FORM NO. REG01474

AIR SYSTEM AND BRAKES SPECIFICATIONS

FOR

950 WHEEL LOADER & 950 TREE HARVESTER

SERIAL NUMBERS
31K
43J
49U
73J
81J

INTRODUCTION

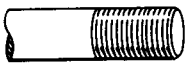
The specifications in this book are given on the basis of information that was current at the time the book was written. These specifications give the torques, operating pressures, measurements of new parts and other items. When the word "permissible" is used in the description, the specification value given is the "maximum or minimum" normally permitted before adjustment, repair and/or new parts are needed. Make a comparison of the measurements of a worn part with the specifications of a new part to find the amount of wear. The wear factor is not the only basis for the replacement of parts. The expected service life of the worn part is a factor. A part that is worn can be safe to use if an estimate of the remainder of its service life is good. When a disassembly is made for the purpose of reconditioning, the recommendation is the replacement of parts not completely worn out if a short service life is expected. 77200

NOTE: For Systems Operation and Testing and Adjusting, make reference to 950 AIR SYSTEM AND BRAKES, Form No. REG00595.

INDEX

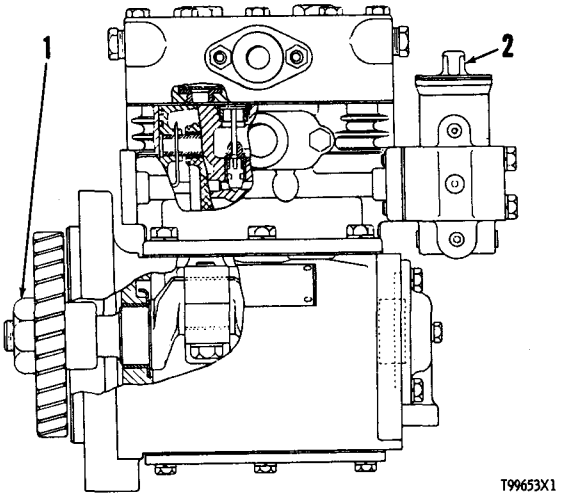
GENERAL TIGHTENING TORQUE FOR BOLTS, NUTS AND TAPERLOCK STUDS

The following charts give the standard torque values for bolts, nuts and taperlock studs of SAE Grade 5 or better quality. Exceptions are given in the Specifications.

THREAD DIAMETER		STANDARD TORQUE	
inches	millimeters	lb. ft.	mkg
Standard thread 		Use these torques for bolts and nuts with standard threads.	
1/4	6.35	9 ± 3	1.24 ± 0.4
5/16	7.94	18 ± 5	2.5 ± 0.7
3/8	9.53	32 ± 5	4.4 ± 0.7
7/16	11.11	50 ± 10	6.9 ± 1.4
1/2	12.70	75 ± 10	10.4 ± 1.4
9/16	14.29	110 ± 15	15.2 ± 2.0
5/8	15.88	150 ± 20	20.7 ± 2.8
3/4	19.05	265 ± 35	36.6 ± 4.8
7/8	22.23	420 ± 60	58.1 ± 8.3
1	25.40	640 ± 80	88.5 ± 11.1
1 1/8	28.58	800 ± 100	110.6 ± 13.8
1 1/4	31.75	1000 ± 120	138 ± 16.6
1 3/8	34.93	1200 ± 150	166 ± 20.7
1 1/2	38.10	1500 ± 200	207 ± 27.7
		Use these torques for bolts and nuts on hydraulic valve bodies.	
5/16	7.94	13 ± 2	1.8 ± 0.3
3/8	9.53	24 ± 2	3.3 ± 0.3
7/16	11.11	39 ± 2	5.4 ± 0.3
1/2	12.70	60 ± 3	8.3 ± 0.4
5/8	15.88	118 ± 4	16.3 ± 0.5
Taperlock stud 		Use these torques for studs with Taperlock threads.	
1/4	6.35	5 ± 2	0.69 ± 0.3
5/16	7.94	10 ± 3	1.4 ± 0.4
3/8	9.53	20 ± 3	2.8 ± 0.4
7/16	11.11	30 ± 5	4.1 ± 0.7
1/2	12.70	40 ± 5	5.5 ± 0.7
9/16	14.29	60 ± 10	8.3 ± 1.4
5/8	15.88	75 ± 10	10.4 ± 1.4
3/4	19.05	110 ± 15	15.2 ± 2.0
7/8	22.23	170 ± 20	23.5 ± 2.8
1	25.40	260 ± 30	35.9 ± 4.1
1 1/8	28.58	320 ± 30	44.2 ± 4.1
1 1/4	31.75	400 ± 40	55 ± 5.5
1 3/8	34.93	480 ± 40	66 ± 5.5
1 1/2	38.10	550 ± 50	76 ± 7

