

A detailed line drawing of a Jake Brake engine retarder, showing various components like the housing, mounting brackets, and internal parts. The words "JAKE BRAKE" are visible on one of the components.

Models 310A, 317D & 317E

**Parts information for Models 310, C317, C317A,
317B and 317C is also included in this manual.**

The Model 310A Jake Brake® engine retarder replaces the Model 310 as the current production model. The Model 317D Jake Brake engine retarder replaces the Models C317, C317A and 317B as the current production model. The Model 317E Jake Brake engine retarder replaces the Model 317C as the current production model.

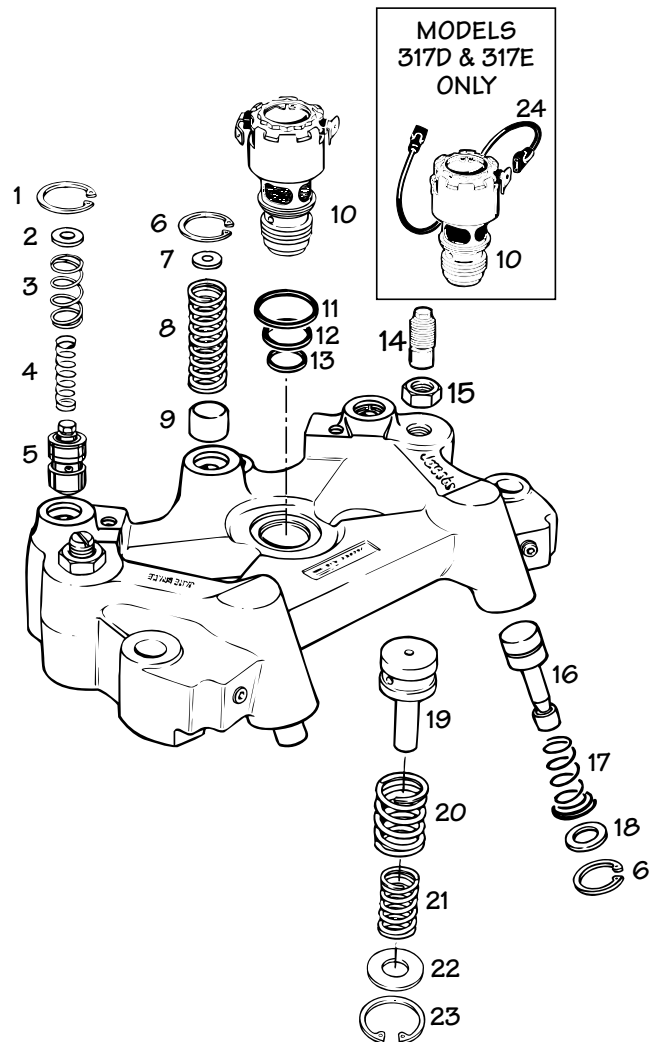
Information in this manual was current at the time of printing and is subject to change without notice or liability. Jacobs service literature should be consulted for additional applications and updated information. Application and adjustment information is contained in the Installation Manual, P/N 019642, and Application Guide, P/N 020995.

PARTS MANUAL

Model 310A, 317D & 317E Housing Assemblies

Engine Brake Model	Packaged Housing Part No.	Description
310A	019499	Housing assembly, 12 VDC, D/L
310A	021196	Housing assembly, 24 VDC, D/L
317D	020099	Housing assembly, 12 VDC, S/L
317E	020118	Housing assembly, 12 VDC, S/L

