

**APE**

**4BBB**

AMERICAN BOSCH DIVISION

AMERICAN  
BOSCH  
ARMA  
CORPORATION

SPRINGFIELD 7, MASS., U. S. A.

*Supersedes Manual Pages D133/1500  
thru D133/1503 October, 1954*

# AMERICAN BOSCH FUEL INJECTION PUMP



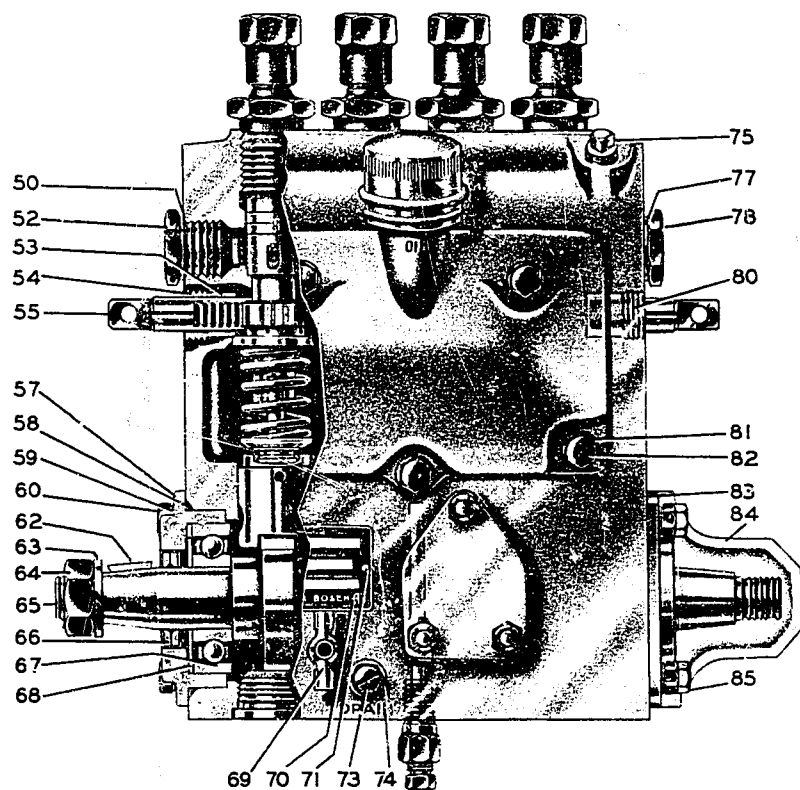
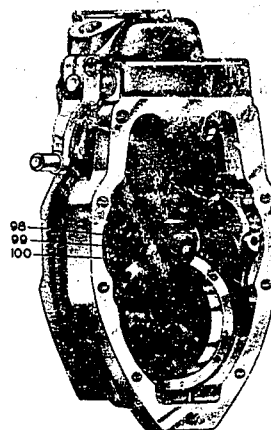
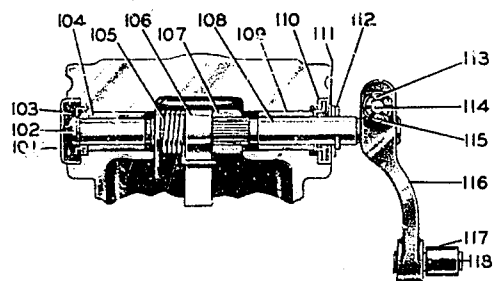
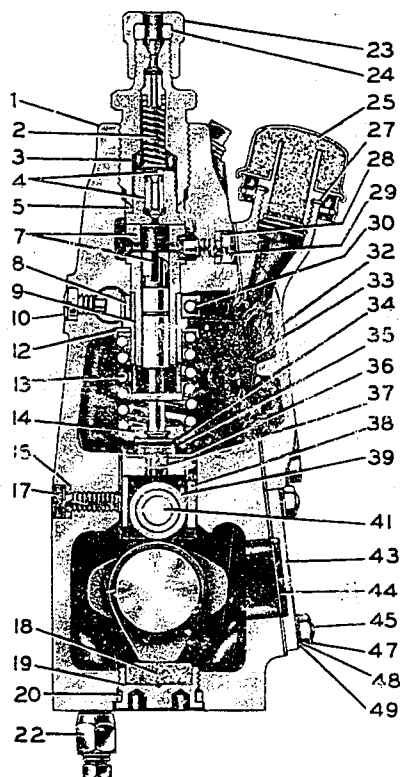
TYPE APE 4BB 100-130 Q 300/3  
400/3

