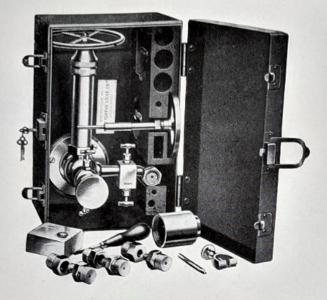
### Dead-Weight Gage Tester Equipment





The Ashton Tester body is of bronze, nickel plated and, with fittings, is neatly packed in a welded steel box, with lock, having serviceable dull black finish. The weights also are in a similar box (or boxes) each of which has handle for convenience in carrying.

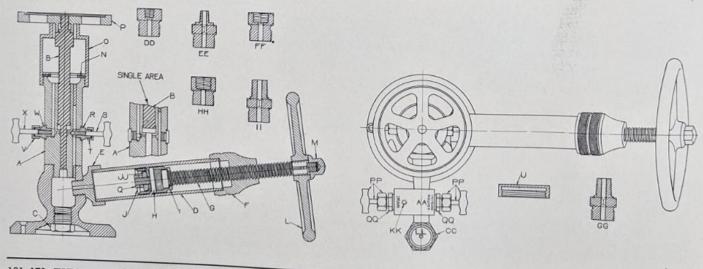
With each Tester is furnished a complete equipment of necessary weights and tools, consisting of screw-driver, oil can, gage hand puller, hand set, and six connecting nipples for attaching Gages.

The weights furnished are for the following capacities:

Style	Capacity	Net Weight	Style	Capacity	Net Weight
179 C	200 lbs.	39 lbs.	179		
179 B	300 lbs.	45 lbs.		1,000 lbs.	82 lbs.
179 A	500 lbs.		180 A	1,500 lbs.	113 lbs.
	oco ibs.	58 lbs.	180	2,000 lbs.	138 lbs.

Orders should always specify style number and, in addition, whether weights are wanted for testing up to 200, 300, or some other of the ranges mentioned above.

Complete instructions in detail for operating are furnished with each instrument.



161-179 FIRST STREET

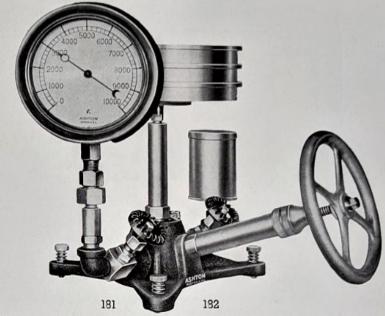
THE ASHTON VALVE COMPANY CAMBRIDGE (BOSTON), MASS.

## Dead-Weight Gage Tester

#### For Medium High Pressure

The Tester here illustrated is of moderate size, suitable for testing Gages in pressure ranges higher than the capacity of the portable style 179, but below that where it would be desirable to employ the heavier style 86. This Tester is designed in two styles; the 181 having piston area of 0.05 sq. in. (minimum testing units 20 lbs.) with weights grouped in loads equivalent to 1,500, 2,000, and 3,000 lbs. per square inch, and the 182 having piston area of 0.02 sq. in. (minimum testing unit 50 lbs.) with weights grouped in loads equivalent to 4,000 and 5,000 lbs. per square inch. No. 182 can be furnished special for testing to 10,000 lbs.

This Tester is simple in construction and operation. The tripod base, fitted with knurled adjusting screws, provides a three-point support which, in conjunction with the built-in, cross-test level, provides for leveling the instrument on surfaces not in themselves plane or level.



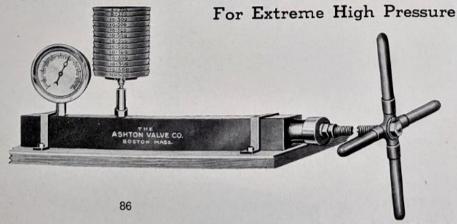
Workmanship is of the highest grade. All joints are tested to pressure 100 per cent above the rated capacity of the Tester, and cup leathers and followers are fitted and tested to 10,000 lbs. per square inch. Pistons, ground, properly seasoned, and lapped to tolerances under 0.0001", are lapped to cylinders with great care and, if operated at temperatures between 70° and 100° F., will perform freely and accurately with a minimum of leakage past the piston.

Weights, carefully machined and balanced, are of large diameter, reducing the height of the stacked pile at high pressures and furnishing a set-up that gives a long, easy spin. Tester and weights are shipped in boxes complete with all tools and accessories.

The Gage illustrated is not furnished, being merely an illustration of a gage as applied for test.

Weights of Testers with tools, 40 lbs. net. Weights of Testers with boxes, 75 lbs. net. Total net including weights and boxes: No. 181, 1,500 lbs. — 157 lbs.; 2,000 lbs. — 177 lbs.; 3,000 lbs. — 237 lbs.; No. 182, 4,000 lbs. — 156 lbs.; 5,000 lbs. — 176 lbs.

### Dead-Weight Gage Tester



for testing to 10,000 lbs. 86 A for testing to 15,000 lbs. 86 B for testing to 20,000 lbs. 86 C for testing to 25,000 lbs.

The Ashton Tester here illustrated has single cylinder, otherwise constructed on the same principle as our regular Dead-Weight Gage Tester on page 13, but specially designed for testing Gages at extreme high pressures.

The body is made from a square solid bar of tool steel. The weight plunger is also of tool steel hardened, accurately ground and lapped into the cylinder. The Tester is easily operated at the highest pressures, by means of extra long iron pipe crossbar handles.

The Gage, board and clamps shown in cut are not furnished, but are merely used as illustration of a gage as applied

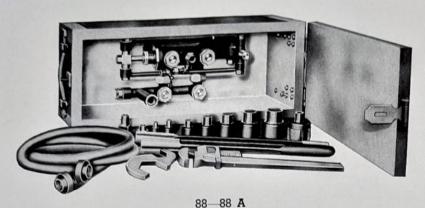
for test.

NET WEIGHTS

Weights, for No. 86, 10,000 lbs.......... 199 lbs. For each 500 lbs. on Gage, add or subtract 10 lbs. from weights.

THE ASHTON VALVE COMPANY CAMBRIDGE (BOSTON), MASS.

## Portable Boiler Test-Pump Outfit



Specially adapted for making hydrostatic tests on locomotive and stationary boilers at outlying points, and extensively used by State and Boiler Insurance Inspectors.

Illustration shows style 88 Ashton Portable Boiler Test-Pump, with complete outfit of hose and all necessary fittings, as usually required, packed in a substantial iron-bound locked case. The following features of construction of practical value are embodied in this equipment.

The case is metal lined and watertight, therefore can be used as a reservoir for the Pump to draw from. The Pump has a supplementary water-service connection which can be used for the supply instead of the tank.

There are no interior parts of iron to rust, the Pump being made entirely of high-grade bronze. The suction valves can be taken out for repairs and the piston or rod repacked without removing the Pump body.

Style 88 Pump piston is  $1\frac{3}{4}$ " diameter, 3" stroke, double acting, capacity 250 lbs. per square inch. Style 88 A Pump piston is  $1\frac{1}{4}$ " diameter, 3" stroke, double acting, capacity 500 lbs.

Size of case: width,  $10\frac{1}{2}$ "; height,  $11\frac{1}{2}$ "; length, 26". Stillson is furnished only when specified and at an extra charge. Weight, complete with fittings, 100 lbs.

### Boiler Test Pump

Style 89 Ashton Boiler Test Pump here shown is a compact, convenient size Pump of the outside packed plunger style, having a 5" stroke and 1½" diameter cylinder. It has a long, upright lever, which is handily operated from a standing position, and which can be readily disconnected at its lower socket end and set aside when not in use. Range to 500 lbs.

Style 89 A is similar to above except made with double cylinders, each .862" diameter. Range to 1000 lbs.

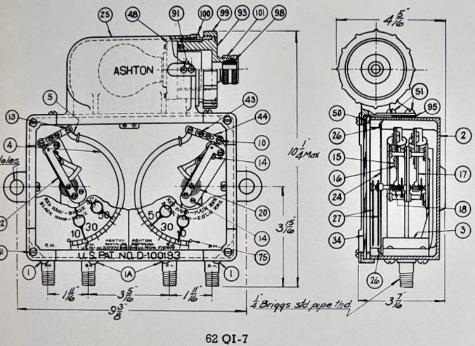
Pump bodies are made of high-grade cast iron, with bronze plunger and check valve, mounted on hardwood base, which can be held firmly in position while in use.

Width, 10"; height, without lever, 131/4"; length, 30"; net weight, 65 lbs.

