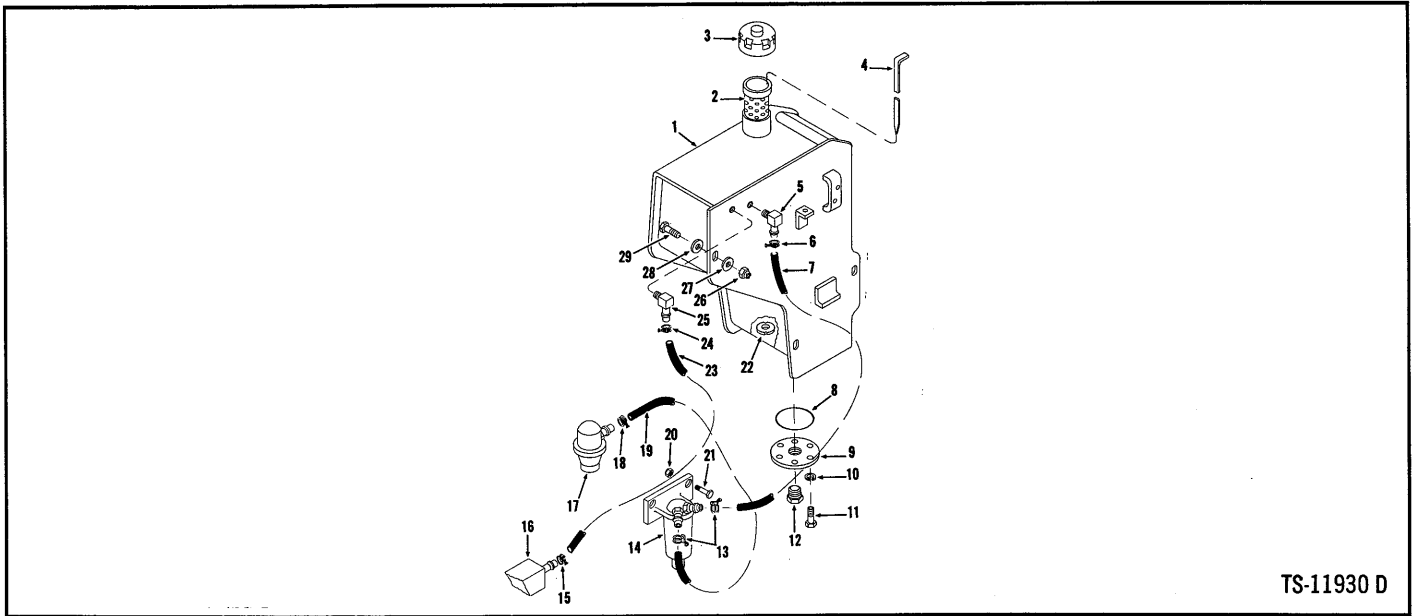
†Inc. 1A, 1B

‡Inc. 1B

‡Inc. 3A, 3B

Fuel Tank and Lines – Perkins

MICHIGAN



TS-11930 D

No.	Part No.	Qty.	Description
1	13980292	1	Fuel tank
1A	†21509027	1	Latch assy
1B	†1H-414	1	Rivet
2	943957	1	Screen
3	31558644	1	Cap
3A	†946953	1	Gasket
3B	†946954	1	Plate
4	3980303	1	Dipstick
5	3981554	1	Elbow
6	3957697	1	Clamp
7	743563	1	Hose
8	25K-40428	1	O-ring
9	587613	1	Cover
10	4E-06	6	Lockwasher
11	24C-612	6	Bolt
12	40K-16	1	Plug
13	3957697	2	Clamp
14	3968005	1	Water trap
15	3957697	1	Clamp
16	-----	—	Engine
17	4-----	—	Fuel pump
18	3957697	1	Clamp
19	656247	1	Hose
20	18D-5	2	Nut
21	24C-516	2	Bolt
22	525293	1	Magnet
23	656247	1	Hose
24	3957697	1	Clamp
25	3981556	1	Elbow
26	18D-8	3	Locknut
27	25E-22	3	Washer
28	25E-22	3	Washer
29	24C-832	3	Bolt

†Inc. 1A, 1B

‡Inc. 1B

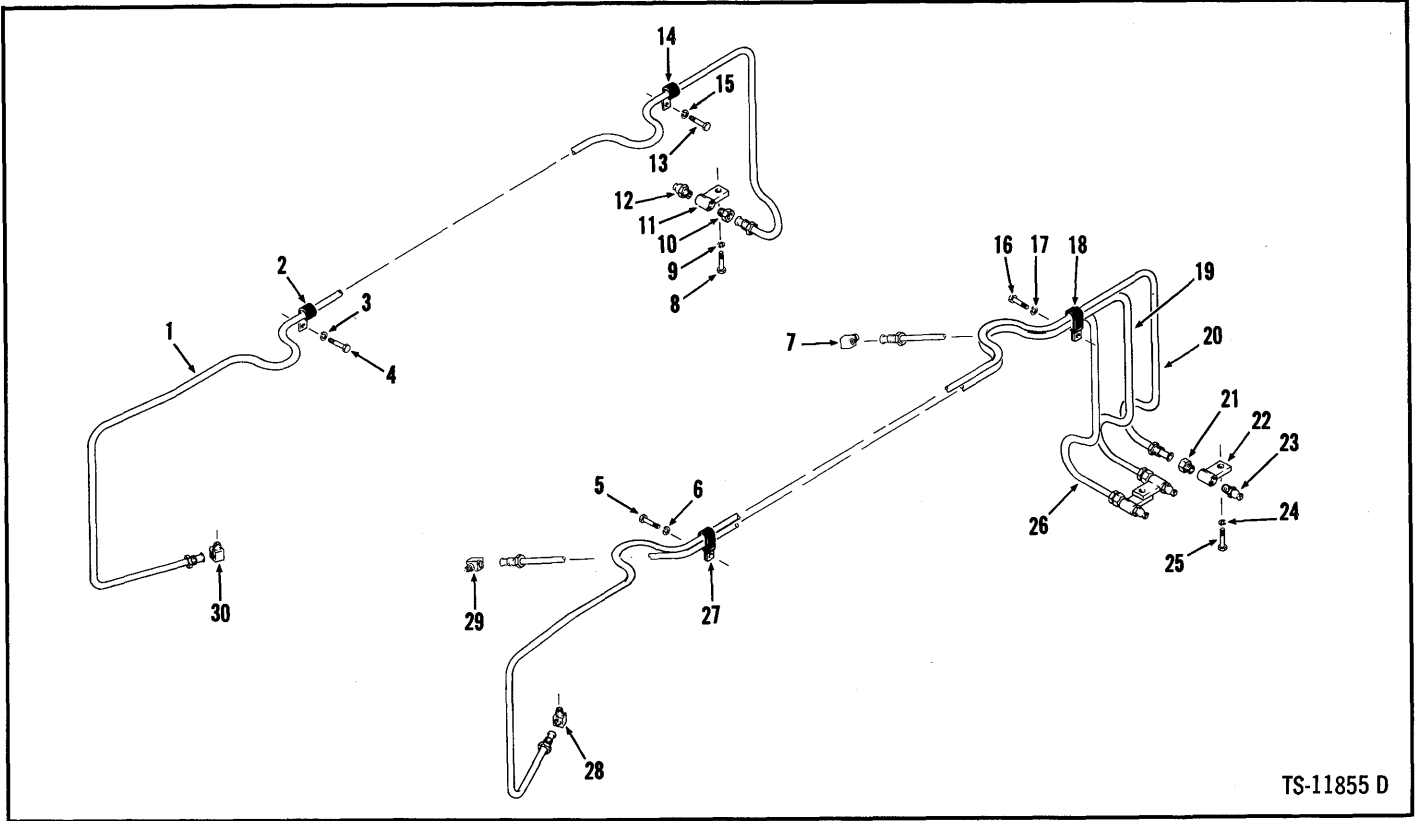
§Inc. 3A, 3B

¶See Engine Parts Manual

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Group G
Grease Piping

G2

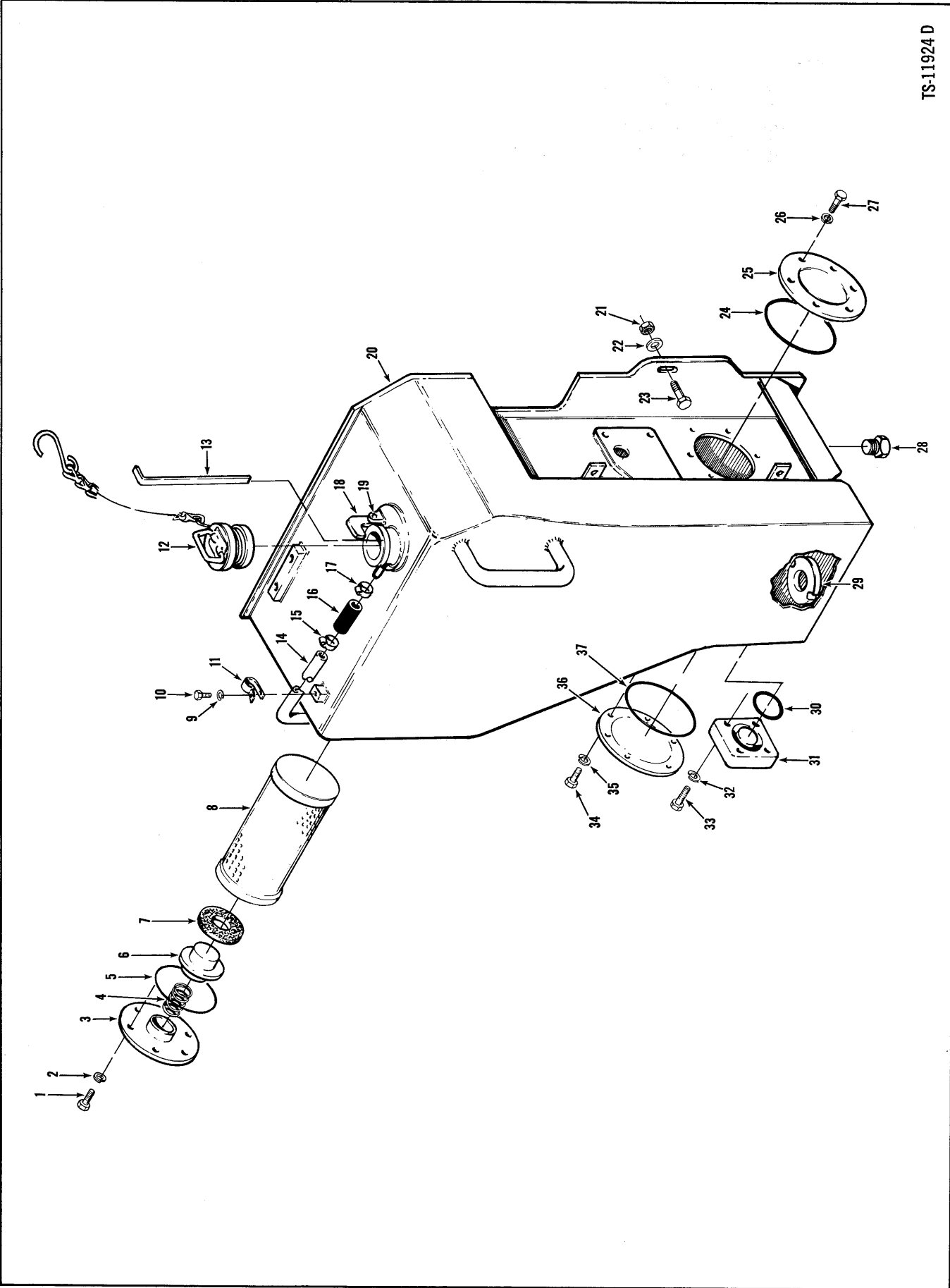


TS-11855 D

No.	Part No.	Qty.	Description
1	3980684	1	Tube
2	30H-16	1	Clip
3	4E-06	1	Lockwasher
4	24C-610	1	Bolt
5	24C-610	1	Bolt
6	4E-06	1	Lockwasher
7	62F-3	1	Elbow
8	24C-616	1	Bolt
9	4E-06	1	Lockwasher
10	59F-3	1	Connector
11	1504336	1	Coupling
12	11H-15	1	Fitting grease
13	24C-610	1	Bolt
14	30H-16	1	Clip
15	4E-06	1	Lockwasher
16	24C-610	1	Bolt
17	4E-06	1	Lockwasher
18	31H-19	1	Clip
19	3980229	1	Tube
20	3980233	1	Tube
21	59F-3	3	Connector
22	1504336	3	Coupling
23	11H-15	3	Fitting grease
24	4E-06	2	Lockwasher
25	24C-616	2	Bolt
26	3980231	1	Tube
27	31H-12	1	Clip
28	62F-3	1	Elbow
29	62F-3	1	Elbow
30	62F-3	1	Elbow

Group H

Hydraulic Oil Reservoir	H3
Hydraulic System, Main	H5, 7
Hydraulic System, Steering	H9
Hydraulic System, Transmission & Torque Converter	H10

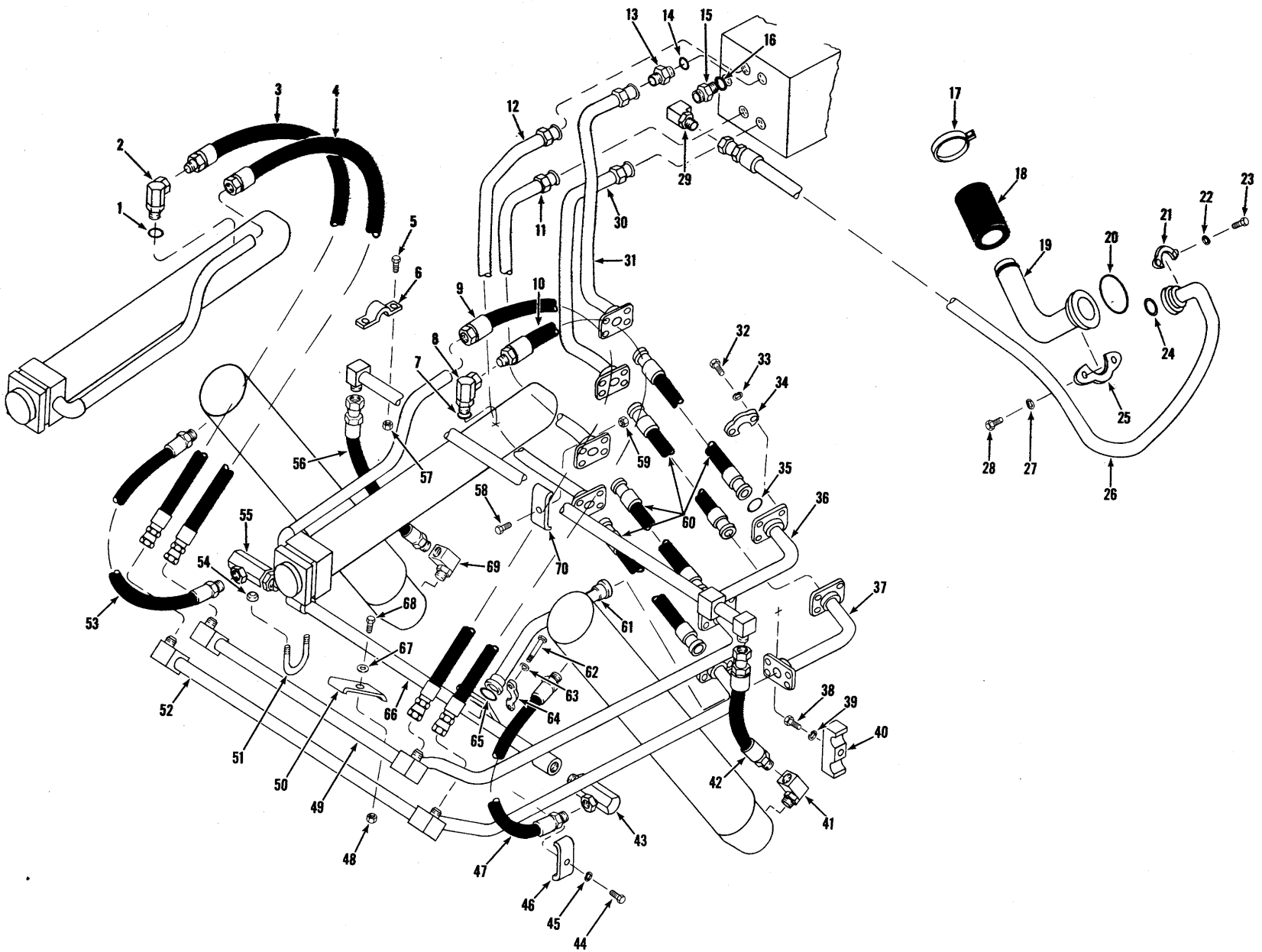


Hydraulic Oil Reservoir

MICHIGAN

No.	Part No.	Qty.	Description
1	24C-612	6	Bolt
2	4E-06	6	Lockwasher
3	1535143	1	Plate
4	732923	1	Spring
5	25K-40624	1	O-ring
6	1535139	1	Retainer
7	1535778	1	Gasket
8	1530600	1	Filter
9	4E-06	1	Lockwasher
10	24C-610	1	Bolt
11	30H-31	1	Clip
12	554843	1	Cap
13	3980879	1	Dipstick oil rsvr
14	3981127	1	Tube
15	521874	1	Clamp
16	743563	1	Hose
17	521874	1	Clamp
18	1543511	1	Latch assy
19	1H-414	1	Rivet
20	3980317	1	Reservoir
21	18D-08	3	Locknut
22	25E-22	6	Washer
23	24C-832	3	Bolt
24	25K-40428	1	O-ring
25	591381	1	Cover
26	4E-06	6	Lockwasher
27	24C-612	6	Bolt
28	40K-12	2	Plug
29	525293	2	Magnet
30	1306622	1	O-ring
31	3980880	1	Cap
32	4E-06	4	Lockwasher
33	24C-618	4	Bolt
34	24C-612	6	Bolt
35	4E-06	6	Lockwasher
36	591381	1	Cover
37	25K-40428	1	O-ring

Inc. 19

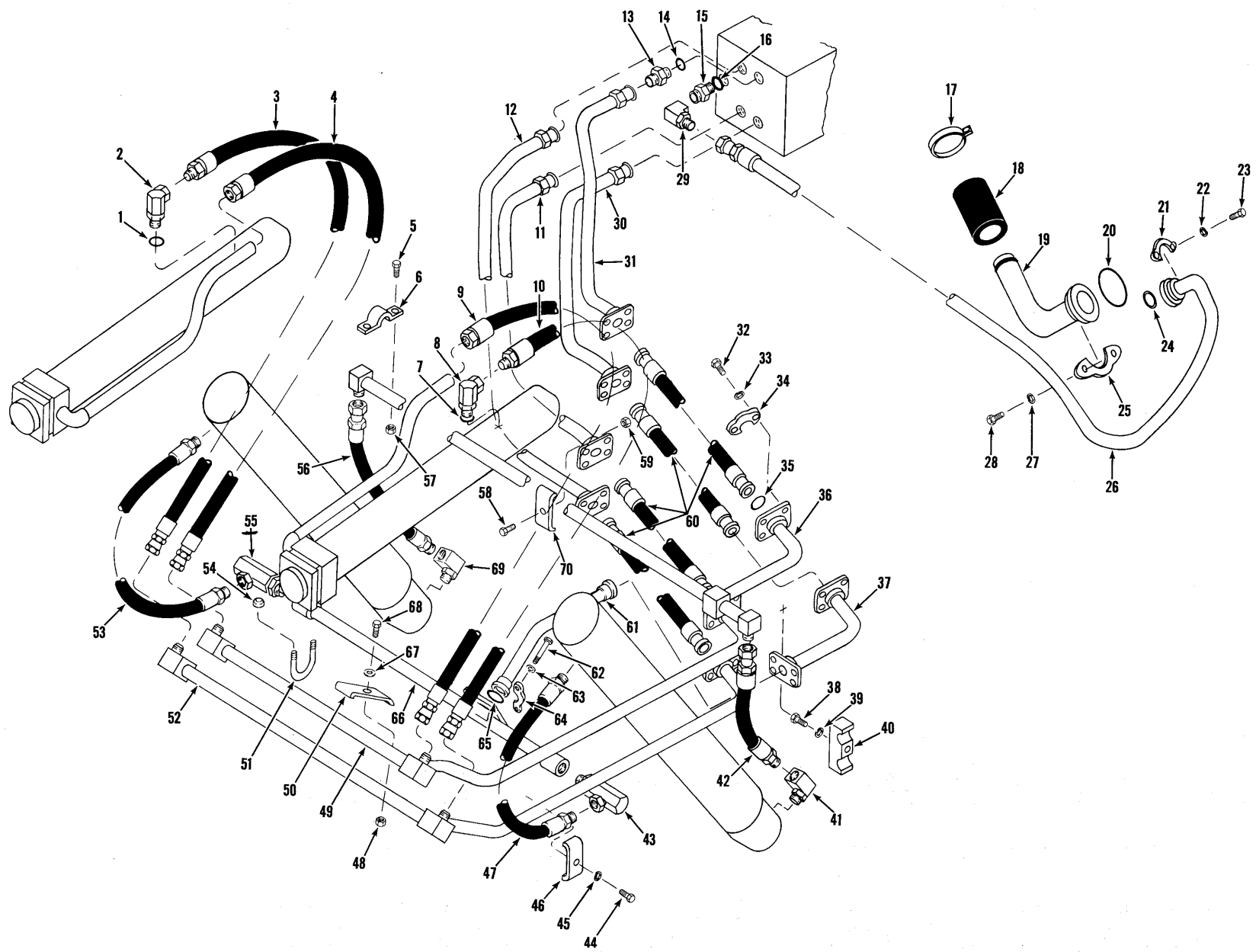


Hydraulic System – Main



No.	Part No.	Qty.	Description
1	¹ 91F-8	1	O-ring
2	² 526676	1	Elbow
3	2500155	1	Hose
4	2500155	1	Hose
5	24C-620	2	Bolt
6	3980520	1	Clamp
7	³ 91F-8	1	O-ring
8	⁴ 526676	1	Elbow
9	2500155	1	Hose
10	2500155	1	Hose
11	3980632	1	Tube
12	3980630	1	Tube
13	⁵ 15K-10	4	Adapter
14	⁶ 91F-10	4	O-ring
15	⁷ 15K-10	1	Adapter
16	⁸ 91F-10	1	O-ring
17	540128	2	Clamp
18	1517153	1	Hose
19	1519585	1	Tube
20	1306624	1	O-ring
21	1511520	2	Flange
22	4E-07	4	Lockwasher
23	23C-724	4	Bolt
24	1306623	1	O-ring
25	1511521	2	Flange
26	1533256	1	Hose
27	4E-08	4	Lockwasher
28	23C-824	4	Bolt
29	11K-10	1	Elbow
30	3980628	1	Tube
31	3980625	1	Tube
32	23C-620	32	Bolt
33	4E-06	32	Lockwasher
34	663092	16	Flange
35	791553	8	O-ring
36	3980506	1	Tube
37	2500087	1	Tube
38	24C-636	1	Bolt
39	4E-06	1	Lockwasher
40	1519989	1	Clamp
41	536224	1	Elbow
42	532621	1	Hose
43	1509752	1	Swivel
44	24C-632	1	Bolt
45	4E-06	1	Lockwasher

¹See 2
²Inc. 1
³See 8
⁴Inc. 7
⁵Inc. 14
⁶See 13
⁷Inc. 16
⁸See 15

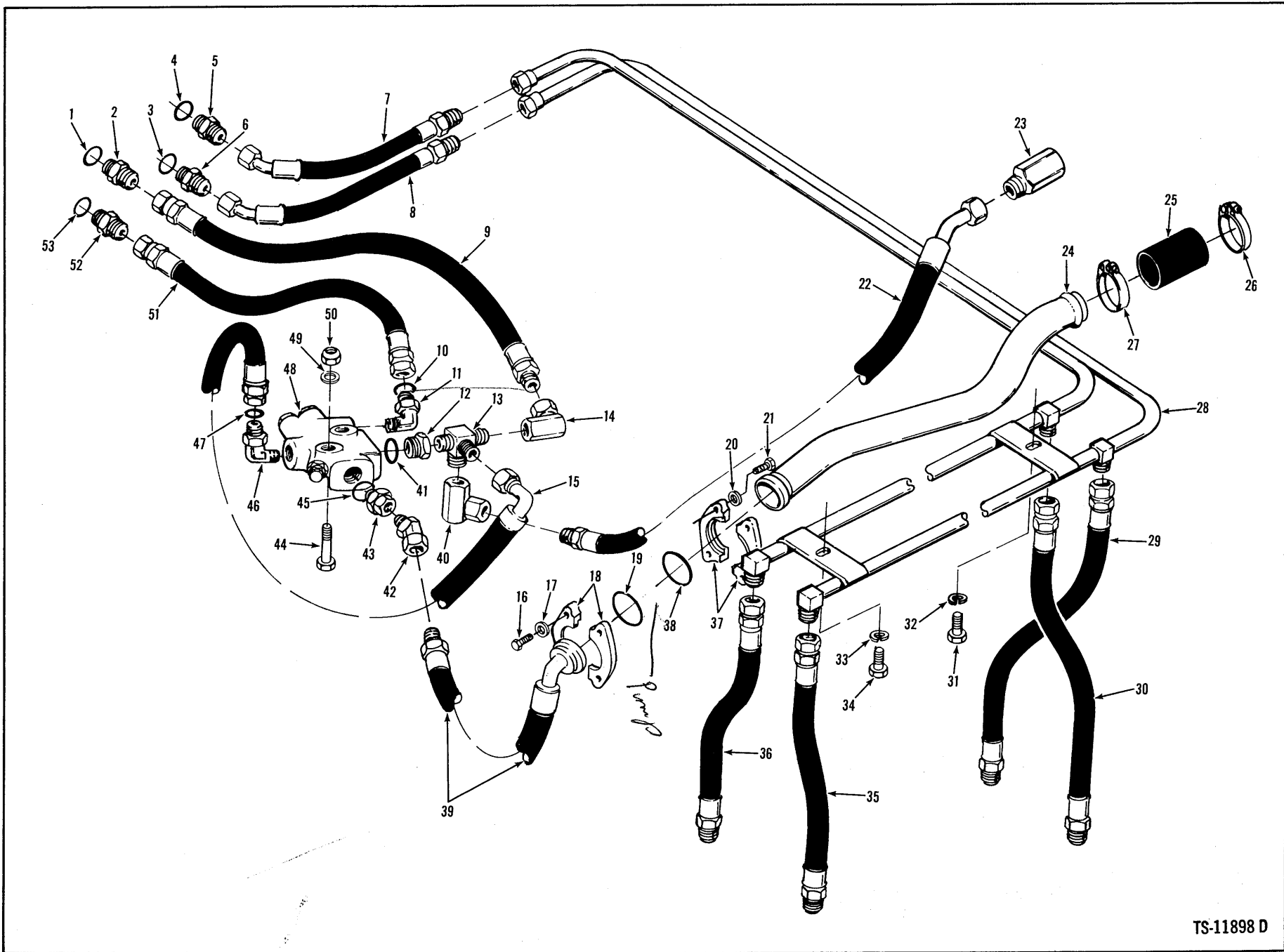


H6-1

Hydraulic System – Main

MICHIGAN

No.	Part No.	Qty.	Description
46	3980519	2	Clamp
47	574442	1	Hose
48	18D-06	2	Locknut
49	3980526	1	Tube
50	3980529	2	Clamp
51	2500085	2	U-bolt
52	3980521	1	Tube
53	574442	1	Hose
54	18D-06	4	Locknut
55	1509752	1	Swivel
56	532621	1	Hose
57	18D-06	2	Locknut
58	24C-636	2	Bolt
59	18D-06	2	Locknut
60	2500156	4	Hose
61	1519964	1	Hose
62	23C-620	8	Bolt
63	4E-06	8	Lockwasher
64	663092	4	Flange
65	791553	2	O-ring
66	2500084	1	Tube
67	25E-17	2	Washer
68	24C-632	2	Bolt
69	536224	1	Elbow
70	3980519	2	Clamp



Hydraulic System, Steering

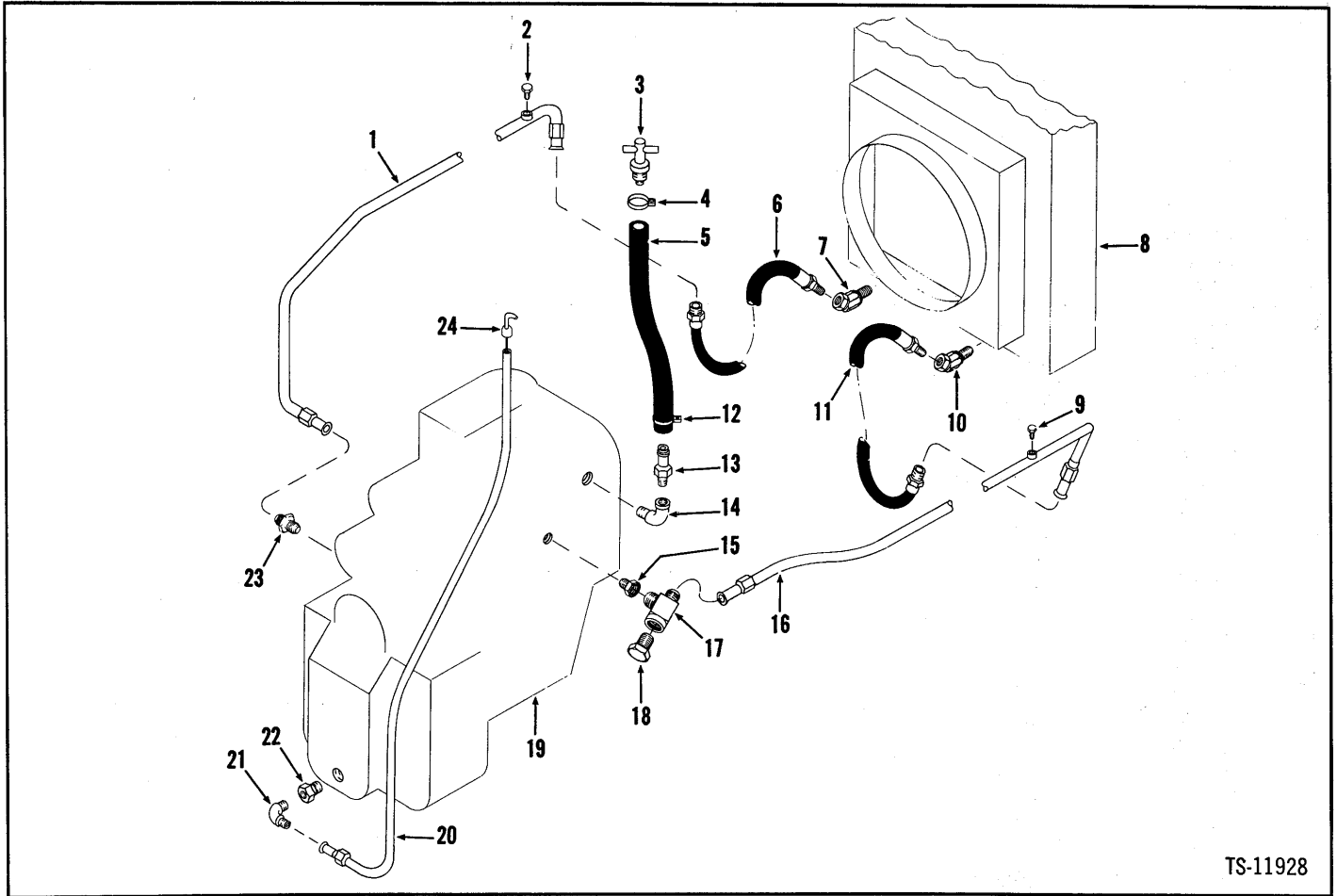
MICHIGAN

No.	Part No.	Qty.	Description
1	91F-6	1	O-ring
2	¹ 731793	1	Adapter
3	91F-6	1	O-ring
4	91F-6	1	O-ring
5	² 731793	1	Adapter
6	³ 731793	1	Adapter
7	1519963	1	Hose
8	1519963	1	Hose
9	1519967	1	Hose
10	91F-7	1	O-ring
11	⁴ 17K-7	1	Elbow
12	⁵ 588399	1	Adapter
13	2500015	1	Junction block
14	32F-4	1	Adapter
15	1519962	1	Hose
16	23C-620	4	Bolt
17	4E-06	4	Lockwasher
18	663093	2	Flange half
19	1306622	1	O-ring
20	4E-07	4	Lockwasher
21	23C-724	4	Bolt
22	1519961	1	Hose
23	93F-10	1	Adapter
24	1519820	1	Tube
25	585883	1	Hose
26	1545004	1	Clamp
27	1545004	1	Clamp
28	1519999	1	Tube assy
29	663304	1	Hose
30	663304	1	Hose
31	24C-616	1	Bolt
32	4E-06	1	Lockwasher
33	4E-06	1	Lockwasher
34	24C-616	1	Bolt
35	663304	1	Hose
36	663304	1	Hose
37	1511520	2	Flange halve
38	1306623	1	O-ring
39	1519966	1	Hose
40	32F-6	1	Adapter
41	91F-11	1	O-ring
42	33F-5	1	Adapter
43	⁶ 3981100	1	Connector
44	24C-656	2	Bolt
45	91F-11	1	O-ring
46	⁷ 17K-7	1	Elbow
47	91F-7	1	O-ring
48	⁸ 3953111	1	Valve
49	25E-17	2	Washer
50	18D-06	2	Nut
51	1519965	1	Hose
52	⁹ 731793	1	Adapter
53	91F-6	1	O-ring

