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MANUAL PREVIEW

Hyster

Service Manual

S60B, S70B, S80B,
S100B, H60C, H70C,
H80C, H100C & H120C

Volume 1 of 2

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HY-S-S60B+

Service Manual

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ENGINE — GASOLINE

GEAR PULLER

CAM GEAR

Figure 37

GEAR PULLER

CRANK GEAR

Figure 38

NOTE: If wear is found to be in the bushings instead, these must be replaced using precision service bushings which require no reaming. Fig. 39 illustrates bushing installation.

DRIVER

BEARING

Figure 39

B. Inspection and Assembly

1. Tappets must be inspected visually for scores or damage to the contact face. Two or three small pits in the latter is acceptable. More than that calls for replacement of the tappets. Fig. 40.

2. Check the outside diameter with a micrometer to determine if replacement is necessary.

3. Tappet guides or guide bushings may be checked for wear with a plug gauge or preferably with a telescope gauge and micrometers.

3. Remove tappet cover. Tappets can then be lifted out and lined up in sequence, for installation in the same location, unless inspection shows that they require replacement.

4. Before pulling the camshaft completely, check the clearance of the bearing journals in the bushing. To do this, use strips of feeler stock 1/4" wide with edges dressed with a stone to eliminate any burrs or feathered edges.

5. If clearance is equal to or greater than the amount indicated under wear limits, check the diameter of the camshaft journals to determine the next step. Excessive wear at these positions requires replacement of the shaft.

ACCEPTABLE

NOT ACCEPTABLE

Figure 40

ENGINE SUPPLEMENT

SPECIFICATION LISTING

Gasoline Engine Model F245

General Specifications

Number of Cylinders	6
Bore	3-7/16 in.
Stroke	4-3/8 in.
Displacement	244 cu. in.
Horsepower	79
@ RPM	2500
Idle Speed	500-600 RPM
Governed Speed:STD	2500 RPM
P.S.	2600 RPM
Valve Lash (Hot)	.014
Timing:	
Firing Order	1-5-3-6-2-4
No. 1 Fires	5° BTDC
(at 600RPM)	
Compression:	
Ratio	7.5:1
Normal at 150 RPM	160 ± 5 PSI
Oil Pressure:	
Normal at 2000 RPM	20-30PSI
Minimum at Idle	7PSI
Lubrication:	
Capacity (includes filter)	7 US Qts.
Oil Type*	SAE 30

*Oil type given is for average atmospheric temperatures. Refer to Miscellaneous Section for the type of oil used in trucks operating in various atmospheric temperatures.

Dimensions (In inches)

Valve Guide, Intake and Exhaust:	
Length	2-5/16
Outside Diameter	.6565/.6575
Stem hole diameter	.3422/.3432
Wear limits-max. dia.	.3447
Contact face to guide	1-15/32
Intake Valves:	
Stem diameter	.3406/.3414
Wear limits-min. dia.	.3386
Seat angle	30°
Steam clearance limits	.0008/.0026

Wear limits-max. cl.	.0046
Desired stem clearance	.0015
Exhaust Valves:	
Stem diameter	.3377/.3385
Wear limits-min. dia.	.3357
Seat angle	45°
Stem Clearance	.0037/.0055
Wear limits-max. cl.	.0075
Desired stem clear.	.0045
Valve Springs, Intake and Exhaust:	
Outside diameter	31/32
Length-valve closed	1-45/64
Load-valve closed	47-53 lbs.
Wear limit-min. wgt.	42 lbs.
Length-valve open	1-27/64
Load-valve open	96-104 lbs.
Wear limit-min. wgt.	86 lbs.
Valve Seat Inserts:	
Standard outside dia.	1.3485/1.3475
Press fit	.003/.005
Camshaft:	
Brg. journal dia. No. 1	1.8715/1.8725
Wear limits-min. dia.	1.8705
Brg. journ. dia. No. 2	1.8085/1.8095
Wear limits-min. dia.	1.8075
Brg. journ. dia. No. 3	1.7457/1.7465
Wear limits-min. dia.	1.7447
Brg. journ. No. 4	1.2465/1.2475
Wear limits-min. dia.	1.2455
Bush inside dia. No. 1	1.8745/1.8755
No. 2	1.8115/1.8125
No. 3	1.7495/1.7502
No. 4	1.2495/1.2505
Bush clearance limits	.002/.004
End play	.005/.009
Connecting Rods:	
Bush. hole dia.	.9130/.9140
Brg. hole dia.	2.1865/2.870
Brg. thickness	.06130/.06155
Wear limits-min. thk.	.0608
Dia. -crank pin	2.0627/2.0619
Wear limits-min. dia.	2.0609
Clearance limits	.0007/.0025
Desired clearance	.0015
Wear limits-max. cl.	.0035
Side play	.006/.010
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BRAKE