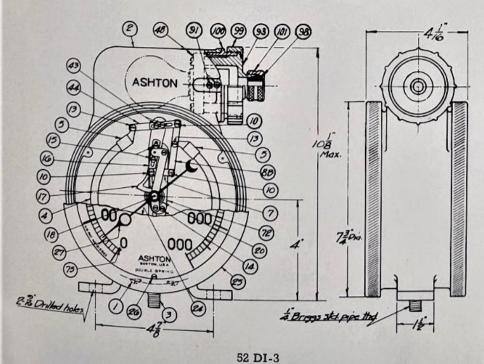


## 5" Dial Quadruplex Air-Brake Gage 63/4" Double Dial Locomotive Steam Gage

### Part List for 5" No. 62 QI-7 Gage



### Part List for 63/4" No. 52 DI-3 Gage



1A Inside Socket Screw	. 1
2 Case	8.0
3 Socket (Specify pressure and also)	
4 Spring specify left or right Not	5.0
5 Tip furnished separately 10 Connection Screw	
10 Connection Screw	. 10
10 110 Connection Screw	. 10
14 Movement Case Screw	. 10
15 Adjusting Slide Screw	.0
16 Adjusting Slide	. 10
18 Pinion Caratter	.60
20 Hair Spring Specify upper or lower.	.40
17 Sector 18 Pinion 20 Hair Spring 24 Dial—Specify left or right, white or silvere	3 2 00
25 Gage Case Cover	5.50
40 Dial Screw	.05
21 fland — Specify red or black	.20
34 Glass	.30
43 Adjustable Link Screw	. 10
44 Adjustable Link Complete	.45
48 Receptacle 48 Receptacle Holder Screw.	.70
48 Receptacle Holder Screw	. 10
50 Front Gasket	.40
51 Gage Case Cover Screw	. 10
72 Movement Complete; specify left or right	3.00
We recommend ordering Movement Complete	.05
75 Hand Stop Pin	.05
93 Cap	1.20
95 Top Gasket	.07
98 Grommet	. 15
99 Spanner Nut	1.50
100 Cap Bushing	3.00
101 Compression Nut	.45
D NT	
Part No. Name of Part List	Prices
1 Socket Screw: Iron \$0.08; Brass	Prices
1 Socket Screw: Iron \$0.08; Brass	Prices . 10 16.70
3 Socket Specify pressure Not	
4 Spring Specify pressure. Not	Prices .10 16.70 3.00
4 Spring 5 Tip Specify pressure. Not furnished separately	3.00
4 Spring Specify pressure. Not furnished separately 7 Movement Connection Arm	3.00
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever	3.00
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw	3.00 .10 .20 .10
3 Socket 4 Spring 5 Tio 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw	3.00
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Adjusting Slide Lock Screw   18 Adjusting Slide Lock Screw   19 Adjusting Slide	3.00 .10 .20 .10 .10
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Adjusting Slide Lock Screw   18 Adjusting Slide Lock Screw   19 Adjusting Slide	3.00 .10 .20 .10 .10
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance	3.00 .10 .20 .10 .10 .10 .08 .10 d .90
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw 15 Adjusting Slide Lock Screw 16 Adjusting Slide 17 Sector: Old Style \$0.60; New Style Balance	3.00 .10 .20 .10 .10 .08 .10 .08 .10
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw 15 Adjusting Slide Lock Screw 16 Adjusting Slide 17 Sector: Old Style \$0.60; New Style Balance	3.00 .10 .20 .10 .10 .08 .10 d .90 .40 .20
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw 15 Adjusting Slide Lock Screw 16 Adjusting Slide 17 Sector: Old Style \$0.60; New Style Balance 18 Pinion 20 Hair Spring 21 Dial Specify pressure 22 Pina	3.00 .10 .20 .10 .10 .08 .10 .40 .20
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   White, silvered or black. Clockwise or counter-clockwise or counter-clockwise.	3.00 .10 .20 .10 .10 .08 .10 .40 .20 .3.00 3.50
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw 15 Adjusting Slide Lock Screw 16 Adjusting Slide 17 Sector: Old Style \$0.60; New Style Balance 18 Pinion 20 Hair Spring 24 Dial Specify pressure 25 Ring 26 Dial Screw	3.00 .10 .20 .10 .10 .08 .10 d .90 .40 .20 3.50
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   White, silvered or black. Clockwise or counter-clockwise or counter-clockwise.	3.00 .10 .20 .10 .10 .08 .10 d .90 .40 .20 3.50 .05 .20
4 Spring   Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   24 Dial Specify pressure   25 Ring   26 Dial Screw   27 Hand	3.00 .10 .20 .10 .10 .08 .10 d .90 .40 .20 3.50
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   24 Dial Specify pressure   25 Ring   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   44 Adjustable Link Screw   45 Pinion   46 Pinion   47 Pinion   48 Pinion   49 Pinion	3.00 .10 .20 .10 .10 .08 .10 .40 .20 .3.50 .05 .20
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   24 Dial Specify pressure   25 Ring   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   44 Adjustable Link Screw   45 Pinion   46 Pinion   47 Pinion   48 Pinion   49 Pinion	3.00 .10 .20 .10 .10 .08 .10 .40 .20 .3.00 .3.50 .20 .20 .10
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   White, silvered or black. Clockwise or counter-clockwise   25 Ring   White, silvered or black. Clockwise or counter-clockwise   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   44 Adjustable Link Screw   48 Receptacle   48	3.00 .10 .10 .10 .10 .00 .10 .20 .3.00 .3.00 .05 .20 .20 .10 .50 .70
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   20 Hair Spring   21 White, silvered or black. Clockwise   22 Pinion   23 Clockwise   24 Dial Screw   25 Pinion   26 Dial Screw   27 Hand   28 Glass — Not shown   29 Hair Spring   29 Pinion   20 Pinion	3.00 .10 .20 .10 .10 .10 .00 .10 .20 .3.00 .3.00 .05 .20 .20 .10 .50 .70 .10 .2.50
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   White, silvered or black. Clockwise   17 Sector   18 Pinion   19 Pinion	3.00 .10 .10 .10 .10 .00 .10 .20 .3.00 .3.00 .05 .20 .20 .10 .50 .70
4 Spring Specify pressure. Not furnished separately 7 Movement Connection Arm 8B Lever 10 Connection Screw 13 Tip Connection Screw 14 Movement Case Screw 15 Adjusting Slide Lock Screw 16 Adjusting Slide Lock Screw 16 Adjusting Slide 17 Sector: Old Style \$0.60; New Style Balance 18 Pinion 20 Hair Spring 24 Dial—Specify pressure 25 Ring 26 Dial Screw 27 Hand 34 Glass—Not shown 43 Adjustable Link Screw 44 Adjustable Link Screw 45 Receptacle 46 Receptacle 47 Movement Complete New Style Balanced We recommend ordering Movement Complete	3.00 .10 .20 .10 .10 .08 .10 .40 .20 .3.00 3.50 .20 .20 .10 .50 .70 .10 2.50 2.80
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   48 Receptacle   49 Receptacle   49 Receptacle   40 Receptacle   40 Receptacle   40 Receptacle   40 Receptacle   41 Felt — Not shown   42 Felt — Not shown   43 Felt   44 Felt   54 Felt   55 Ferror   55 Ferr	3.00 .10 .20 .10 .10 .08 .10 .40 .20 3.00 3.50 .20 .20 .10 .50 .70 .10 2.50 2.80
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   48 Receptacle   49 Receptacle   49 Receptacle   40 Receptacle   40 Receptacle   40 Receptacle   40 Receptacle   41 Felt — Not shown   42 Felt — Not shown   43 Felt   44 Felt   54 Felt   55 Ferror   55 Ferr	3.00 .10 .20 .10 .10 .08 .10 .40 .20 .3.00 .3.50 .20 .20 .10 .50 .20 .10 .2.50 .250 .20 .05
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   17 Sector: Old Style \$0.60; New Style Balance   White, silvered or black. Clockwise or counterclockwise   18 Clockwise   19 C	3.00 .10 .20 .10 .10 .08 .10 .20 .3.00 3.50 .20 .20 .20 .10 .50 .70 .10 2.50 2.80
4 Spring   Specify pressure. Not furnished separately   7 Movement Connection Arm   8B Lever   10 Connection Screw   13 Tip Connection Screw   14 Movement Case Screw   15 Adjusting Slide Lock Screw   16 Adjusting Slide   17 Sector: Old Style \$0.60; New Style Balance   18 Pinion   20 Hair Spring   24 Dial Specify pressure   25 Ring   26 Dial Screw   27 Hand   34 Glass — Not shown   43 Adjustable Link Screw   44 Adjustable Link Screw   48 Receptacle   49 Receptacle   49 Receptacle   40 Receptacle   40 Receptacle   41 Receptacle   42 Receptacle   43 Receptacle   44 Receptacle   45 Receptacle   46 Receptacle   47 Felt — Not shown   75 Hand Stop Pin   75 Hand S	3.00 .10 .20 .10 .10 .00 .8 .10 .20 .3.00 .3.50 .20 .20 .10 .50 .20 .20 .10 .250 .280 .250 .250 .250 .250 .250 .250 .250 .25

99 Spanner Nut.

101 Compression Nut .....

100 Cap Bushing

No. Name of Part Outside Socket Screw.....