## SERVICE PARTS LIST

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Illustration Number	Part Number	Quantity Used	Description of Parts
1	HG 76720A	1	HOUSING ASSEMBLY, pump — includes parts 45 and 53
2	WSF 2141A1X	4	SPRING, delivery valve — for pumps having 10 mm to 11 mm diameter plungers
2	WSF 2056A2X	4	SPRING, delivery valve — for pumps having 12 mm to 13 mm diameter plungers
3	HP 76203A	4	HOLDER ASSEMBLY — delivery valve — for pumps having 10 mm to 11 mm diameter plungers — torque 85 to 90 foot pounds
3	HP 76259A	4	HOLDER ASSEMBLY — delivery valve — for pumps having 12 mm to 13 mm diameter plungers — torque 85 to 90 foot pounds
4	VA 76145A	4	VALVE ASSEMBLY, delivery — for pumps having 10 mm to 11 mm diameter plungers
4	VA 76148A	4	VALVE ASSEMBLY, delivery — for pumps having 12 mm to 13 mm diameter plungers
5	GA 76212	4	GASKET, delivery valve holder
7	BC 76139-4A	4	PLUNGER AND BARREL ASSEMBLY, 10 mm diameter plunger
7	BC 76139-1A	4	PLUNGER AND BARREL ASSEMBLY, 11 mm diameter plunger
7	BC 76139-2A	4	PLUNGER AND BARREL ASSEMBLY, 12 mm diameter plunger
7	BC 76139-3A	4	PLUNGER AND BARREL ASSEMBLY, 13 mm diameter plunger
8	GE 764	4	GEAR, segment — control
9	SV 7625	4	SLEEVE, control
10	WSR 2196/1X	1	SCREW, stop — control rack
12	GU 7654	4	SEAT, plunger spring — upper
13	SP 7656	4	SPRING, plunger
14	GU 7692	4	SEAT, plunger spring — lower
15	GA 7611	4	GASKET, guide screw — tappet
17	SC 76124	4	SCREW, guide — tappet
18	PPT 22/1X	4	WIPER, felt
19	PG 7644	4	PLUG, closing — base hole
20	GA 76214	4	GASKET, closing plug — base hole
22	FI 7671A	1	FITTING, overflow
23	NT 7639	4	NUT, union — delivery
24	WA 7625	4	WASHER, union nut — delivery
25	CV 76119A	1	CAP, breather
27	GA 79106	1	GASKET, breather cap
28	GA 7611	4	GASKET, locating screw — barrel
29	SC 76125	4	SCREW, locating — barrel
30	SC 76189	4	SCREW, clamping — control gear — torque 30 to 35 inch pounds
32	CV 76225 — 1	1	COVER, inspection
33	GA 76216	1	GASKET, inspection cover
34	TP 7644A	4	TAPPET ASSEMBLY, includes parts 35 to 41 — floating pin — (See Note)
35	KN 7610	1	KNOB, tappet
36	SR 7610-1	one	SPACER, timing — .050 inches thick
36	SR 7610-2		SPACER, timing — .054 inches thick
36	SR 7610-3	of	SPACER, timing — .058 inches thick
36	SR 7610-4		SPACER, timing — .062 inches thick
36	SR 7610-5	either	SPACER, timing — .066 inches thick
37	RG 7618	1	RING, snap
38	GU 7656A	1	SHELL, tappet — use with TP 7640A
38	GU 76117A	1	SHELL, tappet — use with TP 7644A
39	RL 768A	1	ROLLER, with bushing — tappet
41	PN 7648	1	PIN, tappet — floating — use with TP 7644A
41	PN 7625	1	PIN, tappet — fixed — use with TP 7640A
43	CV 7620C	1	COVER, bore — supply pump
44	GA 76123	1	GASKET, cover — supply pump
45	SD 7610	3	STUD, mounting — supply pump
47	NT 1159	3	NUT, fastening — supply pump
48	WA 6-8BL	3	WASHER, lock — supply pump
49	WA 1143	3	WASHER, plain — supply pump
50	WMR 2041/5X	1	GASKET, closing plug — sump
52	SC 7632	1	PLUG, closing — sump
53	WMB 2157/2X	2	BUSHING, control rack — inner
54	PMB 15/1X	1	BUSHING, control rack — outer
55	PZR 49/3X	1	RACK, control
57	PL 7677-1	1	PLATE, end
58	GA 76211	2	GASKET, end plate
59	WA 22-8BL	8	WASHER, lock — fastening screw — end plate
60	SC 1140-1	8	SCREW, fastening — end plate — torque to 95 to 100 inch pounds
62	NEE 6/3X	1	KEY, Woodruff — camshaft
63	WA 6-24	1	WASHER, lock — camshaft
64	WMU 2132/1X	1	NUT, hexagon — camshaft
65	SH 7659	1	CAMSHAFT
66	PK 7617	2	SEAL, oil
67	BB 1035	2	BEARING, ball