¹Inc. 1
²Inc. 4
³Inc. 3

⁴Inc. 10
⁵Inc. 41
⁶Inc. 45

⁷Inc. 47
⁸Webster Electric Co. #FV7126
⁹Inc. 53



TS-11928

No.	Part No.	Qty.	Description
1	3980928	1	Tube
2	40K-04	1	Plug
3	568824	1	Plug cap transm
4	1545186	1	Clamp
5	3980917	1	Hose
6	526847	1	Hose
7	33F-5	1	Adapter
8	1	1	Radiator assy
9	40K-04	1	Plug
10	33F-5	1	Adapter
11	526847	1	Hose
12	1545186	1	Clamp
13	667288	1	Nipple
14	26F-5	1	Elbow
15	945417	1	Connector
16	3980921	1	Tube
17	1520154	1	Tee
18	40K-08	1	Plug
19	1	1	Transmission assy
20	3980919	1	Tube
21	83F-6	1	Elbow
22	356618	1	Bushing
23	15K-8	1	Connector
24	3980920	1	Dipstick transm

¹See Index

Group M
Mid-Mount Bearing Assembly

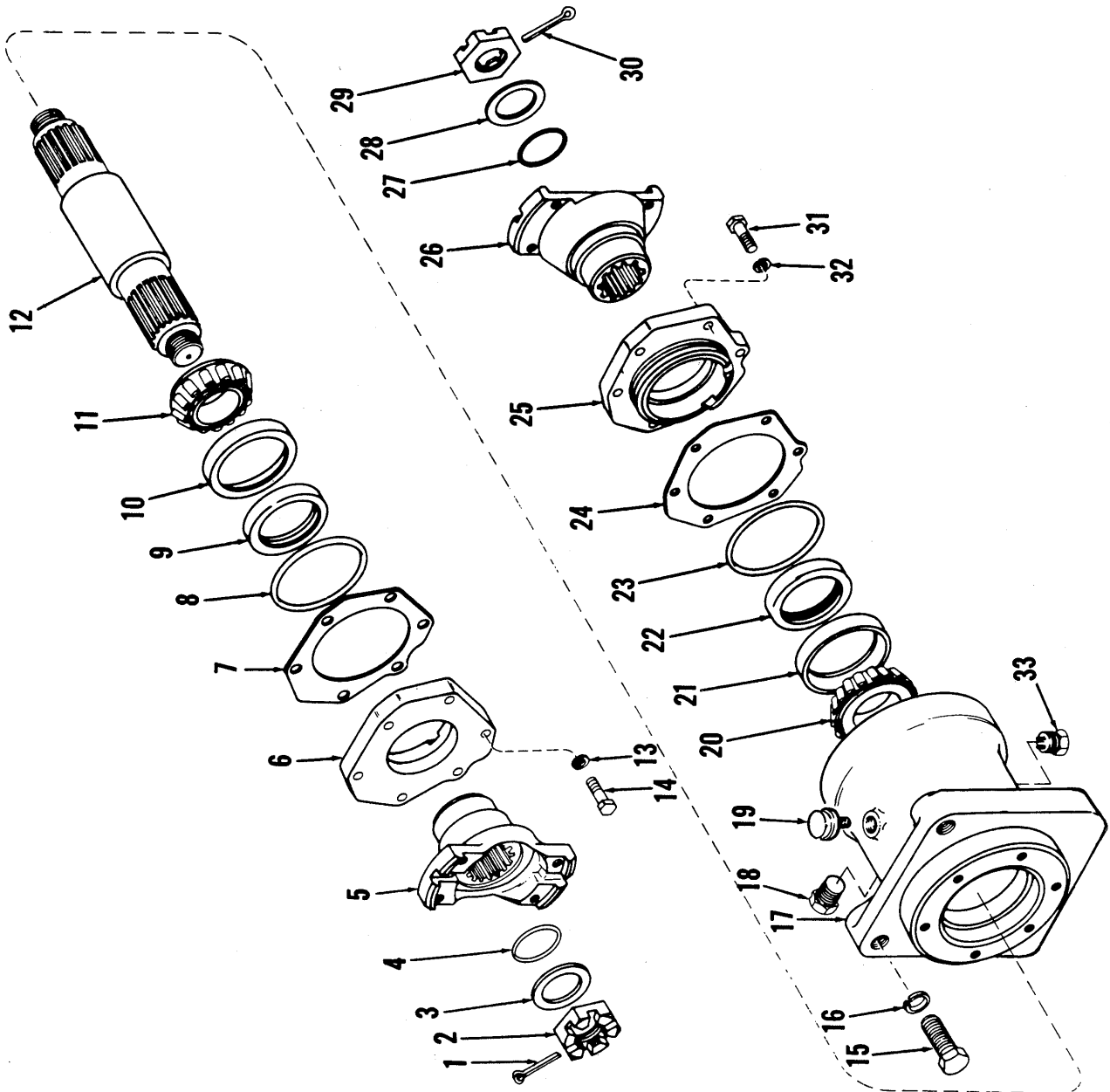
M3



VOLVO BM
MICHIGAN
EUCLID

6667057 89.09 500x50

TS-11863 D



Mid-Mount Bearing Assembly

MICHIGAN

No.	Part No.	Qty.	Description
A	13980278	1	Brg assy mid-mount
1	1F-428	1	Pin cotter
2	201951	1	Nut
3	102745	1	Washer
4	25K-40112	1	O-ring
5	214985	1	Flange
6	3980281	1	Cap
7	‡23980282	—	Shim
7A	‡33980283	—	Shim
7B	‡43980284	—	Shim
8	25K-40308	1	O-ring
9	206864	1	Seal
10	5223270	1	Bearing
11	-----	1	Bearing
12	3980280	1	Shaft
13	4E-06	4	Lockwasher
14	23C-616	4	Bolt
15	23C-1024	4	Bolt
16	4E-10	4	Lockwasher
17	3980279	1	Housing
18	40K-06	1	Plug
19	211433	1	Breather
20	6223270	1	Bearing
21	-----	1	Bearing
22	206864	1	Seal
23	25K-40308	1	O-ring
24	‡23980282	—	Shim
24A	‡33980283	—	Shim
24B	‡43980284	—	Shim
25	3980281	1	Cap
26	214985	1	Flange
27	25K-40112	1	O-ring
28	102745	1	Washer
29	201951	1	Nut
30	1F-428	1	Pin cotter
31	23C-616	4	Bolt
32	4E-06	4	Lockwasher
33	215757	1	Plug

¹Inc. 1-14, 17-33

²0.004" (0,10 mm)

³0.008" (0,20 mm)

⁴0.012" (0,30 mm)

⁵Inc. 11

⁶Inc. 21

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Group N

Nameplates, Decals – Cummins

N2

Nameplates, Decals – Perkins

N3



Nameplate, Decals – Cummins

No.	Part No.	Qty.	Description
1	1510525	1	Decal lubrication
2	1523338	1	Decal caution oil
3	538256	1	Decal transmission oil
4	2501186	1	Decal transmission filter
5	1511711	3	Decal warning
6	1548364	1	Decal brake warning
7	1549005	1	Decal not for parking
8	1549006	1	Decal emergency hand valve
9	1505581	1	Decal safety wiring
10	1515482	1	Decal valve lever instruction
11	547851	2	Decal clark equipment
12	547852	2	Decal Michigan
13	1517621	4	Decal racing stripe
14	1512863	1	Decal safety warning
15	1513843	1	Decal circuit breaker
16	1512006	1	Decal patent
17	2501172	2	Decal model
18	1519818	1	Decal shift lever
19	2501183	1	Decal precaution
20	1527430	1	Plate service
21	1513887	1	Tag warning
22	3980248	4	Strip abrasive
23	1513447	1	Plate instruction
24	564011	1	Nameplate Michigan
25	7G-418	4	Screw
26	20E-04	4	Lockwasher
27	61D-04	4	Nut
28	2501744	1	Plate indicating light

Nameplate, Decals – Perkins

MICHIGAN

No.	Part No.	Qty.	Description
1	1512006	1	Decal patent
2	3980245	2	Decal model
3	3981969	1	Decal engine oil pressure
4	1519818	1	Decal shift lever
5	3951029	1	Decal brake
6	547852	2	Decal Michigan
7	3981965	1	Decal battery
8	3951031	1	Decal warning lamp
9	3981966	1	Decal parking brake
10	538256	1	Decal drain
11	3981968	1	Decal engine water temp
12	1512863	1	Decal safety warning
13	3981967	1	Decal t c oil temp
14	3981121	1	Decal circuit breaker
15	3981971	1	Decal test switch
16	3980243	1	Plate lubrication
17	3980244	1	Plate lubrication
18	6C-605	8	Screw
19	1527430	1	Plate service
20	1513447	1	Plate instruction
21	3980248	6	Strip abrasive
22	564011	1	Nameplate Michigan
23	44G-418	4	Screw

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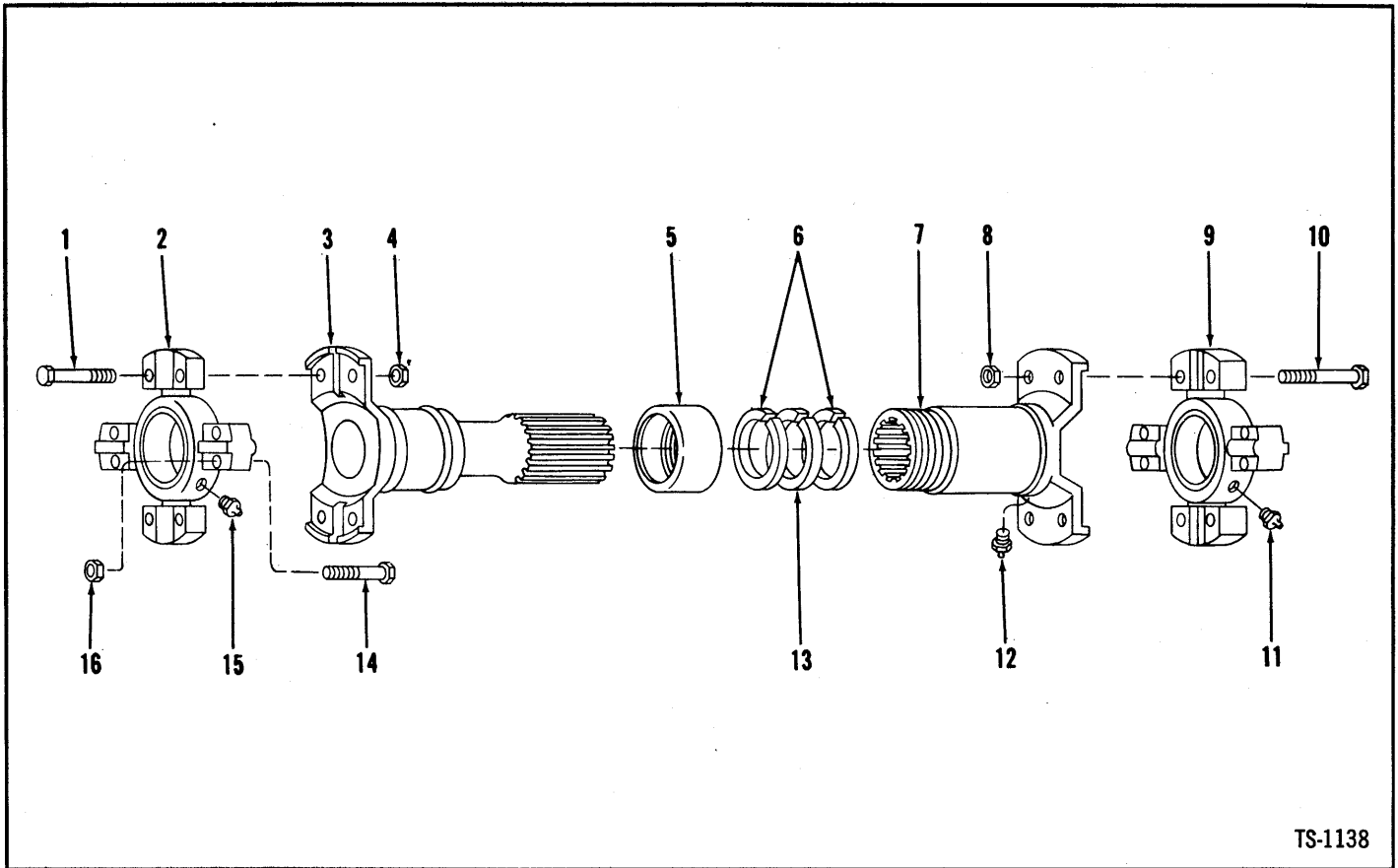


Group P

Propeller Shaft Assembly: Mid-Mount – Front Axle
Propeller Shaft Assembly: Rear Axle – Transmission
Pump Assembly, Main
Pump Assembly, Steering
Pump Attaching Parts

P2
P3, 4
P5
P6
P7

Propeller Shaft Assembly – Mid-mount Bearing/ Transmission/Front Axle



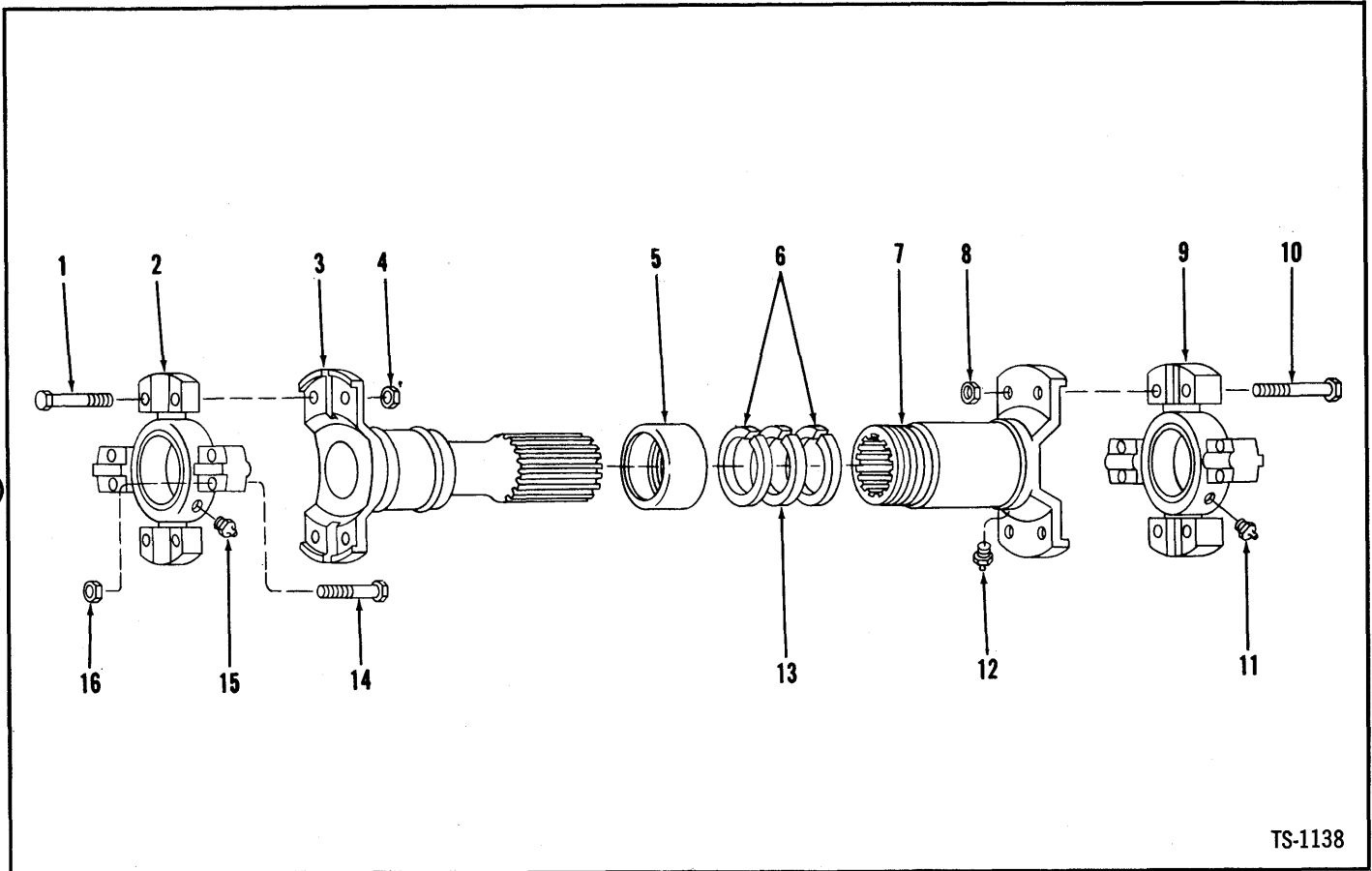
No.	Part No.	Qty.	Description
A	*1550580	2	Propeller shaft
1	940089	4	Bolt
2	944862	1	Spider u-joint
3	940084	1	Yoke tube
4	8D-06	4	Nut
5	940090	1	Retainer
6	940091	2	Washer
7	² 940093	1	Slip yoke
8	8D-06	4	Nut
9	944862	1	Spider u-joint
10	940089	4	Bolt
11	10H-35	1	Fitting grease
12	10H-25	1	Fitting grease
13	940092	1	Washer
14	940089	8	Bolt
15	10H-35	1	Fitting grease
16	8D-06	8	Nut

¹Inc. 1-16

²Inc. 12

*2 used per machine. Quantities listed are for 1.

Propeller Shaft Assembly – Rear Axle/Transmission

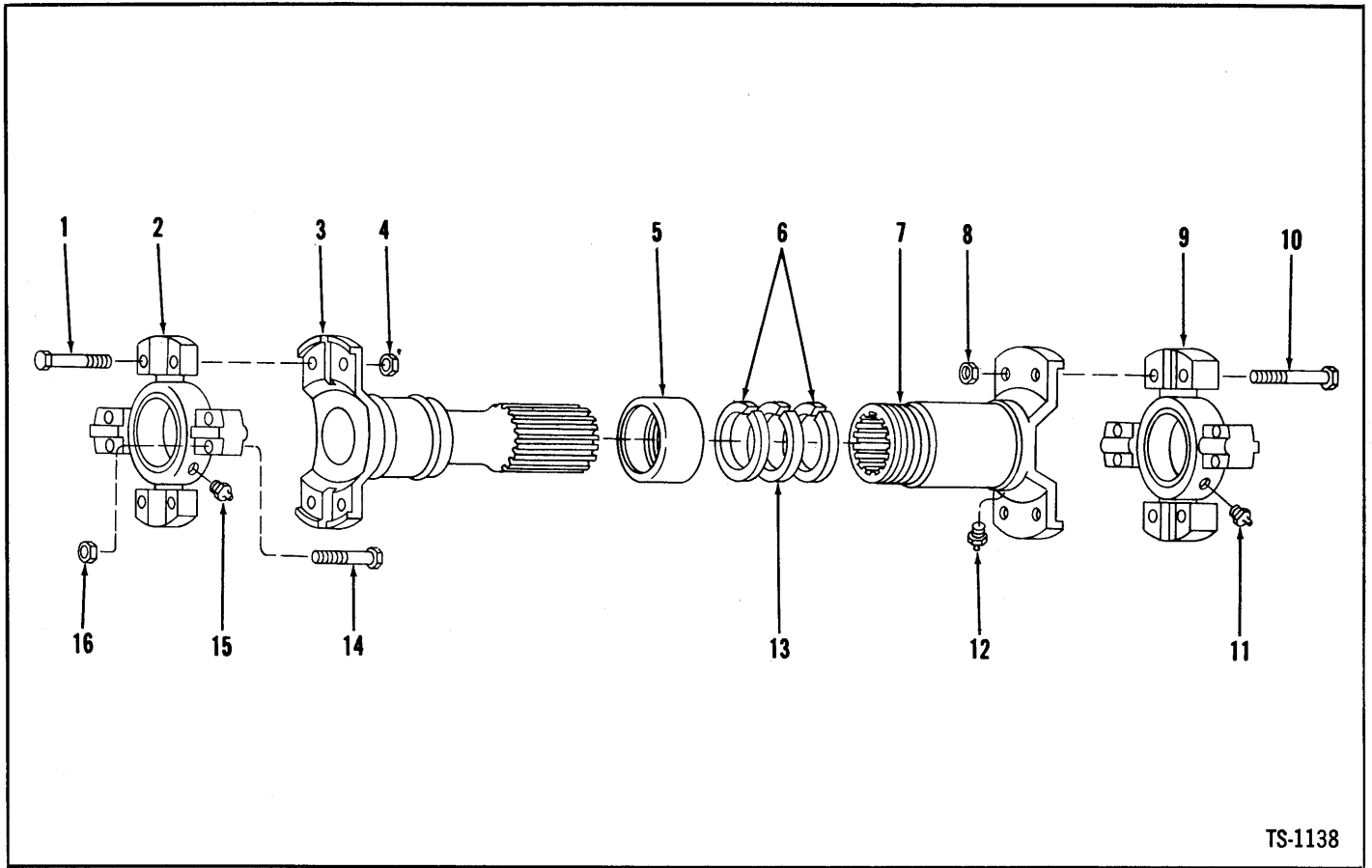


TS-1138

No.	Part No.	Qty.	Description
A	521000	1	Propeller shaft
1	940089	4	Bolt
2	944862	1	Spider u-joint
3	888281	1	Yoke tube
4	8D-06	4	Nut
5	940090	1	Retainer
6	940091	2	Washer
7	940093	1	Slip yoke
8	8D-06	4	Nut
9	944862	1	Spider u-joint
10	940089	4	Bolt
11	10H-35	1	Fitting grease
12	10H-25	1	Fitting grease
13	940092	1	Washer
14	940089	8	Bolt
15	10H-35	1	Fitting grease
16	8D-06	8	Nut

¹Inc. 1-16

²Inc. 12



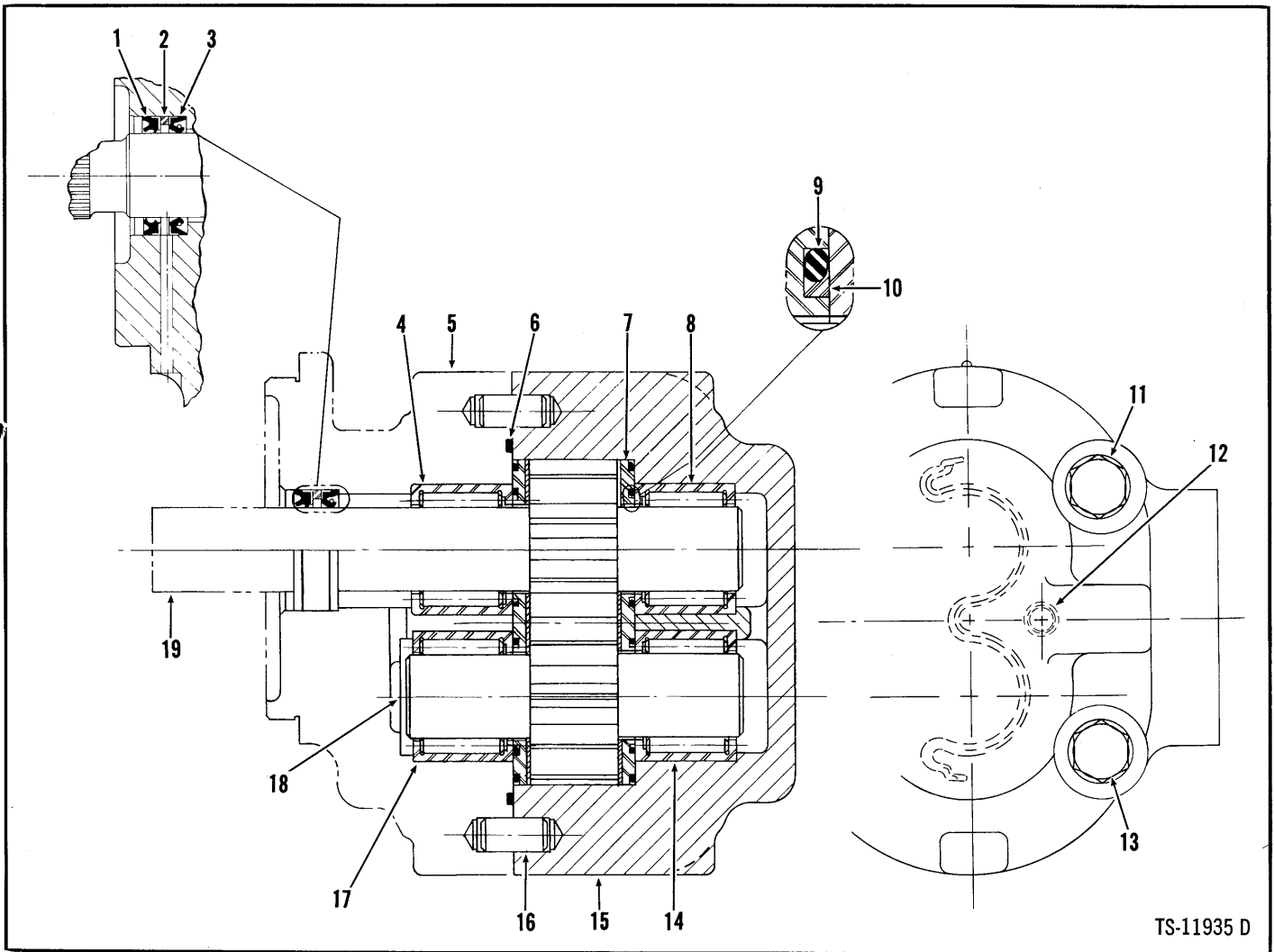
TS-1138

No.	Part No.	Qty.	Description
A	3980426	1	Propeller shaft
1	940089	4	Bolt
2	944862	1	Spider u-joint
3	3981902	1	Yoke tube
4	8D-06	4	Nut
5	940090	1	Retainer
6	940091	2	Washer
7	3981901	1	Slip yoke
8	8D-06	4	Nut
9	944862	1	Spider u-joint
10	940089	4	Bolt
11	10H-35	1	Fitting grease
12	10H-25	1	Fitting grease
13	940092	1	Washer
14	940089	8	Bolt
15	10H-35	1	Fitting grease
16	8D-06	8	Nut

Inc. 1-16

Pump Assembly, Main

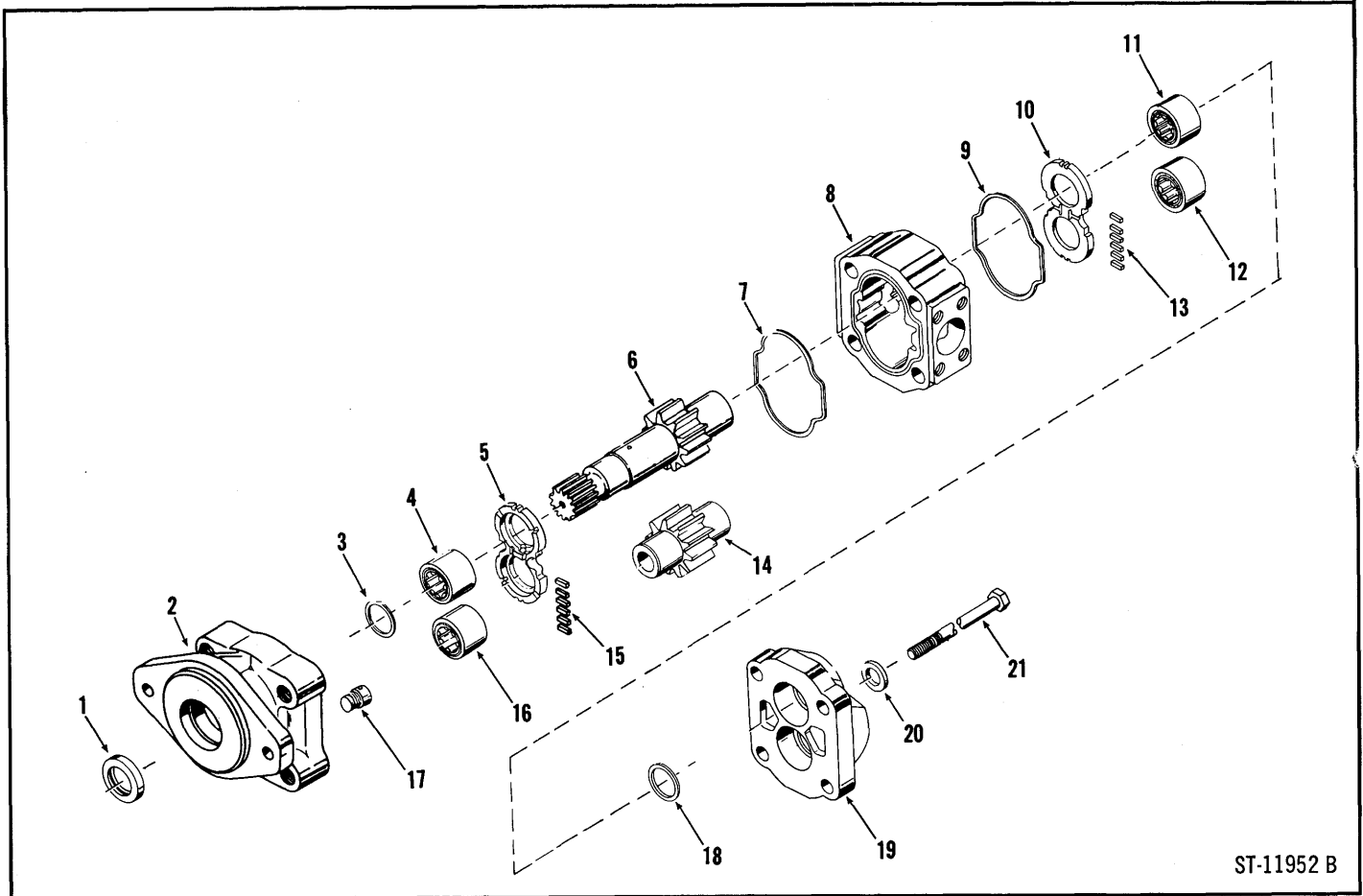
MICHIGAN



TS-11935 D

No.	Part No.	Qty.	Description
A	3953109	1	Pump assy
1	949859	1	Wiper
2	949312	1	Ring
3	949316	1	Seal
4	949858	1	Bearing
5	949853	1	Adapter
6	949860	1	Ring
7	949857	2	Plate
8	949858	1	Bearing
9	949861	2	Seal
10	949862	2	Seal
11	4E-10	4	Lockwasher
12	16F-02	1	Plug
13	1C-576	4	Bolt
14	949858	1	Bearing
15	949854	1	Housing
16	743835	2	Dowel
17	949858	1	Bearing
18	949855	1	Shaft
19	949856	1	Shaft