T95416-5

AIR COMPRESSOR
BENDIX-WESTINGHOUSE
(8S894 and 9S9743)



(Typical Example)

(1) Torque for nut holding drive gear ..... 150 ± 20 lb. ft. (20.7 ± 2.8 mkg)

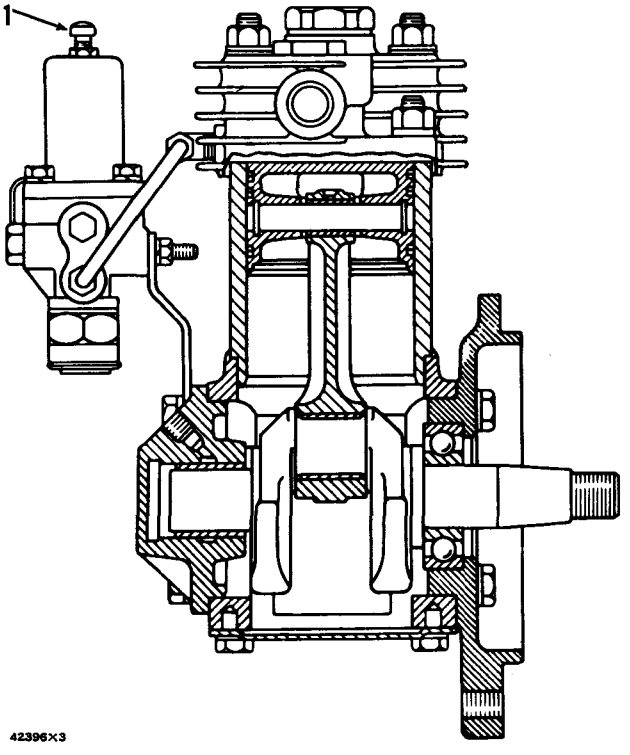
(2) Governor:

Cutout pressure of governor .... 120 ± 2 psi (8.4 ± 0.1 kg/cm²)

Cut-in pressure of governor ..... 101 ± 3 psi (7.1 ± 0.2 kg/cm²)

Pressure relief valve opens at ..... 150 psi (10.5 kg/cm²)

AIR COMPRESSOR
CLAYTON DEWANDRE
(9S3124 and 1P28)



Torque for nut holding drive gear ..... 150 ± 20 lb. ft. (20.7 ± 2.8 mkg)

(1) Governor:

Cutout pressure of governor .... 120 ± 2 psi (8.4 ± 0.1 kg/cm²)

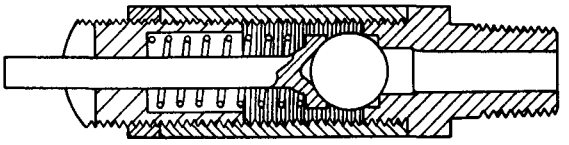
Cut-in pressure of governor ..... 101 ± 3 psi (7.1 ± 0.2 kg/cm²)

One turn counterclockwise of adjusting screw raises cutout pressure ..... 20 psi (1.4 kg/cm²)

Pressure relief valve opens at ..... 150 psi (10.5 kg/cm²)

