

# Brake Control Systems

Tekonsha's 9030 & 9035 voyager brake controls feature:

- Simple four-wire hook-up makes installation fast and simple,
- Enough power for 2 to 4 and 6 to 8 brake systems,
- A green LED changes to red to indicate relative braking power,
- Compatible with ABS systems.
- Five year "No Fault" warranty.



9030

TEKONSHA 9030 AND 9035 BRAKE CONTROL	
Part #	Description
9030	Tekonsha brake control, all electric, for 2 & 4 brake systems (1 & 2 axles), Voyager
9035	Tekonsha brake control, all electric, for 6 & 8 brake systems (3 & 4 axles), Voyager XP

The 9040 and 9045 Envoy Brake Controls feature:

- Simple 4-wire hook-up and pivot mount to simplify installation.
- Compatible with ABS systems,
- Five year "No Fault" warranty.
- A green LED changes to red to indicate relative braking power,



9040

TEKONSHA 9040 AND 9045 BRAKE CONTROL	
Part #	Description
9040	Tekonsha brake control, all electric, for 2 & 4 brake systems (1 & 2 axles), Envoy
9045	Tekonsha brake control, all electric, for 6 brake systems (3 axles), Envoy XP

Tekonsha's 9055 brake control features:

- Gain control which adjusts power output to the trailer brakes,
- Easy-to-access manual override slide lever,
- LED power delivery display which shows the amount of current delivery to trailer brakes when applied.
- Five year "No Fault" warranty.



9055

TEKONSHA 9055 BRAKE CONTROL	
Part #	Description
9055	Tekonsha brake control, all electric, for 2, 4, 6 & 8 brake systems (1 to 4 axles), Sentinel

Hayes all-electronic brake controls are some of the most advanced brake controls on the market. They can be used on both domestic and imported vehicles. Features include:

- Easy installation,
- Solid state design,
- Built-in automatic circuit protection,
- Meets federal motor vehicle standards,
- The 81750 Micro Control HD Plus comes with a lifetime warranty



81725

HAYES ALL-ELECTRIC BRAKE CONTROL	
Part #	Description
81751	Hayes manual remote switch for 81750 controller
81750	Hayes brake control, all electric, for 2, 4, 6 & 8 brake systems (1 to 4 axles)
81741B	Hayes brake control, all electric, for 2 & 4 brake systems (1 & 2 axles)
81725	Hayes brake control, all electric, for 2 & 4 brake systems (1 & 2 axles)



81750



81741B

# Brake Control Systems



100400B

This unit offers either manual or automatic air actuation of electric trailer brakes.

## HAYES AIR BRAKE CONTROL

Part #	Description
100400B	Hayes brake control, for 2, 4 & 6 brake systems for air brake tow vehicles



TAP945

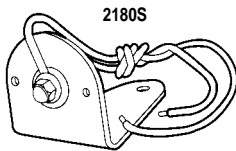
The TAP brake control is an electronic controller for 2 to 6 brake systems (1 to 3 axles). It features:

- 10 LED bar graph displays the speed and hardness of trailer brakes,
- Bar graph with fingertip output controls allows precise adjustments,
- Manual override slide switch,
- Includes mounting bracket, hardware and installation instructions,
- For use with 12-volt negative ground systems only,
- 4-year limited warranty.

## TAP ELECTRIC BRAKE CONTROL

Part #	Description
TAP945	Tap brake control, all electric, for 2, 4 & 6 brake systems (1 to 3 axles)

A pulse preventor prevents actuation of an electronic brake control by way of a 4-way flasher circuit. Use with 2030 Tekonsha brake control. Can be used with all other electronic braking devices, but it is not necessary for models 9030, 9035, 9040, 9045 or 9055.



2180S

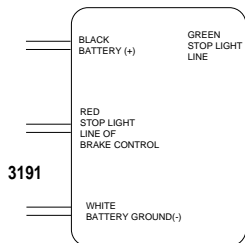
## PULSE PREVENTOR

Part #	Description
2180S	Pulse preventor, for brake control

The positive ground conversion kit from Tekonsha is required for installation of the 9030 and 9035 brake controls when vehicles have a positive ground system.