Inc. 1 → 18



ST-11952 B

No.	Part No.	Qty.	Description
A	3953110	1	Pump assy
1	946397	1	Seal
2	5209589	1	Cover
3	1566986	1	Seal
4	1566983	1	Bearing
5	1566985	1	Plate
6	2949964	1	Gear set
7	1566982	1	Seal
8	1566702	1	Housing
9	1566982	1	Seal
10	1566985	1	Plate
11	1566983	1	Bearing
12	1566983	1	Bearing
13	‡*1566984	—	Seal
14	§ ³ -----	1	Gear
15	‡*1566984	—	Seal
16	1566983	1	Bearing
17	1566881	1	Plug
18	1566986	1	Seal
19	946400	1	Cover
20	946401	4	Washer
21	1C-1076	4	Bolt

11-21

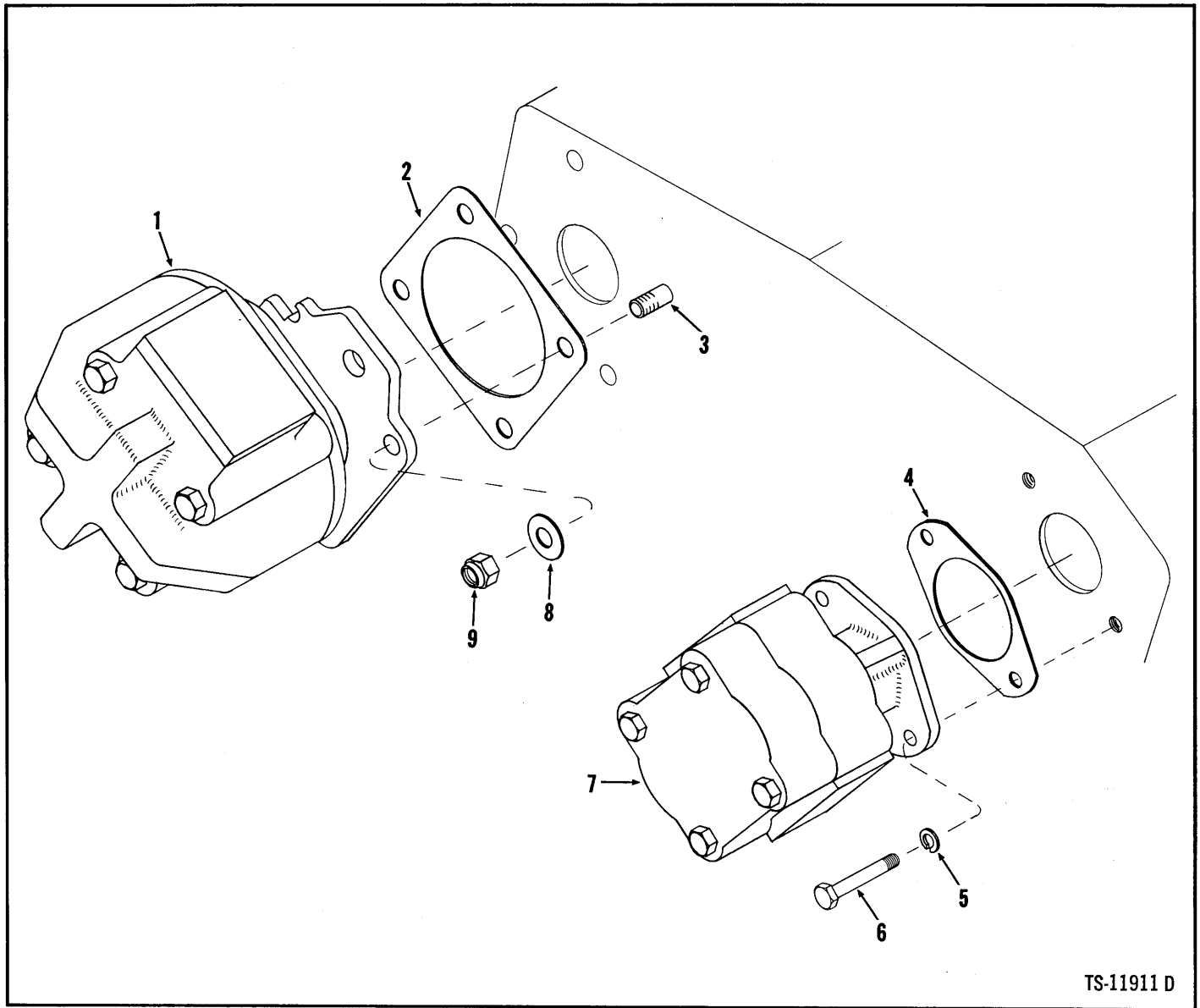
2Inc. 14

3See 6

*12 Pocket Seal pieces to be cut from this strip

Pump Attaching Parts

MICHIGAN



TS-11911 D

No.	Part No.	Qty.	Description
1	_____	1	Pump main
2	552161	1	Gasket
3	108014	4	Stud
4	3953953	1	Gasket
5	4E-06	2	Lockwasher
6	23C-620	2	Bolt
7	_____	1	Pump steering
8	25E-21	4	Washer
9	18D-08	4	Locknut

¹See Index

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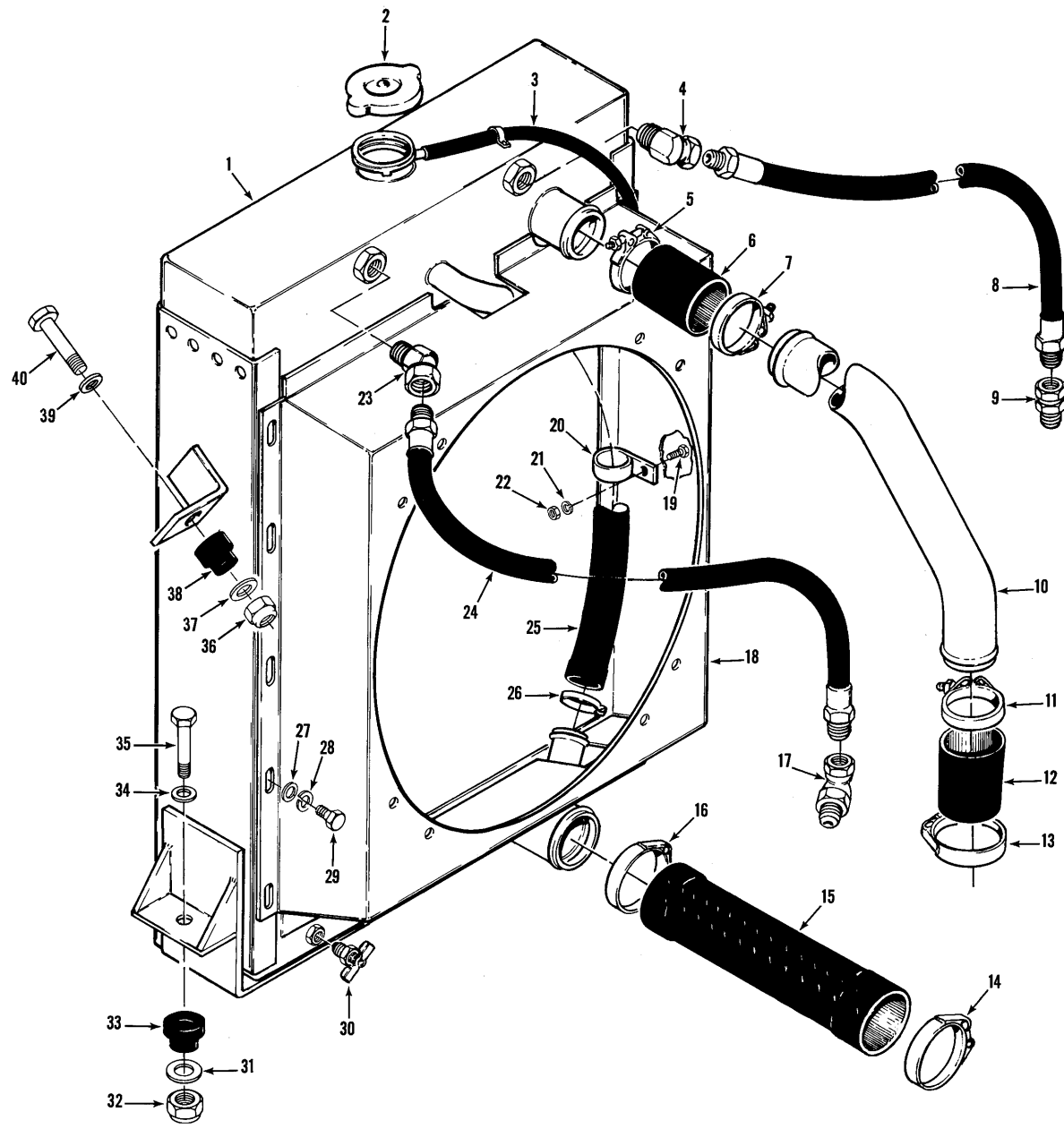
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Group R

Radiator & Connections – Cummins
Radiator Assembly – Perkins
Radiator Connections – Perkins

R3
R5
R6



TS-11947

Radiator & Connections – Cummins

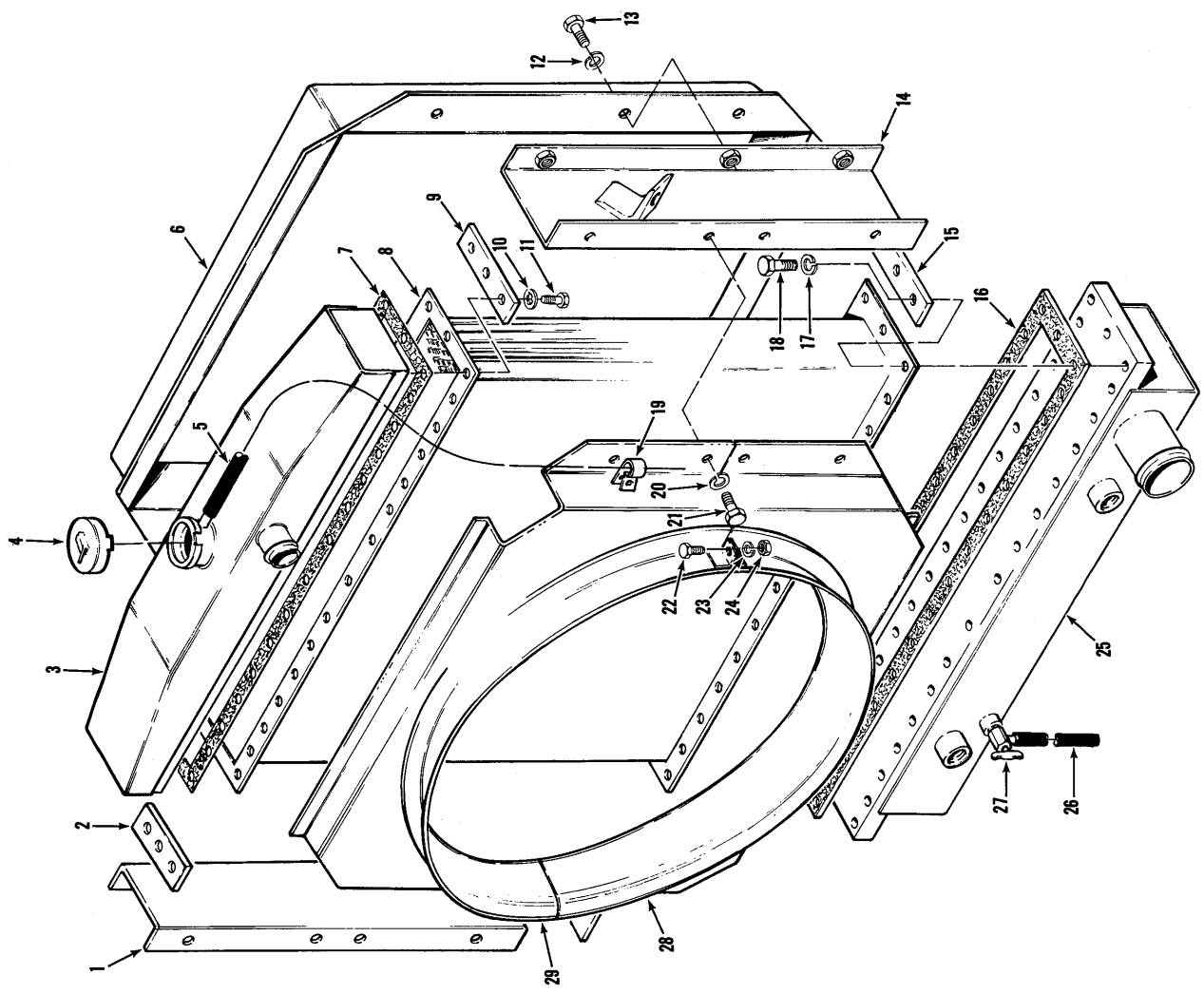
MICHIGAN

No.	Part No.	Qty.	Description
1	¹ 2501743	1	Radiator
1A	¹ 949942	1	Bottom tank
2	863364	1	Cap
3	945460	1	Hose
4	33F-2	1	Adapter
5	540108	1	Clamp
6	1M-16040	1	Hose
7	540108	1	Clamp
8	1506738	1	Hose
9	36F-1	1	Adapter
10	² 1501695	1	Tube
11	540108	1	Clamp
12	1M-16040	1	Hose
13	540108	1	Clamp
14	546371	1	Clamp
15	³ 940694	1	Hose
16	546371	1	Clamp
17	33F-1	1	Adapter
18	949943	1	Shroud
19	1C-510	1	Bolt
20	949137	1	Clip
21	4E-05	1	Lockwasher
22	1D-05	1	Nut
23	33F-2	1	Adapter
24	1506738	1	Hose
25	949136	1	Hose
26	949074	2	Clamp
27	619019	10	Washer
28	4E-05	10	Lockwasher
29	1C-510	10	Bolt
30	72F-2	1	Draincock
31	25E-22	2	Washer
32	18D-08	2	Nut
33	568361	2	Dampener
34	25E-22	2	Washer
35	24C-836	2	Bolt
36	18D-08	2	Nut
37	25E-22	2	Washer
38	568361	2	Dampener
39	25E-22	2	Washer
40	24C-836	2	Bolt

¹Inc. 1A, 2, 3, 18-22, 25-29

²Upper (125)

³Lower (126)



Radiator Assembly — Perkins

MICHIGAN

No.	Part No.	Qty.	Description
A	3981568	1	Radiator assy
1	3981908	1	Support — R.H.
2	3981910	2	Plate
3	3981904	1	Tank — upper
4	3981915	1	Cap
4A	†3981916	1	Strainer
5	3981917	1	Hose
6	3981914	1	Shroud
7	3981906	2	Packing
8	3981903	1	Core
9	3981910	1	Plate
10	6EM100	48	Lockwasher
11	1CM1025	48	Bolt
12	6EM100	6	Lockwasher
13	2CM1016	6	Bolt
14	3981907	1	Support — L.H.
15	3981910	1	Plate
16	‡3981909	—	Shim
17	6EM120	12	Lockwasher
18	1CM1235	12	Bolt
19	3981913	2	Clip
20	6EM100	8	Lockwasher
21	2CM1016	8	Bolt
22	2CM1016	2	Bolt
23	6EM100	2	Lockwasher
24	2DM10	2	Nut
25	3981905	1	Tank — lower
25A	†3981918	1	Cooler
26	3981920	1	Hose
27	3981919	1	Drain cock
28	3981912	1	Fan shroud — lower
29	3981911	1	Fan shroud — upper

Inc. 1-29



Radiator Connections – Perkins

No.	Part No.	Qty.	Description
1	584501	4	Dampener vibration
2	584502	4	Washer
3	24C-848	2	Bolt
4	24C-836	2	Bolt
5	18D-08	4	Nut
6	¹ 3981569	1	Tube – upper
7	² 3981570	1	Tube – lower
8	1M-16046	2	Hose – Straight
9	3981654	2	Hose – elbow
10	3957624	8	Clip – hose
11	3981571	1	Clip
12	24C-612	1	Bolt
13	18D-06	1	Nut

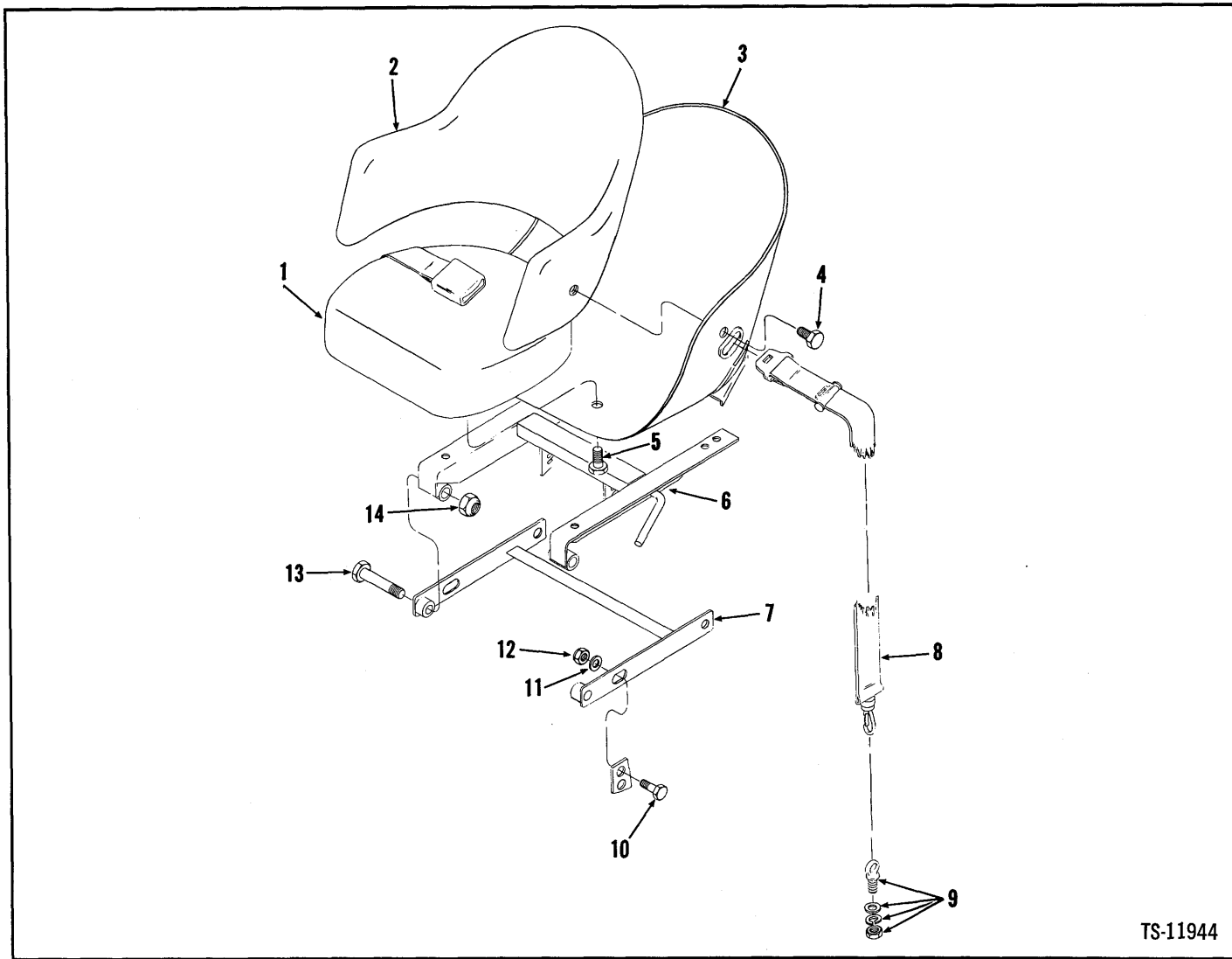
¹Upper

²Lower

Group S

Seat, Seat Belt & Support Parts – Cummins
Seat & Support Parts – Perkins
Sheet Metal Group – Cummins
Sheet Metal Group – Perkins
Steering Controls

S2
S3
S5, 7
S9, 11
S12



TS-11944

No.	Part No.	Qty.	Description
A	1513559	1	Seat assy
1	6515896	1	Cushion back rest
2	6515896	1	Cushion back rest
3	949574	1	Shell
4	1C-610	5	Bolt
4A	†103293	5	Washer
5	1C-616	2	Bolt
5A	†25E-15	2	Washer
6	1513459	1	Adjuster
7	1513455	1	Seat support
8	21527745	1	Seat belt assy
9	§ ³ _____	—	Eyebolt
10	24C-824	4	Bolt
11	25E-22	2	Washer
12	18D-08	4	Nut
13	24C-836	2	Bolt
14	18D-08	2	Nut

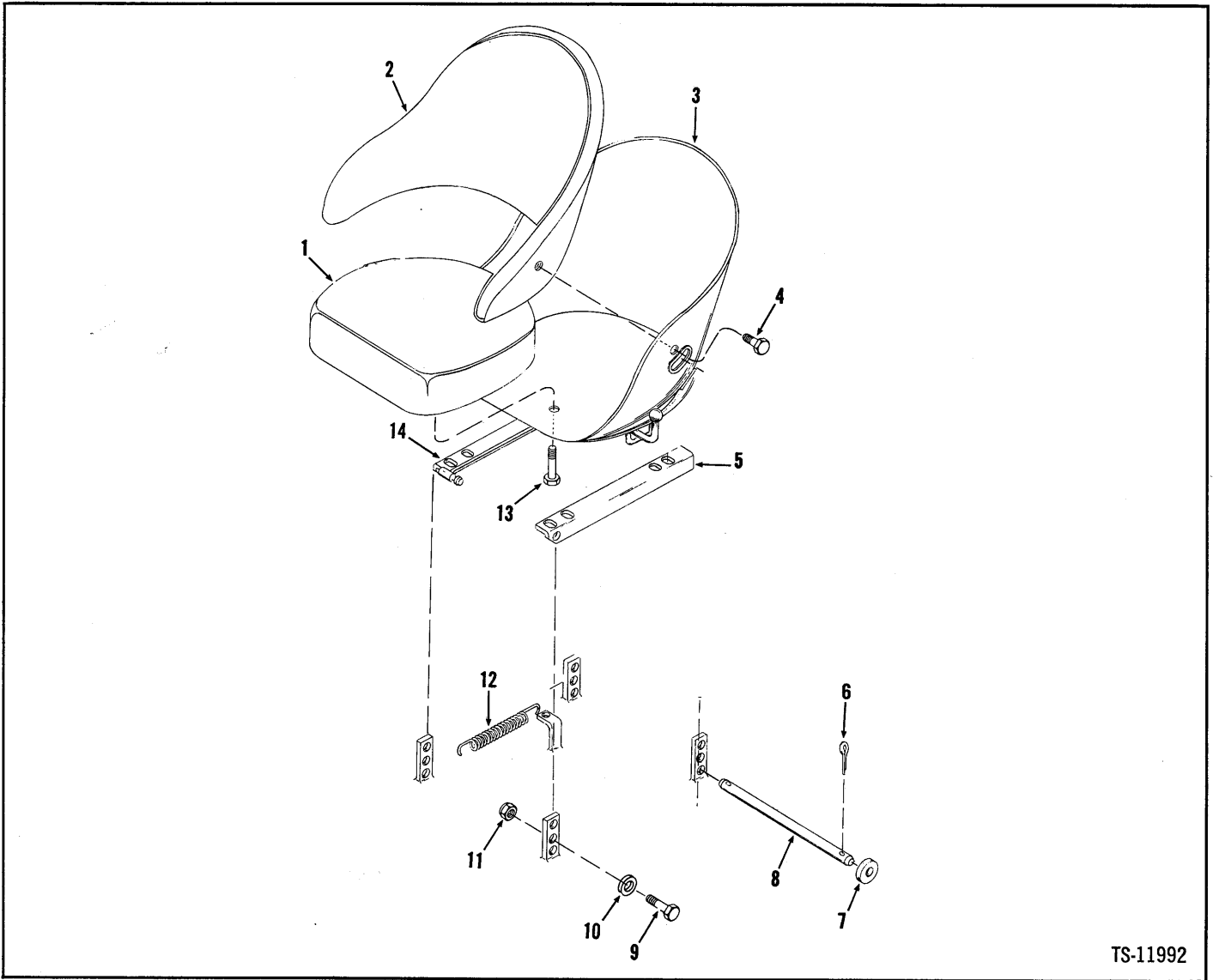
¹Incl. 1→5A

²Incl. 9

³See 8

Seat & Support Parts – Perkins

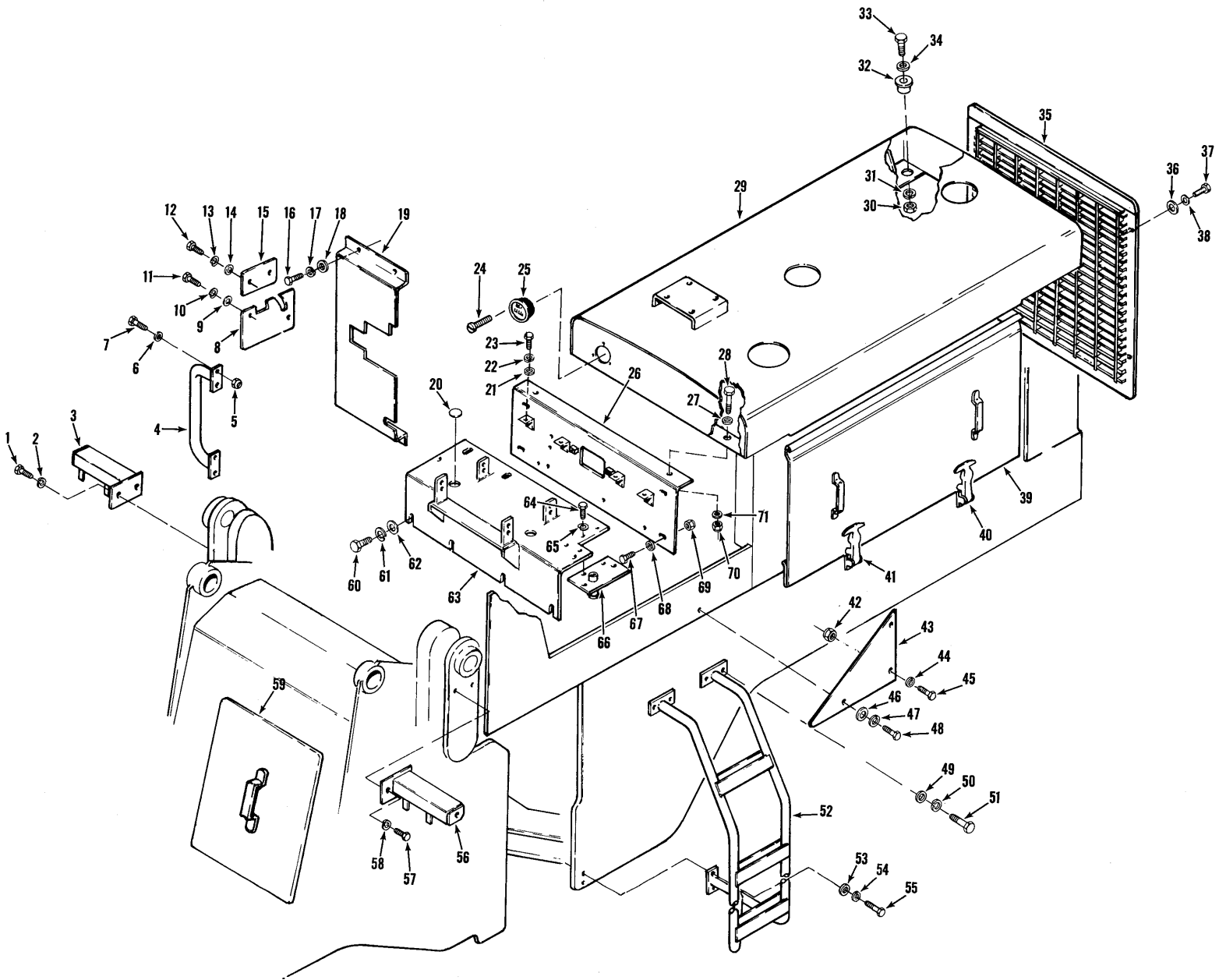
MICHIGAN



TS-11992

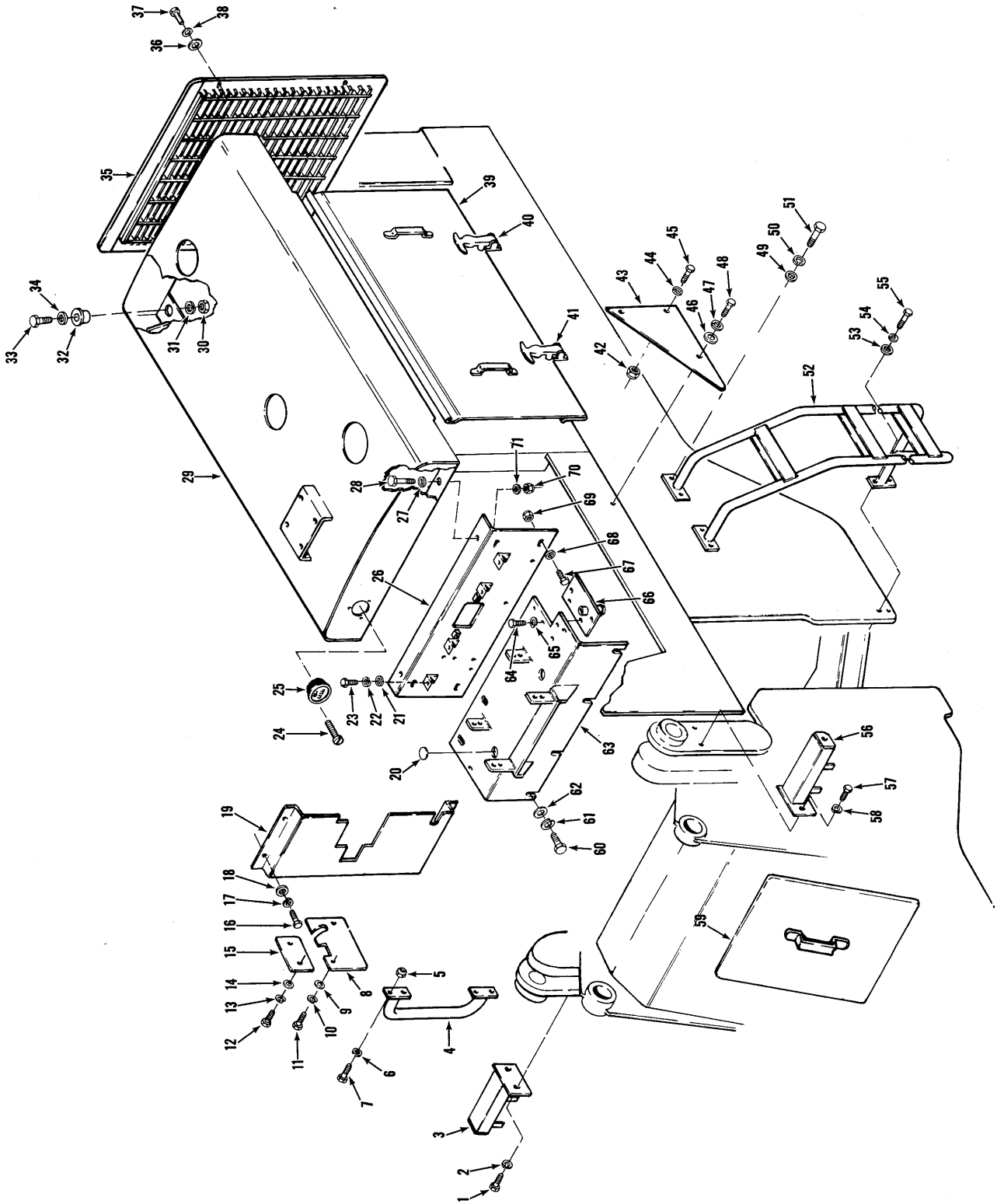
No.	Part No.	Qty.	Description
A	1513559	1	Seat assy
1	949575	1	Cushion seat
2	6515896	1	Cushion back rest
3	949574	1	Bucket seat
4	1C-610	5	Bolt
4A	†103293	5	Washer
5	558779	1	Angle iron
6	1F-420	2	Pin cotter
7	25E-22	2	Washer
8	557458	1	Bar
9	24C-824	2	Bolt
10	584092	2	Washer
11	18D-08	2	Nut
12	550301	1	Spring
13	1C-610	2	Bolt
13A	†25E-15	2	Washer
14	558777	1	Angle iron