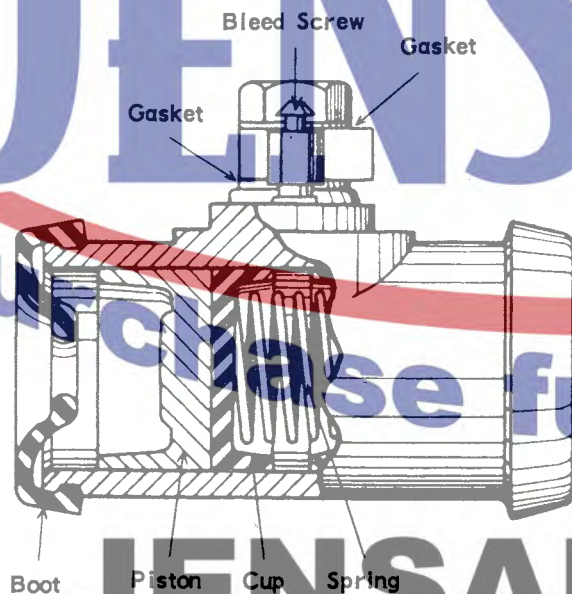
Make sure the rubber boot is in position on the push rod and master cylinder. This is important, otherwise, dirt and water can enter the master cylinder bore, causing premature failure.

WHEEL CYLINDER

A. General

There are two cylinders on each truck. One in each brake assembly. Their purpose is to change hydraulic flow and pressure to the mechanical equivalents.

The wheel cylinder houses two opposed pistons, two rubber cups and a spring. On the outside of the cylinder is a bleed valve, hydraulic line fitting and two rubber boots. Fig. 20.



WHEEL CYLINDER

Figure 20

Although not utilizing the same drilled passages, the line fitting and bleeder valve are in communication with the cylinder bore in this manner.

The spring is placed between the cups. Consequently, each of the cups is held in constant contact with its mating piston. The cups and pistons are assembled in the cylinder bore so

that the lips of the cups face each other. The flat side of each cup contacts the flat side of the mating piston leaving the opposite end of the pistons (which are recessed) facing the open ends of the cylinder.

The purpose of the boots is to prevent foreign materials entering into the open ends of the cylinder. A boot is slipped over each end of the cylinder, forming a seal against foreign elements. A seal is also formed around the piston to the brake shoe link. It is important that these boots be inspected at every opportunity and replaced whenever any defect is noticed.

Pressure formed in the master cylinder is transferred from the master cylinder through the hydraulic lines to the wheel cylinder bore. The cups are forced apart by the pressure and this motion is carried to the brake shoes through the connecting links.

B. Procedures

1. Removal: Refer to Brake Shoe Removal Section.
2. Cleaning and Inspection: Refer to Master Cylinder, Cleaning and Inspection.

BLEEDING THE SYSTEM

A. General

Bleeding the system means removing air from the system.

Except for a bleeder hose and bleeder wrench used on the "S" series trucks, no special tools are absolutely necessary, and the actual bleeding procedure, remains the same for both series.

When a brake line is disconnected from and then reconnected to an individual cylinder, only that cylinder need be bled. Most of the time the foregoing is true for the master cylinder also.

NOTE: Always check master cylinder fluid level before starting the bleeding process. If a pressure bleeder or master cylinder filler is not available, keep a close check on the fluid level in the master cylinder during bleeding, otherwise, fluid level may become too low and allow air to enter the system.

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H360-620B, H700-800A,
N30-50CA and N30-40CR

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