8.00

5.00

3.00

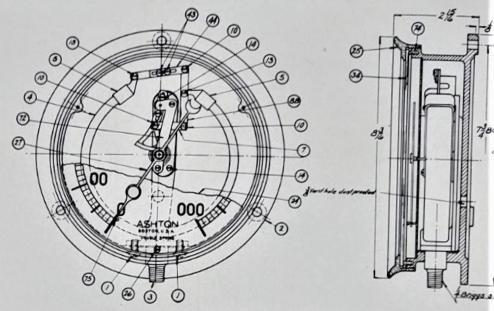
## Standard Locomotive Steam Gage

REFERENCE LIST OF PARTS

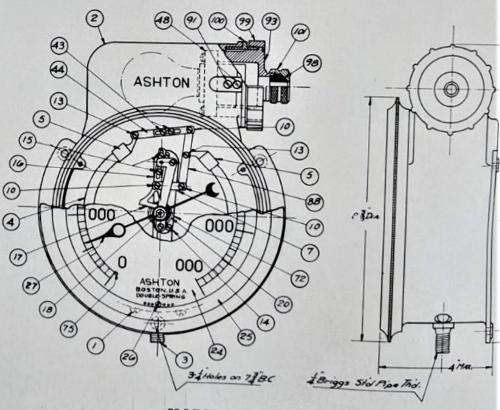
Part List for 63/4" No. 52 LBC and 63/4" No. 52 LBCI-3 Gages

Part No.	Name of Part List	Prices
1 Socket	Screw: Iron \$0.08; Brass	\$0.10
	rify iron or brass	
	No. 52 LBC: Iron, \$3.50; Brass	
No. 5	52 LBCI-3: Iron \$10.00; Brass	13.00
	rify iron or brass	
3 Socket	Specify pressure. Not	
4 Spring	furnished separately	3.00
5 Tip		1000
	ent Connection Arm	. 10
8B Lever.	etion Screw	.20
13 Tip Con	nnection Screw	.10
14 Movem	ent Case Screw	.10
15 Adjusti:	ng Slide Lock Screw	. 10
16 Adjusti	ng Slide	.08
17 Sector		.60
18 Pinion		.40
20 Hair Sp	ring	.20
24 Dial. S	pecify pressure: white, silvered or	.20
black		3.00
25 Ring. S	pecify O G or Semi-Flush	3.50
26 Dial Scr	ew	.05
21 Hand.	Specify black or white	.20
34 Glass.	Not shown	.20
43 Adjusta	ble Link Screw	. 10
44 Adjusta	ble Link. Complete	.50
48 Recepta	cle	.70
72 Moveme	cle Holder Screw	. 10
74 Felt. No	of shown	1.80
75 Hand St	op Pin	.20
- THOMECIO	I. INOT Shown	.05
or cap bus	ming Screw	.90
		.05
oo orommi	SI.	1.20
		.15
		3.00
101 Compre	ssion Nut	.45
	TAT	

Weights: Iron and Brass Non Illuminated, 10 lbs. Illuminated, 131/2 lbs.

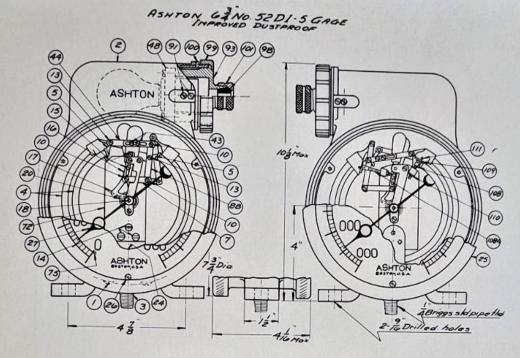


52 LBC Size 63/4-inch Dial



We recommend ordering Movement complete. When ordering Parts from above list, always specify style, size, iron or brass, maximum pressure and whether dials are to be silvered, black or white enamel, Ring

## Double Dial Locomotive Master Pilot Steam Gage



#### REFERENCE LIST OF PARTS

### Part List for 63/4" No. 52 DI-5 Gage

Part N	No. Name of Part	List Prices Par	No.	Name of Part	List Pri	ices
1	Socket Screw: Iron \$0.08; Brass .	\$0.10	Glass	Not shown		
	Specify iron or brass	43		stable Link Screw		10
2	Case: Iron \$9.90; Brass		Adjus	stable Link Complete		50*
3	Socket (	48		otacle		70
4	Specify pressure Not	48	Recep	otacle Holder Screw		10
5	Tip furnished separately	10.00	Move	ment Complete	8.0	00
7	110	74	Felt.	Not shown		20
8B	Movement Connection Arm		Hand	Stop Pin		05
10	Lever			Bushing Screw		05
	Connection Screw					20
1000	Tip Connection Screw			etor. Not shown		90
2012	Movement Case Screw			met		15
1000	Adjusting Slide Lock Screw	.08		ner Nut		100
V. 10300	Adjusting Slide					
**	Sector	.90 100		Bushing		
	rinion	.40 101		ression Nut		15
-0	riair Spring.	20 108		g Stop Screw		10
	Didi	3.00† 108	A Spring	g Stop Screw		0
	-ung	3.50 109	Spring	Stop Adjustment Key		6
10000	Diai Screw	.05   110	Spring	Stop Screw Check Nut		0
27	Hand	.20 111	Adjust	tment Key Lock Screw		0

<sup>\*</sup> When ordering parts numbers 7-8B or 44, specify for Pilot Scale or full pressure scale and maximum graduations as required.

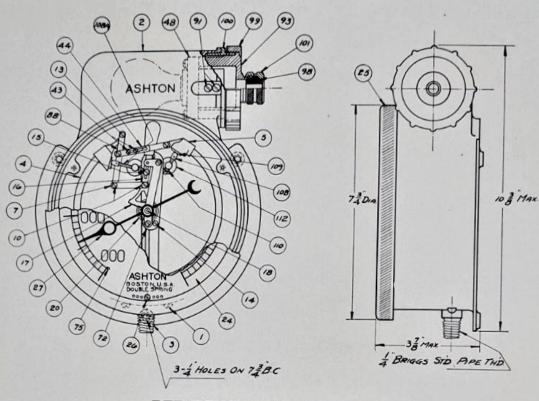
We recommend ordering Movement complete.

Weight: Iron and Brass Case 16 lbs.

<sup>†</sup> When ordering DIAL part number 24, specify for Pilot Scale or full pressure scale and maximum graduations as required.

### Locomotive Master Pilot Steam Gage

SINGLE ILLUMINATED DIAL



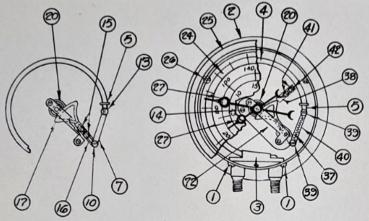
### REFERENCE LIST OF PARTS

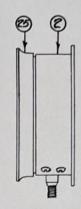
## Part List for 63/4" No. 72 I-3 Gage

Part 1	No. Name of Part L	ist Pri	ces   List N	o. Name of Part List 1	
1	Socket Screw: Iron \$0.08; Brass	\$0		List I	Prices
	Specify iron or brass	. 40.		Hand	\$0.20
2	Case: Iron \$10.00; Brass	10	34	Glass. Not shown	20
	Specify iron or brass	. 13.		Adjustable Link Screw	10
3	Socket (		44	Adjustable Link Complete	.50
4	Spring   Specify pressure, Not		40	Receptacle	.70
5	Tip furnished separately	. 10.	.00 48	Receptacle Holder Screw	.10
7			72		
8B	Movement Connection Arm		.10 75	Hand Stop Post	8.00
10	20,01		.20 91	Hand Stop Post	.05
13	Connection Sciew			Cap Bushing Screw.	.05
14				Cap	1.20
15	- Case Screw			Reflector. Not shown	.90
16	) adding blide Lock Screw		00	Grommet	. 15
17	Jasting bilde		35	Spanner Nut	1.50
18			100	Cap Bushing.	3.00
20			101	Compression Nut	.45
0.000			100	Spring Stop Screw	.30
24	becar white, slivered or black		1001	Spring Stop Screw	.30
00			100	Spring Stop Adjustment Key	.06
25	Ring		110	Spring Stop Screw Check Nut	
26	Dial Screw	. 3.5	50 112		.10
		(	05   113	Stop Post Fastening Screw. Not shown	2.00
	We recommen	d or	dering Move	ement complete.	1.20
				ment complete.	

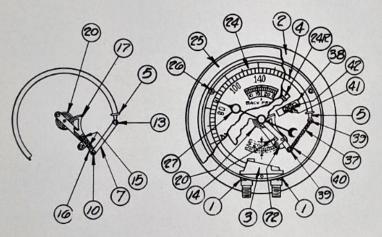
Weight: Iron and Brass Case 15 Lbs.

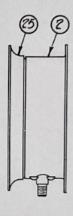
## Locomotive Duplex Back Pressure and Master Pilot Steam Gages





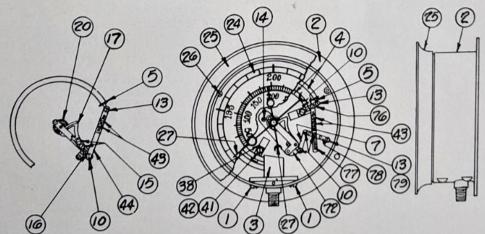
62 BA, 62 BO, DIAL SIZE 63/4 inch





62 BP, 62 BPA, DIAL SIZE 63/4 inch

### Locomotive Master Pilot Gage



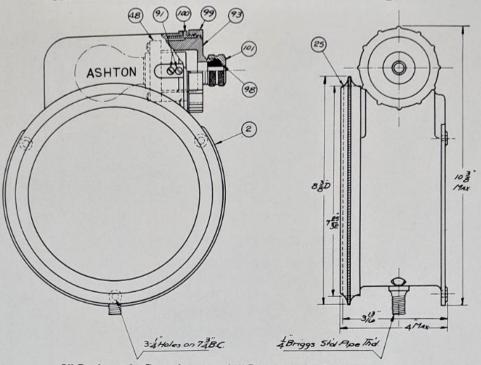
UPPER SPRING

LOWER SPRING

62BB, DIAL SIZE-63/4 inch

For illuminated cases and list of Parts, see next page.