†Inc. 1 → 4, 4A, 13, 13A



TS-11914 D

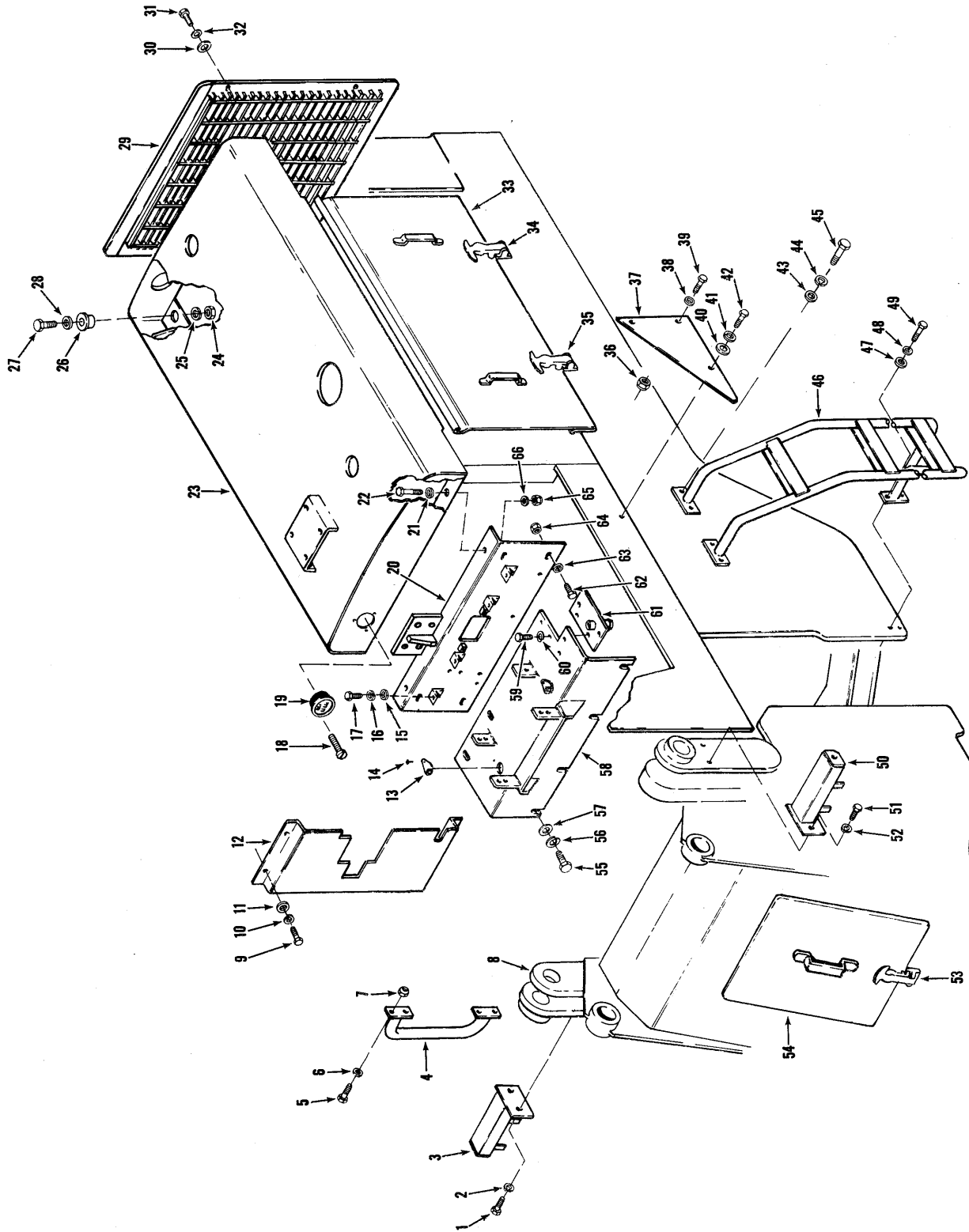
No.	Part No.	Qty.	Description
1	23C-716	2	Bolt
2	4E-07	2	Lockwasher
3	3980483	1	Bracket headlight R.H.
4	3980474	2	Hand rail
5	18D-06	8	Nut
6	656672	8	Washer
7	24C-618	8	Bolt
8	2500832	1	Cover
9	25E-17	2	Washer
10	4E-06	2	Lockwasher
11	24C-612	2	Bolt
12	24C-612	2	Bolt
13	4E-06	2	Lockwasher
14	25E-17	2	Washer
15	2500817	1	Cover
16	23C-612	6	Bolt
17	4E-06	6	Lockwasher
18	25E-17	6	Washer
19	3980536	1	Cover
20	648825	2	Plug
21	619021	4	Washer
22	4E-06	4	Lockwasher
23	23C-616	4	Bolt
24	866-606	3	Screw
25	1743825	—	Hourmeter kit
26	3980996	1	Plate
27	619021	2	Washer
28	24C-628	2	Bolt
29	3980441	1	Hood
30	18D-06	2	Nut
31	619021	2	Washer
32	568276	2	Dampener vibration
33	24C-632	2	Bolt
34	619021	2	Washer
35	3980455	1	Grille radiator
36	619029	4	Washer
37	24C-824	4	Bolt
38	4E-08	4	Lockwasher
39	2500626	2	Side panel
40	1545622	2	Latch assy
41	1545622	2	Latch assy
42	18D-06	4	Locknut
43	3980488	2	Cover
44	656672	4	Washer
45	24C-628	4	Bolt



Sheet Metal Group – Cummins

MICHIGAN

No.	Part No.	Qty.	Description
46	656672	2	Washer
47	4E-06	2	Lockwasher
48	24C-616	2	Bolt
49	656672	8	Washer
50	4E-06	8	Lockwasher
51	24C-616	8	Bolt
52	3980467	1	Step L.H.
52A	†3980472	1	Step R.H.
53	656672	4	Washer
54	4E-06	4	Lockwasher
55	24C-616	4	Bolt
56	3980476	1	Bracket headlight L.H.
57	23C-716	2	Bolt
58	4E-07	2	Lockwasher
59	3980449	1	Cover
59A	†1545622	1	Latch assy
60	23C-616	6	Bolt
61	4E-06	6	Lockwasher
62	619021	6	Washer
63	2501089	1	Plate
64	23C-616	3	Bolt
65	4E-06	3	Lockwasher
66	2500029	1	Plate
67	24C-824	4	Bolt
68	25E-21	4	Washer
69	18D-08	4	Nut
70	18D-06	2	Nut
71	619021	2	Washer

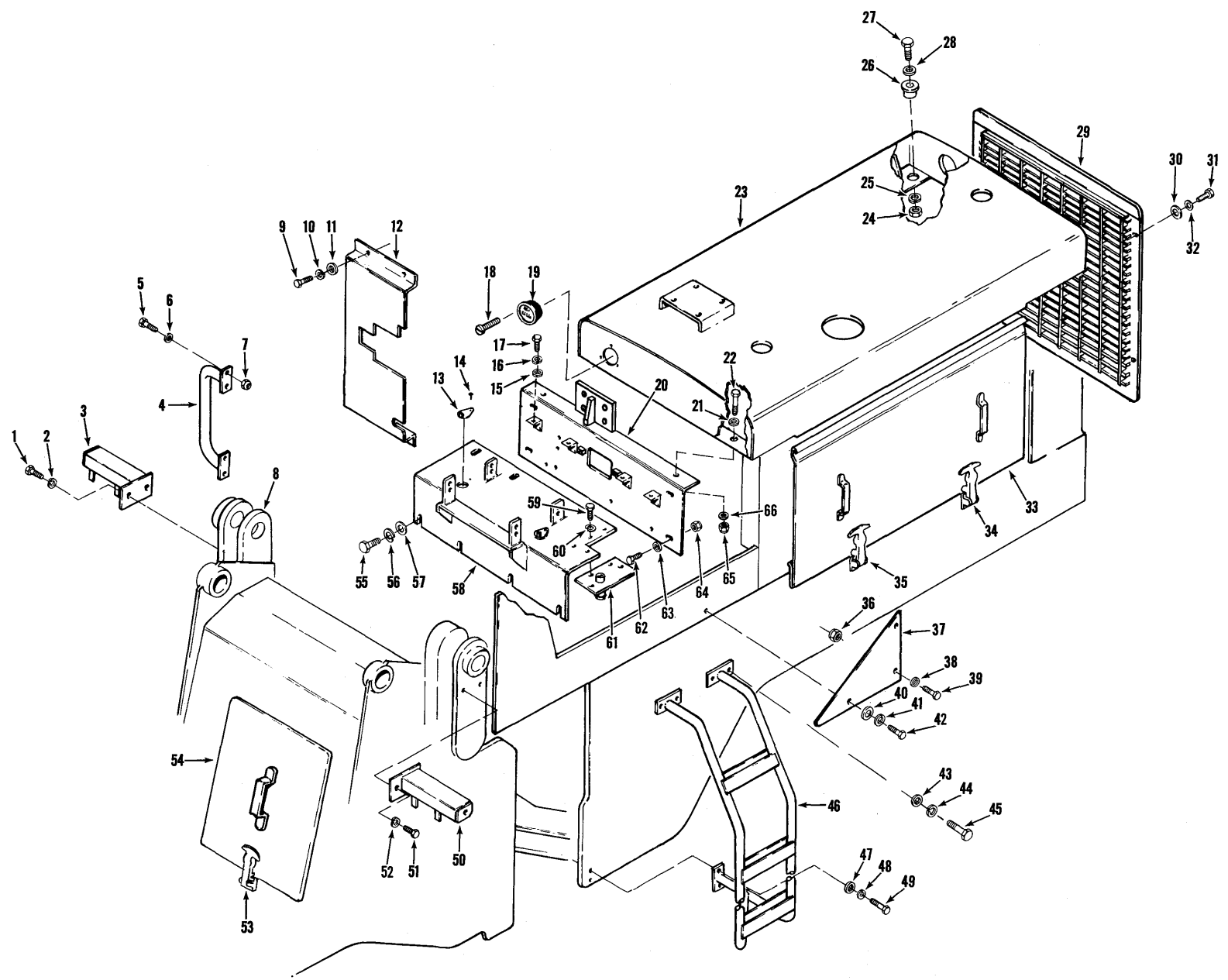


Sheet Metal Group – Perkins



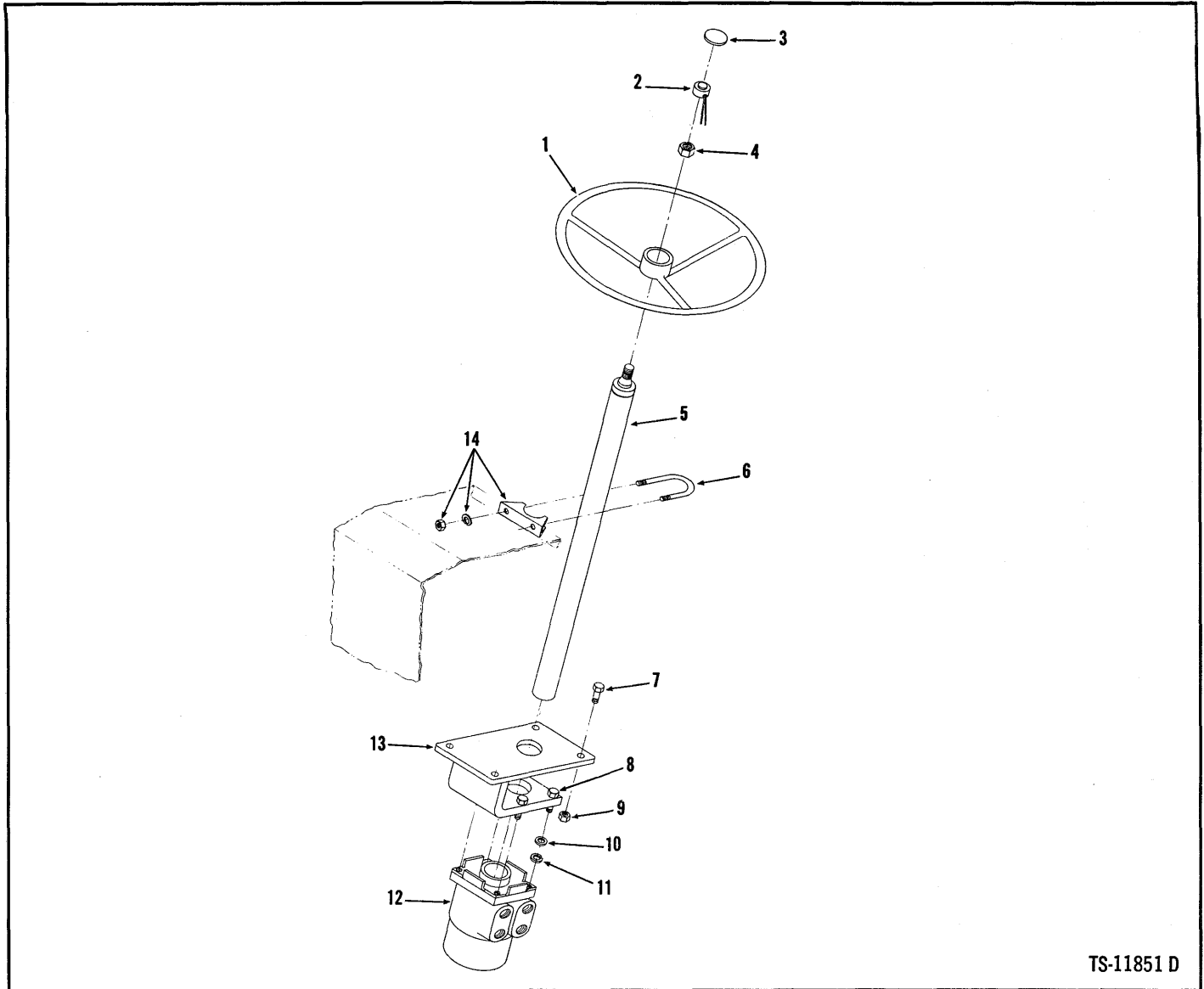
No.	Part No.	Qty.	Description
1	23C-716	2	Bolt
2	4E-07	2	Lockwasher
3	3980483	1	Bracket headlight R.H.
4	3980474	2	Hand rail
5	24C-618	8	Bolt
6	656672	8	Washer
7	18D-06	8	Nut
8	1	—	Frame
9	23C-612	6	Bolt
10	4E-06	6	Lockwasher
11	25E-17	6	Washer
12	3980536	1	Cover
13	3981141	2	Plate
14	1H-508	2	Rivet
15	619021	4	Washer
16	4E-06	4	Lockwasher
17	23C-616	4	Bolt
18	86G-606	3	Screw
19	1743825	1	Hourmeter kit
20	3981612	1	Plate
21	619021	2	Washer
22	24C-628	2	Bolt
23	3981529	1	Hood
24	18D-06	2	Nut
25	619021	2	Washer
26	568276	2	Dampener vibration
27	24C-632	2	Bolt
28	619021	2	Washer
29	3980455	1	Grille radiator
30	619029	4	Washer
31	24C-824	4	Bolt
32	4E-08	4	Lockwasher
33	3980451	2	Side panel
34	1545622	2	Latch assy
35	1545622	2	Latch assy
36	18D-06	4	Nut
37	3980488	2	Cover
38	656672	4	Washer
39	24C-628	4	Bolt
40	656672	2	Washer
41	4E-06	2	Lockwasher
42	24C-616	2	Bolt
43	656672	8	Washer
44	4E-06	8	Lockwasher
45	24C-620	8	Bolt

¹See Index



TS-11925 D

No.	Part No.	Qty.	Description
46	3980467	1	Step L.H.
46A	†3980472	1	Step R.H.
47	656672	4	Washer
48	4E-06	4	Lockwasher
49	24C-616	4	Bolt
50	3980476	1	Bracket headlight L.H.
51	23C-716	2	Bolt
52	4E-07	2	Lockwasher
53	1545622	1	Latch assy
54	3980449	1	Cover
55	23C-616	4	Bolt
56	4E-06	4	Lockwasher
57	25E-17	4	Washer
58	2500035	1	Plate
59	23C-616	3	Bolt
60	4E-06	3	Lockwasher
61	2500029	1	Plate
62	24C-824	4	Bolt
63	25E-21	4	Washer
64	18D-08	4	Nut
65	18D-06	2	Nut
66	619021	2	Washer



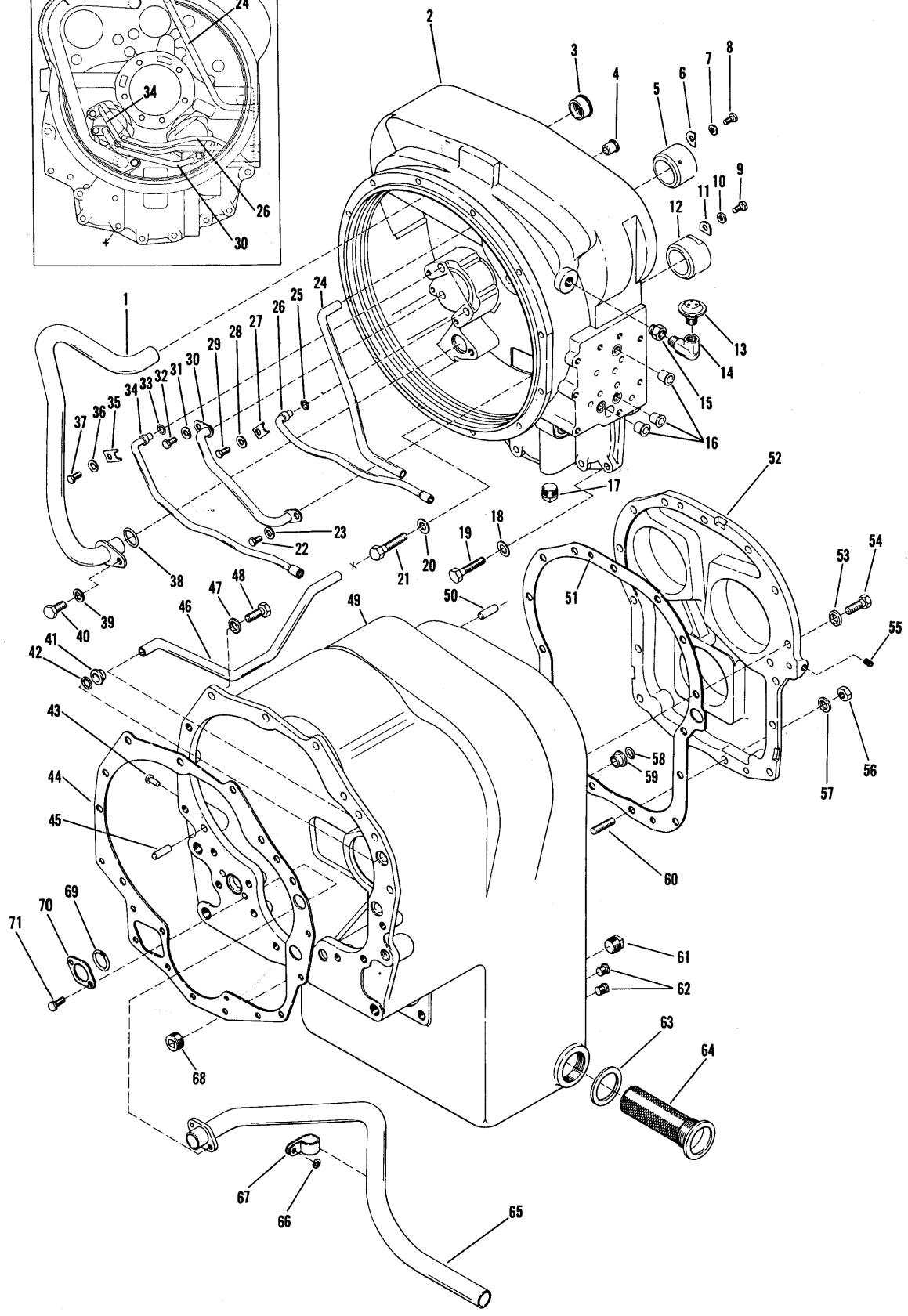
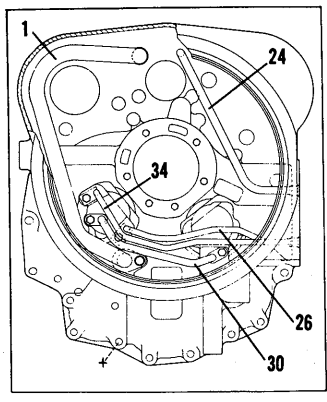
TS-11851 D

No.	Part No.	Qty.	Description
1	1519254	1	Steering wheel
2	5200219	1	Horn button kit
3	1519255	1	Cover
4	5200237	1	Nut <i>5200032</i>
5	1519253	1	Steering column
6	¹ 1500021	1	Clamp
7	24C-620	4	Bolt
8	23C-624	4	Bolt
9	18D-06	4	Nut
10	25E-17	4	Washer
11	4E-06	4	Lockwasher
12	² 1519252	1	Valve assy
13	1519991	1	Mounting bracket
14	³ -----	—	Clamp

¹Inc. 14
²See Index
³See 6

Group T

Transmission & Converter Assembly	T3, 5
Transmission Converter Assembly	T7, 9
Transmission & Converter Pressure Regulator Valve	T11
Transmission Gear & Shaft Group	T13, 15, 17
Transmission Clutch Group – First & Second	T18
Transmission Clutch Group – Low	T19
Transmission Clutch Group – Reverse & Third	T20
Transmission Control Valve	T23
Transmission Control Levers & Linkage	T25



TS-11826 B

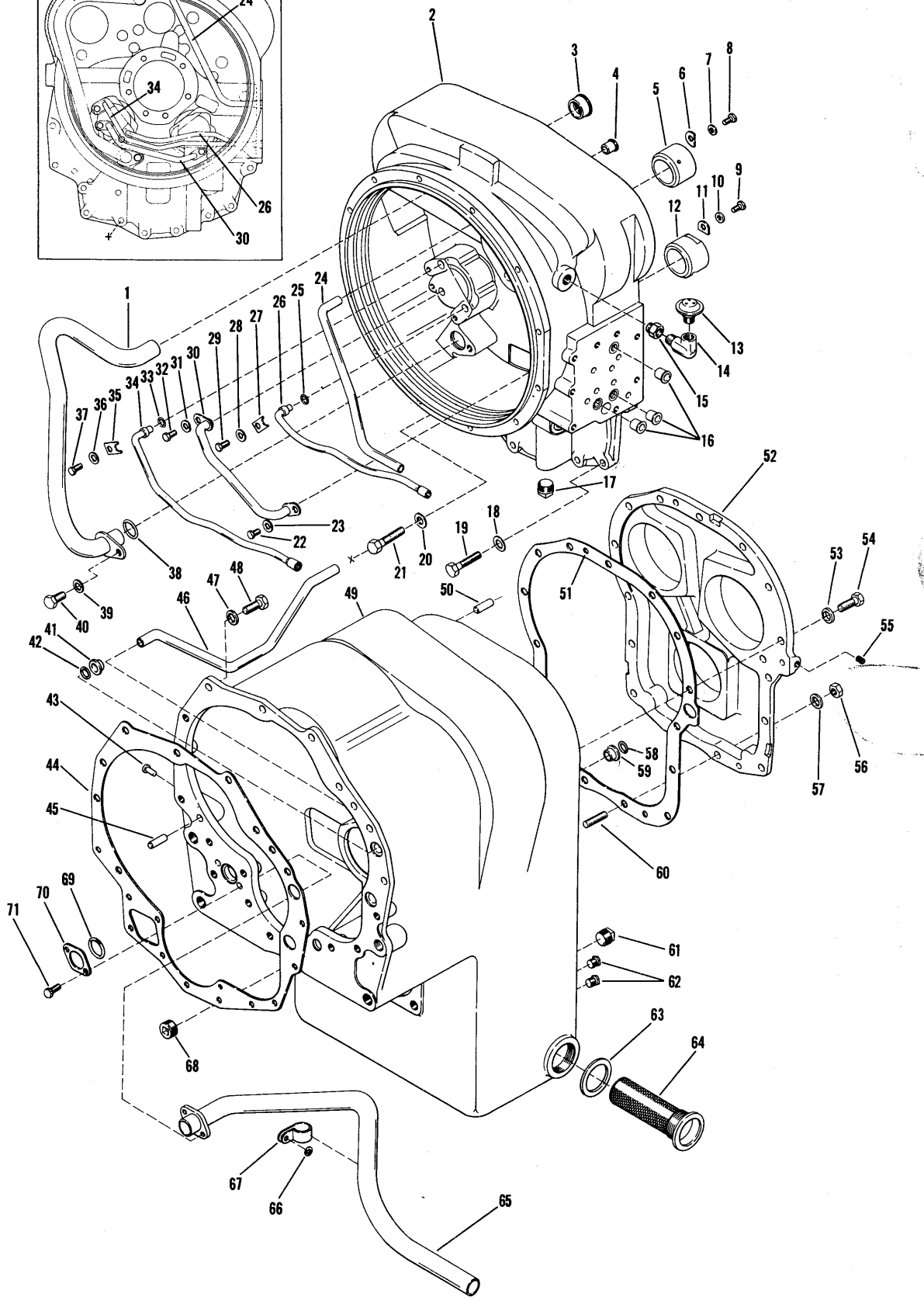
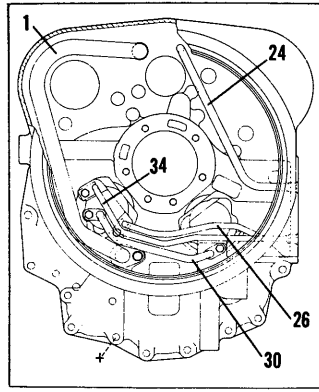
Transmission & Converter Assembly

MICHIGAN

No.	Part No.	Qty.	Description
A	283929	1	Trans & conv assy
1	232136	1	Tube
2	231614	1	Housing assy
3	230854	1	Sleeve
4	222067	1	Sleeve
5	231056	1	Sleeve
6	230851	1	Lock
7	4E-05	1	Lockwasher
8	1C-510	1	Bolt
9	1C-510	1	Bolt
10	4E-05	1	Lockwasher
11	230851	1	Lock
12	231056	1	Sleeve
13	211433	1	Breather
14	26F-3	1	Elbow
15	19F-8	1	Bushing
16	222067	3	Sleeve
17	13F-12	1	Plug
18	4E-07	4	Lockwasher
19	1C-728	4	Bolt
20	4E-07	4	Lockwasher
21	1C-744	4	Bolt
22	1C-510	1	Bolt
23	4E-05	1	Lockwasher
24	231166	1	Tube
25	25K-30012	1	O-ring
26	231095	1	Tube
27	231048	1	Clip
28	4E-05	1	Lockwasher
29	1C-510	1	Bolt
30	231093	1	Tube
31	4E-05	1	Lockwasher
32	1C-510	1	Bolt
33	25K-30012	1	O-ring
34	231094	1	Tube
35	231048	1	Clip
36	4E-05	1	Lockwasher
37	1C-510	1	Bolt
38	25K-40030	1	O-ring
39	4E-06	1	Lockwasher
40	5C-612	1	Bolt
41	222067	1	Sleeve
42	25K-40026	1	O-ring
43	1H-418	1	Clip
44	231606	1	Gasket

1(12HR28322) Inc. 1→71 and Pages T5→T23

2Inc. 1→12, 16, 22→40



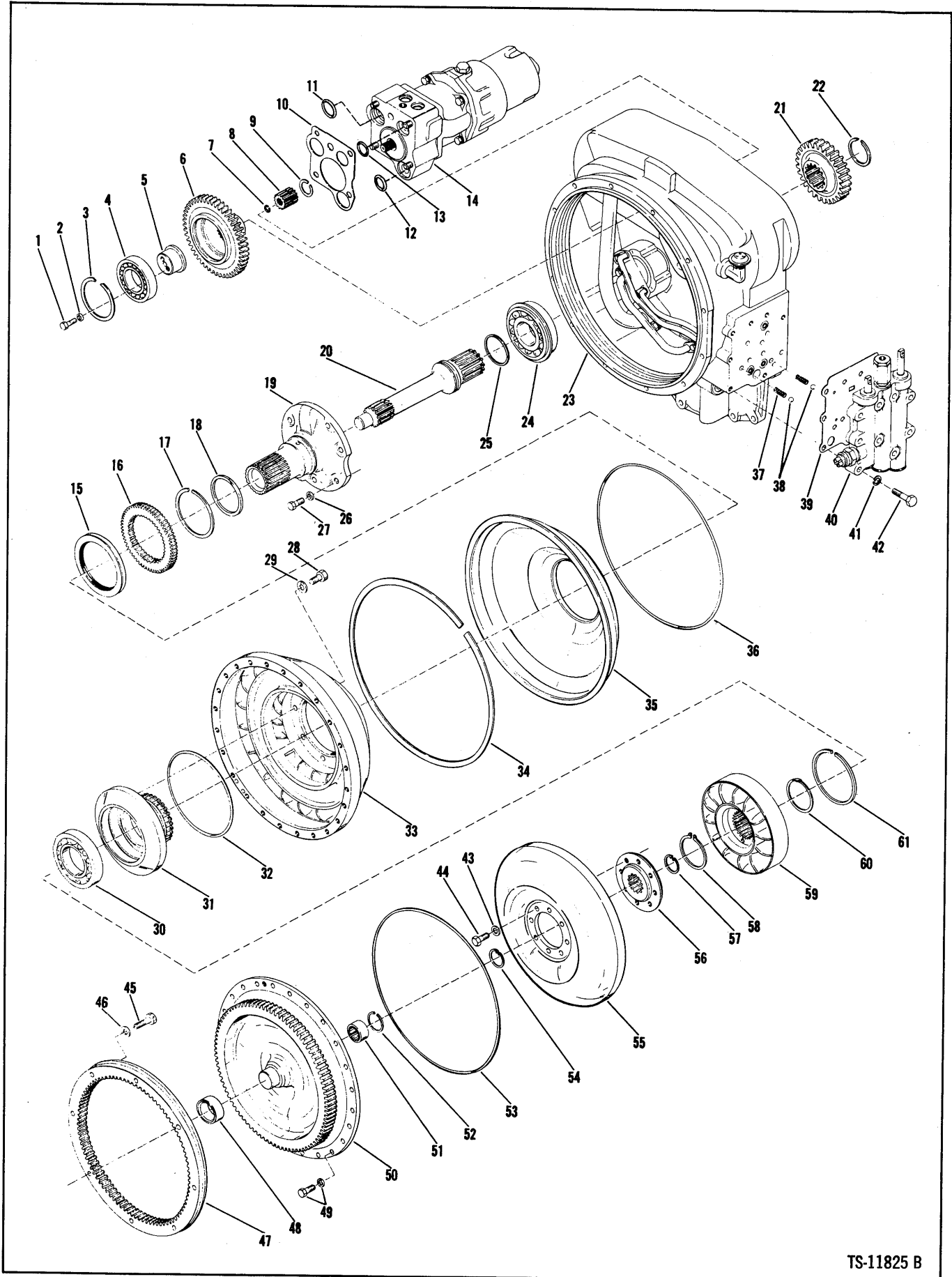
TS-11826 B

Transmission & Converter Assembly

MICHIGAN

No.	Part No.	Qty.	Description
45	214295	2	Dowel
46	230900	1	Tube
47	4E-07	10	Lockwasher
48	1C-720	10	Bolt
49	³ 231611	1	Trans case assy
50	214118	2	Dowel
51	231781	1	Gasket
52	231192	1	Cover
53	4E-07	13	Lockwasher
54	1C-720	13	Bolt
55	16F-02	1	Plug
56	62D-07	2	Nut
57	4E-07	2	Lockwasher
58	893267	1	O-ring
	222067	1	Sleeve
60	226862	2	Stud
61	215757	1	Plug
62	40K-04	2	Plug
63	219373	1	Gasket
64	231390	1	Screen
65	231612	1	Tube
66	619018	1	Washer
67	6H-36	1	Clip
68	14F-16	2	Plug
69	25K-40104	1	O-ring
70	230921	1	Washer
71	4C-514	2	Bolt