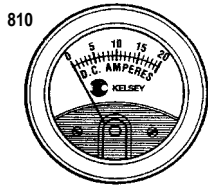
## POSITIVE GROUND CONVERSION KIT

Part #	Description
3191	12v positive ground conversion kit



3191

Our 0-20 D.C. amp electric brake ammeter from Hayes is for 2, 4 or 6 brake assemblies. It works with all electric brake controllers (manual or electronic). There is no need to cut any wires so it installs quickly.



810

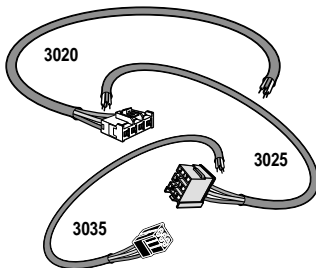
## ELECTRIC BRAKE AMMETER

Part #	Description
810	Electric brake ammeter

Simplify your brake control installation with these O.E.M. Wiring Harnesses. Designed to fit a truck's factory tow package option

## BRAKE CONTROL WIRING HARNESS

Part #	Description
3020	2' Harness for '96 - '98 Dodge Ram / '98 - '99 Dodge Durango trucks
3025	2' Harness for '99 GM trucks
3035	2' Harness for '92 - '99 Ford trucks and vans



3020

3025

3035

# Brake Control Systems

The complete brake control installation package includes wire, a circuit breaker, terminals and wire ties. Use our side-post battery adapter kit for side-mount batteries. For use with most electric brake controllers (use with negative ground systems).

BRAKE CONTROL INSTALLATION KITS	
Part #	Description
BC1	Brake control installation kit
BC1-1	Side-post battery adapter kit

BC1 kit includes:

- (10) wire ties
- (4) butt connectors
- (2) screws #8 X 1/2"
- (2) #10 blue ring connectors
- (2) ring terminals (5/16")
- (1) 20 amp breaker
- (1) quick splices
- (1) 14 gauge, 25' blue wire
- (1) 16 gauge, 3' red wire
- (1) 16 gauge, 15' blue wire
- (1) 14 gauge, 15' black wire

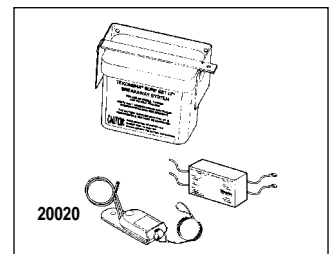
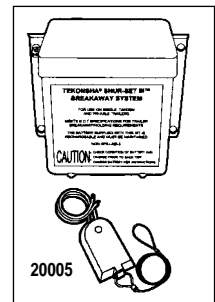


Tekonsha's Shur-Set III breakaway kits are the most advanced systems on the market today. Following are some of the unique features of the Shur-Set III breakaway kits:

- Meets or exceeds D.O.T. specifications regarding breakaway/holding requirements,
- Weather/corrosion resistant,
- Mounts on jackpost or A-frame.