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SPRINGFIELD 7, MASS., U S A

Illustration Number	Part Number	Quantity Used	Description of Parts
68	SR 7611-1	as required	WASHER, adjusting — camshaft .008 inches thick
68	SR 7611-2	as required	WASHER, adjusting — camshaft .012 inches thick
68	SR 7611-3	as required	WASHER, adjusting — camshaft .016 inches thick
68	SR 7611-4	as required	WASHER, adjusting — camshaft .004 inches thick
68	SR 7611-5	as required	WASHER, adjusting — camshaft .006 inches thick
69	FI 765	1	PETCOCK, lube oil — overflow
70	NP 7676	1	PLATE, name
71	SC 150-2	2	SCREW, drive — plate fastening
73	SC 7970	1	PLUG, drain
74	GA 7996	1	GASKET, drain plug
75	PG 7617	2	PLUG, pipe
77	WMR 2041/5X	1	GASKET, closing plug — sump
78	SC 7632	1	PLUG, closing — sump
80	PMB 15/1X	1	BUSHING, control rack — outer
81	WA 22-10BL	5	WASHER, lock — fastening screw — inspection cover
82	SC 76123	5	SCREW, fastening — inspection cover — torque 95 to 100 inch pounds
83	PL 7677-1	1	PLATE, end
84	CV 76228	1	COVER, protection — camshaft (this part requires a special order)
85	SC 1110-1	4	SCREW, fastening — protection cover (used when part 84 is used)

NOTE: When the governor mounting flange is integral with the pump housing incorporating the shut-off operating lever (116), it is located at either the right or left hand side when facing the governor end of the pump and the part numbers are included in parts list variation. Whether operating lever is located at right or left side, parts 105, 106 and 107 remain in position shown.

NOTE TO ILLUSTRATION 34: When servicing of this type pump requires replacement of the tappet assemblies, incorporate the tappet with floating pin (TP 7644A), unless the individual pump parts list specifies the tappet assembly with the fixed pin (TP 7640A). If the tappet assembly incorporates a fixed pin and a replacement pin is required, use Tappet pin PN7625.