³Inc. 41, 43, 46, 49, 59, 65, 66, 67, 69, 70, 71



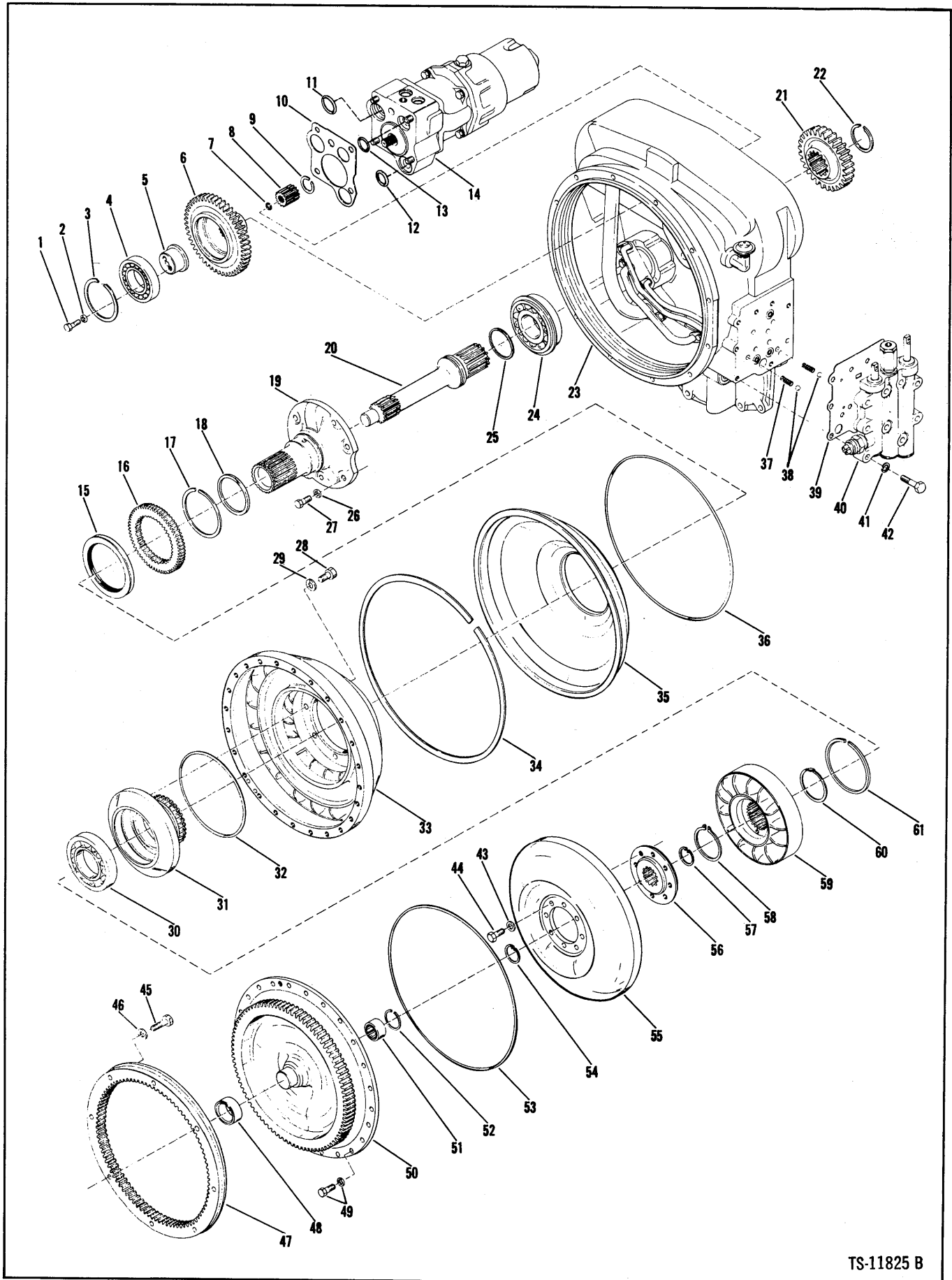
TS-11825 B

Transmission Converter Assembly



No.	Part No.	Qty.	Description
1	2C-720	6	Bolt
2	4E-07	6	Lockwasher
3	223925	3	Ring
4	225601	3	Bearing
5	230811	3	Support
6	230812	3	Gear
7	658130	1	Ring
8	¹ 231184	1	Sleeve conv pump
8A	² 233250	1	Sleeve steer pump
9	224039	1	Ring
9A	659041	1	Ring
10	231080	1	Gasket
11	60K-40106	1	O-ring
12	60K-40100	1	O-ring
13	60K-40026	1	O-ring
14	³ 231002	1	Valve pump & filter assy
15	214941	1	Seal
16	230805	1	Gear
17	224009	1	Ring
18	221653	1	Ring
19	230808	1	Support
20	214933	1	Shaft
21	233705	1	Gear
22	224026	1	Ring
23	231614	1	Housing & Tube assy
23A	[†] 23C-624	9	Bolt
23B	[†] 23C-628	3	Bolt
23C	[†] 4E-06	12	Lockwasher
24	225597	1	Bearing
25	222079	1	Ring
26	7E-08	6	Lockwasher
27	1C-820	6	Bolt
28	4C-714	8	Bolt
29	25E-19	8	Washer
30	214596	1	Bearing
31	214923	1	Hub
32	60K-40616	1	O-ring
33	214920	1	Impeller assembly
34	230855	1	Ring
35	⁴ 232461	1	Baffle
36	231458	1	Ring
37	232147	2	Spring
38	10J-12	2	Ball
39	232787	1	Gasket
40	³ 231168	1	Valve transm control
41	4E-06	9	Lockwasher
42	1C-932	9	Bolt
43	619023	8	Washer

¹Inc. 7, 9
²Inc. 9, 9A
³See Index
⁴Inc. 15



TS-11825 B

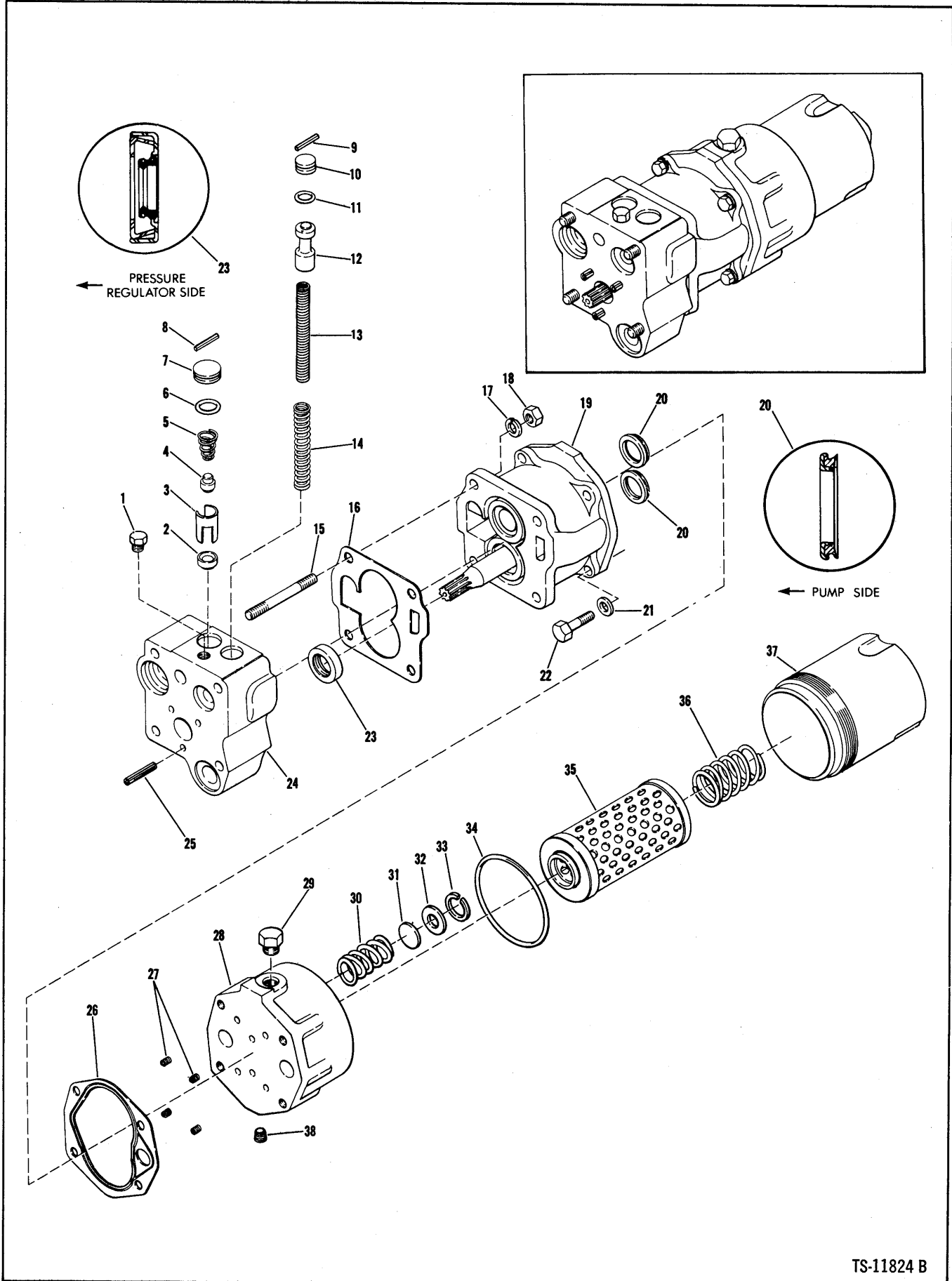
Transmission Converter Assembly



No.	Part No.	Qty.	Description
44	209313	8	Bolt
45	233092	16	Bolt
45A	^{†5} -----	1	Lockwire
46	215909	16	Washer
47	⁶ 801780	1	Ring gear kit
48	222006	1	Sleeve
49	233128	24	Bolt assy
50	214922	1	Cover
51	214988	1	Bearing
52	666542	1	Ring
53	232535	1	O-ring
54	659065	1	Ring
55	222684	1	Turbine
56	214924	1	Hub
57	659065	1	Ring
58	743035	1	Ring
59	229565	1	Reaction member conv
60	229566	1	Spacer
61	214953	1	Ring

⁵18 ga.-99" (2514.6 mm)

⁶Inc. 45, 45A, 46



TS-11824 B

Transmission Converter Pressure Regulator Valve, Charging Pump & Oil Filter Assembly

MICHIGAN

No.	Part No.	Qty.	Description
A	¹ 231002	1	Valve pump & filter assy
B	² 233544	1	Pump & filter assy
C	³ 231075	1	Valve assy
1	40K-04	1	Plug
2	233278	1	Seat
3	233279	1	Spacer
4	222318	1	Plunger
5	222312	1	Spring
6	25K-30022	1	O-ring
7	229296	1	Stop
8	763795	1	Pin
9	763795	1	Pin
10	220983	1	Stop
11	25K-30018	1	O-ring
12	231077	1	Piston
13	224368	1	Spring
14	231078	1	Spring
15	231083	4	Stud
16	231081	1	Gasket
17	4E-07	4	Lockwasher
18	62D-07	4	Nut
19	*233540	1	Pump assembly
20	230703	1	Seal
21	4E-07	4	Lockwasher
22	1C-724	4	Bolt
23	456294	1	Seal
24	[§] -----	1	Valve body
25	233280	3	Pin
26	231199	1	Gasket
27	230704	4	Spring
28	233286	1	Adapter
29	40K-04	1	Plug
30	230959	1	Spring
31	230960	1	Disc
32	230961	1	Seat
33	230965	1	Ring
34	25K-40404	1	O-ring
35	[§] 230962	1	Element
36	230963	1	Spring
37	230964	1	Housing
38	16F-02	1	Plug

¹Inc. 1-38

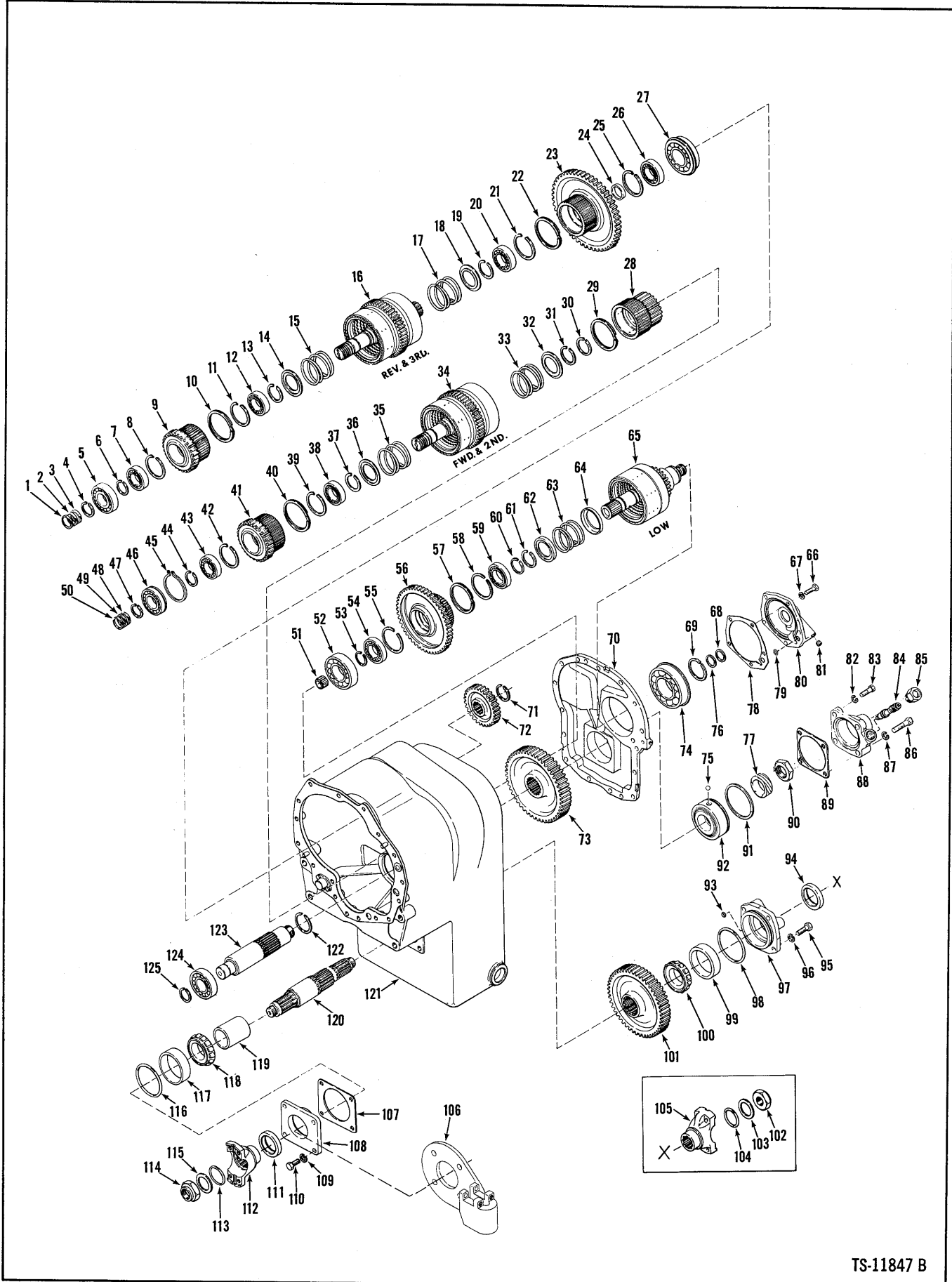
²Inc. 19-22, 26-38

³Inc. 1-14, 23, 25

⁴See C

⁵Inc. 34

*When converter charging pump replacement is required, only a new factory built and tested pump should be used. Proper operation of converter and transmission is dependent on an efficient charging pump. Damage possible by use of a field rebuilt pump can result in repair costs exceeding cost of a new pump alone.



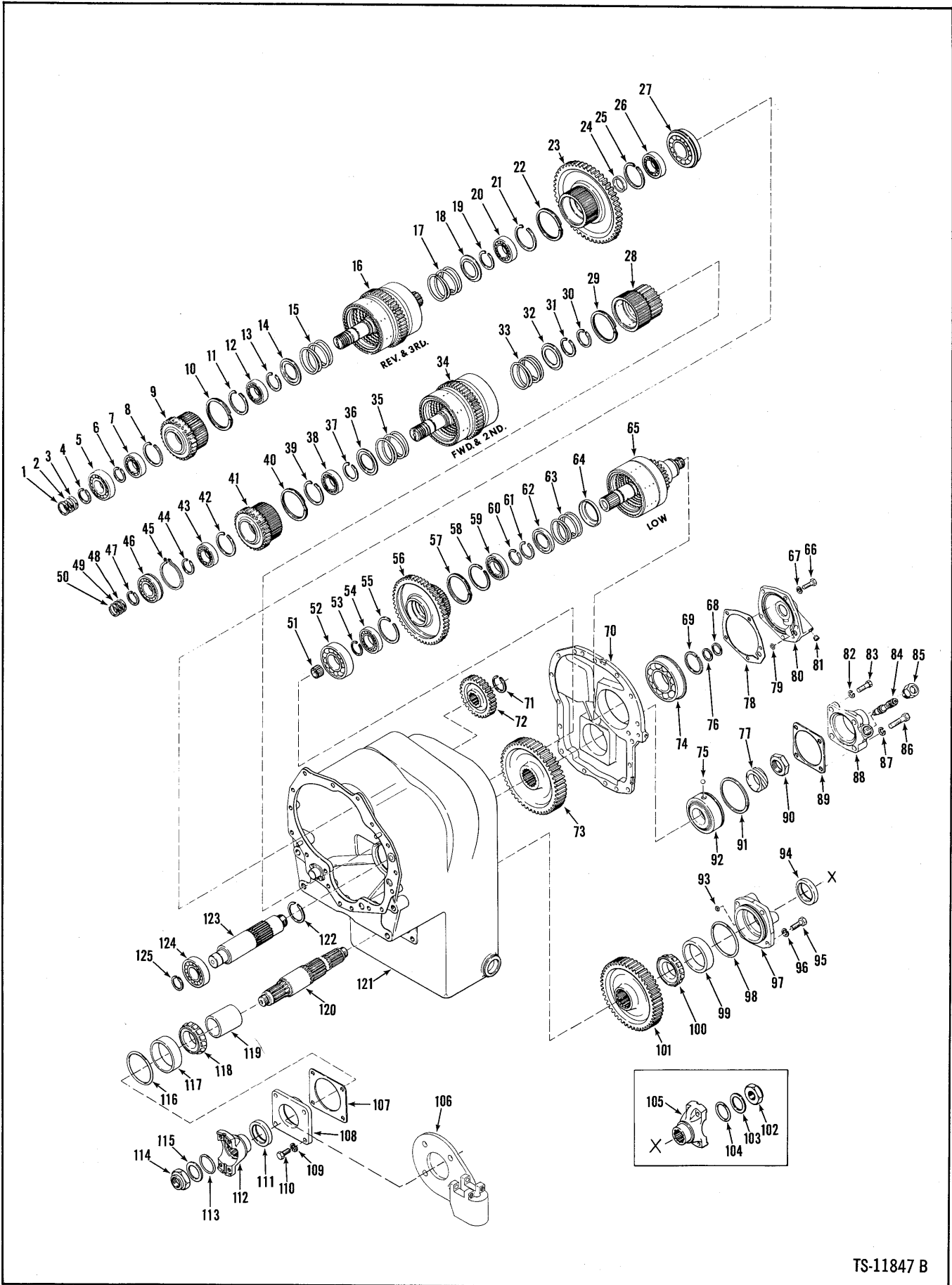
TS-11847 B

Transmission Gear & Shaft Group

MICHIGAN

No.	Part No.	Qty.	Description
1	215183	1	Ring
2	215183	1	Ring
3	215183	1	Ring
4	224083	1	Ring
5	225603	1	Bearing
6	224083	1	Ring
7	230829	1	Bearing
8	223877	1	Ring
9	231828	1	Gear
10	731160	1	Ring
11	223877	1	Ring
12	233389	1	Bearing
13	654613	1	Ring
14	232089	1	Retainer
15	230822	1	Spring
16	-----	—	Clutch assy
17	230822	1	Spring
18	232089	1	Retainer
19	654613	1	Ring
20	230860	1	Bearing
21	223874	1	Ring
22	731160	1	Ring
23	231098	1	Gear
24	230906	1	Spacer
25	223874	1	Ring
26	233390	1	Bearing
27	658038	1	Bearing
28	231198	1	Gear
29	731160	1	Ring
30	654613	1	Ring
31	654613	1	Ring
32	232089	1	Retainer
33	230822	1	Spring
34	-----	—	Clutch assy
35	230822	1	Spring
36	232089	1	Retainer
37	654613	1	Ring
38	230829	1	Bearing
39	223877	1	Ring
40	731160	1	Ring
41	231828	1	Gear
42	223877	1	Ring
43	233389	1	Bearing
44	224083	1	Ring
45	230889	1	Ring

1See Index



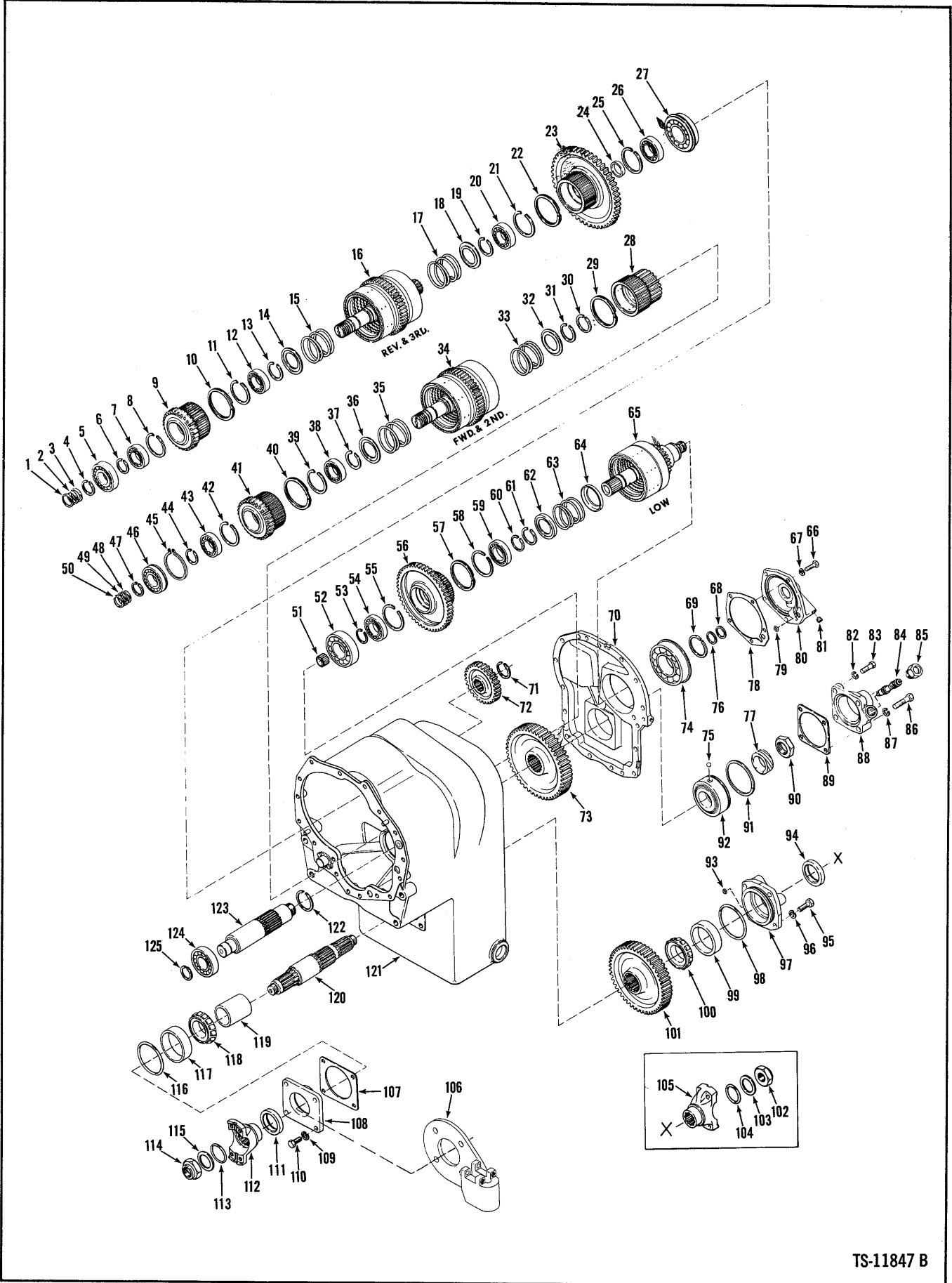
TS-11847 B

Transmission Gear & Shaft Group

MICHIGAN

No.	Part No.	Qty.	Description
46	223349	1	Bearing
47	224083	1	Ring
48	215183	1	Ring
49	215183	1	Ring
50	215183	1	Ring
51	230886	1	Bearing
52	231554	1	Bearing
53	230888	1	Ring
54	230885	1	Bearing
55	223964	1	Ring
56	231229	1	Gear
57	731160	1	Ring
58	223964	1	Ring
59	230885	1	Bearing
60	230888	1	Ring
61	654613	1	Ring
62	232089	1	Retainer
63	230882	1	Spring 230882 - 8/8.00
64	232088	1	Retainer
65	1-----	—	Clutch assy
66	1C-618	5	Bolt
67	4E-06	5	Lockwasher
68	220079	1	Ring
69	232081	1	Ring
70	231192	1	Cover
71	224106	1	Ring
72	230871	1	Gear
73	233656	1	Gear
74	230968	1	Bearing
75	10J-15	1	Ball
76	220079	1	Ring
77	231066	1	Gear
78	231193	1	Gasket
79	25K-30016	1	O-ring
80	231176	1	Cap
81	16F-02	1	Plug
82	4E-09	1	Lockwasher
83	1C-922	3	Bolt
84	229187	1	Gear
85	202459	1	Nut
86	1C-940	1	Bolt
87	4E-09	3	Lockwasher
88	231065	1	Cap
89	232484	1	Gasket
90	231639	1	Nut

1See Index



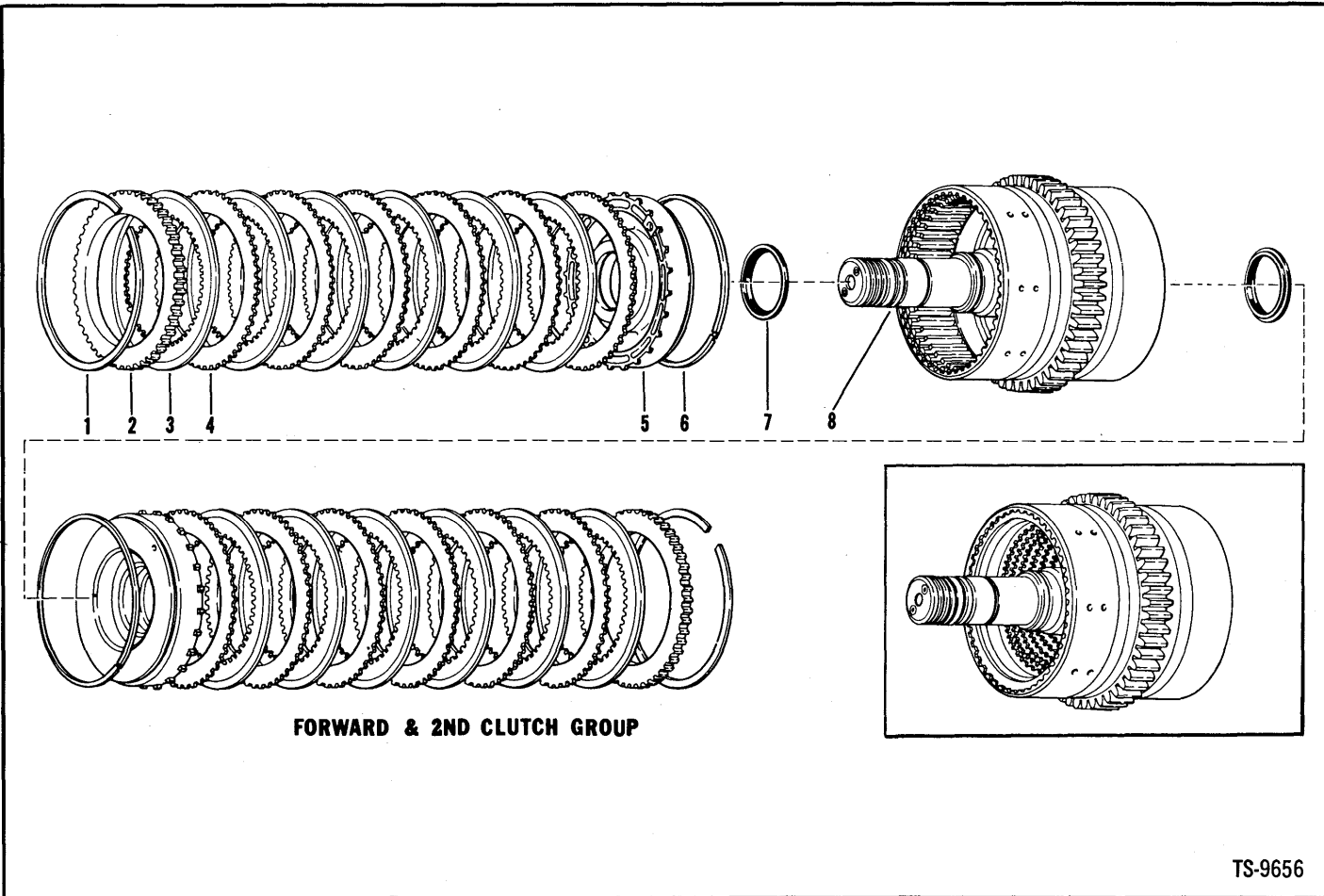
TS-11847 B

Transmission Gear & Shaft Group

MICHIGAN

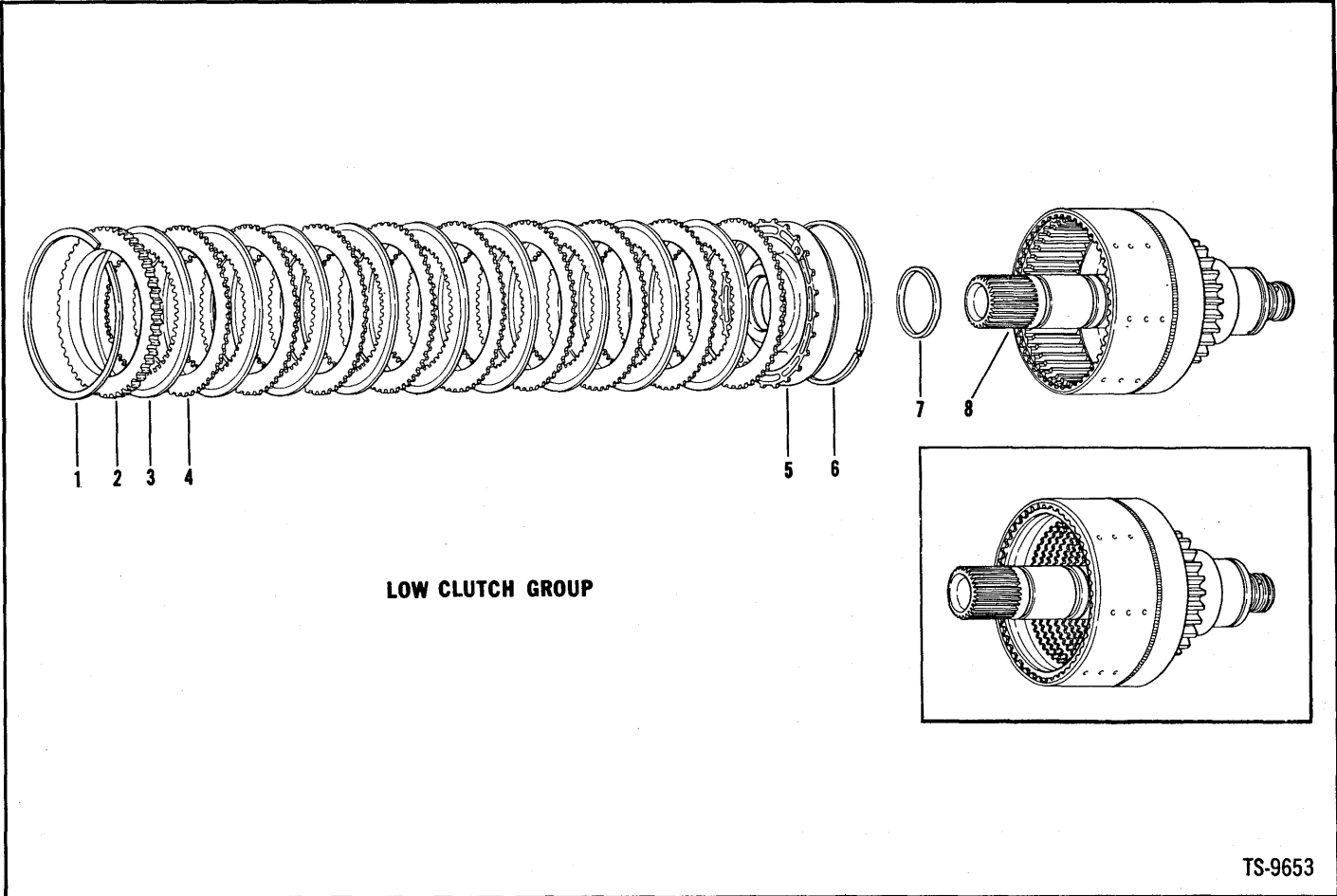
No.	Part No.	Qty.	Description
91	230952	1	Ring
92	231646	1	Bearing
93	25K-30026	1	O-ring
94	225823	1	Seal
95	1C-928	4	Bolt
96	4E-09	4	Lockwasher
97	231817	1	Cap
98	25K-40412	1	O-ring
99	742240	1	Cup
100	1315447	1	Cone
101	233652	1	Gear
102	222960	1	Nut
103	222179	1	Washer
104	25K-60116	1	O-ring
105	230864	1	Flange
106	2500170	1	Brake carrier
107	‡231848	—	Shim
107A	‡231849	—	Shim
107B	‡231850	—	Shim
107C	‡231851	—	Shim
108	231818	1	Cap
109	4E-09	4	Lockwasher
110	17C-928	4	Bolt
111	230954	1	Seal
112	231116	1	Flange
113	25K-60116	1	O-ring
114	222960	1	Nut
115	222179	1	Washer
116	25K-40400	1	O-ring
117	666697	1	Cup
118	1314713	1	Cone
119	231405	1	Spacer
120	231406	1	Shaft
121	231611	1	Case
122	224065	1	Ring
123	231883	1	Shaft
124	743439	1	Bearing
125	224083	1	Ring