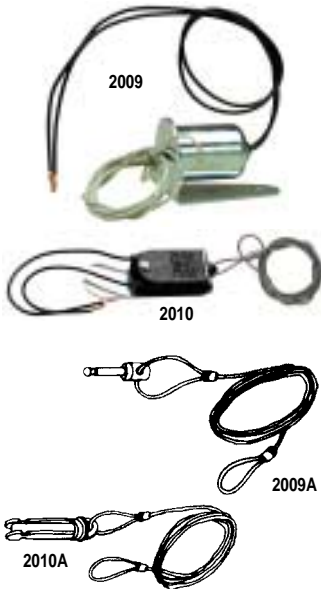


TEKONSHA BREAKAWAY KITS		
Part #	Description	Includes
2028	Breakaway kit, complete, uses 5 amp battery	Battery case with mounting bracket (part # 2018), Rechargeable battery, sealed, 12v, 5 amp (part # 2023), Nylon breakaway switch (part # 2010), Battery charger (part # 2024)
2026	Breakaway kit, w/o battery charger, uses 5 amp battery	Battery case with mounting bracket (part # 2018), Rechargeable battery, sealed, 12v, 5 amp (part # 2023), Nylon breakaway switch (part # 2010)
1028	Breakaway kit, complete, uses 4 amp battery	Battery case with mounting bracket (part # 2018), Rechargeable battery, sealed, 12v, 4 amp (part # 1023), Nylon breakaway switch (part # 2010), Battery charger (part # 1024)
1026	Breakaway kit, w/o battery charger, uses 4 amp battery	Battery case with mounting bracket (part # 2018), Rechargeable battery, sealed, 12v, 4 amp (part # 1023), Nylon breakaway switch (part # 2010)
20020	Breakaway kit, lockable complete, uses 5 amp battery	Lockable metal mounting bracket with battery case (part # 20000), Rechargeable battery, sealed, 12v, 5 amp (part # 2023), Nylon breakaway switch (part # 2010), Battery charger (part # 2024)
20010	Breakaway kit, lockable, w/o battery charger, uses 5 amp battery	Lockable metal mounting bracket with battery case (part # 20000), Rechargeable battery, sealed, 12v, 5 amp (part # 2023), Nylon breakaway switch (part # 2010)
20005	Breakaway kit, lockable, w/o battery charger, uses 5 amp battery	Lockable battery case (part # 2051), Rechargeable battery, sealed, 12v, 5 amp (part # 2023), Nylon breakaway switch (part # 2010)



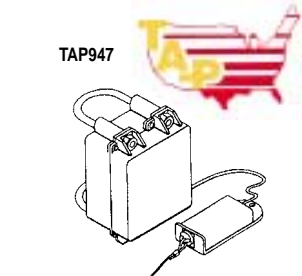
# Brake Control Systems

Breakaway switches set the trailer brakes in case of accidental trailer breakaway. The trailer brakes are applied automatically. Silver contact points remain corrosion free for positive contact.



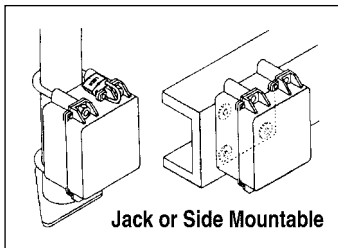
TEKONSHA BREAKAWAY SWITCHES	
Part #	Description
2009	Breakaway switch, metal with cable and pin
2010	Breakaway switch, nylon with cable and pin
2009A	Replacement cable and pin assembly, for switch 2009
2010A	Replacement cable and pin assembly, for switch 2010

TEKONSHA BREAKAWAY KIT ACCESSORIES	
Part #	Description
2018	Battery case
20000	Lockable battery case with metal bracket
2051	Lockable battery case, all Polymer
2023	Rechargeable battery, 12v, 5 amp, sealed
1023	Rechargeable battery, 12v, 4 amp, sealed
2024	Battery charger



From TAP USA Corporation, this breakaway kit is available with or without a battery charger.

TAP BREAKAWAY KITS		
Part #	Description	Includes
TAP947	Breakaway kit, complete	Lockable battery box, 12v sealed rechargeable battery, breakaway switch, battery charger
TAP946	Breakaway kit, w/o battery charger	Lockable battery box, 12v sealed rechargeable battery, breakaway switch



Atwood's brake actuators feature:

- Heavy-duty, stamped steel housing,
- 2" ball socket,
- Brake lockout lever prevents brakes from being applied while backing up, increasing maneuverability
- Light weight and compact design.

ATWOOD BRAKE ACTUATORS					
Part #	Attachment	Capacity	Tongue Weight	Zinc	Disc Brake
82543	Ball coupler, 2"	6,000 lbs.	900 lbs.		
84132	Ball coupler, 2"	6,000 lbs.	900 lbs.	•	
83000	Ball coupler, 2"	8,000 lbs.	1,000 lbs.		
83010	Ball coupler, 2"	8,000 lbs.	1,000 lbs.	•	
88740	Ball coupler, 2"	6,000 lbs.	900 lbs.		•
88370	Ball coupler, 2"	6,000 lbs.	900 lbs.	•	•



# Brake Control Systems

We believe that selection is important. We have selected four different Dico actuating systems/models for your convenience. **Note:** Designed for drum brake use.