Illus. No.	Part No.	Part Name	Quantity/ Housing
1	015561	Retaining ring	2
2	014928	Control valve cover	2
3	011434	Control valve stop spring	2
4	011823	Control valve inner spring	2
5	011283	Control valve	2
6	012991	Retaining ring	3
7	016505	Washer	1
8	012990	Spring	1
9	012983	Accumulator piston	1
10	019650	Solenoid valve assembly, 12V D/L (with P/N 019499)	1
10	016440	Solenoid valve assembly, 12 V S/L (with P/N's 020099 and 020118)	1
10	021253	Solenoid valve assy., 24 V D/L (with P/N 021196)	1
11	001081	Upper seal ring	1
12	001082	Center seal ring	1
13	001083	Lower seal ring	1
14	020477	D-Lash™ assembly (310A & 317E only)	2
14	020631	D-Lash™ assembly (317D only)	2
15	011395	Hex jam nut	2
16	019264	Master piston assembly	2
17	019353	Master piston spring	2
18	018144	Master piston retainer washer	2
19	014664	Slave piston	2
20	014716	Slave piston outer spring	2
21	014715	Slave piston inner spring	2
22	013500	Spring retainer	2
23	011284	Retaining ring	2
24	017368	Solenoid harness (317D/E only)	1

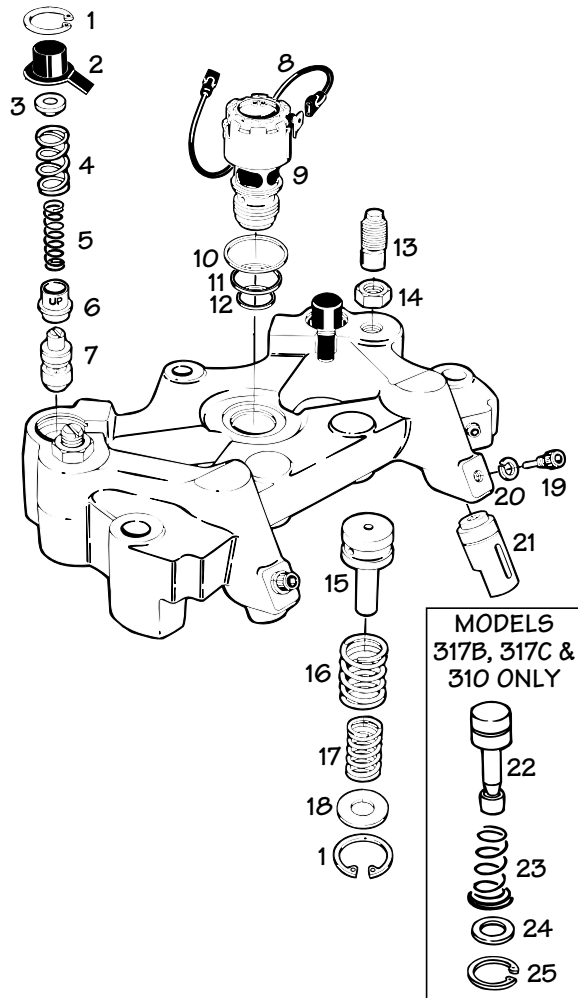


S/L Single Lead

D/L Dual Lead (Note: Dual-lead solenoid harness is furnished on the 3176B engine with the Model 310A engine brake.)

NOTE: Early production slave pistons, P/N 014664, have a recess on the top of the slave piston. Early and current production parts are interchangeable. There is no change to the slave piston adjustment.

Model 310, C317, C317A, 317B & 317C Housing Assemblies



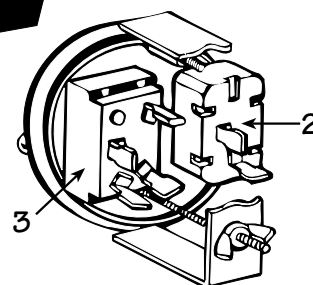
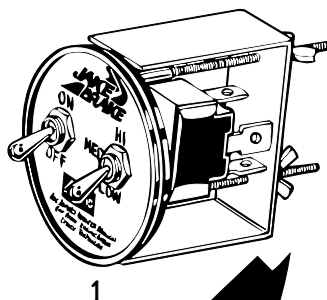
Illus. No.	Part No.	Part Name	Quantity/ Housing
1	011284	Retaining ring	4
2	011252	Control valve cover	2
3	018697	Control valve cover insert	2
4	019190	Control valve stop spring	2
5	019504	Control valve inner spring	2
6	011251	Control valve collar	2
7	018434	Control valve	2
8	018346	Solenoid harness	1
9	016440	Solenoid valve assembly, S/L (C317, C317A, 317B, 317C only)	1
NI	019650	Solenoid valve assembly, D/L (310 only)	1
10	001081	Upper seal ring	1
11	001082	Center seal ring	1
12	001083	Lower seal ring	1
13	020631	D-Lash™ assembly (C317, C317A, 317B only)	2
13	020477	D-Lash™ assembly (310 & 317C only)	2
14	011395	Hex jam nut	2
15	014664	Slave piston	2
16	014716	Slave piston outer spring	2
17	014715	Slave piston inner spring	2
18	013500	Spring retainer	2
For Model C317 Only (Replacement Parts)			
19	015814	Anti-rotation pin assembly	2
20	006868	Lock washer	2
21	017381	Master piston assembly	2
For Model C317A Only			
NI	020557	Master Piston Upgrade Kit	
For Models 310, 317B & 317C Only (Replacement Parts)			
22	019264	Master piston assembly	2
23	019353	Master piston spring	2
24	018144	Master piston retainer washer	2
25	012991	Master piston retainer ring	2