2.004" (0,10 mm)
 3.007" (0,18 mm)
 4.010" (0,25 mm)
 5.020" (0,50 mm)



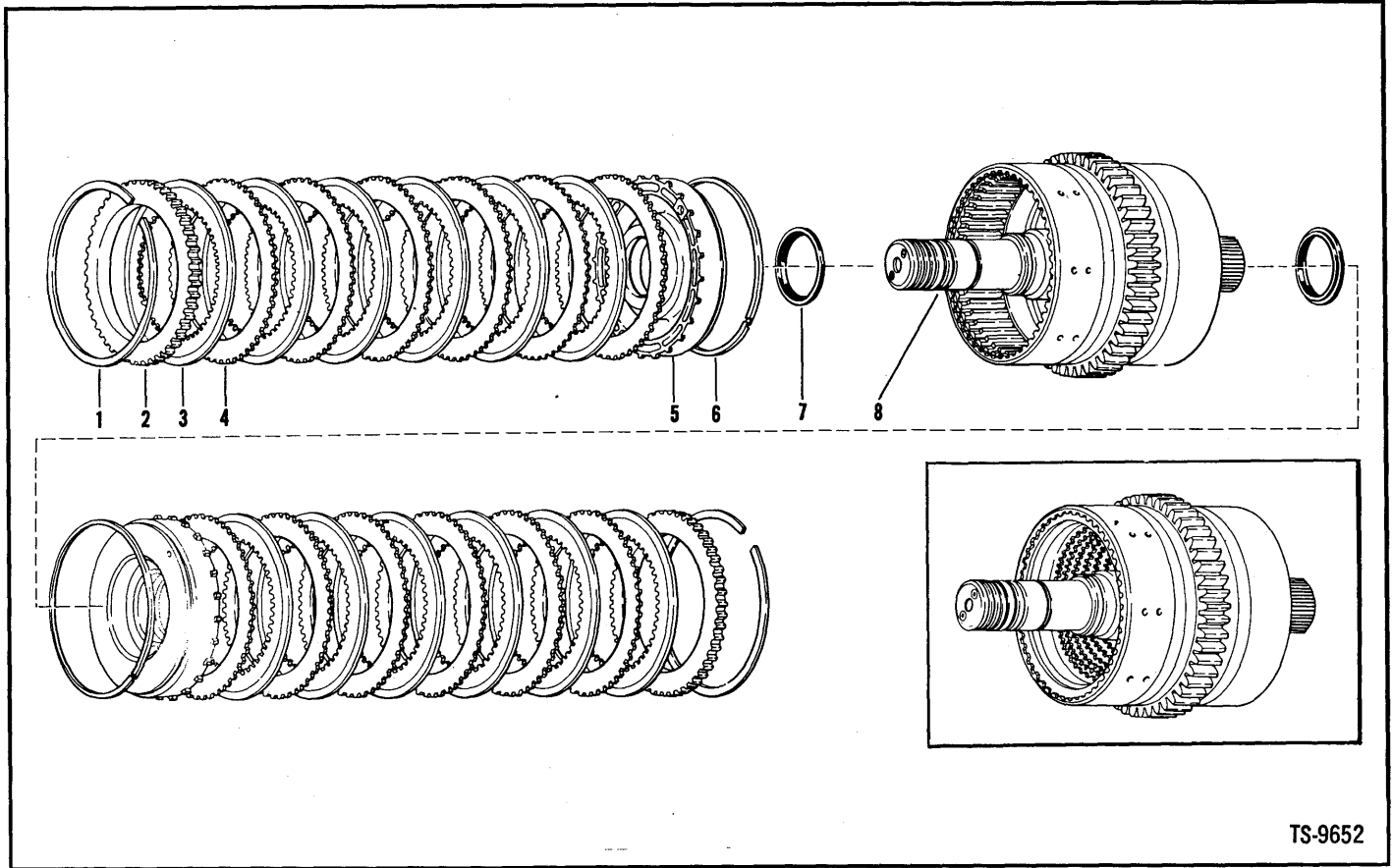
No.	Part No.	Qty.	Description
1	215190	2	Ring
2	224774	2	Plate
3	233166	12	Disc inner
4	224772	12	Disc outer
5	230850	2	Piston
6	224771	2	Ring
7	230857	2	Seal
8	231090	1	Drum shaft assy

Transmission Clutch Group – Low



TS-9653

No.	Part No.	Qty.	Description
1	215190	1	Ring
2	224774	1	Plate
3	230911	9	Disc inner
4	224772	9	Disc outer
5	230850	1	Piston
6	224771	1	Ring
7	230857	1	Seal
8	231194	1	Drum shaft assy



No.	Part No.	Qty.	Description
1	215190	2	Ring
2	224774	2	Plate
3	233166	12	Disc inner
4	224772	12	Disc outer
5	230850	2	Piston
6	224771	2	Ring
7	230857	2	Seal
8	231085	1	Drum shaft assy

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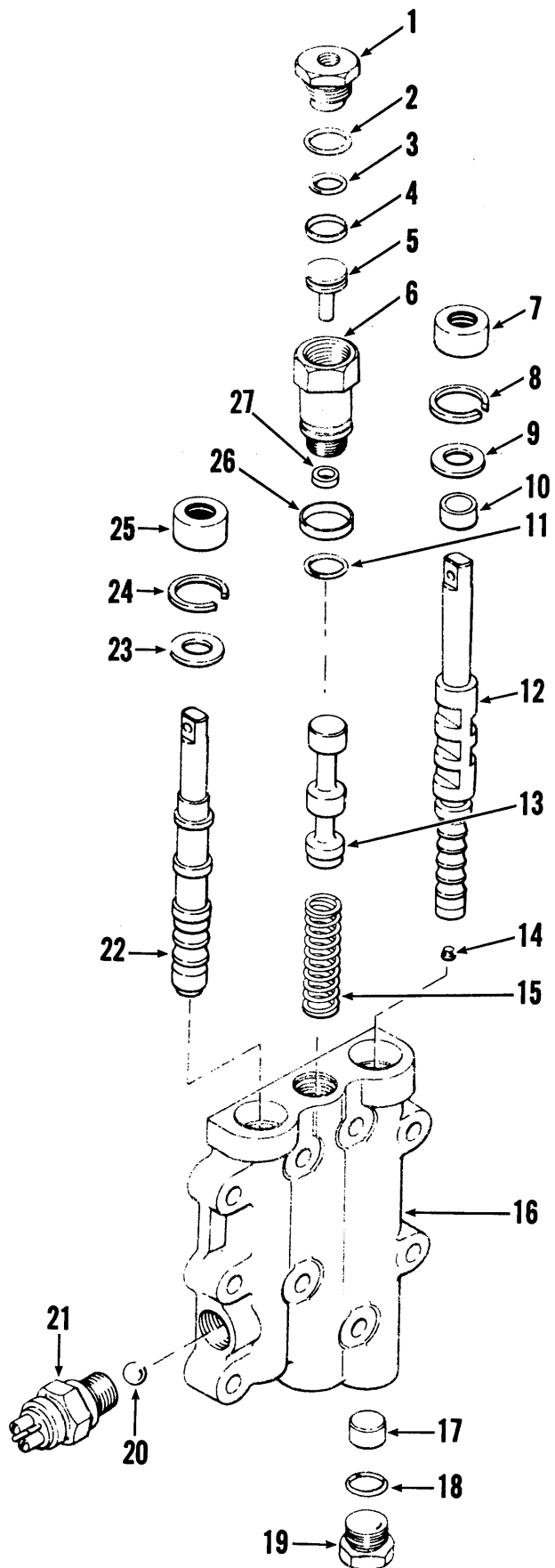
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TS-9648

Transmission Control Valve

MICHIGAN

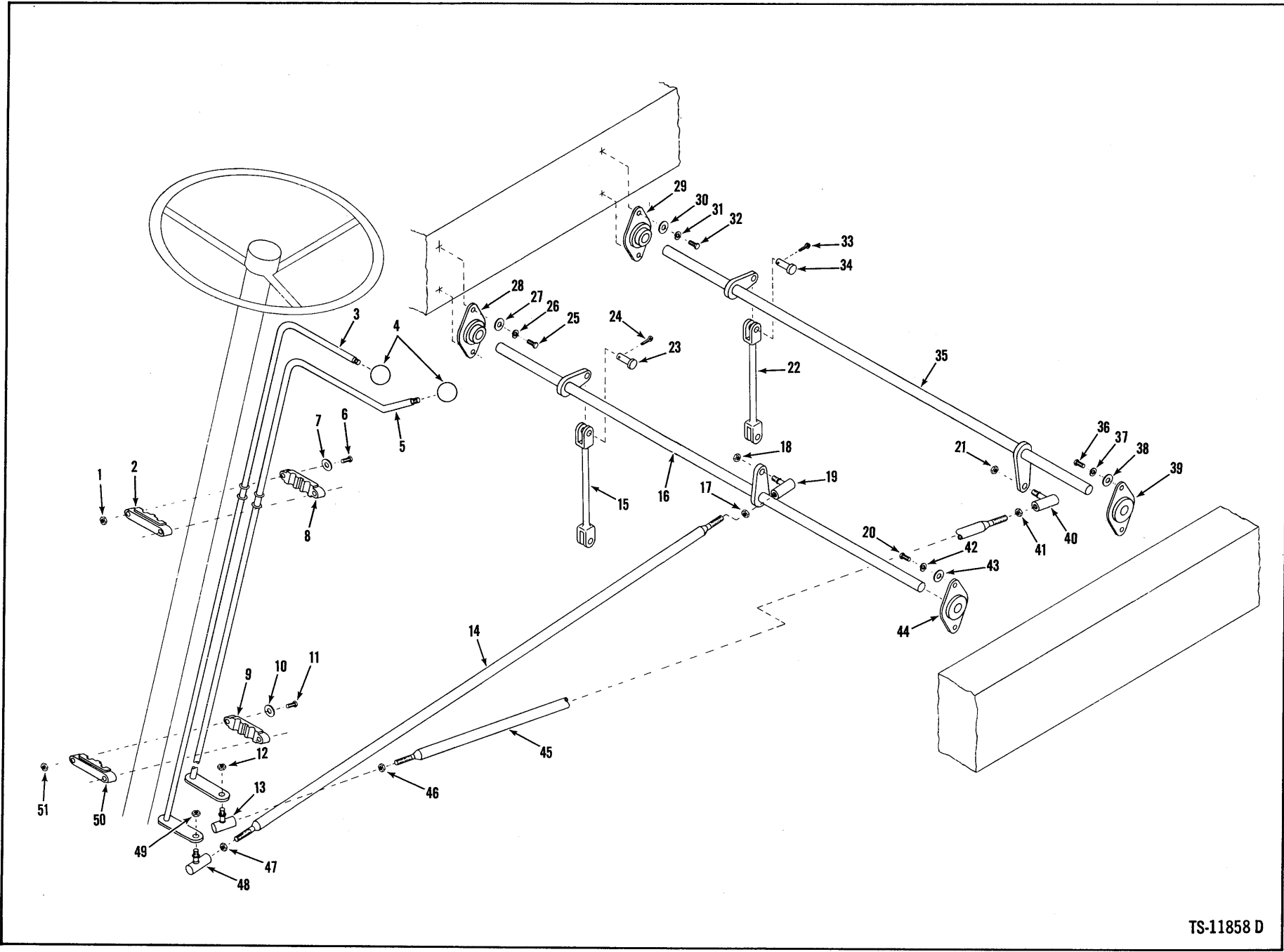
No.	Part No.	Qty.	Description
A	231168	1	Valve transm control
1	217928	1	Plug valve
2	91F-8	1	O-ring
3	25K-30020	1	O-ring
4	227672	1	Seal
5	227674	1	Piston
6	219342	1	Valve de-clutch
7	233222	1	Seal
8	664140	1	Ring
9	217657	1	Washer
10	231840	1	Spacer
11	25K-30022	1	O-ring
12	§ ³ -----	—	Spool
13	§ ³ 231154	—	Spool
14	16F-01	1	Plug pipe
15	231164	1	Spring
16	§ ³ -----	—	Valve body
17	4-----	—	Omit
18	91F-7	1	O-ring
19	24K-7	1	Plug pipe
20	10J-12	1	Ball
21	229729	1	Switch neutral start
22	§ ³ -----	—	Spool
23	217657	1	Washer
24	664140	1	Ring
25	233222	1	Seal
26	228931	1	Seal
27	229131	1	Seal

¹Inc. 7-9, 12, 14, 16, 18-25

²Inc. 1-5, 11, 26, 27

³See Voir, Siehe, Veja, Véase "A"

⁴Not used this application.



Transmission Control Levers & Linkage

MICHIGAN

No.	Part No.	Qty.	Description
1	66D-05	2	Nut
2	¹ 1508846	1	Support
3	1519945	1	Rod
4	509772	2	Knob
5	1519946	1	Rod
6	24C-540	2	Bolt
7	25E-15	2	Washer
8	² -----	—	Support
9	³ 1508846	1	Support
10	25E-15	2	Washer
11	24C-540	2	Bolt
12	66D-06	1	Nut
13	1301362	1	Ball joint
14	⁴ 1519934	1	Rod assy
15	1519940	1	Rod
16	1519932	1	Rod
17	8D-06	1	Nut
18	66D-06	1	Nut
19	1301362	1	Ball joint
20	24C-412	2	Bolt
21	66D-06	1	Nut
22	1519942	1	Rod
23	4F-5062	2	Pin
24	1F-310	2	Pin cotter
25	24C-412	2	Bolt
26	4E-04	2	Lockwasher
27	25E-13	2	Washer
28	1763347	1	Flange bearing
29	1763347	1	Flange bearing
30	25E-13	2	Washer
31	4E-04	2	Lockwasher
32	24C-412	2	Bolt
33	1F-310	2	Pin cotter
34	4F-05062	2	Pin
35	1519944	1	Rod
36	24C-412	2	Bolt
37	4E-04	2	Lockwasher
38	25E-13	2	Washer
39	1763347	1	Flange bearing
40	1301362	1	Ball joint
41	8D-06	1	Nut
42	4E-04	2	Lockwasher
43	25E-13	2	Washer
44	1763347	1	Flange bearing
45	⁵ 1519938	1	Rod assy
46	8D-06	1	Nut
47	8D-06	1	Nut
48	1301362	1	Ball joint
49	66D-06	1	Nut
50	⁶ -----	—	Support
51	66D-05	2	Nut

¹Inc. 8

²See 2

³Inc. 50

⁴Inc. 17, 19, 47, 48

⁵Inc. 13, 40, 41, 46

⁶See 9

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Group V

Valve, Air Brake

Valve Assembly – Flow Divider

Valve Assembly, Main

Valve Control Levers & Linkage (Two Spool)

V3

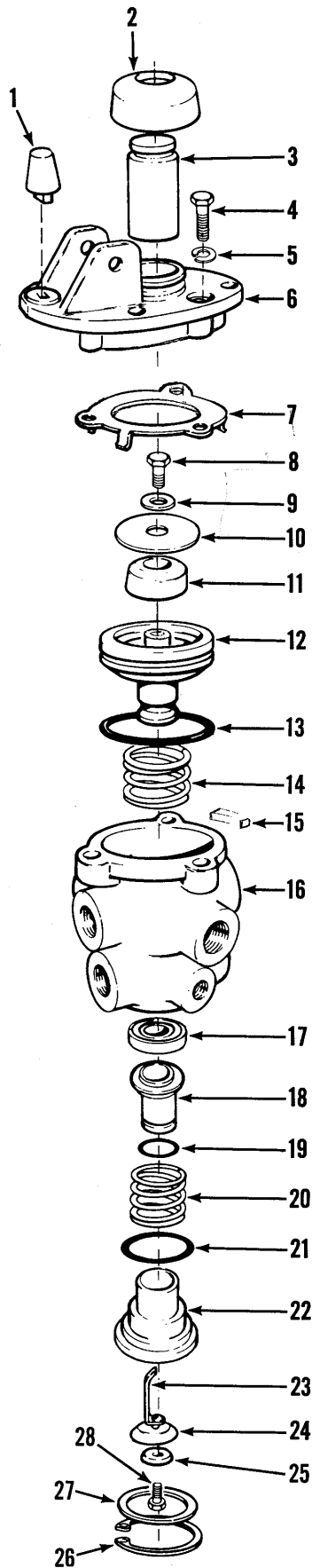
V4

V7, 9

V10

3 SPOOL VALVE

P/W 3 916 077



TS-11001

Valve Air Brake

MICHIGAN

No.	Part No.	Qty.	Description
A	*1945996	2	Valve kit - 556962
B	² 3290125	1	Repair kit
C	³ 3290124	1	Repair kit
D	⁴ 3290099	1	Repair kit
E	⁵ 3290106	1	Repair kit
1	513932	1	Stop rubber
2	875762	1	Boot
3	3290122	1	Plunger
4	1C-520	3	Bolt
5	4E-05	3	Lockwasher
6	949260	1	Plate
7	894543	1	Retainer
8	21C-410	1	Bolt
9	894542	1	Washer
10	894541	1	Valve seat
11	894540	1	Spring
12	894539	1	Piston
13	25K-40204	1	O-ring
14	875754	1	Spring
15	949261	1	Filter
16	3290105	1	Body
17	894537	1	Retainer
18	894538	1	Valve
19	25K-20020	1	O-ring
20	894536	1	Spring
21	25K-30112	1	O-ring
22	894535	1	Valve seat
23	894534	1	Spring
24	894533	1	Diaphragm
25	894532	1	Washer
26	661415	1	Ring
27	949264	1	Washer
28	87G-806	1	Screw

¹Inc. 1-28

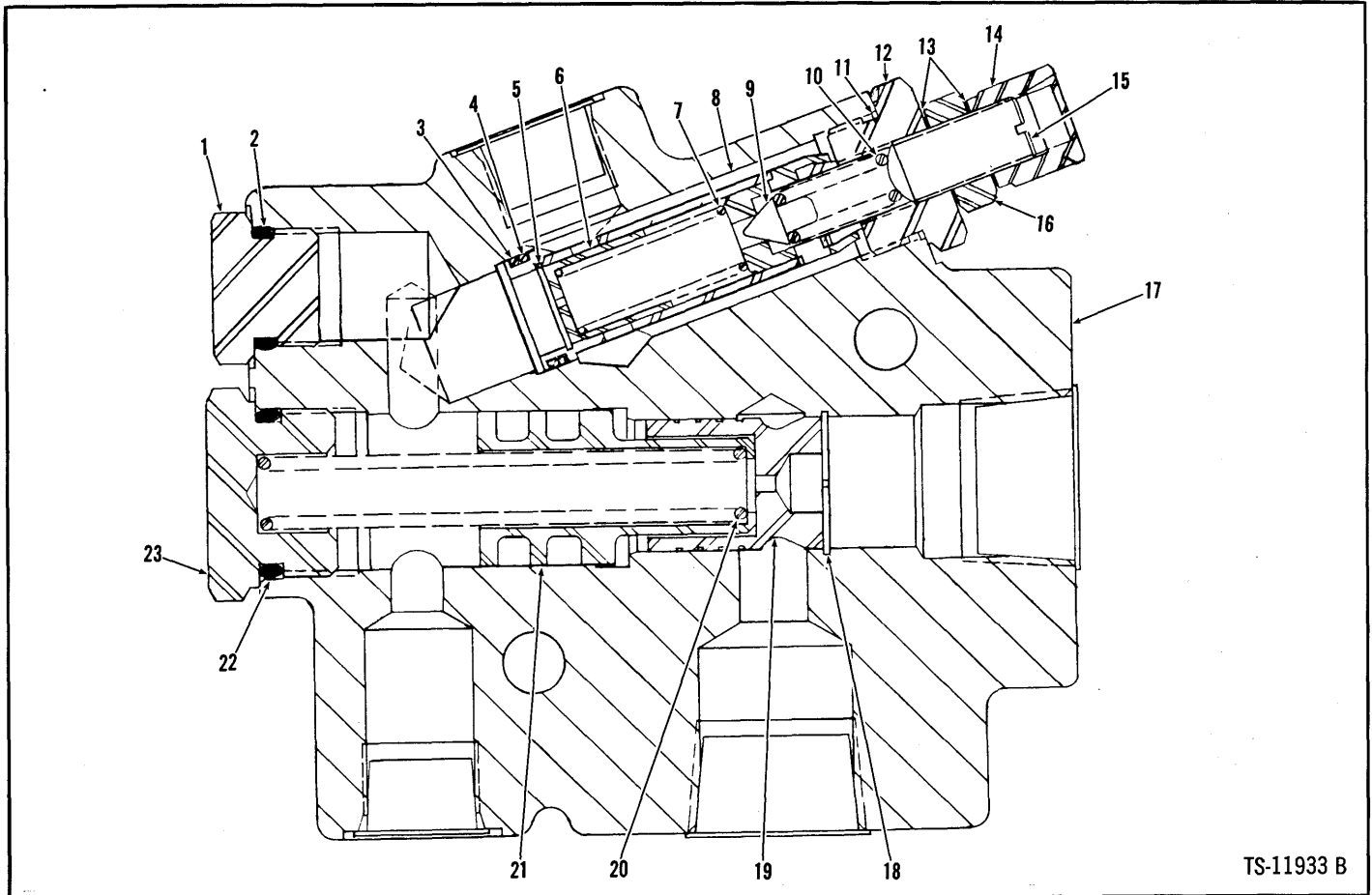
²Inc. 1, 2, 11, 13-15, 18-21, 23, 24

³Inc. 1, 2, 18, 19, 21, 24

⁴Inc. 8-12

⁵Inc. 17-26

*2 used per machine. Quantities listed are for 1.



TS-11933 B

No.	Part No.	Qty.	Description
A	3953111	1	Valve assy
1	24K-7	1	Plug
2	91F-7	1	O-ring
3	945832	1	O-ring
4	949904	1	Ring back-up
5	659041	1	Ring retaining
6	949899	1	Piston
7	949898	1	Spring
8	§²-----	—	Piston
9	5202527	1	Poppet
10	5202528	1	Spring
11	949905	1	Gasket
12	949897	1	Sleeve
13	886020	2	Gasket
14	885105	1	Cap
15	949903	1	Adjusting screw
16	949900	1	Nut
17	§²-----	—	Housing
18	662770	1	Ring retaining
19	949894	1	Piston
20	949896	1	Spring
21	949895	1	Piston
22	791553	1	O-ring
23	949902	1	Plug

¹Inc. 1→23

²See A

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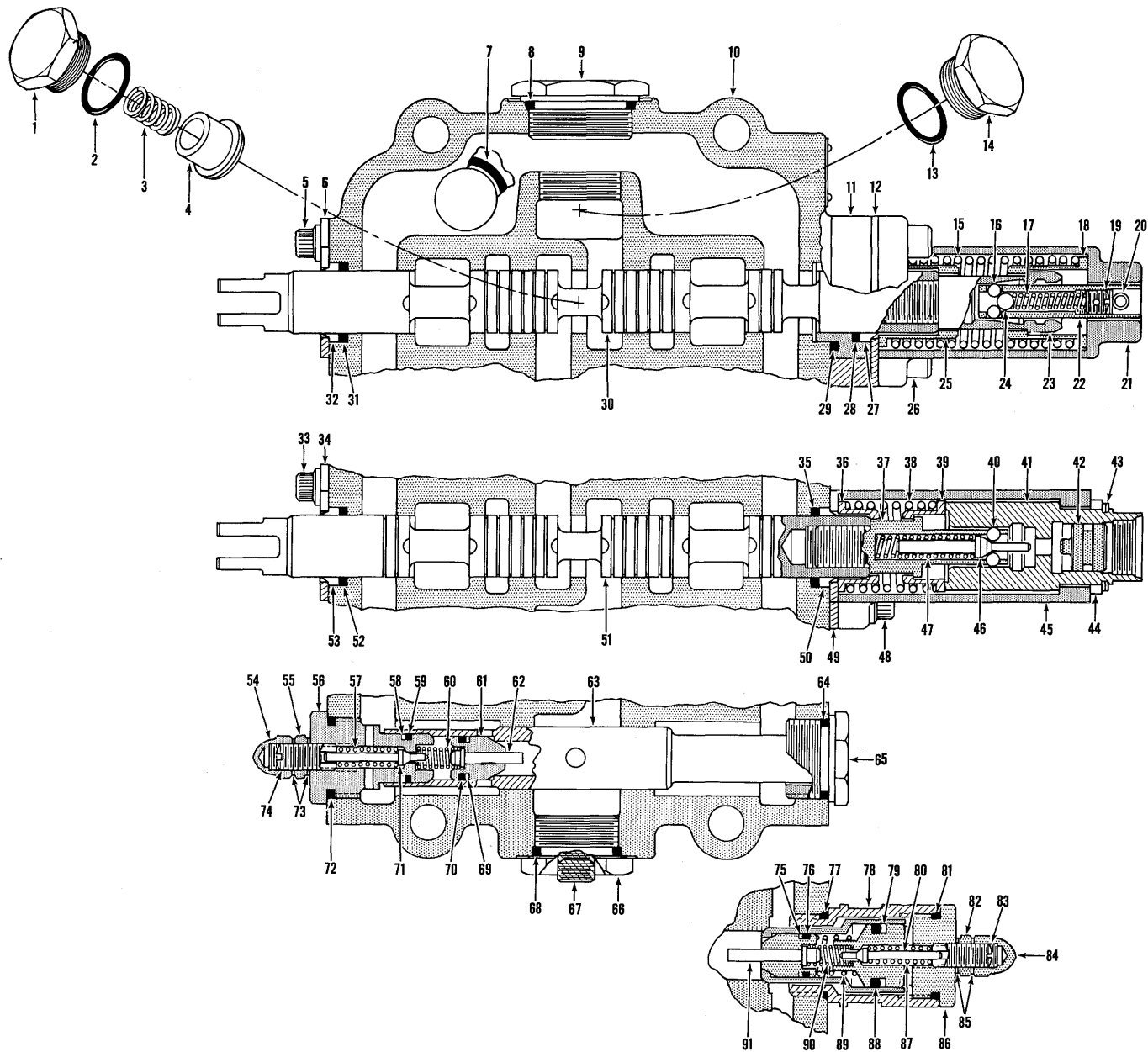
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11

12

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14



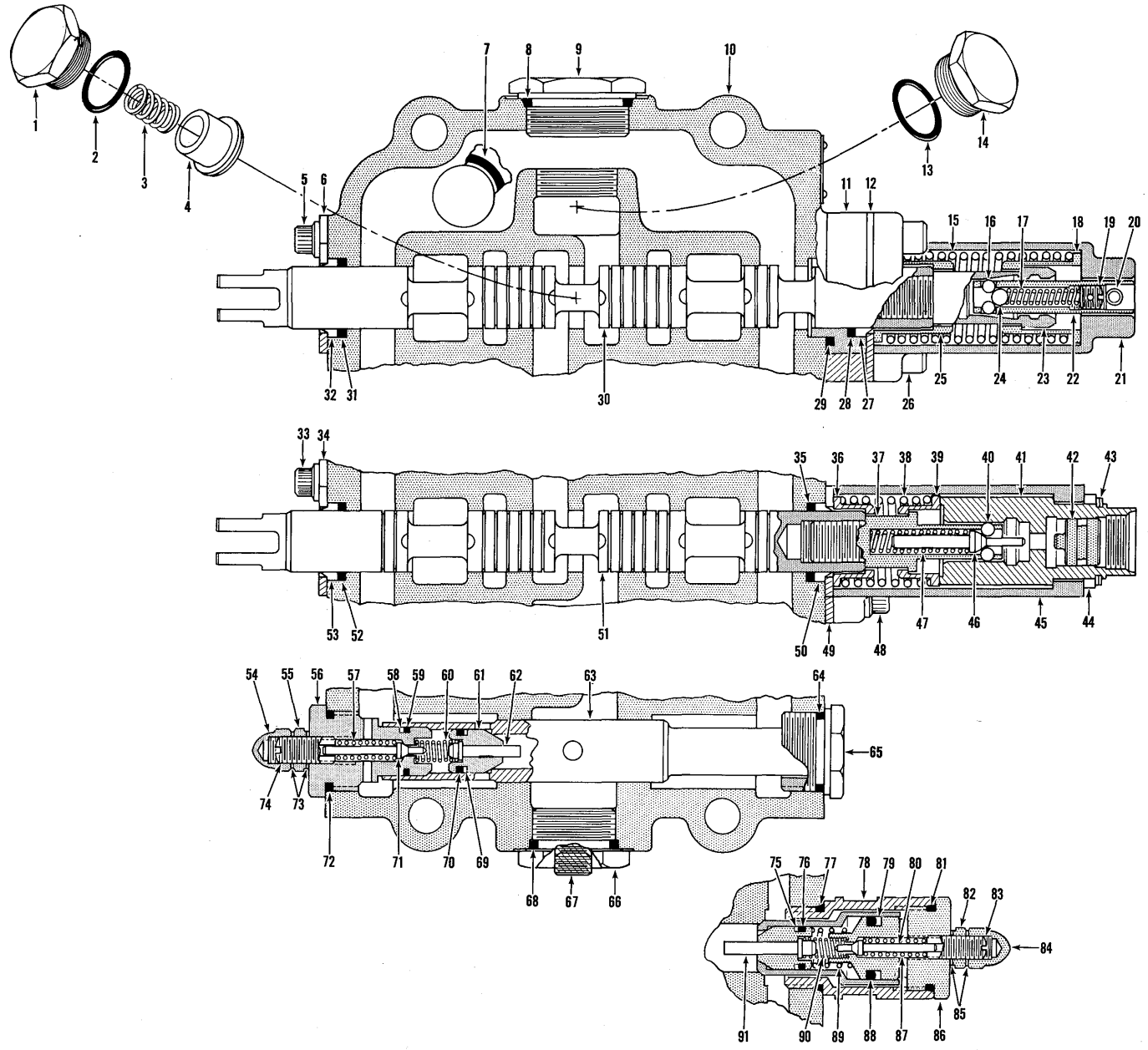
Valve Assembly – Main



No.	Part No.	Qty.	Description
A	3980667	1	Valve assy
1	5208957	2	Plug
2	791553	2	O-ring
3	947045	2	Spring
4	947046	2	Poppet
5	71G-610	2	Screw
6	947044	1	Plate
7	25K-40108	1	O-ring
8	949948	1	O-ring
9	949945	1	Plug
10	§ ² -----	—	Housing
11	949952	1	Spacer
12	947044	1	Plate
13	91F-10	1	O-ring
14	949947	1	Plug
15	949873	1	Spring
16	877420	3	Ball
17	949874	1	Spring
18	949871	1	Seat
19	949984	1	Setscrew
20	5201521	1	Pin
21	949872	1	Cover
22	949883	1	Pin
23	949875	1	Sleeve
24	949946	1	Ball
25	949871	1	Seat
26	11G-628	1	Screw
27	947048	1	Wiper
28	791553	1	O-ring
29	25K-40108	1	O-ring
30	§ ² -----	—	Plunger
31	791553	1	O-ring
32	947048	1	Wiper
33	71G-610	2	Screw
34	947044	1	Plate
35	791553	1	O-ring
36	947098	1	Seat
37	949881	1	Pin
38	949882	1	Spring
39	947098	1	Seat
40	877420	3	Ball
41	949880	1	Sleeve
42	949963	1	Piston
43	949950	1	Ring snap
44	949949	1	Spacer
45	949877	1	Cover
46	949878	1	Cam
47	949879	1	Spring
48	71G-616	2	Screw
49	947044	1	Plate