## Locomotive Duplex Back Pressure and Master Pilot Steam Gages



All Duplex style Gages have two 1/4" Briggs standard pipe connections

 $6\frac{3}{4}$ -inch dial size illuminated Case can be furnished for the following style Gages: Nos. 62 BB, 62 BPA, 62 BA, 62 BAA. When ordering Springs (3, 4, and 5) or Dials (24), specify maximum pressure.

#### REFERENCE LIST OF PARTS

		Style: Size:		628AA 63/4"	62B0 63/4"	62BP 62BPA 63/4"	62BB 63/4"							yle:	62BA 634"	62BAA 63/4"	62B0 63/4"	62BP 62BPA 63/4"	62BB 63/4"
Fig.	Name of Part			List Pr			74	Fic	1.		Na	me o	f Part		094			s, Each	
1 2 3 4 5 7 10 13	Case Socket Spring Note above Movement Connection Screw	Iron Brass Iron Brass Arm	5.00 5.00 5.00	\$0.08 .10 4.00 8.00 5.00 .50 .10	\$0.08 .10 4.00 8.00 5.00 .50 .10		\$0.08 .10 4.00 8.00 7.00	40 41 42 43 44 76 77	Spr Spr Ad Ad Laz Top Ad	ing S justab justab y Han o Con justab	top I Stop I Stop I ole L ole L nd. I ole T	Post So Post V ink So ink co Not sh ink. 6 ake-ur	Vasher omplet own	e	\$0.30 .10 .05	\$0.30 .10 .05	\$0.30 .10 .05 	\$0.30 .10 .05	\$0.10
14 15 16 17	Tip Connection Screw Movement Case Screw Adjusting Slide Lock S Adjusting Slide	crew.	.10	.10 .10 .08 .10	.10 .10 .08 .10	.10 .10 .08	.10 .10 .08 .10	78 79 72	Tak Piv	ce-up of Pos	Link st. 6	. 62 B 2 BB c	Bonly			3.00		3.00	1.00 1.00 5.00
18 20 24	Sector Pinion. Not shown Hair Spring Dial. Note below		.40	1 .40	.40	.60		Pa	rt No		M-		D					List I Iron \$ Brass	n .
25 26 27 34 37 38 39	A Dial, Rotating, 62BP a 62BPA only. Note be Ring or Cover OG Sty Dial Screw. Hand. Glass. Not shown Tension Spring Spring Stop Post Connection Arm Screet is more economical to	elow	3.50 .05 .20 .20 .60 .40	9 .05 .20 .60 .40 .20	3.50 .05 .20 .20 .60 .40 .20	2.60 3.50 .05 .20 .20 .60 .40 .20	3.50 .05 .20 ¶ .20	4 4 9 9 9 9 100 10	8 Rec 8 Rec 1 Ca 3 Ca 8 Gr 9 Sp 0 Ca 1 Co	ceptaceptaceptaceptaceptaceptaceptacepta	cle I cle I shing et Nut shing ssion	Holder J Scre	Screv	emi-f	lush				3.50 .70 .10 .05 1.20 .15 1.50
	t is more economical to ‡ Specify bl All list prices subject to	ack or o disco	white. unt.	Weight	§ Sp s: Non	ecify s	silver or nated Iro	ir com	coner	nt Par	ts to	T TRAS	sem bli	na	4	C1		BEER FA	

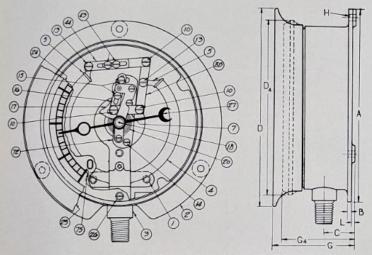
161-179 FIRST STREET

Locomotive Steam and Air Gages

> New Style with Socket Extension supporting Movement and Dial

Interior View Double Spring Gage

With OG Face Ring With Flush Face Ring



#### Part List No. 52-13 and 52-23

Part No		Name of Part	Lis	t Prices:	41/2"	5"	
1 Soc	ket Scraw	. Specify brass	or iron	Iron	\$0.08	\$0.08	
				Diass	. 10	. 10	
2 Can	· Cil	y brass or iron .		Iron	1.50	2.00	
2 Cas	e. Specif	y brass or iron .		Brass	4.00	4.50	
*3 Soc	ket, 4 Sr	oring, 5 Tip			2.00	2.50	
1 IATO.	vement Co	nnection Arm			.10	.10	
op rea	er				.20	.20	
10 Cor	nection S	crew			.10	.10	
13 11p	Connection	on Screw			.10	.10	
TAT TATO	vement Sc	rew			.10	.10	
15 Adj	usting Slic	le Lock Screw			.08	.08	
16 Adi	usting Sli	de			.10	.10	
-1 060	101				.60	.60	
18 Pin	ion	• • • • • • • • • • • • • • •			.40	.40	
20 Hai	r Spring				.20	.20	
24 Dia	l. Specify	pressure and fi			2.00	2.30	
25 Rin	a pechy	pressure and n	nish		2.50	2.75	1
26 Dia	Screw	bressure and n				.05	
27 Har	d Specia	y color			.05	.20	
					. 15	.15	
43 Adi	netmont C	own			. 15		
					.10	. 10	
72 Mg	ustable Li	nk, complete			.45	.45	
75 Hay	vement co	mplete. Note be	low		1.50	1.50	
					.05	.05	
520000	THE ANG	ights: Iron and E	brass. Lt	OS	4	41/2	1
N pec	Ju pressur	, not furnished se	manatala.	+ Solid	link in 3	1/2 inch si	ze.
Dimens	ione	, not jurnished se	paratety.	Botta			

Dimensions

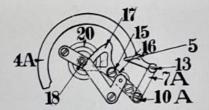


With Flush Face Ring (A) (P2) 16

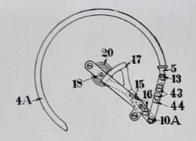
Part List No. 51-20 a	nd 51	l-23	
Part No. Name of Part List Prices:	31/2"	41/2"	5"
1 Socket Screw	\$0.08	\$0.08	\$0.08
2 Case. Specify brass or iron . Iron Brass	1.50	1.50	2.00 4.50
*3 Socket, 4 Spring, 5 Tip	1.50 .10 .10 .10	1.60 .10 .10 .10	1.75 .10 .10 .10
15 Adjusting Slide Lock Screw	.10	.10	. 10
17 Sector	.60	.60	.60
20 Hair Spring	2.00	2.00	2.30
25 Ring	2.50	2.50	2.75
27 Hand. Specify color	. 15	. 15	.20
43 Adjustment Screw 44 Adjustable Link complete 72 Movement complete. Note below	†.15 1.50	.45	. 10 .45 1.50
7E Hand Stop Pin	.05	.05	.05
Approximate Weights: Iron and Brass. Lbs. We recommend ordering Movement	nts con	nplete.	4.00
51-20 Do Go A	B 51	-23	G <sub>4</sub>
A B C D3 G3			

Height =  $\frac{3}{16}$ " for all sizes.

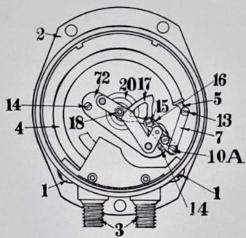
## Locomotive Duplex Air Brake and Stoker Gages



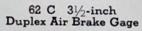
Inner or Brake Pipe Spring and Connections

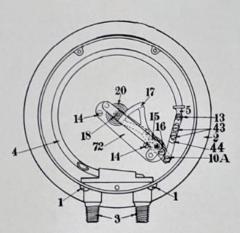


Upper Spring and Connections



Outer or Cylinder Spring and Connections





Lower Spring and Connections

62 BZ	)
62 BAB-1	
62 BAB-2	
62 BAC	5-inch
62 B-1&2	
62 BU	1

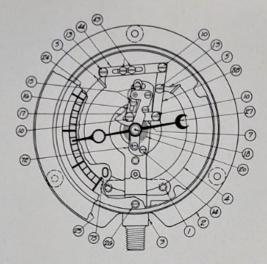
#### REFERENCE LIST OF PARTS

	Style:	62 C	62 B- 1&2 62 BU	BAB-2		Style:	62 C	62 B-1&:	2 BAB-1 BAB-2
	Size:	Duplex		BAC		Silvie.	Duplex	62 BZ	BAC
Fig.	Name of Part	31/2"	5"	5"	1	Size:	31/2"	5"	5"
1	Carlat C	The second	List Price	S	Fig.	Name of Part	/ 4	The Street of the last	
	Socket ScrewIron	\$0.08	\$0.08	\$0.08	16			List Price	
	Brass	.10	.10	.10	17	Adjusting Slide	\$0.10	\$0.10	\$0.10
2	CaseIron	1.50	2.00		18	Sector	.60§	.60§	.60§
	Brass	4.00	4.50	2.00	20	Pinion, Nickel Silver	.40	.40	.40
3	Socket (Complete. Not	4.00	4.50	4.50	24	Hair Spring. Note below	.20	.20	.20
4	Spring furnished separately	0.00			24	Dial, Silvered or Black.*	2.50	3.00	3.70
5	Tip Note below	3.00	3.25	3.25	00	Note below, not shown			
2					25	Ring, Flush or OG, Threaded.	2.50	2.75	2.75
4 8	Socket Complete. Not				- 00	Not shown		2.20	
4A 5		3.00	3.25	3.25	26	Dial Screw. Not shown	.05	.05	.05
5	Tip Note below			0.20	27	Hand, Black or Red	. 15	.20	.20
7	Movement Connection Arm	.101			-	Note below. Not shown		.20	.20
IOA	Movement Arm Con. Screw	.10	.10	10	34	Glass. Not shown	.15	. 15	. 15
13	Tip Connection Screw	.10	.10	. 10	43	Adjustable Link Screw		.10	.10
14	Movement Case Screw	.10	.10	. 10	44	Adjustable Link, complete	4	.45	.45
15	Adjusting Slide Lock Screw	.08	.08	.10	75	nand Stop Pin. Not shown	.05	.05	.05
	* Onad1- 1: 1		.08	.08	72	Movement complete. Note below	3.00	3.00	3.00