Control Groups (cont.)

Illus. No.	Part No.	Part Name	Quantity/Engine
------------	----------	-----------	-----------------

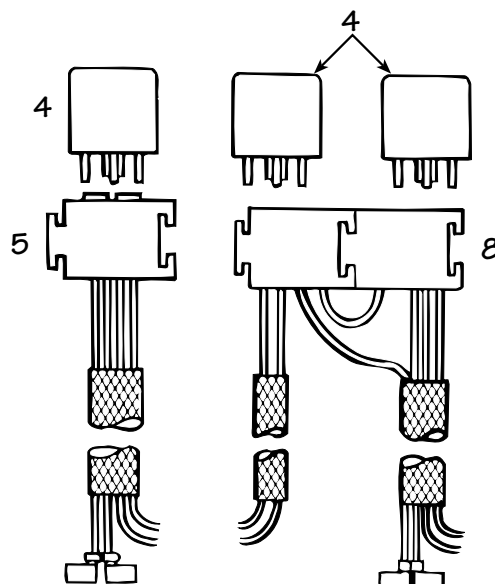
**P/N 018428, Relay Group (w/o ABS)
'91 & later Model Year Engines**

1	017328	3-mode switch group	1
2	002957	• ON/OFF toggle switch	1
3	001304	• 3-position toggle switch	1
4	016933	Relay	1
5	017593	Pre-wired relay base, hi active	1
6	017594	Power lead harness	1
7	018355	Engine to select switch wire harness (bullet)	1



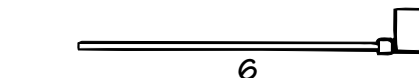
**P/N 018427, Relay Group (with ABS)
'91/'92 Model Year Engines**

1	017328	3-mode switch group	1
2	002957	• ON/OFF toggle switch	1
3	001304	• 3-position toggle switch	1
4	016933	Relay	2
6	017594	Power lead harness	1
7	018355	Engine to select switch wire harness (bullet)	1
8	017595	Pre-wired relay base, hi active	1
NI	016944	Hex bolt	1



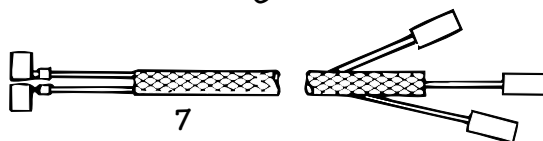
**P/N 021816, Harness Adapter
Female spade to male bullet group**

Required for Relay Groups (P/Ns 018428 and 018427) when used on older 317 models with spade terminals (P/N 002299) on the spacer assembly