NOTE: FOR TORQUE VALUES NOT GIVEN, SEE THE FIRST PAGE OF SPECIFICATIONS FOR GENERAL TIGHTENING TORQUES

SAFETY VALVE

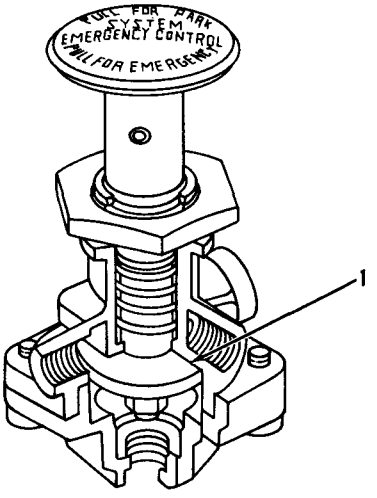


T88834-A

Pressure (bench test at which relief valve opens) ..... 150 psi (10.5 kg/cm²)

CONTROL VALVE FOR EMERGENCY AND PARKING BRAKE

(7K2738)



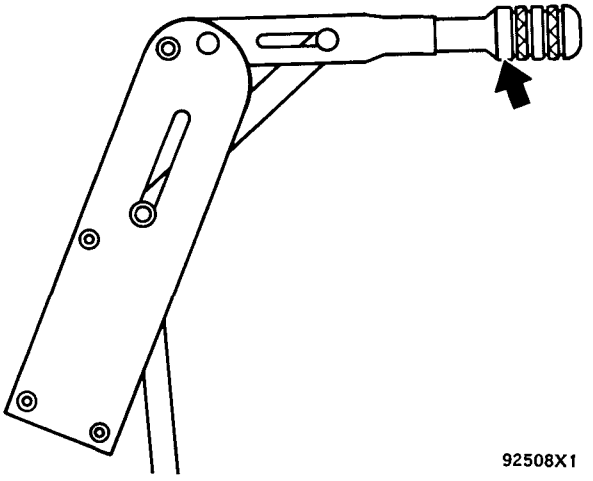
77725X1

(1) Valve:

Opens at ..... 40 ± 5 psi (2.8 ± 0.4 kg/cm²)

Closes at ..... 55 ± 5 psi (3.9 ± 0.4 kg/cm²)

PARKING BRAKE LEVER



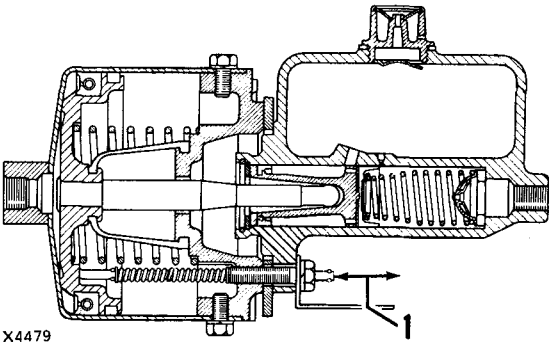
92508X1

Force required to move over center ..... 50 to 60 lb. (23 to 27 kg)

(Transmission linkage must shift to neutral as brake is activated)

AIR CHAMBER AND MASTER CYLINDER

(5K3663)

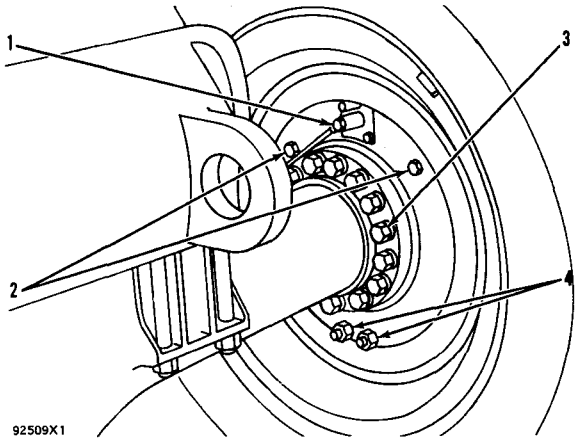


X4479

(1) Maximum piston stroke ..... 1.25 in. (31.8 mm)

Torque for tubing flair nut (all hydraulic brake tube assemblies) .... 90 lb. in. (103.8 cm.kg)

WHEEL BRAKES (SHOE)
(81J1 through 81J9509 and 31K1 through 31K1054)