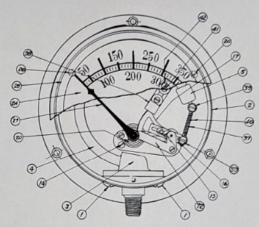
<sup>\*</sup> Quadruple dials with other than standard service marking or pressure, \$1.00 each, net, extra. † Solid link (7) in 3½-inch. † Specify 7 or 7A. § Specify upper or lower.

In ordering Parts always specify number of Gage; maximum dial graduation and finish, silvered, black or white enameled; iron or brass case, hairspring, top or bottom style; hand, red or black; dial service marking desired. It is more economical to order complete new Movements than their component parts for reassembling.

### Locomotive Booster Steam and Feed Water Heater Gages



52 BB-13 5-inch Dial Booster Gage



5-inch "Worthington" 6-inch "Elesco"

#### REFERENCE LIST OF PARTS

	Size	5"		Size	5"	6''
Fig.	Name of Part	List Prices	Fig.	Name of Part	Lis	t Prices
1 2 2 2	Socket Screw, Iron Socket Screw, Brass Case, Iron Case, Brass	10	1 1 2	Socket Screw Iron Socket Screw Brass Case Iron Brass	\$0.08 .10 3.75 4.25	\$0.08 .10 4.75 5.50
4 5	Socket Spring Tip Complete. Not furnished separately		3 4 5	†Socket Spring Not furnished separately	2.50	2.80
5 7 8B 10 13 14 15 16 17 18 20 24 25 26 27 34 43	Movement Connection Arm Lever Connection Screw Tip Connection Screw Movement Case Screw Adjusting Slide Lock Screw Adjusting Slide Lock Screw Hair Spring Dial, Silvered or Black. Not shown Ring, OG or Flush, Threaded. Not shown Dial Screw. Not shown Hand, Black or White Glass. Not shown		5 14 15 16 17 18 20 24 25 26 27 34 37 38 39 40	Tip Movement Case Screw Adjusting Slide Lock Screw Adjusting Slide Sector Pinion. Not shown Hair Spring †Dial Ring or Cover Dial Screw Hand Glass. Not shown Tension Spring Spring Stop Post Connection Arm	.10 .08 .10 .60 .40 .20 2.30 2.75 .05 .20 .15 .60 .40	.10 .08 .10 .60 .40 .20 .20 .3.50 .05 .20 .20 .60 .40 .20 .40
44	Adjustable Link Screw. Adjustable Link, complete *Movement, complete. Note below Hand Stop Pin. Not shown	10	41 42 72 72	Spring Stop Post Screw Spring Stop Post Washer *Movement, complete Movement, Hard Chrome Plated	.10 .05 1.50 2.50	.10 .05 1.80 2.80

<sup>\*</sup> It is more economical to order complete new Movements than their component parts for reassembling. When ordering Springs (3, 4, and 5), or Dials (24) specify the maximum pressure.

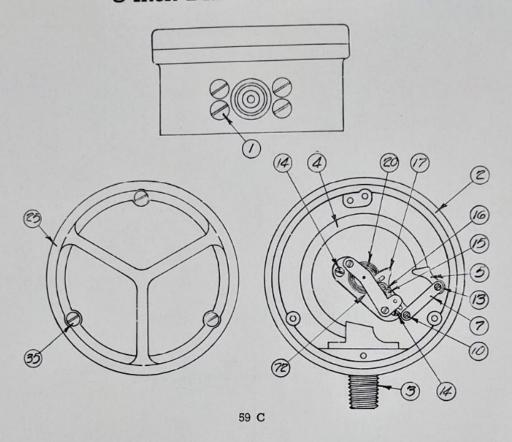
White porcelain or black.

In ordering Parts specify style, number of Gage, size, style of case, finish of dial and maximum graduation.

The Nos. 51 E and 51 S Gages are extensively used on locomotive feed water heaters and are especially adapted to this severe service. We strongly recommend the use of Retard Device No. 120 and hard chrome plated Movements with these Gages.

For weights and dimensions see page 28.

## Protected Dial Pressure Gage 3-Inch Dial Aluminum Case



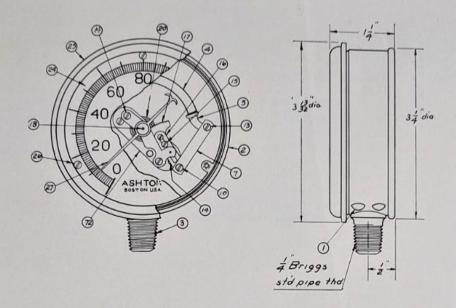
#### PRICE LIST OF PARTS

3. Socket 1/4-inch pipe 4. Spring not furnished 5. Tip separately 7. Movement Connection	14. Movement Case Screw 15. Adjusting Slide Lock Scre 16. Adjusting Slide	.10 2 w .08 2 .10 3 .60 3 .40 7	27. Hand (not shown)	)5 15 25 )5
--	---	---	----------------------	----------------------

The No. 59 C Gage is for air brake service on rear end train brake cock, and enables the man backing a train to know the pressure on the brake system.

In ordering Parts specify style number of Gage. Weight and dimensions on page 28. We recommend ordering Movements complete.

## Inspectors' Pocket Test Gage



#### REFERENCE LIST OF PARTS

### Part List for 3" No. 51 AH and No. 159-1

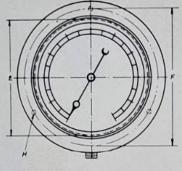
Pari	No. Name of Part	List P	rices
		51 AH	159-1
1	Socket Screw, Nickel Plated	\$0.10	\$0.10
2	Case. Brass Nickel Plated	2.25	2.25
4	Socket Spring Specify pressure Not furnished separately.	1.50	2.50
	Tip Movement Connection Arm	. 10	.10
	Movement Connection Arm Screw		.10
			.10
	Tip Connection Screw		.10
	Movement Case Screw		.08
	Adjusting Slide Lock Screw	10	.10
	Adjusting Slide	00	107.0
17	Sector		.60
18	Pinion		.40
20	Hair Spring	.20	.20
24	Dial		3.00
25	Ring	2.50	2.50
	Dial Screw	.05	.05
27	Hand	. 15	. 15
	Glass. Not shown		.35
	Movement complete		1.00
	Cover. Not shown		1.00

We recommend ordering Movement complete. Weight  $1\frac{1}{4}$  Lbs.

# Locomotive Steam and Air Gages DIMENSION SHEET AND WEIGHTS

51 E

51 S



200	_ D	
<u></u>	D <sub>3</sub>	
4		F 1
	<b>(A)</b>	45

DICAGO		CASL	HOM	CASE	
	5''	6"	5"	6"	
"A"	6,5	75/8	63%	75/8	
"B"	1/8	1/8	1/8	1/8	
"C"	$\frac{1}{1}\frac{3}{6}$	2 7 3 2	1 8 1 6	27	
"D"	6,5	73/8	6,3	71/8	
"D3"	515	61/2	515	61/2	
"D4"	5,9	7 3 2	5 9	7 3 2	
"E"	5	6	5	6	
"F"	57/8	7	51/8	7	
"G"	2 5	2,7	$2\frac{5}{16}$	2,7	
"G3"	1 3 1	23 32	1 3 1	232	
"G4"	216	2,5	216	2,5	
"H"	3 16	1/4	$\frac{3}{16}$	36	
"lbs."	33/4	61/2	33/4	61/2	
	"B" "C" "D3" "D4" "E" "F" "G" "G3" "G4" "H"	"A" 6 5 6 6 6 6 7 6 6 7 6 6 7 6 6 7 6 6 7 6 6 7 6	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

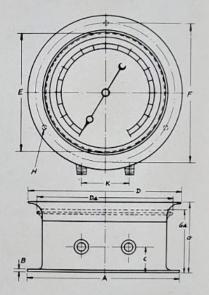
BRASS CASE

62 B-1 62 B-2 62 BAC 62 BR 62 BPA

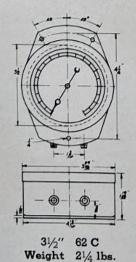
62 BAA 62 BO 62 BA 62 BU 62 BZ 62 BAB-1 62 BAB-2

#### BRASS and IRON CASES

Size:		5"	6"	63/4"
Diameter of Back Flange	"A"	63/8	75%	81/2
Thickness of Flange	"B"	1/8	1/8	1/8
Location of Bottom Connection	"C"	1 3 2	1 3	111
Diameter of Ring (OG)	"D"	6,5	73/8	81/4
Diameter of Ring (Semi-Flush)	"D4"	5,8	7.3	718
Diameter of Dial	"E"	5	6	63/4
Diameter of Bolt Circle	"F"	47/8	7	73/4
Height of Gage (OG)	"G"	3,3,	3,3	311
Height of Gage (Semi-Flush)	"G4"	233	3.1	316
Size of Holes	"H"	1/4	1/4	1/4
Distance Between Sockets	"K"	111	111	111
Approximate Weight	"lbs."	51/4	8	9



TRON CACE



For dimensions of 52-13, 52-23, 51-20, 51-23, 52 BB-13 see page 23.

