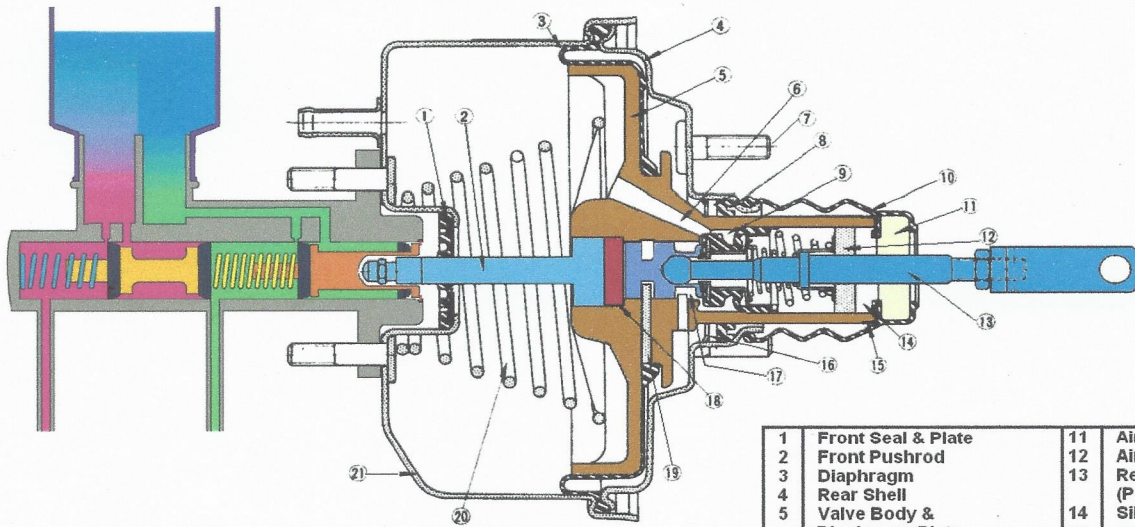


TYPICAL SINGLE DIAPHRAGM MASTER VAC & TANDEM MASTER CYLINDER



1	Front Seal & Plate	11	Air Silencer / Filter
2	Front Pushrod	12	Air Silencer / Filter
3	Diaphragm	13	Rear Pushrod
4	Rear Shell	14	(Pedal Pushrod)
5	Valve Body & Diaphragm Plate	15	Silencer
6	Vacuum Route	16	Air Silencer Retainer
7	Rear Stud	17	Retainer
8	Rear Seal	18	Air Valve
9	Vacuum Valve (Poppet / Bellows)	19	Reaction Disc
10	Dust Boot	20	Lock Key
		21	Return Spring
			Front Shell

FITTING INSTRUCTIONS

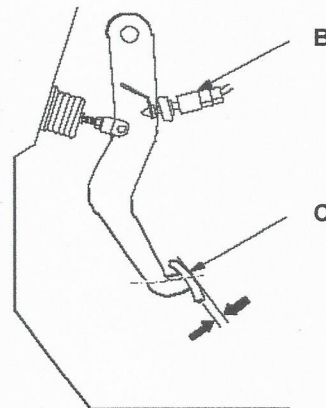
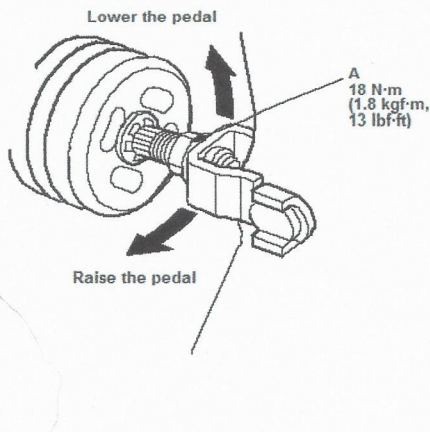
Reference should be made to manufacturers workshop manual for correct installation and adjustment procedure
 Check and rectify any fluid entry into booster unit e.g. fuel, oil, brake etc.
 Check vacuum hoses, manifold fittings and ensure an adequate vacuum supply.
 Check pedal and pushrod pivots for wear, lubrication and correct adjustment
 Check master cylinder piston / booster push rod clearance adjustment
 Check operation of any remote mounted check valves. Boosters will not be warranted if petrol contaminated
 An engine backfire can cause a booster to explode if contaminated with petrol or LPG vapour

ADJUSTMENTS

It is the fitters responsibility to ensure that the Mastervac pushrods are correctly adjusted when fitted to the vehicle.
 Incorrect adjustment may cause Brake Drag, Low Pedal Feel or Stoplight switch malfunction.

PEDAL PUSHROD

1. Loosen the pushrod locknut (A), and screw the pushrod in or out with pliers until the standard pedal height from the floor is reached. After adjustment, tighten the locknut firmly



2. **Ensure free travel 'C' is 2-5mm.**

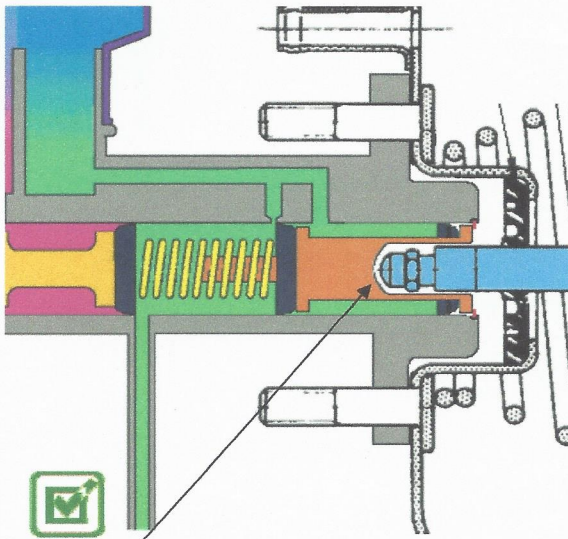
Depending on vehicle type "Free Travel" may be set by adjusting the pedal pushrod, or the stoplight switch/pedal stop 'B'.