These Pages Supersede Manual Pages D 133/1504 to D 133/1506  
Issued September, 1950

APE 4BB 110Q 2074A — Buda 5<sup>5</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>" — Model 4-DC-645

**2074A**

APE 4BB 110Q 2074B — Buda 5<sup>5</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>" — Model 4-DC-645

**2074B**

Drive End: L.H. Side — Pump Rotates Anti-clockwise — Firing Order: 1-3-4-2  
Timed for Port Opening — Camshaft Notch: R.H. Side

Illustration Number	Part Number	Quantity Used	Description of Part
1	HG 76810A	1	HOUSING ASSEMBLY, Pump — includes parts 45 and 53
2	SP 7698	4	SPRING, delivery valve
**	HP 76207A	4	HOLDER, delivery valve — angular — consists of parts 3, **a, **b and **c (14 x 1.5 mm thread for Ermeto)
3	HP 76205A	1	HOLDER, delivery valve
**a	FI 7680	1	UNION, angular fuel discharge
**b	WMR 2118/4X	2	GASKET, angular fuel discharge union
**c	WMU 2153/2X	1	NUT, angular union retaining
4	VA 76116A	4	VALVE ASSEMBLY, delivery
7	BC 76141-1A	4	PLUNGER AND BARREL ASSEMBLY, 11 mm diameter plunger
22	PG 1041	1	PLUG, pipe
23			Not furnished by American Bosch
24			Not furnished by American Bosch
34	TP 7640A	4	TAPPET ASSEMBLY, includes parts 35 to 41 and **y
39	RL 764	1	ROLLER, tappet
**y	BG 7655	1	BUSHING, steel, tappet
43	SPA 22B 1323C	1	PUMP ASSEMBLY, supply — for parts see Fuel Supply Pump Section
52	SC 7680	1	PLUG, fuel inlet
54	PMB 15/2X	1	BUSHING, control rack
75	VA 7928A	1	VALVE ASSEMBLY, overflow — right hand side — for parts see Safety Valve Section
**	PMK 8/1X	1	COVER, control rack protection
**	WMR 2041/409X	1	GASKET, protection cover
**	ZKG 12A3	1	COUPLING ASSEMBLY — for parts see Coupling Section

Omit illustrated part 49

CALIBRATION: Set at 600 RPM and control rack position of 10.0 mm for 55-57 cc per 500 strokes. Check at 225 RPM and control rack position of 7.5 mm for 14.5-16.5 cc per 500 strokes.

Use ADN 6S 2 nozzle. Set opening pressure at 2500 lbs./sq. in.

FOR ALL OTHER PARTS SEE MANUAL PAGES D133/1502 AND D133/1503

APE 4BB 110Q 2075A — Buda 5<sup>5</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>" — Model 4-DC-645

**2075A**

APE 4BB 110Q 2075B — Buda 5<sup>5</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>" — Model 4-DC-645

**2075B**

Drive End: L.H. Side — Pump Rotates Anti-Clockwise — Firing Order: 1-3-4-2  
Timed for Port Opening — Camshaft Notch: R.H. Side

Illustration Number	Part Number	Quantity Used	Description of Part
1	HG 76825A	1	HOUSING ASSEMBLY, consisting of pump housing (this part not supplied separately) and parts 45, 53, 98, 99 and 100
2	SP 7698	4	SPRING, delivery valve
**	HP 76207A	4	HOLDER, delivery valve — angular — consists of parts 3, **a, **b and **c (14 x 1.5 mm thread for Ermeto)
3	HP 76205A	1	HOLDER, delivery valve
**a	FI 7680	1	UNION, angular fuel discharge
**b	WMR 2118/4X	2	GASKET, angular fuel discharge union
**c	WMU 2153/2X	1	NUT, angular union retaining
4	VA 76116A	4	VALVE ASSEMBLY, delivery
7	BC 76141-1A	4	PLUNGER AND BARREL ASSEMBLY — 11 mm diameter plunger
22	PG 1041	1	PLUG, pipe
23			Not furnished by American Bosch
24			Not furnished by American Bosch
32	CV 76244-1	1	COVER, inspection
34	TP 7640A	4	TAPPET ASSEMBLY — includes parts 35 to 41 and **y
39	RL 764	1	ROLLER, tappet
**y	BG 7655	1	BUSHING, steel — tappet