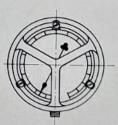
For dimensions of 159-1, 51 AH see page 27.

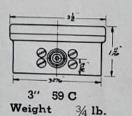
For dimensions of 52 LBC, 52 LBCI-3 see page 18

For dimensions of 52 DI-3, 62QI-7 see page 17

For dimensions of 72 I-3 see page 20

For dimensions of 52 DI-5 see page 19.





161-179 FIRST STREET

THE ASHTON VALVE COMPANY

CAMBRIDGE (BOSTON), MASS.

### OTHER ASHTON PRODUCTS

PRESSURE GAGES VACUUM GAGES MASTER PILOT AND MASTER PRESSURE GAGES RECORDING GAGES WHEEL PRESS RECORDING GAGE LOCOMOTIVE DRIVING WHEEL QUARTERING GAGE LOCOMOTIVE OPEN POP AND MUFFLED SAFETY VALVES GAGE TEST PUMPS GAGE COCKS GAGE CHECK VALVES POP SAFETY VALVES, SINGLE POP SAFETY VALVES, DUPLEX POP SAFETY VALVE YOKES POP SAFETY VALVE MUFFLERS RELIEF VALVES

MADE IN MANY SIZES AND STYLES FOR LOCOMOTIVE, STATIONARY, AND MARINE BOILERS, ALSO FOR POWER HOUSES AND SHOP EQUIPMENT

### **ASHTON QUALITY**

Cable Address, "ASHTON," BOSTON

### Telegraph or Cable Code

Also use Western Union, ABC or Bentley's Code as necessary

Code		Code	
MABET	At what price and how soon can you furnish?	MAFEX	Iron Case Chrome Plated Ring
MABIX	Ship all you possibly can by quickest route.	MAFLE	Brass Case and Ring
MABOD	Ship all by cheapest route.	MAFOH	Brass Case and Ring Nickel Plated
MACAP	Ship by fast freight.	MAFUM	Brass Case and Ring Chrome Plated
MACKA	Ship by express.	MAGEY	Black Dial
MACOE	Ship by parcel post.	MAGUN	Silvered Dial
MADAR	Ship by parcel post special delivery.	MAHAV	White Enamel Dial
MADEV	Hold shipment order No. ——; particulars by mail.	MAHEX	Name on Dial
MADIZ	Advise regarding shipment order No. ——.	MAJAX	Illuminated Dial
MADOF	Trace shipment order No. ——.	MAJEB	Non-Illuminated Dial
MADUK	Iron Case Brass Ring		
MAFAT	Iron Case Nickel Plated Ring		

#### Sizes in Inches

Code		Code		Code		Code	
MAJOL	1/8"	MAKOM	31/2"	MALUT	63/4"	MANOP	18"
MAJUR	1/4"	MAKRO	41/2"	MANAB	170.55 f - * Oh	MANZA	
MAKAY	1/2"	MALAZ	5"	MANEF	7 43	MAPAD	
MAKEC	21/5"	MALON	6"	MANIJ		MAPEH	
MAKIG	211				144	MATEIL	40

#### Pressure in Pounds

Code

Code		Code		Code		Code		Code	
LABAP	5	LAFIC	70	LAKAZ	135	LASSY	200		
LACAR	10	LAGEZ	75	LAKBA	TOTAL STATE OF THE PARTY OF THE		200	LAXAL	1000
LACEV	15	LAGID	80		140	LASYE	225	LAXDO	1200
LACIZ	20		11 12 13 15 17	LAKFE	145	LATEL	250	LAXEP	1500
LACOF	0.0333	LAHAW	85	LAKON	150	LATHO	300	LAXUF	NO TO SERVICE
	25	LAHOK	90	LARAF	155	LATIP	350		2000
LACUK	30	LAHTO	95	LARDI	160	LATUB		LAYAM	2500
LACYO	35	LAHUP	100	LAREI	165		400	LAYCO	3000
LADAS	40	LAJAY	105	LARIN	Residen	LAVEN	450	LAYOB	3500
LADEW	45	LAJEC	0.000		170	LAVIS	500	LAZAN	4000
LADME	50	LAJIG	110	LARJO	175	LAVOY	550	LAZES	
LADOG	1000000		115	LARTY	180	LAVUD	600		5000
	55	LAJOM	120	LARUZ	185	LAWAK	31010101	LAZOC	10000
LADUL	60	LAJRO	125	LASEK	190		700	LEBEY	15000
LAFEY	65	LAJUS.	130	LASNU		LAWIT	800	LEBUN	20000
				DADING	195	LAWOZ	900	TROPE	
								LECEZ	25000

Code

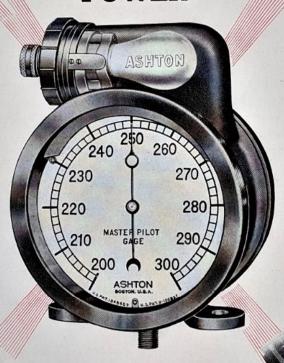
Code

Code

THE ASHTON VALVE COMPANY CAMBRIDGE - BOSTON - MASSACHUSETTS



FOR MODERN POWER



CATALOG 40 R.R.

# THE ASHTON VALVE COMPANY

161-179 FIRST STREET
CAMBRIDGE (BOSTON) MASSACHUSETTS

NEW YORK

SAN FRANCISCO

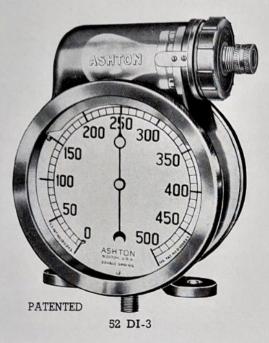
CHICAGO

### INDEX

#### STYLE NUMBERS AND NAMES

No. 52 DI-5 Illuminated Double Dial Locomotive Master Pilot Steam Gage (Frontispiece)	Page
	1
are my sent all Dial Improved Dust 11001 Quadrapies 1111 Dealer Dust Inches 11	1
no pro programme and Double Dial Locomonive Steam Gage	2
TO D Davide Dial Locomotive Steam Gage	2
62 OL 7 Illuminated Dial Improved Dust Proof Quadruplex Air Brake Gage	3
20 V C2 O 2 Oundrupley Air Brake Gage	3
63/11 No. 72 L-3: No. 52 DI-5 Illuminated Single and Double Dial Master Pilot and No. 62 BB Single Dial Non-Illuminated Locomotive	
Steam Garres	4
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Gages	-
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5" No. 52-13 Fine Coal Single; No. 62-BZ Duplex Jet Pressure and Engine Pressure Locomotive Stoker Gages	
5" No. 62 FAE-1 Quadruple Dial Stoker and 62 BAB-2 Quadruple Dial Combination Locomotive Stoker and Duplex Air Brake Gages	
5" No. 62 B Figure 1; No. 62 B Figure 2 Improved Duplex Air Brake Gages; 5" No. 62 BAC Quadruple Dial Duplex Air Brake Gage;	
3½" No. 62 C Duplex Air Brake Gage	9
6" No. 62 ER Duplex Air Brake Test Gage; No. 159 Standard Test Gages, sizes $3\frac{1}{2}$ "; $4\frac{1}{2}$ "; $6$ " and $6\frac{3}{4}$ "; $8\frac{1}{2}$ "; $10$ " and $12$ " Dials	10
3" Dial No. 59 C Aluminum Case Protected Dial Gage; 159-1 3" Dial Standard Pocket Test Gages	10
5" Dial No. 51-23; 3½", 4½" and 5" Dial No. 51-20 Special Caboose and Single Air Brake Gages	11
41/2" and 5" Dial No. 52-23 and 3" No. 51 AH Double Spring Locomotive Steam Heat and Single Air Brake Service Gages	
5" and 6" No. 52 BB-13; 51 E and 51 S Locomotive Booster Steam and Feed Water Heater Gages	
No. 155 and 155-1 Hydraulic Gages	
No. 179 and 180 Dead-Weight Gage Testers	13
Dead-Weight Gage Tester Equipment.	14
No. 181, 182 and 86 Dead-Weight Gage Testers for Medium and Extreme High Pressure	15
No. 88, 88A, 89 and 89A Portable Boiler Test Pumps	16
5" No. 62 QI-7 Quadruplex Air Brake Gage and 63/4" No. 52 DI-3 Double Dial Locomotive Steam Gage. Part List and Dimensions.	17
63/4" No. 52 LBC; 52 LBCI-3 Locomotive Steam Gages. Part List and Dimensions. 63/4" No. 52 DI-5 Double Dial Locomotive Steam Gages. Part List and Dimensions.	18
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6¾" No. 62 BA; 62 BO; 62 BP; 62 BPA; 62 BB Locomotive Duplex Back Pressure and Master Pilot Steam Gages. List of Parts	21
63/4" Locomotive Duplex Back Pressure and Master Pilot Steam Gages. List of Parts No. 52 13; 52-23 Double Spring; 51-20; 51-23 Single Spring Local Columns Col	22
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No. 39 C Protected Dial Protected Di	
All and No. 150 1 t	
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Telegraph and Cable Code	29
	30