Over adjustment of the pedal pushrod will result in brake drag.

NOTE: A number of vehicles are now fitted with stoplight switches that are only adjustable once during installation. Service manuals warn that the brake switch may not operate normally after adjusting the pedal height. Whenever adjusting the pedal height, replace the brake switch with a new one. Adjustment of the engine start interlock may also be required.

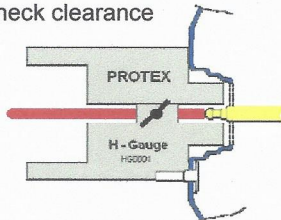
ADJUSTMENTS

MASTER CYLINDER PUSHROD



Recommended Piston Clearance is 0 - 0.4mm.
Fig 1. Correct Adjustment - STD Master

The most accurate way to check adjustment is with a H-Gauge. The gauge is set and locked on the m/cyl then transferred to the booster to check clearance



The front mastervac pushrod also needs to be checked for correct adjustment. If the pushrod is protruding far it will cause brake drag. For the majority of vehicles the recommended free play is 0 - 0.4mm.

Note: Where possible Vacuum should be applied to the booster before checking clearances.

A simple test to check for over adjustment is to place the master cylinder against the face of the booster. You should feel no resistance as the master cylinder contacts the face of the booster. A front pushrod which is protruding only 2-3mm to far can cause brake drag. Figure 2. illustrates how an over adjusted pushrod can advance the master cylinder piston moving the hydraulic cup over the compensating port, stopping fluid from returning to the reservoir.

There are some exceptions to the rule. For example PBR ADR master cylinders which use a pressed tin cap to retain the m/cyl piston rely on the booster pushrod to push the master cylinder piston forward setting its correct position. See Fig 3.

Refer to the vehicle service manual for more information.

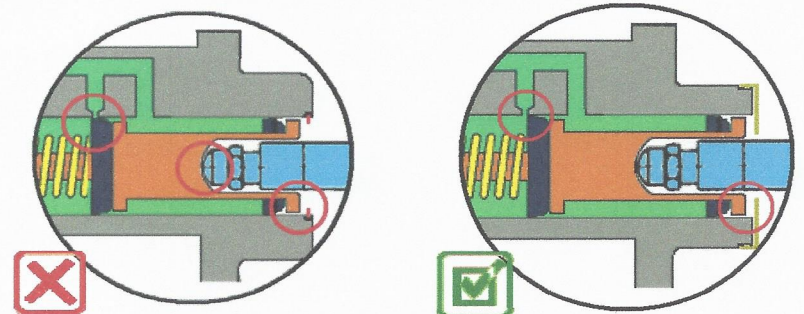


Fig 2. Over Adjustment - STD Master

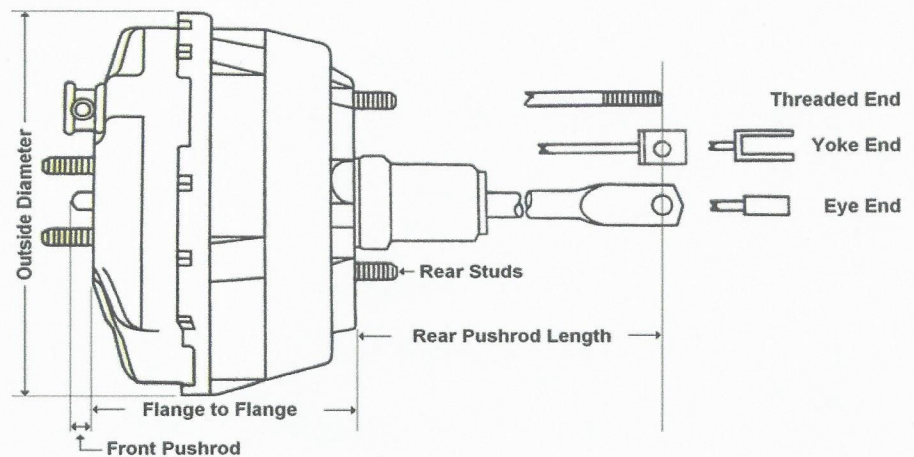
Fig 3. PBR With Tin Cap Retainer

Some master cylinders such as JB1975 or 210A0077 use the booster pushrod as the rear master cylinder pushrod, and as such cannot be bench bled. When replacing this type of master the booster front pushrod must be replaced or resleeved if it shows any signs of wear.

GLOSSARY OF TERMS

BOOSTER MANUFACTURERS

ASC	Asco/Aisin
AISIN	Aisin
ATE	Continental Teves
BDX	Bendix USA
BOS	Bosch
DEL	Delco / Delco Moraine
DBA	French Lockheed
E/L	English Lockheed
FTE	FTE / FAG
GLG	Girling
GLK	Girlock
JKC	Jidosha Kiki Corp
TRW	Lucas / TRW
MID	Midland
NISIN	Nisin
NK	Nisin Kogyo
PBR	PBR
SV	SV
TOK	Tokico



B/N	Booster Part Number	M/C	Master Cylinder
F P/R	Front Pushrod	S	Single Diaphragm Mastervac
R P/R	Rear Pushrod	D	Double Diaphragm Mastervac
F-F	Flange To flange Thickness	H	Hydropower