¹Inc. 1 → 91

²See A

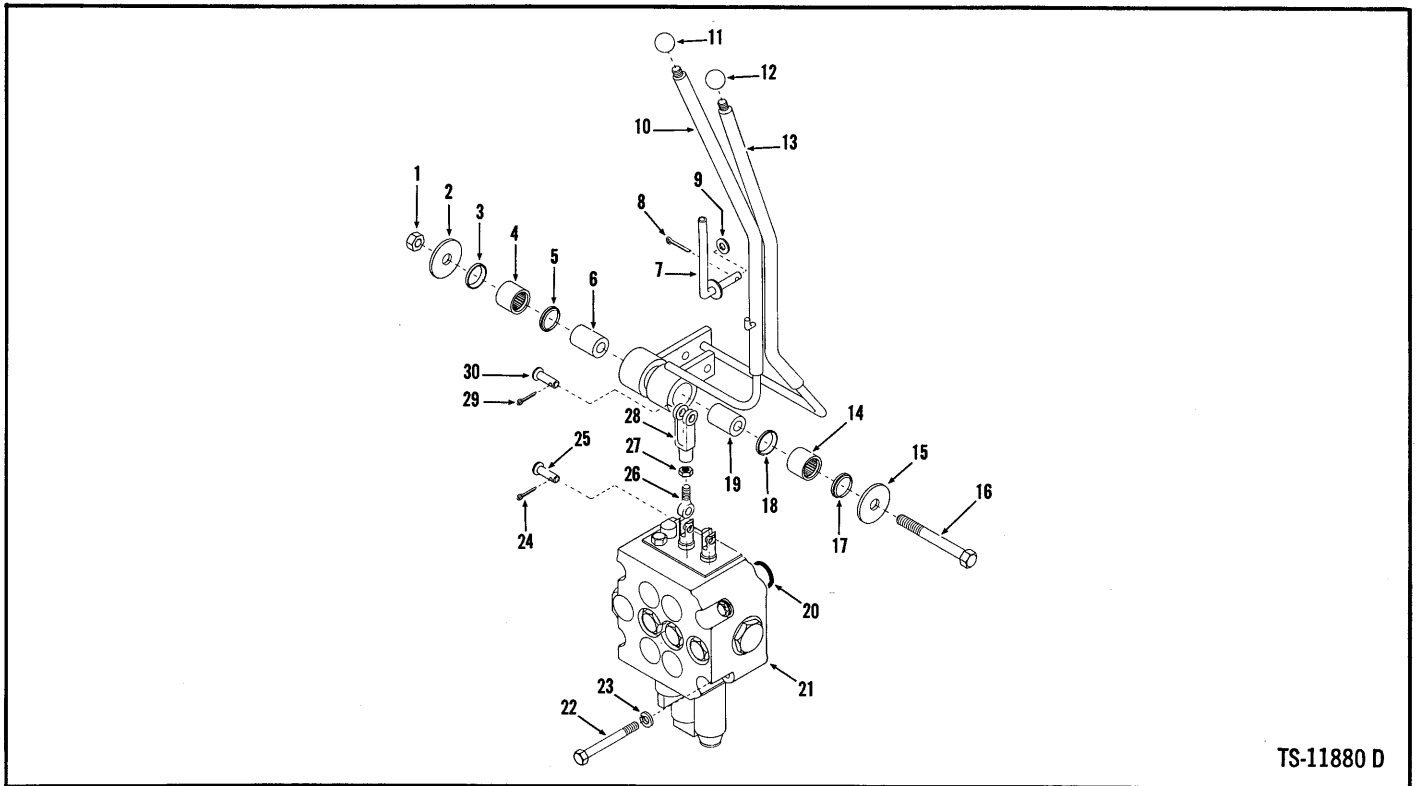


Valve Assembly – Main



No.	Part No.	Qty.	Description
50	947048	1	Wiper
51	§ ² -----	—	Plunger
52	791553	1	O-ring
53	947048	1	Wiper
54	47D-06	1	Nut
55	8D-06	1	Nut
56	949892	1	Cap
57	948825	1	Spring
58	948849	1	Ring back-up
59	948063	1	O-ring
60	948129	1	Spring
61	§ ² -----	—	Seat relief
62	949893	1	Poppet
63	§ ² -----	—	Sleeve
64	791553	1	O-ring
65	5206975	1	Plug
66	949944	1	Plug
67	16F-04	1	Plug
68	91F-10	1	O-ring
69	949954	1	Ring back-up
70	949953	1	O-ring
71	949891	1	Piston
72	948297	1	O-ring
73	948043	2	Washer
74	948044	1	Adjusting screw
75	949954	1	Ring back-up
76	949953	1	O-ring
77	91F-10	1	O-ring
78	949886	1	Housing
79	949956	1	Ring back-up
80	949891	1	Piston
81	91F-10	1	O-ring
82	8D-06	1	Nut
83	948044	1	Adjusting screw
84	47D-06	1	Nut
85	948043	2	Washer
86	949890	1	Cap
87	948825	1	Spring
88	949955	1	O-ring
89	949889	1	Spring
90	949887	1	Spring
91	949888	1	Piston

²See A



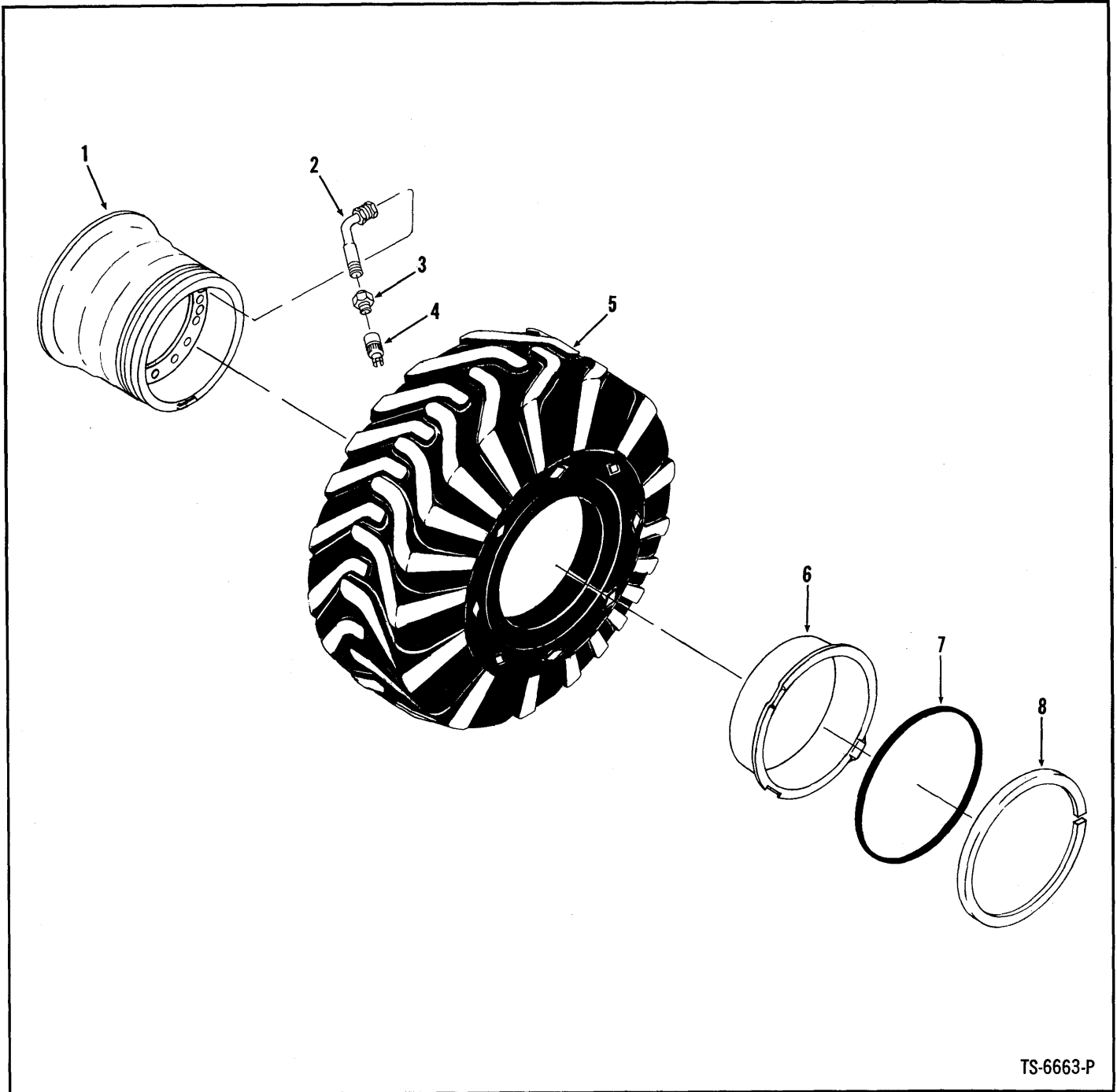
TS-11880 D

No.	Part No.	Qty.	Description
1	18D-08	1	Nut
2	569909	1	Washer
3	1522535	1	Ring
4	675227	1	Bearing
5	1522535	1	Ring
6	1503251	1	Sleeve
7	3980708	1	Lever stop assy
8	1F-516	1	Pin cotter
9	25E-21	1	Washer
10	2500536	1	Lever
11	509772	1	Knob
12	509772	1	Knob
13	2500537	1	Lever
14	675227	1	Bearing
15	569909	1	Washer
16	24C-872	1	Bolt
17	1522535	1	Ring
18	1522535	1	Ring
19	1503251	1	Sleeve
20	25K-40108	1	O-ring
21	3980667	1	Valve
22	24C-856	3	Bolt
23	4E-08	3	Lockwasher
24	1F-310	2	Pin cotter
25	4F-06106	2	Pin
26	2500416	2	Rod end
27	8D-06	2	Nut
28	2J-6208	2	Clevis
29	1F-310	2	Pin cotter
30	4F-06106	2	Pin

¹See Index

Group W
Wheel & Tire Data

W2



TS-6663-P

No.	14.0 x 24	15.5 x 25	17.5 x 25	Description	Qty.
1	1540366	1519829	1508626	Wheel	4
2	1517963	1509445	1509445	Stem	4
3	551684	551684	551684	Adapter	4
4	109247	551685	551685	Cap	4
5	---	---	---	Tire	4
6	941326	589401	589401	Flange	4
7	941329	112462	112462	O-ring	4
8	941325	112460	112460	Lockring	4

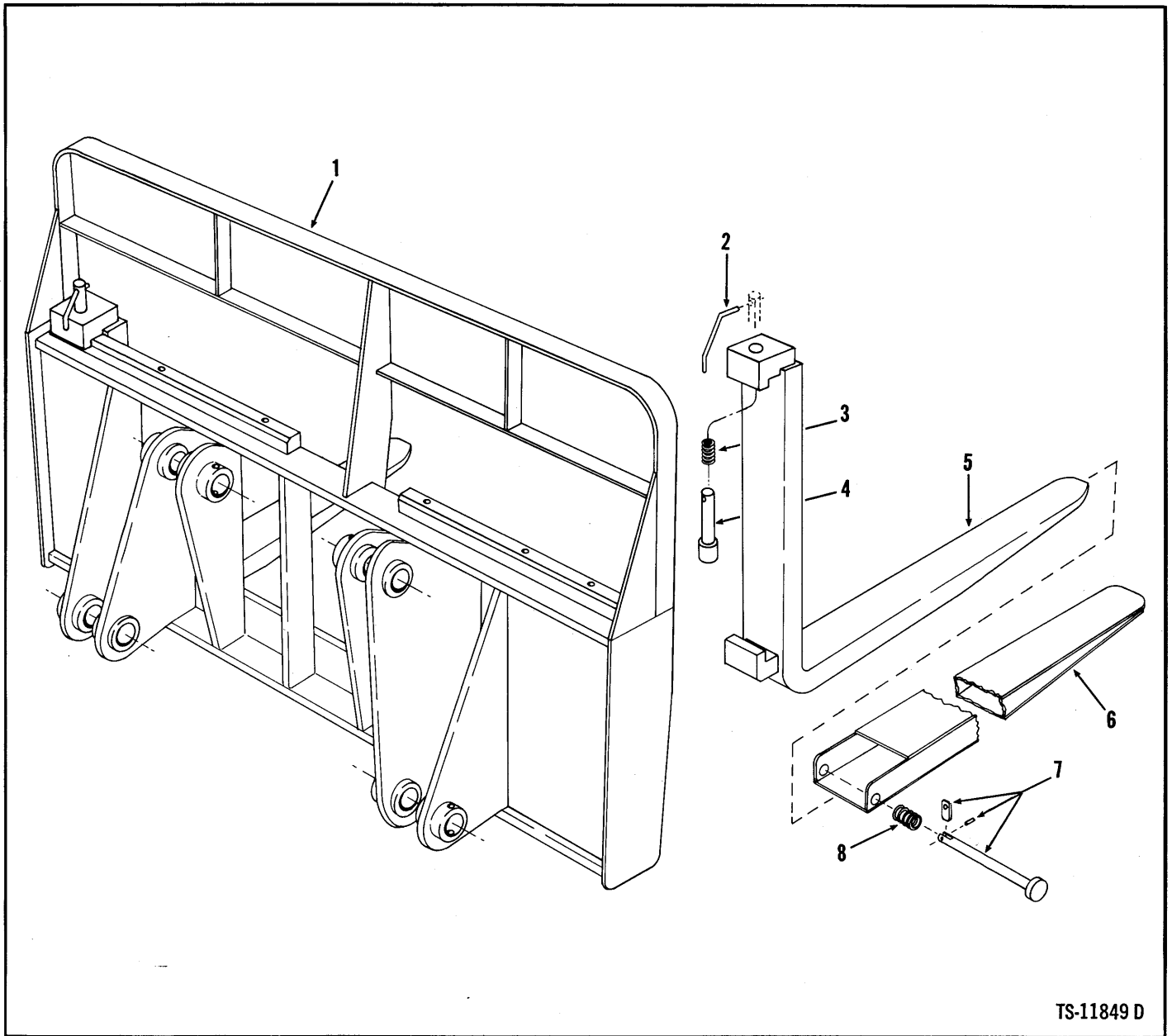
Inc. 3, 4

W2-1

Group Z

Fork Lift Attachment – 48"
Roll-Over Protective Structure (ROPS)
Seat Belt

Z2
Z3
Z4

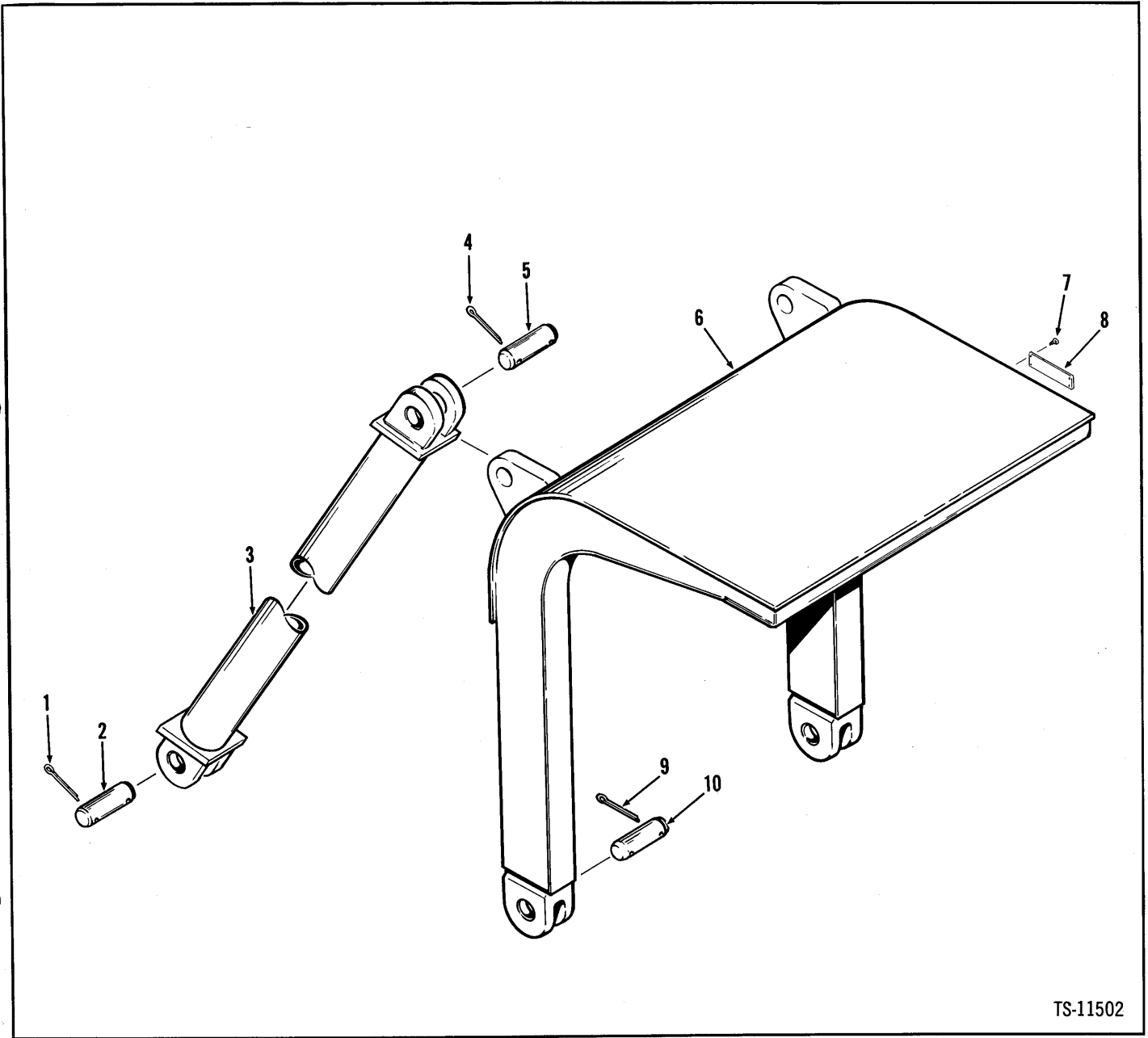


No.	Part No.	Qty.	Description
A	3983587	1	Fork lift attach
B	3983596	1	Fork extension
1	3983615	1	Carrier assy
2	3983614	2	Finger holder
3	3983606	2	Spring
4	3983613	2	Pin
5	3983609	2	Fork
6	3983597	2	Fork extension
7	3983602	2	Pin
8	3983606	2	Spring
9	†3983639	4	Stop
10	†3983641	2	Stop base

†Inc. 1-10
†Inc. 6-8

Roll-Over Protective Structure (Rops)

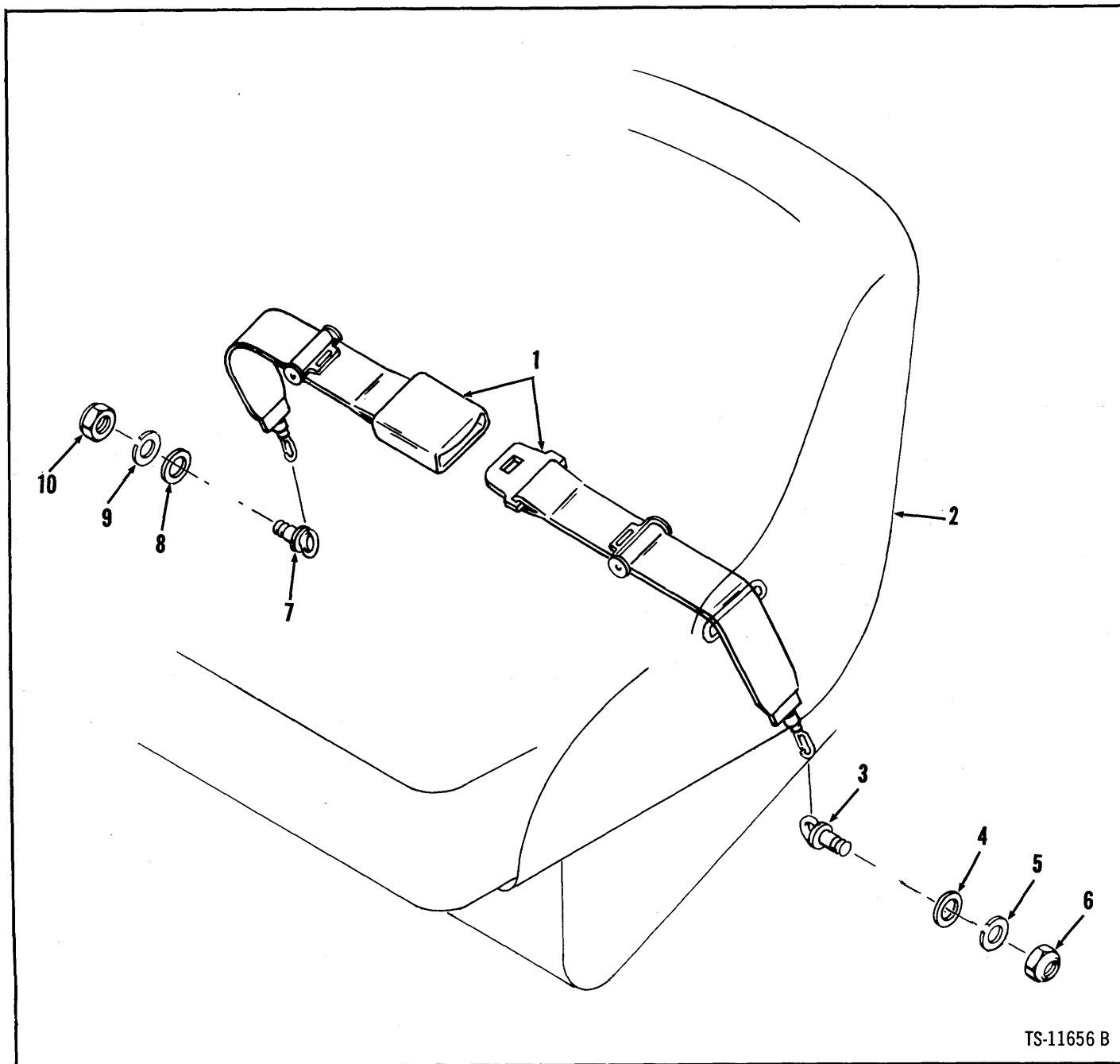
MICHIGAN



TS-11502

No.	Part No.	Qty.	Description
A	1511008	1	Roll-over prot strctr
1	1F-1236	4	Pin cotter
2	1537103	2	Pin mounting
2A	†1519894	1	Bushing
3	2500257	2	Brace
4	1F-1236	4	Pin cotter
5	1537103	2	Pin mounting
6	1511935	1	Canopy
7	6C-406	4	Screw
8	1515952	1	Identification plate
9	1F-1236	4	Pin cotter
10	1537103	2	Pin mounting

†Inc. 1→10



TS-11656 B

No.	Part No.	Qty.	Description
1	11527745	1	Belt assy
2	2	1	Seat
3	3	1	Eyebolt
4	4	1	Washer
5	5	1	Lockwasher
6	6	1	Nut
7	7	1	Eyebolt
8	8	1	Washer
9	9	1	Lockwasher
10	10	1	Nut

¹Incl. 3 → 10
²See Index
³See 1

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111 119469 A5-1 489
111 119914 A9-1 489
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111 121014 A5-1 489
111 121015 A5-1 489
111 121166 A10-1 489

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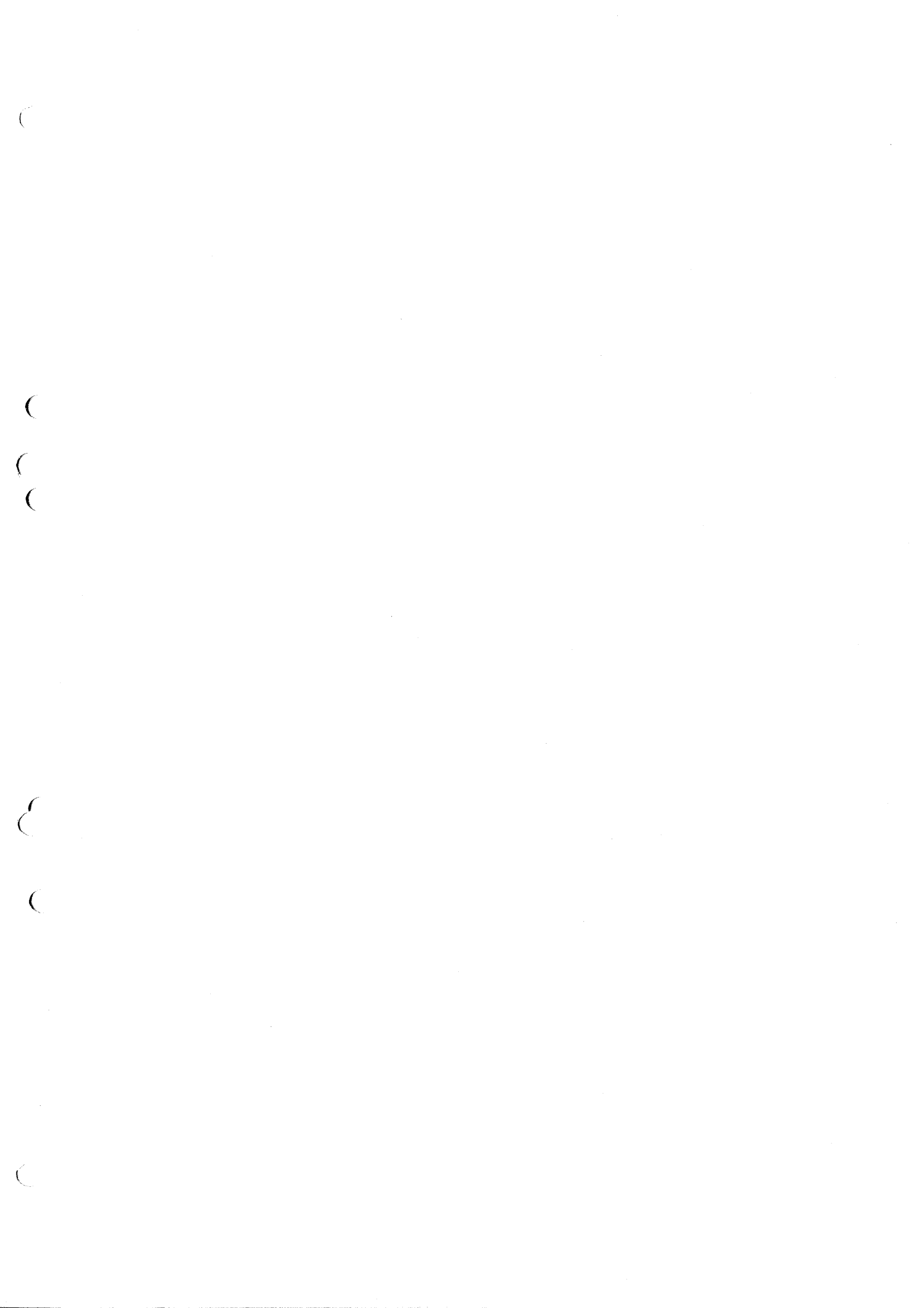
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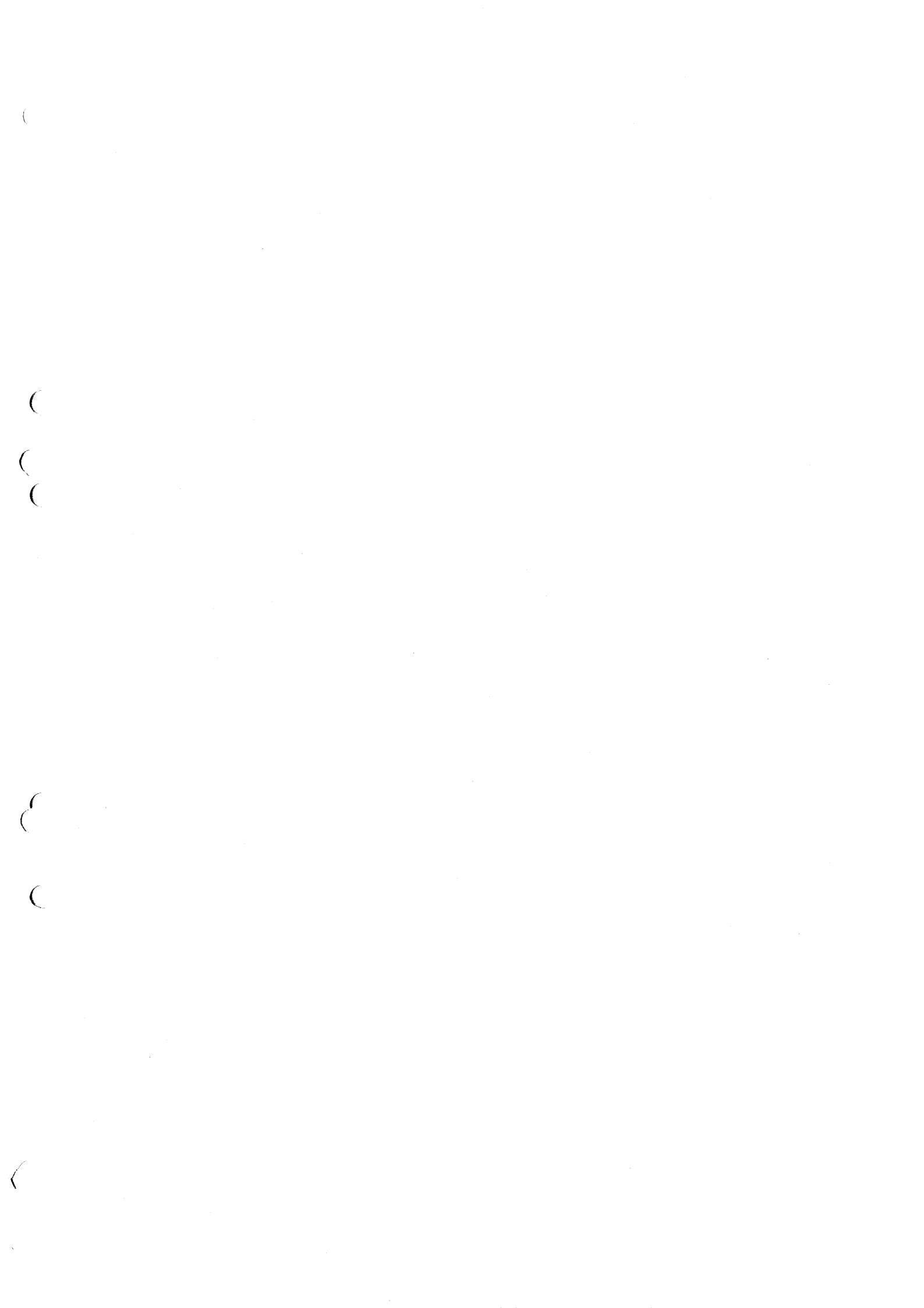
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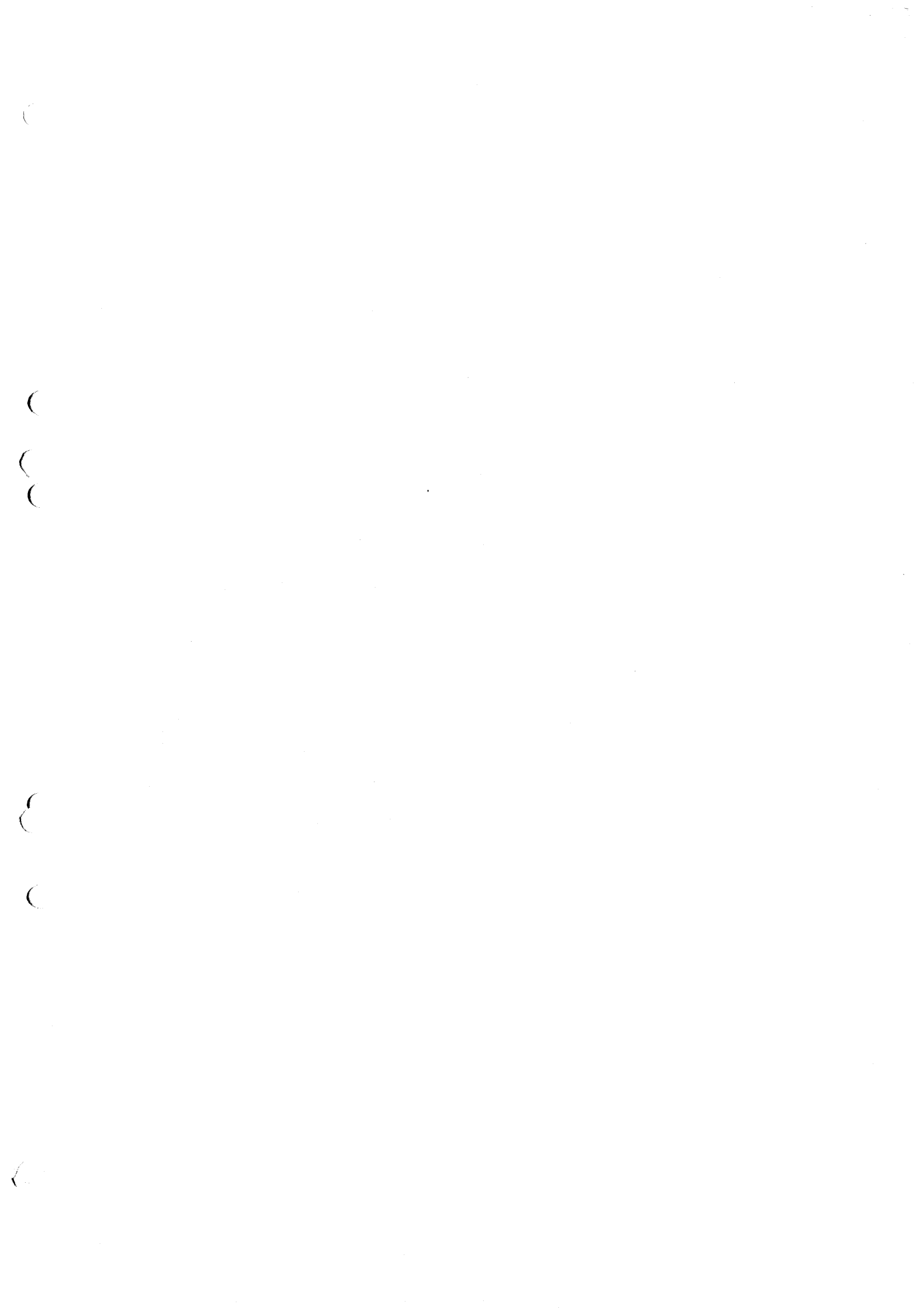
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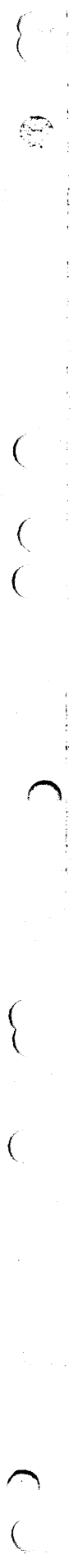
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Clark Equipment Company
1 2. NOV. 1974