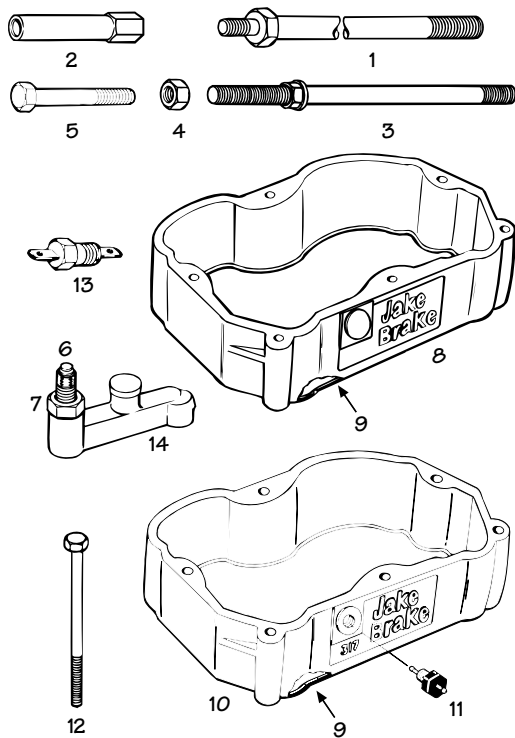
**P/N 020280, Cab Control Group
3176B Engine (Model 310A)**

1	019407	Switch group	1
2	019915	• ON/OFF toggle switch	1
3	019916	• 3-position toggle switch	1
NI	020244	Harness group	1
NI	020357	Control group instructions	1



ABS = Anti-lock Braking System

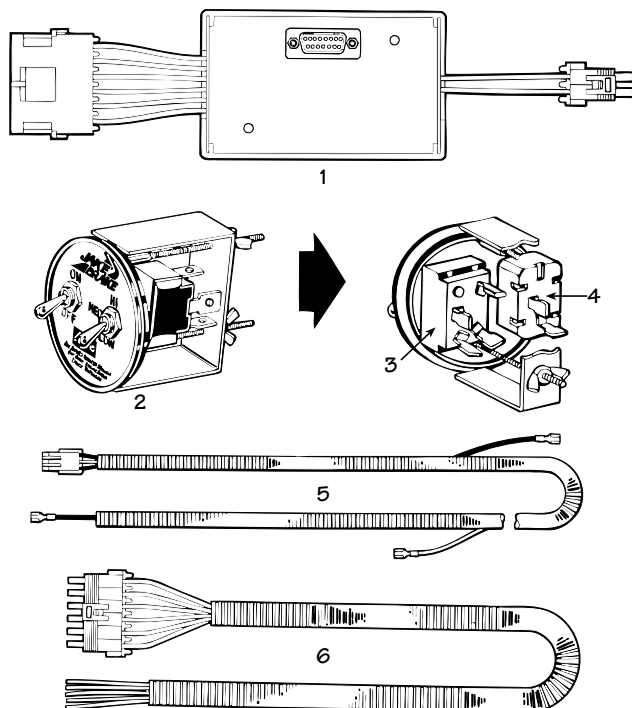
Attaching Parts Groups



Illus. No.	Part No.	Part Name	Quantity/ Engine
Attaching Parts Group			
1	014677	Cylinder head bolt	3
2	014678	Spacer	3
3	016941	Brake mounting stud assembly	6
4	016553	Hex nut, M-12 x 1.75	6
5	014801	Hex-head bolt	3
6	014676	Screw and pin assembly	6
7	014721	Lock nut	6
Spacer Group (310 Series only)			
8	019028	• Spacer assembly	3
9	015906	- Seal (one per group)	3
Spacer Group (317 Series only)			
10	018167	• Spacer assembly	3
9	015906	- Seal	3
11	017366	- Electrical connector (bullet)	3
12	014799	• Capscrew, 6 x 100 mm	18
NI	018105	• Adaptor harness, male blade	3
Replacement Parts Only, 317			
13	002299	Terminal leadout assembly (spade)	3
Not Sold Separately -- Source through Caterpillar Only			
14	614584	Bridge, exhaust valve	6
Order through Caterpillar: part number listed			

Control Groups

NOTE: CONTROLS INSTALLED BY VEHICLE OEMs MAY BE DIFFERENT THAN CONTROLS SUPPLIED BY JACOBS.