# New Style Dust-Proof Illuminated Dial LOCOMOTIVE GAGES



# 6¾" Double Dial Locomotive Steam Gage

Flush Rings, Threaded Case with Dust-Proof Felt Gaskets

LAMP HOUSING CAST INTEGRAL WITH CASE

Furnished with Flat White Porcelain "Non-Glare" Enameled Dials

For Standard Graduations, 300, 400, 500 and 600 pounds

## - ASHTON QUALITY - -

## 5" Improved Dust-Proof Quadruplex Air-Brake Gage

LAMP HOUSING CAST INTEGRAL WITH FACE RING

Furnished with Flat White Porcelain Enameled Dials

For Standard Service Marking and Graduations as Illustrated



161-179 FIRST STREET

## 63/4" Double Dial Locomotive Steam Gage

NEW STYLE DUST-PROOF ILLUMINATED



52 DI-3
With Electric Light Attachment
PATENTED

The New Style No. 52 DI-3 supersedes the well-known and extensively used Ashton DI Gage. While retaining all the advantages of the interior construction of the latter, the electric illuminating housing is now cast integral with the case, thus insuring a more completely dust-proof assembly, preventing dust, smoke, or grease getting into the interior, fouling the movement parts and obscuring the illumination of the dials. The use of this Gage eliminates the need of separate boiler pressure gages for engineer and fireman on large locomotives and those having fire boxes extending back into the cabs.

Each face of the Gage has a dial and hand. The two hands are at opposite ends of the extended pinion shaft, which, actuated by one movement and one set of Bourdon tubes, insures uniformity of pressure indications on both dials. One hand rotates clockwise and the other counterclockwise, as indicated in the illustrations, which show opposite faces. This simplified construction avoids the necessity of two movements, or extra reverse linkage. The wear of either or both will result in reports or complaints of different pressure indications on the two dials.

The dials of the 52 DI-3 are illuminated by a standard electric lamp bulb, having the American Railway Master Mechanics' bakelite receptacle with lamp grip. The light is reflected down on the dials on the inside of housing between dials and glasses, and thus does not interfere with the vision of the enginemen.

After extensive research we have developed a flat white porcelain enameled dial which is positively "non-glare" and eliminates reflection of light or shadows. These dials can be cleaned with soap and water and have a permanency not found in aluminum, processed or silvered dials, or any other type of dial. In ordering, specify style number of Gage, iron or brass case, and maximum pressure to which dials should be graduated; also finish of dials — porcelain, silvered or black.

Dials graduated to 300, 400, 500, 600 pounds are standard. We recommend Gage graduated to approximately twice working pressure. The double spring construction minimizes vibration and permits the tubes to be drained to prevent freezing.

Wiring inlet has one-half inch pipe thread for standard strain relief bushing, or flexible-metallic cable.

This Gage is made in the six and three-quarter inch dial size only, in dust-proof iron or brass case, with threaded knurled brass rings, one-quarter inch male pipe connection, only one required.

Gages should be so located as to avoid excessive heat. If near or immediately above a fire door a deflector should be provided.

Siphons filled with water must be used with all steam Gages.

Gage without lighting attachment is called No. 52 D style. See cut.

Gages furnished without cocks or fittings.

No. 52 DI-3 Size, 634" 734" x 416" x 101/8" 131/2 lbs.

No. 52 D Size, 634" 734" x 3" x 8" 9 lbs.

Other Dimensions and Part Lists on page 17.

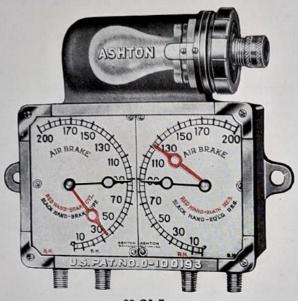
PRICES ON APPLICATION



52 D Without Electric Light Attachment

## 5" Dial Quadruplex Air-Brake Gage

NEW STYLE DUST-PROOF ILLUMINATED



62 QI-7 With Electric Light Attachment

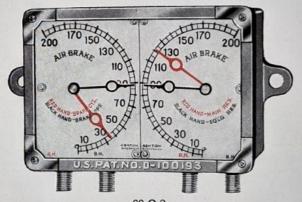
## PERFECT VISIBILITY — OVER 7,000 IN SERVICE

The design of this Gage has been improved as illustrated, from which it will be noted that it is now made dust-proof, with lamp housing cast integral with the face ring, and the zero position on each dial is at the base of the vertical center line, thus obviating the hands traveling uphill to stop pin, and the possibility of a weakened hair spring allowing hands to recede from zero position. The dials are flat white porcelain, which gives better visibility from all angles.

This Ashton innovation in gage construction combines two duplex air Gages in one case  $(3\frac{1}{2})'$  and 5" sizes ordinarily used), thus producing uniformity in size of dials, one less gage case and economizing space in the locomotive cab.

The principal object of this new design is to place in a centralized position the two air Gages and the indicating hands of same as near together as possible, so that the engineer by concentrating his vision particularly on the brake pipe and equalizing reservoir hands may regulate more uniformly and accurately his brake applications and secure smooth handling of the train.

The illumination of the dials is accomplished by the special enclosed electric light attachment, which prevents diffusion of the light rays over other sections of the cab and thus in no



62 Q-3 Without Electric Light Attachment

way interferes with the vision of the enginemen. The electric attachment for No. 62 QI-7 Gages is designed for a standard cab lamp, S-17 bulb, 15 watts, 34 volts, having bakelite receptacle with lamp grip, as adopted by A. R. Association Mechanical Section, 1920.

The gage cases being oblong will induce the mechanic to install same straight and will establish a uniformity in location of zero marks, a condition that will remain impossible as long as round case gages are used and installed to fit pipes or bracket holes originally placed to accommodate a gage of different make or diameter.

The movements and interior construction of the Gages are similar to those used in the Ashton No. 62-B Duplex Air-Brake Gages; therefore involve no complications in repairs or experiments. The Quadruplex Air Gages are so constructed that one Gage may be tested, adjusted or repaired without interfering with the other.

Other Dimensions and Part Lists on page 17

PRICES ON APPLICATION

### Locomotive Master Pilot Steam Gage

SINGLE AND DOUBLE ILLUMINATED DIAL



Single Dial 72 I-3

Size Gage 63/4-inch Dial

#### DUST-PROOF LOCOMOTIVE STEAM GAGE

Iron or Brass Base

PATENTED

Furnished with
Flat White Porcelain ''Non-Glare''
Enameled Dials

For Standard Graduations 300, 400, 500 and 600 pounds



Double Dial 52 DI-5 Note Cut Below



62 BB Single Dial If Illuminated 62 BBI-3 Style

One side on the Double Dial No. 52 DI-5 style of the Gage has a dial which is direct reading from zero to the maximum pressure, and is graduated in the usual 5-or 10-lb. increments. The Gage is mounted on the back boiler head so this dial faces the engineman. On the other side of the Gage, facing the fireman, is the pilot steam dial as illustrated.

Part Lists Weights and Dimensions on pages 19, 20, 21 and 22

PATENTED



Double Dial 52 DI-5 Reverse View

The Ashton Locomotive Master Pilot Steam Gages are constructed with special dials. With wide, coarse graduations of two pounds increments the enginemen may easily detect the slightest fluctuation within the range of the working pressure, and check the advancing steam, thus preventing waste through the safety valves, or reduction of pressure below the efficient and economical operating point. It is particularly adapted for stoker-fired and fuel-oil-burning locomotives, and will contribute to greater efficiency and economy through a more uniform boiler pressure.

## Locomotive Steam and Duplex Back Pressure Gages

FOR INDICATING STEAM PRESSURE, ALSO THE BACK PRESSURE AND VACUUM IN LOCOMOTIVE CYLINDERS



52 LBC I-3



32 BPA I-3

#### Locomotive Steam Gages

PATENTED

Size Gage, 63/4-inch Dial

The double spring construction minimizes vibration and permits tubes to be drained to prevent freezing.

> With Socket Extension Supporting Movement

Also furnished with
Flat Black "Non-Glare" Dials
Flat White Porcelain
"Non-Glare" Enameled Dials
Dust-Proof Iron or Brass Case

Dials graduated to 300, 400, 500, 600 pounds are standard.

We recommend Gage graduated to approximately twice working pressure.