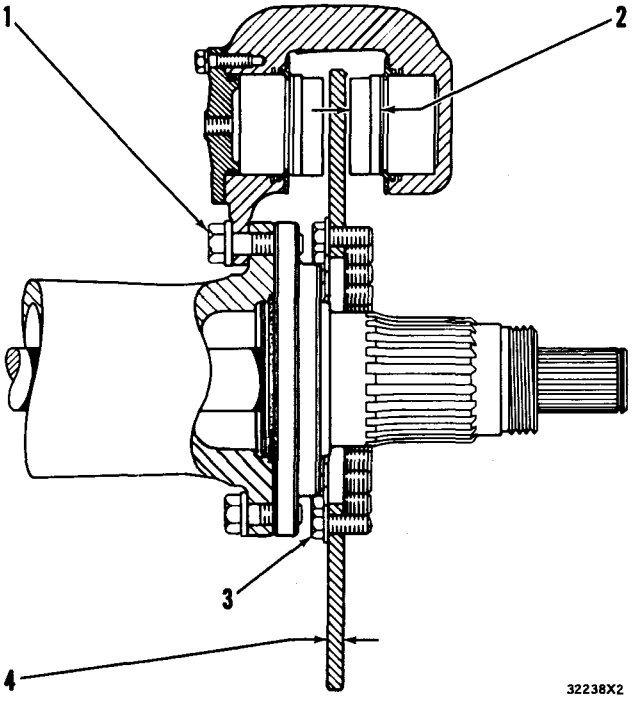
(1) Torque for tubing flair nut ..... 90 lb. in. (103.8 cm.kg)

(2) Clearance shoe to drum (tighten each adjusting cam and back off ¼ turn)

(3) Torque for bolts ..... 195 ± 18 lb. ft. (27.0 ± 2.5 mkg)

(4) Torque for anchor pin nuts ... 175 ± 25 lb. ft. (24.2 ± 3.5 mkg)

WHEEL BRAKE ASSEMBLY (DISC)
(81J9510–UP)
(31K1055–UP)



(1) Torque for the bolt ..... 225 ± 25 lb. ft. (31.1 ± 3.5 mkg)

(2) Thickness of carrier assembly (including lining and plate):

New ..... .88 in. (22.4 mm)

Minimum permissible thickness (worn) ..... .38 in. (9.6 mm)

(Measure the lining at both ends because it can wear more at one end than the other.)

(3) Torque for the bolt (½ in. diameter) ..... 94 ± 10 lb. ft. (13 ± 1.4 mkg)

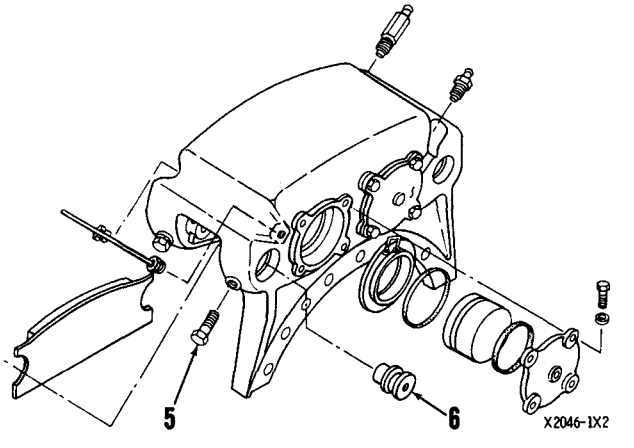
Torque for bolt (5/8 in. diameter) ..... 195 ± 10 lb. ft. (27 ± 1.4 mkg)

(4) Thickness of brake disc:

New ..... .50 in. (12.7 mm)