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\*\*Not Illustrated

**2075A - Cont'd -**  
**2075B**

Illustration Number	Part Number	Quantity Used	Description of Part
43	SPA 22B 1823C	1	PUMP ASSEMBLY, supply — for parts see Fuel Supply Pump Section
52	SC 7680	1	PLUG, fuel inlet
54	PMB 15/2X	1	BUSHING, control rack
55	RD 76159	1	RACK, control
58	GA 76218	1	GASKET, end plate — right hand side
59	WA 1551	4	WASHER, lock — end plate fastening screw — right hand side
60	SC 1555	4	SCREW, fastening end plate — right hand side
65	SH 7691	1	CAMSHAFT
66	PK 765	1	SEAL, oil — right hand side
75	VA 7928A	1	VALVE ASSEMBLY, overflow — right hand side — for parts see Safety Valve Section
83	PL 7676-1	1	PLATE, end
98	BA 792A	1	BAFFLE, oil
99	SC 156-6CA	2	SCREW, fastening — baffle
100	GA 79111	1	GASKET, baffle — oil
101	PG 797	1	PLUG, closing
102	WMR 2090/5X	1	RING, snap
103	WA 1241	1	WASHER, snap ring
104	BG 7925	1	BUSHING, lever shaft — shut-off
105	SP 7956	1	SPRING, stop lever
106	LE 7983	1	LEVER, stop — inner
107	SR 7917	1	SPACER
108	SH 7957	1	SHAFT, lever — shut-off
109	BG 7926	1	BUSHING, lever shaft — shut-off
110	PK 795	1	SEAL, oil
111	WA 1303	1	WASHER
112	PN 3-20 BL	1	PIN, cotter
113	NT 7919	1	NUT, castle
114	SC 7961	1	SCREW, clamping
115	PN 2-20 BL	1	PIN, cotter
116	LE 7951A	1	LEVER ASSEMBLY, shut-off — consists of parts 113 to 118
116	LE 7979A	1	LEVER, operating — shut-off — includes parts 117 and 118
117	PN 7947	1	PIN, Bowden wire
118	SC 326-3 CA	1	SCREW, fastening — Bowden wire
**	NP 7656	1	PLATE, caution
**	SC 150-2	2	SCREW, fastening
**	PMK 8/1X	1	COVER, control rack protection
**	WA 7636	1	GASKET, control rack protection cover
**	ZKG 12A1	1	COUPLING ASSEMBLY — for parts see Coupling Section
**	GVB . . . / . . . C2078B	1	GOVERNOR ASSEMBLY — right hand side — for parts see Governor Section

Omit illustrated parts 49, 77 and 78

**CALIBRATION:** Set at 600 RPM and control rack position of 10.0 mm for 55-57 cc per 500 strokes. Check at 225 RPM and control rack position of 7.5 mm for 14.5-16.5 cc per 500 strokes.

Use ADN 6S 2 nozzle. Set opening pressure at 2500 lbs/sq. in.

FOR ALL OTHER PARTS SEE MANUAL PAGES D133/1502 AND D133/1503.

**2287A** APE 4BB 120Q 2287A — Hercules 6 $\frac{1}{4}$ " x 6" — Model DNX-V8

**2287B** APE 4BB 120Q 2287B — Hercules 6 $\frac{1}{4}$ " x 6" — Model DNX-V8

**2287C** APE 4BB 120Q 2287C — Hercules 6 $\frac{1}{4}$ " x 6" — Model DNX-V8

Drive End: L.H. Side — Pump Rotates Clockwise — Firing Order: 1-2-4-3  
 Timed for Port Closing — Camshaft Notch: R.H. Side