DICO BRAKE ACTUATOR – MODEL 6						
Part #	Attachment	Capacity	Tongue Weight	Zinc Plated	Adjustable	Mounting Channel
24800	Ball coupler, 1½ – 2", multi-fit	6,000 lbs.	600 lbs.	•		•
24928	Ball coupler, 1½ – 2", multi-fit, A-frame	6,000 lbs.	600 lbs.	•		
40792	Ball coupler, 2½"	7,500 lbs.	600 lbs.	•		•
40676	Ball coupler, 2½", A-frame	7,500 lbs.	600 lbs.	•		
40455	Lunette eye, 3", A-frame	7,500 lbs.	600 lbs.	•		

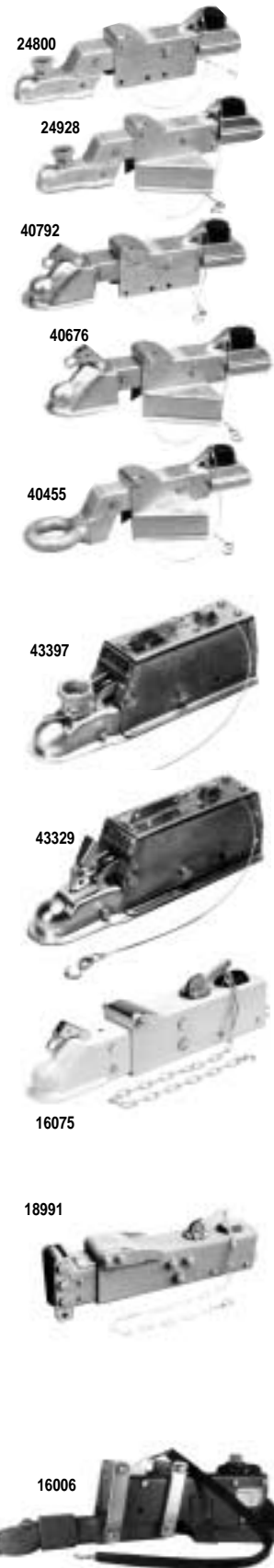
DICO BRAKE ACTUATOR – MODEL 60						
Part #	Attachment	Capacity	Tongue Weight	Zinc Plated	Adjustable	Mounting Channel
43397	Ball coupler, 1½ – 2", multi-fit, straight	6,000 lbs.	600 lbs.	•		
43329	Ball coupler, 1½ – 2", lever lock, straight	6,000 lbs.	600 lbs.	•		

DICO BRAKE ACTUATOR – MODEL 10						
Part #	Attachment	Capacity	Tongue Weight	Zinc Plated	Adjustable	Mounting Channel
42383	Ball coupler, 2½"	10,000 lbs.	800 lbs.		•	•
24776	Ball coupler, 2½"	10,000 lbs.	800 lbs.	•		•
24781	Ball coupler, 2½", with drop	10,000 lbs.	800 lbs.	•		•
16075	Ball coupler, 2½", straight	10,000 lbs.	800 lbs.			
18909	Ball coupler, 2½", straight	10,000 lbs.	800 lbs.		•	
18911	Lunette eye, 3", straight	10,000 lbs.	800 lbs.		•	
16645	Lunette eye, 3"	10,000 lbs.	800 lbs.			•
16079	Clevis channel, .750" pin, straight	10,000 lbs.	800 lbs.		•	
24046	No attachment, straight	10,000 lbs.	800 lbs.			

DICO BRAKE ACTUATOR – MODEL 20						
Part #	Attachment	Capacity	Tongue Weight	Zinc Plated	Adjustable	Mounting Channel
18898	Ball coupler, 2½", straight	12,000 lbs.	1,200 lbs.		•	
15210	Ball coupler, 2½", straight	20,000 lbs.	2,000 lbs.			
17778	Lunette eye, 3", straight	12,000 lbs.	1,200 lbs.		•	
12974	Lunette eye, 3", straight	20,000 lbs.	2,000 lbs.			
18991	Adjustable channel only	12,000 lbs.	1,200 lbs.		•	

Toledo brake actuator needs no electrical or hydraulic connections to towing vehicle and is constantly ready to deliver proportional braking.