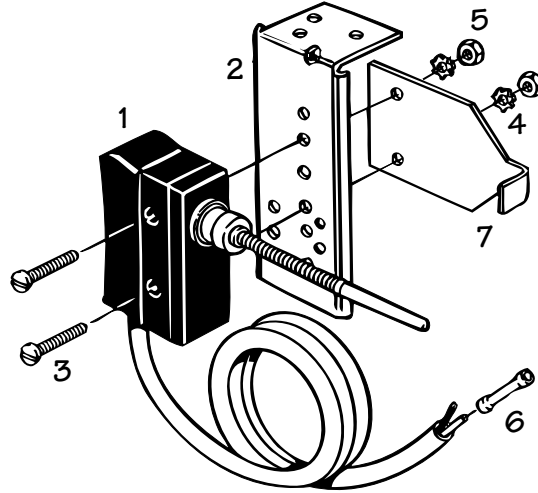


Illus. No.	Part No.	Part Name	Quantity
P/N 016587, PWM Electronic Control			
Pre-91 Model Year Engines			
(S/N 2YG, 7LG07499 and below)			
1	017258	Control module	1
2	017328	3-mode switch group	1
3	002957	• ON/OFF toggle switch	1
4	001304	• 3-position toggle switch	1
5	015683	Retarder harness	1
6	015684	Module harness	1
NI	017263	Harness	1
Miscellaneous Replacement Parts (Pre-91)			
NI	015641	Dash Module	1
NI	016306	Wire harness	1

NI = NOT ILLUSTRATED

Control Groups (cont.)

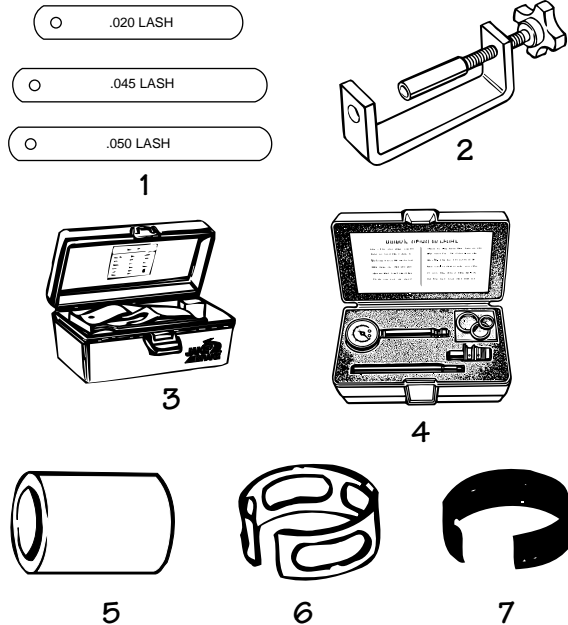
Illus. No.	Part No.	Part Name	Quantity/Group
P/N 012261, Clutch Switch Group			
Pre-91 Model Year Engines			
(used on vehicles without cruise control)			
1	012246	Clutch switch	1
2	012269	Switch mount bracket	1
3	005377	Pan head screw	2
4	005378	Lock washer	2
5	003306	Hex nut	2
6	013708	Butt splice	2
NI	013674	Instructions	1
7	012262	Overtravel bracket*	1



* Optional item not included in group

Service Tools and Parts

Illus. No.	Part No.	Part Name
1	018424	Feeler gage, 0.020" (0.51 mm)
1	017902	Feeler gage, 0.050" (1.27 mm)
1	016896	Feeler gage, 0.045" (1.14 mm)
2	017397	Slave piston removal tool
3	017465	Tool kit for Jake Brake®, all Caterpillar models
3	017469	Tool kit for all Jake Brake models
4	018280	Oil pressure test kit
5	017535	Support tool
6	001283	Solenoid screen retainer
7	001282	Solenoid screen
NI	019764	Bridge setting gage
NI	019502	Tune-up kit
NI	020557	MP Update kit (310A)
NI	019510	MP Update kit (317)
NI	019505	317/317A Upgrade kit
NI	021406	D-Lash™ assembly (6-pack) Models C317, C317A, 317B & 317D
NI	021492	D-Lash™ assembly (6-pack) Models 317C, 317E & 310A



Jacobs®

Jacobs® and Jake Brake® are registered trademarks and D-Lash™ is a trademark of
Jacobs Vehicle Equipment Company
22 East Dudley Town Road
Bloomfield CT 06002