Illustration Number	Part Number	Quantity Used	Description of Part
1	HG 761081A	1	HOUSING ASSEMBLY, pump — includes parts 45 and 53
2	WSF 2141A1X	4	SPRING, delivery valve
3	HP 76226A	4	HOLDER ASSEMBLY, delivery valve — ( $\frac{9}{16}$ " thread for Ermeto fitting)

- continued -

\*\*Not Illustrated



- Cont'd - 2287A to 2287C

Illustration Number	Part Number	Quantity Used	Description of Part
4	VA 76116A	4	VALVE ASSEMBLY, delivery
22	FI 76111A	1	FITTING, overflow
23			Not furnished by American Bosch
24			Not furnished by American Bosch
43	SPA 22B 1823C	1	PUMP ASSEMBLY, supply — for parts see Fuel Supply Pump Section
55	RD 76192	1	RACK, control
73	PG 1041	1	PLUG, pipe
75	VA 7928A	1	VALVE ASSEMBLY, overflow — left hand side — for parts see Safety Valve Section
75	FI 7621	1	FITTING, bleeder — right hand side
78	WRV 2122/1X	1	NUT, union — fuel inlet
**	NRV 11/1X	1	SCREW, fuel inlet union — retaining
**	NRV 3A1X	1	UNION, angular — fuel inlet
**	WMR 2041/7X	2	GASKET, fuel inlet
80	PMB 11/91Z	1	STOP ASSEMBLY, control rack — for parts see Governor Section
**	WMR 2041/409X	1	GASKET, stop assembly
**	WMU 2132/1X	1	NUT, hexagon — camshaft — right hand side
**	WA 6-24	1	WASHER, lock — camshaft — right hand side
**	NKE 6/3X	1	KEY, Woodruff — camshaft — right hand side

Omit illustrated parts 49, 50 and 52

CALIBRATION: Set at 1000 RPM and control rack position of 13.5 mm for 60 cc to 65 cc per 300 strokes. Check at 200 RPM and control rack position of 9.5 mm for 20 cc to 22 cc per 500 strokes. Use ADN 6S 2 nozzle. Set opening pressure at 2500 lbs./sq. in.

FOR ALL OTHER PARTS SEE MANUAL PAGES D133/1502 AND D133/1503

APE 4BB 120Q 3135A

3135A

Drive End: R.H. Side — Pump Rotates Clockwise — Firing Order: 1-2-4-3  
 Timed for Port Closing — Camshaft Notch: L.H. Side

Illustration Number	Part Number	Quantity Used	Description of Part
4	VA 76148A	4	VALVE ASSEMBLY, delivery
7	BC 76139-2A	4	PLUNGER AND BARREL ASSEMBLY — with 12 mm diameter plunger
43	SPA 22B 1823C	1	SUPPLY PUMP ASSEMBLY — for parts see Supply Pump Section
54	PMB 11/91Z	1	STOP ASSEMBLY — control rack — left hand side — includes parts **a to **d
**a	PMB 11/1X	1	BUSHING, stop assembly
**b	WSR 2209/1X	1	SCREW, adjusting — stop assembly
**c	WMS 2153/1X	1	DISC, sealing — stop assembly
**d	PN 4-36	1	PIN, cotter — stop assembly
75	VA 7928A	1	OVERFLOW VALVE ASSEMBLY — for parts see Safety Valve Section
84	CV 76228	1	COVER, protection — camshaft
85	SC 1110-1	4	SCREW, fastening — camshaft protection cover
**	ZKG 12A1	1	COUPLING ASSEMBLY — for parts see Coupling Section

CALIBRATION: Set at 200 RPM and control rack position of 9 mm for 22 cc to 24 cc per 500 strokes. Check at 600 RPM and control rack position of 12 mm for 64.5 cc to 69 cc per 400 strokes.

FOR ALL OTHER PARTS SEE MANUAL PAGES D133/1502 AND D133/1503

\*\*Not illustrated