TOLEDO BRAKE ACTUATOR				
Part #	Description	Style	Capacity	Application
16006	Brake actuator	A-frame	5,000 lbs.	Fits 2" ball
16039	Brake actuator	A-frame	6,000 lbs.	Fits 2½" ball
16015	Brake actuator	Channel, 3"	5,000 lbs.	Fits 2" ball
16062	Brake actuator	Channel, 3"	6,000 lbs.	Fits 2½" ball



# Brake Control Systems

## ATWOOD BRAKE ACTUATOR REPLACEMENT PARTS

Part #	Description
16196	Hose
85830	Replacement shock
85841	Replacement master cylinder
85852	Replacement push rod
87478	Replacement master cylinder cap kit

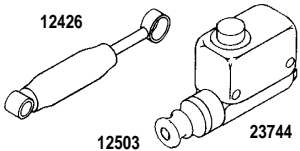
16196



## DICO BRAKE ACTUATOR REPLACEMENT PARTS

Part #	Application
12426	Replacement shock absorber for model 10
7784	Replacement shock absorber for model 20
23361	Replacement shock absorber for model 60
23744	Replacement master cylinder for model 10 and 20
12503	Replacement filler cap and gasket for model 10 and 20
23388	Replacement filler cap for model 60
40454	Replacement multi-fit coupler repair kit
43951	Replacement master cylinder for model 60
8288	Replacement front roller bolt, 5/8" X 4 3/8" X 1/2" NC for model 10 and 20
8294	Replacement rear roller bolt, 5/8" NF X 5" for model 20
8297	Replacement spacer for model 20
8388	Replacement cylinder bracket assy. for model 10, 12 and 20 actuators, right hand
8389	Replacement cylinder bracket assy. for model 10, 12 and 20 actuators, left hand

12426

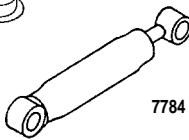


12503

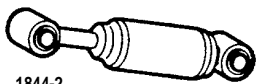
23388



23744



7784



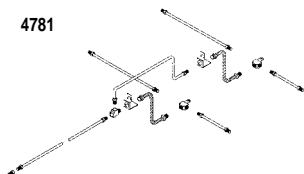
1844-2



4781-EQ



4781



## TOLEDO BRAKE ACTUATOR REPLACEMENT PARTS

Part #	Description
10614	Master cylinder kit
1844-2	Shock absorber
16500	Replacement cap
1753	Self-locking nut, 1/2" - 20
1808-1	Link
1829	Shaft
1745	Nylon bearing

## SURGE BRAKE LINE KITS

Part #	Application
4780	Single axle
4780-EQ	Single axle, Equalizer
4780-A	Single axle, Atwood
4780-A20	Single axle, Atwood 20' length
4780-SS	Single axle, stainless steel
4781	Tandem axle
4781-EQ	Tandem axle, Equalizer
4781-A	Tandem axle, Atwood
4781-A20	Tandem axle, Atwood 20' length
4781-SS	Tandem axle, stainless steel

# Brake Control Systems

Line lock out solenoids are used on disc brake systems. They keep the brakes from locking in reverse when used with a surge actuator.

LINE LOCK OUT SOLENOIDS	
Part #	Description
DBL-LOCK	Normally closed
DBL-LOCK/NO	Normally open



BluDot has put together the systems that you need for hydraulic brake control. All kits listed are for tandem applications and come complete with all hardware needed for proper installation.