MODEL 45B TRACTOR SHOVEL

MICHIGAN

OPERATORS MANUAL SUPPLEMENT

No. 3009

★

This Supplement covers Model 45B Tractor Shovels equipped with Perkins engines effective on machines shipped from the factory with serial numbers:

4189A101 FSC and After

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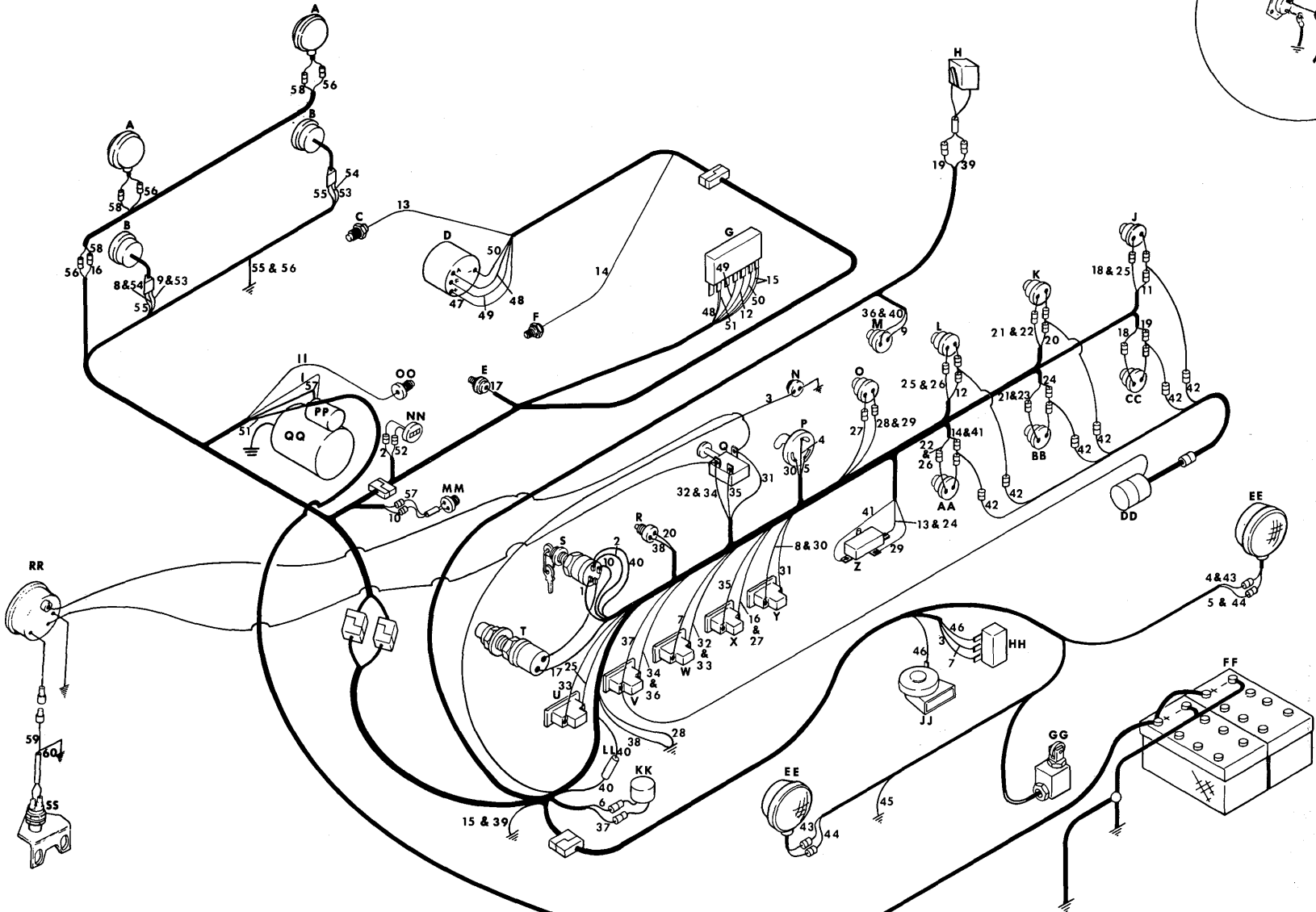
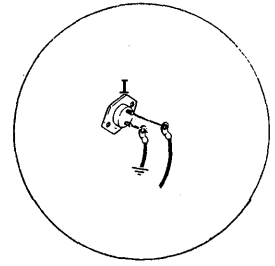
Information contained in Operators Manual No. 2856-R3 will apply to these machines except for the differences that are covered in this Supplement.

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Use this Supplement with Operators Manual No. 2856-R3.

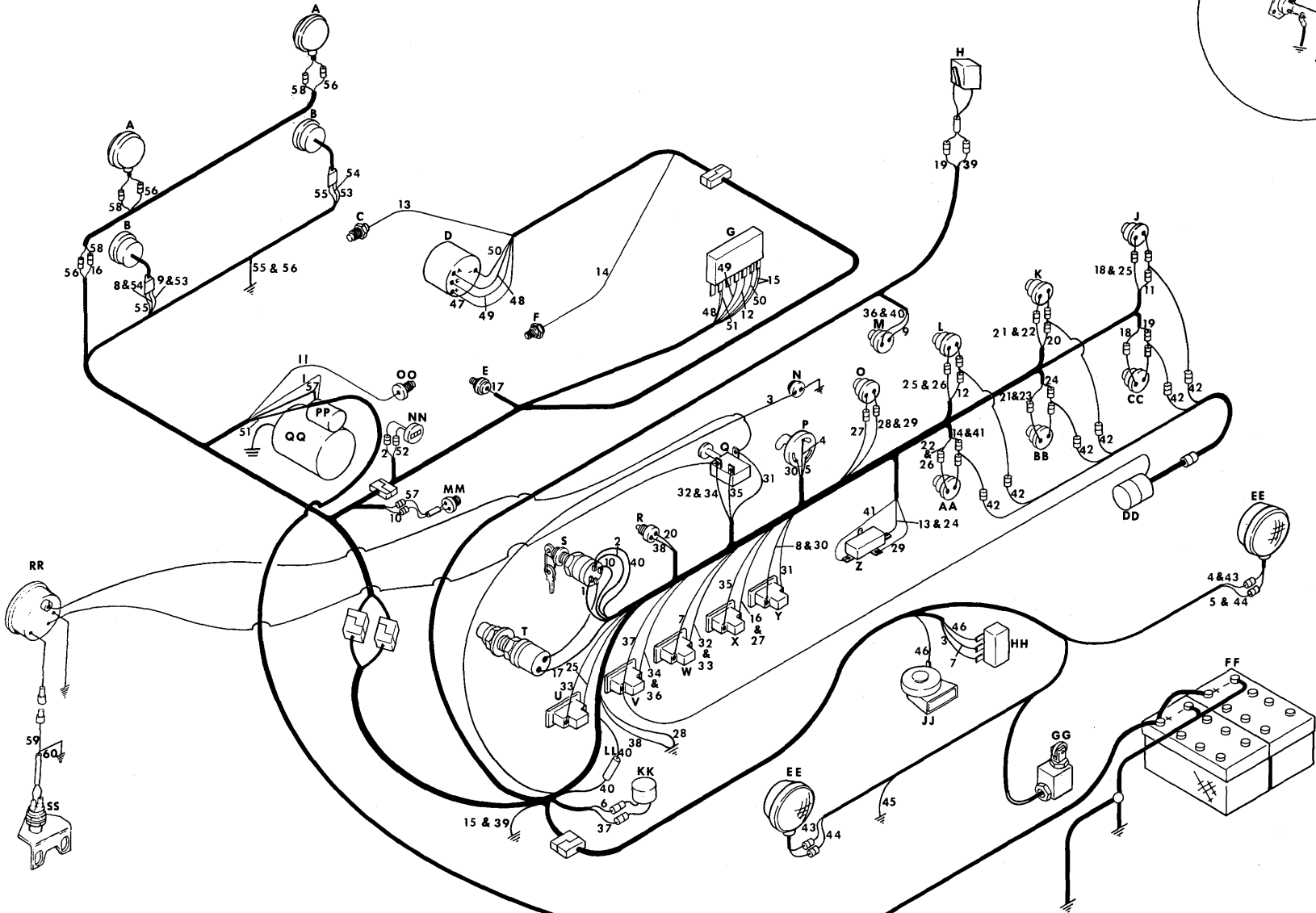
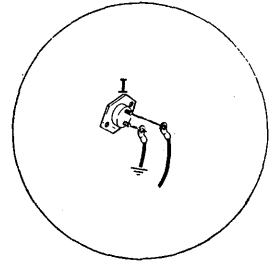
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CLARK EQUIPMENT COMPANY
Construction Machinery Division



COLOR CODE REFERENCE CHART FOR USE WITH TS-13800

Ref. No.	Color	Color Code
1.	Red & Black	Ignition Switch to Starter
2.	Red	Ignition Switch to Hourmeter
3.	Yellow & Black	Horn Relay to Horn Switch
4.	Green	Dimmer Switch to LH Headlamp
5.	Green	Dimmer Switch to LH Headlamp
6.	White & Blue	Bucket Leveler Limit Switch to Solenoid Valve
7.	White & Blue	5 Amp. Circuit Breaker to Horn Relay
8.	Red & Green	10 Amp. Circuit Breaker to RH Tail Light
9.	White & Red	Stop Light Switch to RH Stop Light
10.	Black & Yellow	Ignition Switch to Neutral Start Switch
11.	Black & Yellow	Engine Oil Press. Sender to Engine Oil Press. Warning Light
12.	Yellow	Voltage Regulator to Battery Warning Light
13.	Red & Blue	Engine Temp Sender to Test Switch
14.	Red	Converter Temp. Sender to Converter Temp. Warning Light
15.	Red & Blue	Voltage Regulator to Ground
16.	Red & Blue	10 Amp. Circuit Breaker to Back-Up Lights (Via Ref. No. 58)
17.	Red & Blue	Thermo Start Switch to Thermo Start
18.	Blue	Engine Oil Press. Warning Light to Parking Brake Warning Light
19.	Red & Yellow	Parking Brake Limit Switch to Parking Brake Warning Light
20.	Red & Yellow	Brake Air Press. Sender to Brake Air Press. Warning Light
21.	Green & Red	Brake Air Press. Warning Light to Engine Temp. Warning Light
22.	Red & Green	Converter Temp Warning Light to Brake Air Press. Warning Light
23.	White & Red	Engine Temp. Warning Light to Engine Oil Press. Warning Light
24.	Red & Blue	Engine Temp. Warning Light to Test Switch
25.	Yellow & Black	1 Amp. Circuit Breaker to Battery Warning Light
26.	Brown	Battery Warning Light to Converter Temp. Warning Light
27.	White & Blue	10 Amp. Circuit Breaker to Back-Up Indicator Light
28.	Red & Black	Back-Up Indicator Light to Ground
29.	White & Red	Test Switch to Ground (Via Ref. No. 28)
30.	Yellow & Red	10 Amp. Circuit Breaker to Dimmer Switch
31.	Red & Black	Light Switch to 10 Amp. Circuit Breaker
32.	Green	Light Switch to 5 Amp. Circuit Breaker
33.	Green & White	5 Amp. Circuit Breaker to 1 Amp. Circuit Breaker
34.	Light Green	1 Amp. Circuit Breaker to Light Switch
35.	Light Green	Light Switch to 10 Amp. Circuit Breaker
36.	Black & White	Stop Light Switch to 1 Amp. Circuit Breaker
37.	Black & White	1 Amp. Circuit Breaker to Solenoid Valve
38.	Black & White	Brake Air Pressure Sender to Ground



[4]

**COLOR CODE REFERENCE CHART FOR USE WITH TS-13800
CONTINUED**

Ref. No.	Color	Color Code
39.	Black & White	Parking Brake Limit Switch to Ground
40.	Black & White	Ignition Switch to 5 Amp. Fuse to Stop Light Switch
41.	Yellow & Green	Test Switch to Converter Temp. Warning Light
42.	Black & White	Buzzer to 6 Warning Lights
43.	Brown	LH Headlamp to RH Headlamp
44.	Green & White	LH Headlamp to RH Headlamp
45.	Blue	Bucket Leveler Limit Switch to Ground
46.	Yellow & Red	Horn Relay to Horn
47.	Red & White	Alternator to Ground
48.	Red #10	Alternator to Voltage Regulator
49.	Green	Alternator to Voltage Regulator
50.	White #10	Alternator to Voltage Regulator
51.	Red & White #10	Voltage Regulator to Starter
52.	Red & White	Hourmeter to Ground
53.	Blue	RH Stop Light to LH Stop Light
54.	Yellow	RH Tail Light to LH Tail Light
55.	Red & White	Stop Lights to Ground
56.	Red & White	Back-Up Lights to Ground
57.	Yellow & Green	Neutral Start Switch to Starter
58.	Black & Yellow	10 Amp. Circuit Breaker to Back-Up Lights (Via Ref. No. 16)
59.	White	Speedometer Sender to Speedometer
60.	Black	Speedometer Sender to Ground

A	Back-Up Lights	P	Dimmer Switch	EE	Headlamps
B	Stop & Tail Lights	Q	Light Switch	FF	Batteries
C	Engine Temp. Sender	R	Brake Air Press. Sender	GG	Bucket Leveler Limit Switch
D	Alternator	S	Ignition Switch	HH	Horn Relay
E	Thermo Start	T	Thermo Start Switch	JJ	Horn
F	Converter Temp. Sender	U	1 Amp. Circuit Breaker	KK	Solenoid Valve
G	Voltage Regulator	V	1 Amp. Circuit Breaker	LL	5 Amp. Fuse
H	Parking Brake Limit Switch	W	5 Amp. Circuit Breaker	MM	Neutral Start Switch
*I	Horn Switch	X	10 Amp. Circuit Breaker	NN	Hourmeter
J	Engine Oil Press. Warning Light	Y	10 Amp. Circuit Breaker	OO	Engine Oil Press. Sender
K	Brake Air Press. Warning Light	Z	Test Switch	PP	Starter Solenoid
L	Battery Warning Light	AA	Converter Temp. Warning Light	QQ	Starter
M	Stop Light Switch	BB	Engine Temp. Warning Light	RR	Speedometer
N	Horn Switch	CC	Parking Brake Warning Light	SS	Speedometer Sender
O	Back-Up Indicator Light	DD	Buzzer		

*4189A132FSC → 145FSC only



MODEL 45 B TRACTOR SHOVEL

**CLARK
EQUIPMENT**

OPERATORS MANUAL SUPPLEMENT

No. 3079

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This supplement covers wiring revisions on subject model machines, effective on machines shipped from the factory with serial numbers:

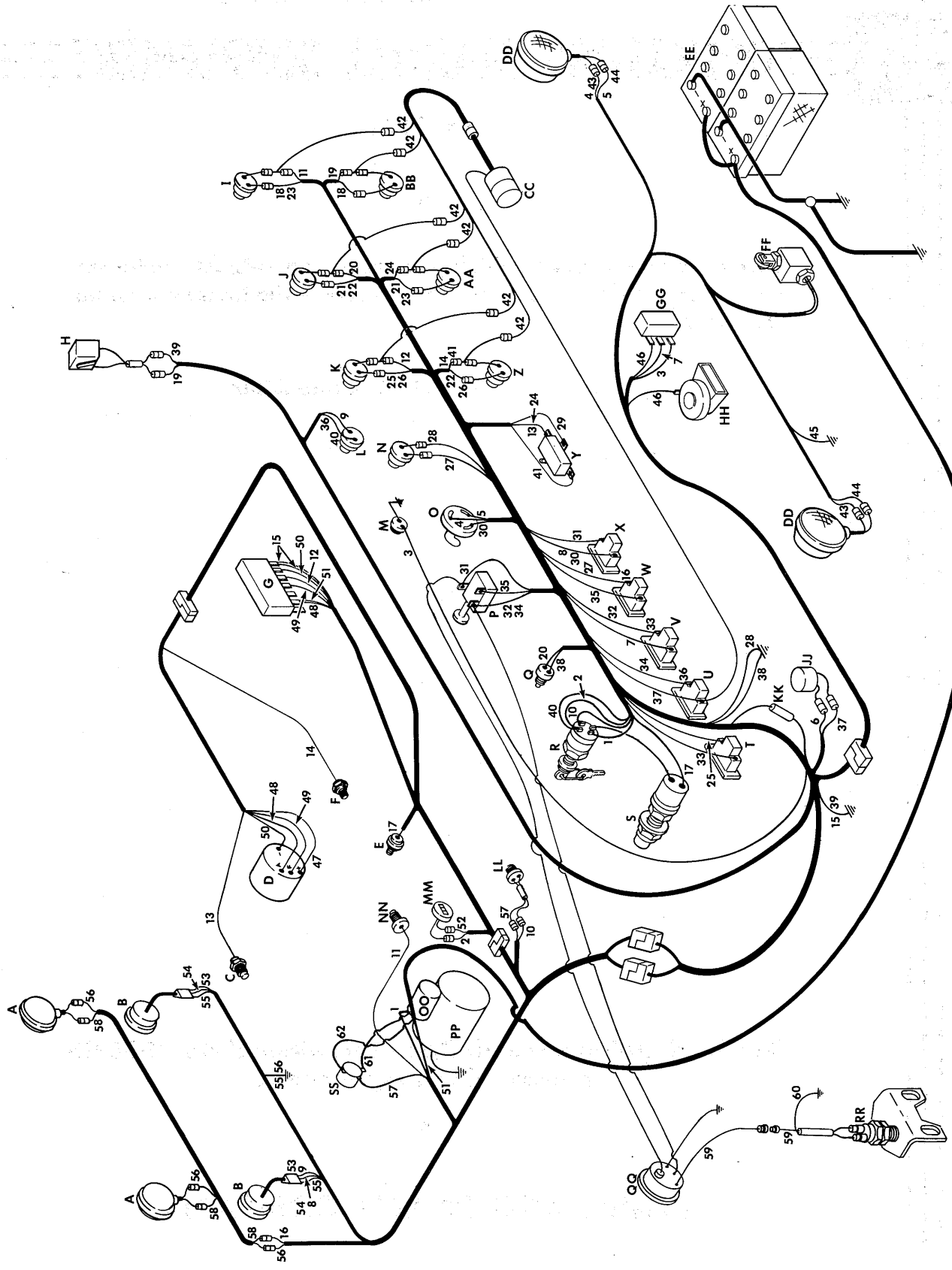
Perkins — 4189A289FSC and After

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**Use this Supplement with Operators Manual No. 2856-R3
and existing supplements.**

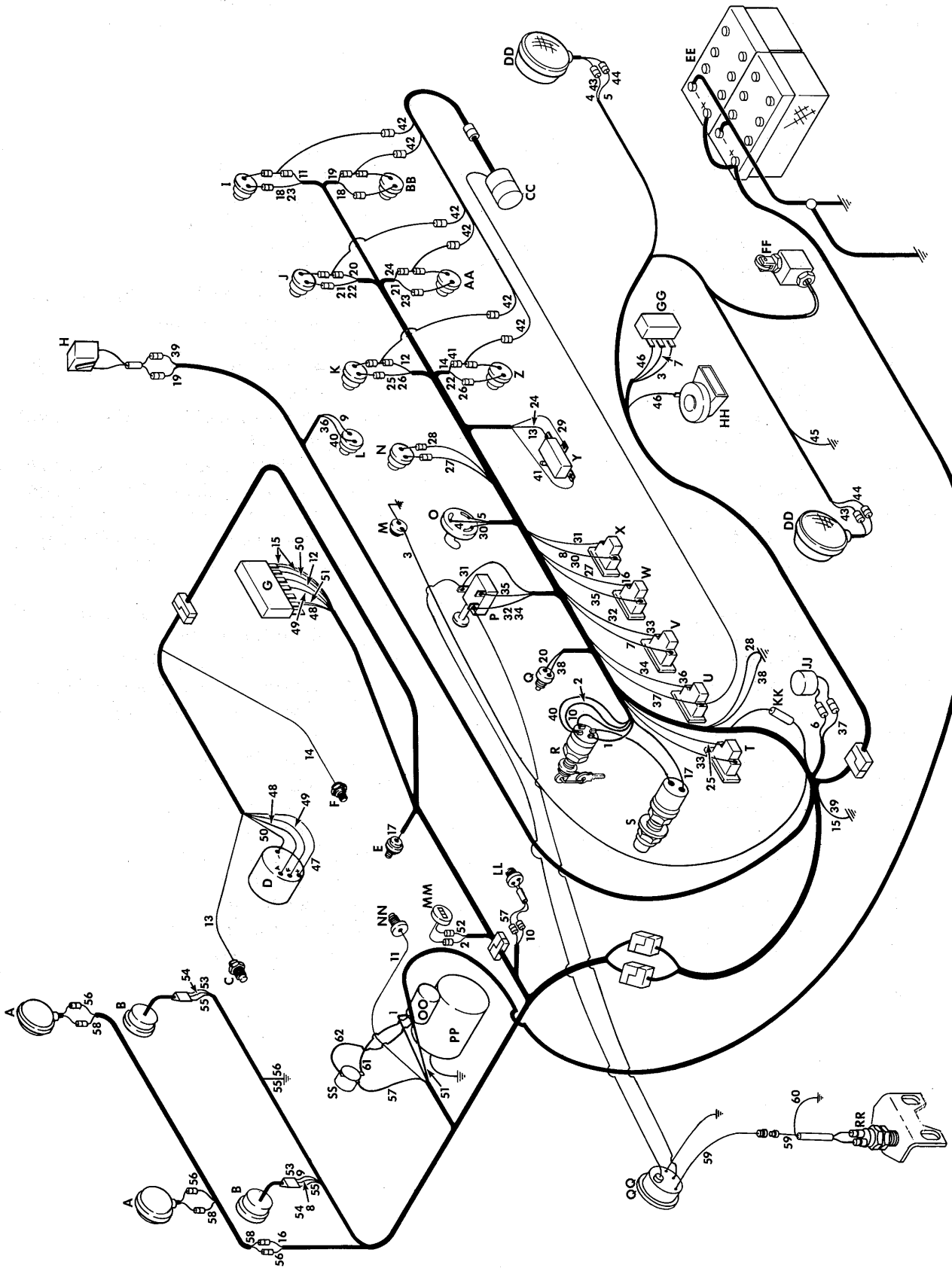
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CLARK EQUIPMENT COMPANY



COLOR CODE REFERENCE CHART FOR USE WITH TS-14172

Ref. No.	Color	Color Code
1.	Red & Black	Ignition Switch to Starter
2.	Red	Ignition Switch to Hourmeter
3.	Yellow & Black	Horn Relay to Horn Switch
4.	Green	Dimmer Switch to L.H. Headlamp
5.	Green	Dimmer Switch to L.H. Headlamp
6.	White & Blue	Bucket Leveler Switch to Solenoid Valve
7.	White & Blue	5 Amp. Circuit Breaker to Horn Relay
8.	Red & Green	10 Amp. Circuit Breaker to R.H. Tail Light
9.	White & Red	Stop Light Switch to R.H. Stop Light
10.	Black & Yellow	Ignition Switch to Neutral Start Switch
11.	Black & Yellow	Engine Oil Press. Sender to Engine Oil Press. Warning Light
12.	Yellow	Voltage Regulator to Battery Warning Light
13.	Red & Blue	Engine Temp. Sender to Test Switch
14.	Red	Converter Temp. Sender to Converter Temp. Warning Light
15.	Red & Blue	Voltage Regulator to Ground
16.	Red & Blue	10 Amp. Circuit Breaker to Back-Up Lights (Via Ref. No. 58)
17.	Red & Blue	Thermo Start Switch to Thermo Start
18.	Blue	Engine Oil Press. Warning Light to Parking Brake Warning Light
19.	Red & Yellow	Parking Brake Limit Switch to Parking Brake Warning Light
20.	Red & Yellow	Brake Air Press. Sender to Brake Air Press. Warning Light
21.	Green & Red	Brake Air Press. Warning Light to Engine Temp. Warning Light
22.	Red & Green	Converter Temp. Warning Light to Brake Air Press. Warning Light
23.	White & Red	Engine Temp. Warning Light to Engine Oil Press. Warning Light
24.	Red & Blue	Engine Temp. Warning Light to Test Switch
25.	Yellow & Black	1 Amp. Circuit Breaker to Battery Warning Light
26.	Brown	Battery Warning Light to Converter Temp. Warning Light
27.	White & Blue	10 Amp. Circuit Breaker to Back-Up Indicator Light
28.	Red & Black	Back-Up Indicator Light to Ground
29.	White & Red	Test Switch to Ground (Via Ref. No. 28)
30.	Yellow & Red	10 Amp. Circuit Breaker to Dimmer Switch
31.	Red & Black	Light Switch to 10 Amp. Circuit Breaker
32.	Green	Light Switch to 5 Amp. Circuit Breaker
33.	Green & White	5 Amp. Circuit Breaker to 1 Amp. Circuit Breaker
34.	Light Green	1 Amp. Circuit Breaker to Light Switch
35.	Light Green	Light Switch to 10 Amp. Circuit Breaker
36.	Black & White	Stop Light Switch to 1 Amp. Circuit Breaker
37.	Black & White	1 Amp. Circuit Breaker to Solenoid Valve



COLOR CODE REFERENCE CHART FOR USE WITH TS-14172

Ref. No.	Color	Color Code
38.	Black & White	Brake Air Press. Sender to Ground
39.	Black & White	Parking Brake Limit Switch to Ground
40.	Black & White	Ignition Switch to 5 Amp. Fuse to Ground
41.	Yellow & Green	Test Switch to Converter Temp. Warning Light
42.	Black & White	Buzzer to 6 Warning Lights
43.	Brown	L.H. Headlamp to R.H. Headlamp
44.	Green & White	L.H. Headlamp to R.H. Headlamp
45.	Blue	Bucket Leveler Limit Switch to Ground
46.	Yellow & Red	Horn Relay to Horn
47.	Red & White	Alternator to Ground
48.	Red #10	Alternator to Voltage Regulator
49.	Green	Alternator to Voltage Regulator
50.	White #10	Alternator to Voltage Regulator
51.	Red & White #10	Voltage Regulator to Starter
52.	Red & White	Hourmeter to Ground
53.	Blue	R.H. Stop Light to L.H. Stop Light
54.	Yellow	R.H. Tail Light to L.H. Tail Light
55.	Red & White	Stop Lights to Ground
56.	Red & White	Back-Up Lights to Ground
57.	Yellow & Green	Neutral Start Switch to Starter Relay
58.	Black & Yellow	10 Amp. Circuit Breaker to Back-Up Lights (Via Ref. No. 16)
59.	White	Speedometer Sender to Speedometer
60.	Black	Speedometer Sender to Ground
61.	Black	Starter Relay to Starter Solenoid
62.	Black	Starter Relay to Starter Solenoid

45 B Perkins

A — Back-Up Lights	P — Light Switch	EE — Batteries
B — Stop & Tail Lights	Q — Brake Air Press. Sender	FF — Bucket Leveler Limit Switch
C — Engine Temp. Sender	R — Ignition Switch	GG — Horn Relay
D — Alternator	S — Thermo Start Switch	HH — Horn
E — Thermo Start	T — 1 Amp. Circuit Breaker	JJ — Solenoid Valve
F — Converter Temp. Sender	U — 1 Amp. Circuit Breaker	KK — 5 Amp. Fuse
G — Voltage Regulator	V — 5 Amp. Circuit Breaker	LL — Neutral Start Switch
H — Parking Brake Limit Switch	W — 10 Amp. Circuit Breaker	MM — Hourmeter
I — Engine Oil Press. Warning Light	X — 10 Amp. Circuit Breaker	NN — Engine Oil Press. Sender
J — Brake Air Press. Warning Light	Y — Test Switch	OO — Starter Solenoid
K — Battery Warning Light	Z — Converter Temp. Warning Light	PP — Starter
L — Stop Light Switch	AA — Engine Temp. Warning Light	QQ — Speedometer
M — Horn Switch	BB — Parking Brake Warning Light	RR — Speedometer Sender
N — Back-Up Indicator Light	CC — Buzzer	SS — Starter Relay
O — Dimmer Switch	DD — Headlamps	