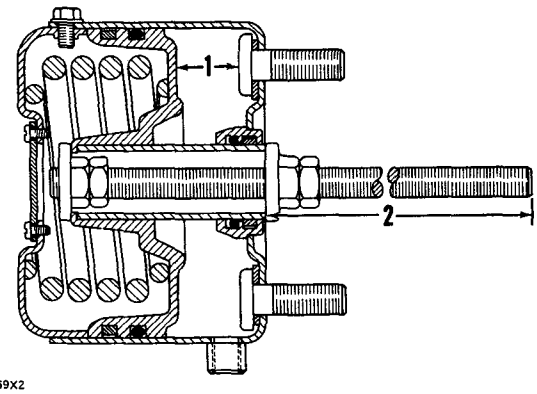
Minimum permissible thickness (worn) (in area where pad and disc make contact) ..... .44 in. (11.2 mm)

(5) (6) Clearance between pin (6) and brake disc must not be less than .010 in. (0.25 mm). If clearance is less than .010 in. (0.25 mm), turn bolt (5) counterclockwise one turn, slide pin (6) to get .010 in. (0.25 mm) clearance and tighten bolt (5) again.



NOTE: FOR TORQUE VALUES NOT GIVEN, SEE THE FIRST PAGE OF SPECIFICATIONS FOR GENERAL TIGHTENING TORQUES

EMERGENCY AND PARKING BRAKE CHAMBER (6K9877)

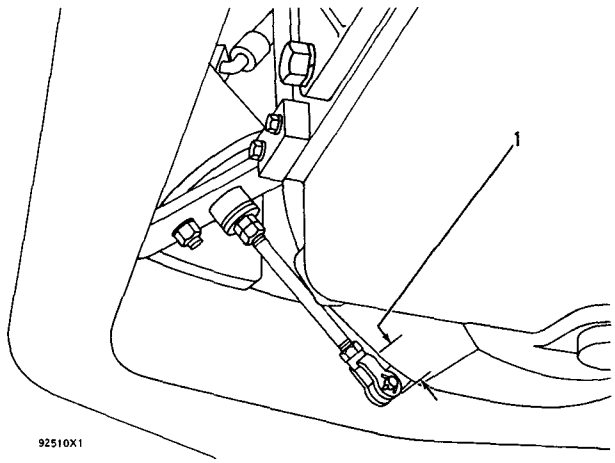


42369X2

(1) 8K8469 Piston:
- Stroke ..... 1.25 in. (31.75 mm)
- Spring force on stroke ..... 900 ± 100 lbs. (408.2 ± 45.4 kg)
- Release pressure (maximum) ..... 57 psi (4.0 kg/cm²)

(2) 8K8466 Rod:
- Length—assembly to tip ..... 7.75 in. (196.8 mm)

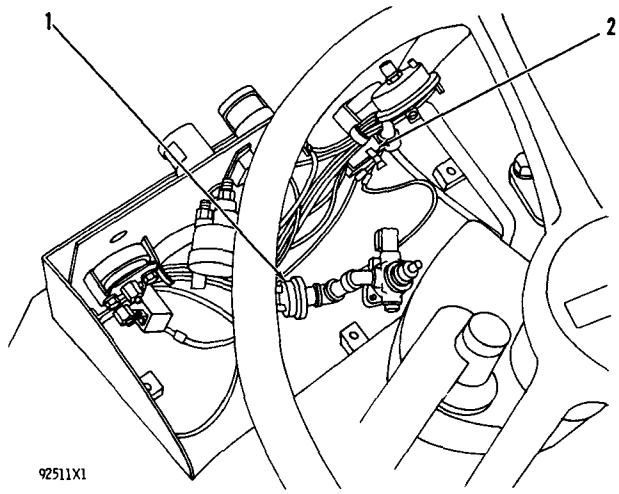
EMERGENCY AND PARKING BRAKE LINKAGE ADJUSTMENT



92510X1

(1) Travel at yoke ..... 1.2 to 1.5 in. (30.5 to 38.1 mm)

PRESSURE SWITCHES



92511X1

(1) Buzzer switch (normally closed):
- Pressure to open switch ..... 70 to 80 psi (4.9 to 5.6 kg/cm²)

(2) Indicator switch (normally open):
- Pressure to close switch ..... 70 to 80 psi (4.9 to 5.6 kg/cm²)

AUGUST 1973
FORM NO. REG01474
CATERPILLAR FUNDAMENTAL ENGLISH

PRINTED IN U.S.A.