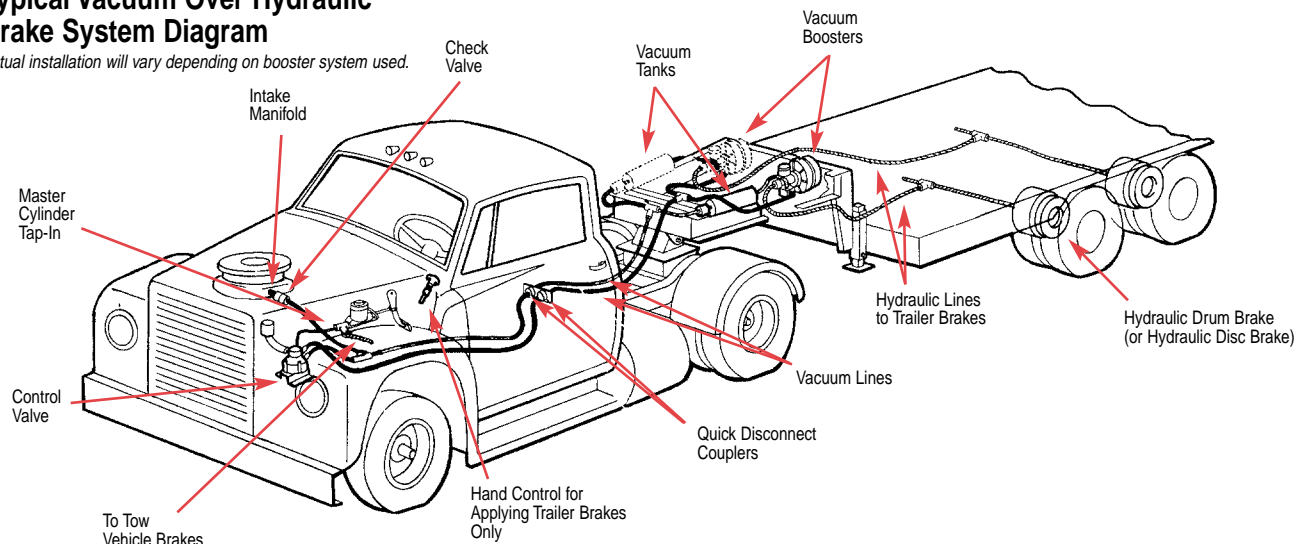
BLUDOT TRAILER BRAKE SYSTEMS		
Part #	Description	Application
TV-802	Vacuum over hydraulic trailer kit	QRG, AL-KO, Dexter and Hayes 5 - 7K
TV-1002	Vacuum over hydraulic trailer kit	Dexter, 8 - 15K
TV-1202	Vacuum over hydraulic trailer kit	QRG, AL-KO and Hayes 8K
TV-1602	Vacuum over hydraulic trailer kit	QRG, AL-KO and Hayes 9 - 12K
TV-1602D	Vacuum over hydraulic trailer kit	AL-KO, Dexter and Hayes 10 - 12K Disc
TH-802	Air over hydraulic trailer kit	QRG, AL-KO, Dexter and Hayes 5 - 7K
TH-1002	Air over hydraulic trailer kit	Dexter 8 - 12K
TH-1202	Air over hydraulic trailer kit	QRG, AL-KO and Hayes 8K
TH-1402	Air over hydraulic trailer kit	Dexter 15K
TH-1502	Air over hydraulic trailer kit	QRG, AL-KO and Hayes 9 - 12K
TH-1502D	Air over hydraulic trailer kit	AL-KO, Dexter and Hayes 10 - 12K
TA-1602	Air trailer kit	Single chamber drum air brakes
TK-3000	Vacuum truck kit	½ to 1 ton trucks and over 1 ton after 1987
TK-3100	Vacuum truck kit	Over 1 ton trucks before 1987
VP-2100	Electric vacuum pump kit	All 12 volt DC trucks



VP-2100

## Typical Vacuum Over Hydraulic Brake System Diagram

Actual installation will vary depending on booster system used.



# Brake Control Systems



These hydraulic brake actuation systems are the leading edge of technology. "Master Brake Systems" has engineered a complete line of Vacuum and Air controlled systems as well as complete Air kits. Please contact your nearest branch for assistance in finding the right application for your needs.



Vacuum/Hydraulic Kit Components



Truck Vacuum Kit Components



Air Tank Kit Components

MASTER BRAKE TRAILER BRAKE SYSTEMS		
Part #	Description	Application
9208-2	Vacuum over hydraulic trailer kit	QRG, AL-KO, Dexter and Hayes 5 - 7K and Kodiak 10" disc
9210-2	Vacuum over hydraulic trailer kit	Dexter, 8 - 15K and Kodiak 12" disc
9212-2	Vacuum over hydraulic trailer kit	QRG, AL-KO, Hayes 8K and Kodiak 13" disc
9215-2	Vacuum over hydraulic trailer kit	QRG, AL-KO and Hayes 9 - 12K
9216-2	Vacuum over hydraulic trailer kit	AL-KO, Dexter and Hayes 10 - 12K Disc
8508-2	Air over hydraulic trailer kit	QRG, AL-KO, Dexter and Hayes 5 - 7K and Kodiak 10" disc
8510-2	Air over hydraulic trailer kit	Dexter, 8 - 15K and Kodiak 12" disc
8510-21-2	Air over hydraulic ABS trailer kit	Dexter 8 - 15K w/ ABS on 1 axle
8512-2	Air over hydraulic trailer kit	QRG, AL-KO, Hayes 8K and Kodiak 13" disc
8515-2	Air over hydraulic trailer kit	QRG, AL-KO and Hayes 9 - 12K
8516-2	Air over hydraulic trailer kit	AL-KO, Dexter and Hayes 10 - 12K
8102	Air trailer kit	Single chamber drum air brakes
8202-1	Air trailer kit	Spring chamber drum air brakes
8202-21-1	Air ABS trailer kit	Spring chamber drum air brakes w/ ABS on one axle
8202-42-1	Air ABS trailer kit	Spring chamber drum air brakes w/ ABS on two axles
9107	Vacuum truck kit	½ to 1 ton trucks and over 1 ton after 1987
9111	Vacuum truck kit	Over 1 ton trucks before 1987
9615	Vacuum pump kit	'96 - '98 350 EFI Chevy
9624	Vacuum pump kit	'96 - '98 454 EFI Chevy
9630	Vacuum pump kit	'88 - '98 460 Ford
9631	Vacuum pump kit	'98 6.4L V10 Ford
9645	Vacuum pump kit	'95 - '97 6.9L and 7.3L Diesel Turbo Ford
9646	Vacuum pump kit	'99 6.9L and 7.3L Diesel Turbo Ford
9672	Vacuum pump kit	'94 - '98 5.9L Cummins Diesel Dodge
9673	Vacuum pump kit	'98 Cummins Diesel 24 Valve Dodge
9675	Vacuum pump kit	'94 - '98 488 V10 Dodge
9579-1	Line kit	All drum brakes
9579-2	Line kit	10K and 12K disc brakes

## MERITOR WABCO



ABS Components

Easy-Stop™ ABS brake systems from Meritor Wabco help increase safety factors on air brake trailers. The systems are available in a multitude of configurations as well as customized kits. Contact your nearest branch for assistance.

MERITOR / WABCO TRAILER BRAKE SYSTEMS		
Part #	Description	Application
214010	Air ABS trailer kit	Spring chamber drum air brakes with ABS on 1 axle
424324	Air ABS trailer kit	Spring chamber drum air brakes with ABS on 2 axles

# Brake Control System

## Troubleshooting Guide

### for Electric Brakes

#### DRAGGING BRAKES

- Check brake adjustment.
- Check for defective controller.
- Check for improperly installed flange.
- Check for corroded brake assembly.
- Check for weak or broken brake shoe return spring.
- Check for worn or damaged lever arm between magnet and brake shoe.
- Improper controller installed position.

#### NOISY BRAKES

- Check brake adjustment.
- Check for worn brake shoes.
- Check for contaminated brake linings.
- Check for weak or broken brake shoe return springs.
- Check for bent backing plate.
- Check for improperly installed flange.
- Check wheel bearing adjustment.
- Check for worn or damaged wheel bearings.
- Check for worn or damaged magnets.

#### BRAKES LOCKED OR BRAKE PEDAL NOT DEPRESSED

- Check stoplight switch adjustment.
- Check for short between stoplight switch circuit and power supply circuit.
- If brakes are locked when 4-way flashers are operated, check for pulse preventor installed in circuit.

#### LED LIGHT COMES ON DIM & GETS BRIGHTER AS BRAKES APPLIED

- If trailer is connected, this indicates normal operation.
- If trailer is not connected, check for short in electro-magnet circuit between controller and trailer connector, at rear of vehicle.

#### LED LIGHT COMES ON BRIGHT & STAYS BRIGHT

- If trailer is hooked up, this indicates system is not operating. Check trailer brakes and connecting wiring.
- If trailer is not connected, this indicates that system is ready to function.

#### INOPERATIVE BREAKAWAY SWITCH

- Check for dead or weak 12-volt battery, on trailer.
- Check all wiring and connections.
- Check breakaway switch.
- If only one brake is operating, check other magnets.

#### UNEVEN TIRE WEAR

- On tandem axle trailers, check voltage at front axle and rear axle with brakes applied. At times, the front axle will "lift" allowing front wheel to lock and slide. Correction can be made by installing a resistor in front brake circuit or combination of axle resistor and an adjusted controller.

#### NO BRAKES

- Check for defective circuit breaker.
- Check for open or shorted circuit.
- Check for properly wired system including a good ground between towing vehicle and trailer.
- Check for defective controller or loose wiring at controller.
- Check brake adjustment.
- Check for defective resistor or loose wiring at resistor.

tor.

- Check for worn or defective magnet(s).
- Check for a damaged or worn connector between towing vehicle/trailer.
- Check for a burned out resistor.
- Ensure correct controller is installed.

#### INTERMITTENT OR SURGING BRAKES

- Check for out-of-round brake drums.
- Check for properly wired system, including a good ground between towing vehicle and trailer.
- Check for defective magnet or wiring.
- Check for loose/worn wheel bearings.

#### INEFFECTIVE OR WEAK BRAKES

- Ensure trailer is not overloaded.
- Check for loose or corroded connections
- Check for properly wired system
- Check for a shorted circuit.
- Check for proper variable resistor resistance to trailer.
- Worn or defective magnet.
- Check brake adjustment.
- Check for bent backing plate flange.
- Check for contaminated brake linings
- Check brake system wiring.
- Check for worn, damaged brake linings.
- Check for weak or broken brake shoe return spring.
- Check for defective or worn brake drums.
- Check for loose axle.
- Check that correct controller is installed.
- Improper controller installed position.

#### GRABBING OR LOCKING BRAKES

- Check for improperly installed flanges.
- Check for contaminated brake linings.
- Check for weak or broken brake shoe return spring.
- Check for out-of-round brake drums.
- Check variable resistor.
- Ensure a variable resistor is installed (if necessary).
- Check that correct controller is installed.
- Check for defective controller.
- Rust on armature plate or brake drum.
- Check for loose/ worn wheel bearings.
- Improper controller installed position.

# Brake Control Systems

## Troubleshooting Guide

### for Hydraulic Brakes

#### DRAGGING BRAKE

- Check brake adjustment.
- Check for malfunctioning master cylinder.
- Check for improperly installed flange.
- Check for corroded brake assembly.
- Improper weight on tow bar.

#### NOISY BRAKES

- Check brake adjustment.
- Check for worn brake shoes.
- Check for contaminated brake linings.
- Check for loose parts in drum.
- Check for bent backing plate.
- Check wheel bearing adjustment.
- Check for damaged wheel bearing.

#### LOCKING BRAKES

- Check for under adjustment of brakes.
- Look for broken or loose brake parts.
- Drums are damaged or out of round.

#### NO BRAKES

- Insufficient brake fluid.
- Broken brake line.
- Loose line connection.
- Air in the brake lines.
- Master cylinder not functioning.
- Too much weight on tow bar.

#### WEAK BRAKES

- Trailer is overloaded.
- Not enough brakes on trailer.
- Improper brake adjustment.
- Corroded brake parts.
- Worn brake cylinder.
- Incorrect brake shoe or lining.
- Lining is glazed.
- Grease on lining.
- Drum worn out.
- Air in brake lines.
- Brakes are overheated.

#### SURGING BRAKES

- Drums are damaged or out of round.
- Shoe linings have grease or oil on them.

#### SWAYING OF TRAILER WHEN BRAKING

- Brake adjustment not proper.
- Tire air pressure not proper.
- Tires different on axle.
- Shoe or linings not properly operating.
- Brake lines damaged.

#### PROPER BRAKE ADJUSTMENT

1. Jack trailer up and support with jack stands.
2. The brake adjustment nut is located behind a slot at the bottom of the backing plate. Tighten until you cannot rotate wheel by hand. Note: always rotate wheel in direction of forward rotation only.
3. Back off the adjustment nut seven to ten notches.
4. Remove jack stands from trailer support.

#### PROPER BLEEDING OF THE BRAKE SYSTEM

1. Use good hydraulic brake fluid. DOT-3 heavy duty fluid is recommended.
2. Fill master cylinder with fluid. Install bleeder hose on first wheel cylinder to be bled. If tandem trailer, bleed rear axle first. Have loose end of hose submerged in brake fluid in glass container to observe bubbling.
3. By loosening the bleeder screw located in the wheel cylinder one turn, the system is open to the atmosphere through the passage drilled in the screw. Push actuator with long steady strokes. The bleeding operation is completed when bubbles no longer rise to the surface of the fluid. Be sure to close bleeder screw securely.
4. Repeat bleeding operation at each wheel cylinder. During the bleeding process, replenish the brake fluid, so the level does not fall below the half full level in the master cylinder reservoir.
5. After bleeding is completed, make sure master cylinder is filled to 3/8" below the top of the reservoir and filler cap is installed.

**QUALITY**

TRAILER PRODUCTS, INC.

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