> Part Lists Weights and Dimensions on page 18

#### Locomotive Back Pressure Gages

PATENTED

The Ashton Duplex Locomotive Back Pressure Gage is designed to register or indicate the effective pressure on the pistons of the locomotive; the steam chest pressure (large dial) pipe line being connected to the live steam passage between the throttle and the cylinder. The small dial indicates the amount of back pressure, the pipe line of which is connected to the exhaust passage of the cylinders.



52 LBC



62 BPA

When the locomotive is at rest both hands are at 0. When the throttle is open the large hand should gradually rise and indicate the maximum steam chest pressure, which should, in operation of the locomotive, be maintained as near the maximum boiler pressure as possible. As the locomotive gains speed, back pressure is built up and indicated on the small dial and the cut-off should be set back or reduced to use the steam expansively, thereby cutting down the back pressure.

The difference between the two pressures, namely steam chest pressure minus back pressure, represents

the actual effective power in the cylinder.

It is most desirable to operate the locomotives with a minimum difference between the working boiler pressure and the initial steam chest pressure, with the proper throttle opening and position of reverse lever, so as to maintain the desired running speed and carry as low a back pressure as possible.

Parts Lists, Weights and Dimensions on pages 21 and 22

## Locomotive Duplex Back Pressure and Vacuum Gages





62 BA If Illuminated 62 BAI-3

Size Gage 63/4-inch Dial

Iron or Brass Case

PATENTED

The Ashton No. 62 BO Gage, illustrated above, is similar to No. 62 BA (illustrated below) in design, size, etc., but with the inside circle graduated to 50 pounds maximum for Back Pressure, and the outside circle, Steam Chest Pressure, graduated to a maximum of 400 pounds pressure and also 30-inch vacuum.

Part Lists
Weights and Dimensions
on pages 21 and 22

PATENTED



62 BC



62 BAA with Lazy Hand If Illuminated 62 BAAI-3

The Ashton No. 62 BA style Gage, illustrated above, is specially designed and constructed for indicating the steam chest pressure and back pressure in locomotive cylinders. It has been instrumental in producing some very satisfactory results in fuel economy by materially reducing the back pressure on locomotives. Without such a Gage the enginemen have but a vague idea of what constitutes a full throttle and how to adjust the cut-off to the best advantage.

The inside circle on the dial is graduated to 30 pounds and the hand indicates the back pressure. The outer circle is graduated to 300 pounds and the hand indicates the initial steam chest pressure, enabling the engineman at a glance to take advantage of the longest expansion possible in the cylinder and thus secure the maximum efficiency and economy. Furthermore, the Lazy Hand on the Gage provides a telltale or indicator by which the enginemen may, from day to day, repeat the performance of the individual runs and not be dependent, as heretofore, on the sense of hearing or feeling to determine the best locomotive performance.

The pulsating pressures to which these Gages are subjected are extremely severe, and to reduce them to a minimum we recommend that the Ashton No. 120 Retard Device, as illustrated and described on the next page, be provided for both the steam chest and back pressure lines.



Pulsation Retard Device

The Ashton No. 120 Pulsation Retard Device, illustrated above, is especially designed to retard pressure pulsations, as its name implies. It consists of a needle valve, having a very sharp point which may be adjusted to effectively retard the pulsations and eliminate the vibration of the Gage hand.

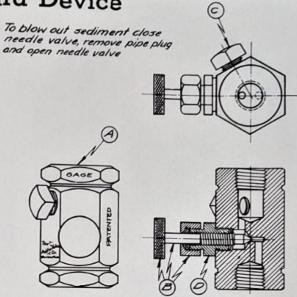
There is a blow-out passage through the body "A" and across the seat of the needle valve "B," and by removing plug "C" it is possible to blow out any sediment that may have lodged on the seat or in the passage.

This device is especially designed to retard the pulsations to which the Ashton No. 62 BP, No. 62 BPA, No. 62 BA and No. 62 BO steam chest pressure and back pressure Gages are subjected on locomotives.

We recommend that both the high and low pressure units of the Ashton No. 62 BA, No. 62 BP, No. 62 BPA and No. 62 BO

Gages be protected from the severe pulsations by installation of the Ashton No. 120 Retarding Device which is made for \(^1/4\)-inch standard pipe thread connections, and this device should be installed in the pipe line below the usual steam gage siphon, which further prevents the condensation in the siphon from being blown out and live steam allowed to enter the gage tube. Blueprints showing piping arrangement for connecting up the Gage and Retard Device will be furnished on request.

Dimensions:  $2\frac{1}{4}$ -inch wide, including needle valve,  $2\frac{1}{4}$ -inch long. Weight:  $\frac{3}{4}$  pounds.





52-13 Main Steam Gage

### Locomotive Stoker Gages

Both Gages are 5inch size, have movements with wide sectors of cast phosphor bronze, nickel silver pinions and shafts, and phosphor bronze bearing bushings in top and bottom plates.

All Ashton Stoker Gages are now provided with chokes in sockets to minimize pressure pulsations, also safety disc on back of case to



62 BU Steam Jet Gage

prevent accumulation of pressure therein. Rings are OG, threaded. Connections are ½-inch pipe size, male. Orders should specify style number of Gage as shown under cuts, pressure, iron or brass case and marking on dial. Siphons filled with water must be used with all steam Gages. Furnished without cocks or fittings.

These illustrations show modifications of Ashton No. 52 LBDB and No. 62 BU Gages with special dials for use with locomotive stokers. The Main Steam Gage has silvered or black dial graduated to 250, 300 or 400 pounds. The double spring construction of the No. 52-13 minimizes vibration and permits tubes to be drained to prevent freezing. The No. 62 BU Steam Jet Gage has silvered dial graduated to 150, 250, 300, 350 or 400 pounds, black and red hands. Can also be furnished with black dial, white and red hands.

Part Lists, Weights and Dimension on pages 23, 24 and 28.

Locomotive Stoker Gages



Size Gage 5-inch Dial

Iron or Brass Case

Part Lists Weights and Dimensions on pages 23, 24 and 28



The above Gages are especially designed for Stoker Service. The No. 52-13 is of double tube construction with movement suspended on socket casting. Movements have wide sectors of cast bronze, nickel pinions and shafts, OG threaded rings or flush style when so specified. Black dials have white and red hands, silvered dials, if so ordered have black and red hands. Orders should specify style number, pressure, iron or brass case, black or silvered dials, also service marking on dial. Connections are 1/4-inch pipe size. Siphons filled with water must be used with all steam Gages.

### Combination Locomotive Stoker and Duplex Air Brake Gages



Size Gage 5-inch Dial

Iron or Brass Case

Part Lists Weights and Dimensions on pages 24 and 28

PATENTED

Silvered Dials



The Ashton No. 62 BAB-1-2 Gages illustrated above are provided with dials having quadruple service marking as required on various makes of stoker equipment, graduated 150 or 250 lbs. The cover plate may be rotated to display the correct marking "shown in phantom" on the cuts. This is accomplished by springing the plate over a small dowl and moving it to the desired position. The No. 10 per plate over a small dowl and moving it to the desired position. the plate over a small dowl and moving it to the desired position. The No. BAB-2 Gage is made with combination service marking for stoker and air brake equipment. The interior construction case rings, etc., are the same as the 5-inch Ashton Duplex Stoker and Air Brake Gages. REDUCE YOUR STOCK. With these Gages it is unnecessary to carry in the storeroom a variety of gages different only in the service markings on the dials. Made with OG face rings above or flush rings as illustrated on the next page.

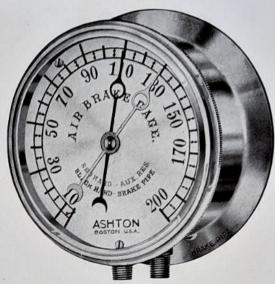
## Improved Duplex Air Brake Gages



5-inch Dial

Iron or Brass Case

Part Lists Weights and Dimensions on pages 24 and 28



62 B Fig. 2

These Gages are made with two independent springs and connections; the red and black hands indicate the individual service pressures as marked on dials and flanges. The movements are of substantial construction, with nickel silver pinions and shafts, sectors and bushings of phosphor bronze, springs of seamless drawn

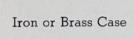
brass tubing. Sockets are cast in one piece, are of heavy construction and made to resist pipe strains that frequently affect the accuracy of some gages. Connections are 1/4-inch pipe size, male. Rings are threaded cast brass. Orders should specify iron or brass case and Fig. 1 or Fig. 2.



62 BAC 5-inch Dial PATENTED

The above Gage is provided with a dial having stamped thereon four commonly used air brake service markings. By moving the cover plate as explained on the preceding page, the desired marking is exposed. This quadruple dial marking avoids the expense of several duplicate stocks of gages.

The construction otherwise is the same as the No. 62 B described above.



Part Lists Weights and Dimensions on pages 24 and 28



62 C 3½-inch Dial Small Pattern

This Gage is similar in construction and operation to the No. 62 B Duplex Air Brake Gage shown above, but is of smaller size with 31/2-inch diameter dial. It is used specially on locomotive driving wheel brake systems, and is made with special back flange so as to occupy as small a space in the locomotive cab as possible.

Sockets are cast in one piece, are of heavy construction and made to resist pipe strains that frequently affect the accuracy of some gages. Ring is threaded cast brass, flush style. Movement has nickel silver pinions and shafts, phosphor bronze sectors and bushings. Dial is silvered. Connections are 1/4-inch pipe size, male. Orders should specify style number of Gage, iron or brass case.

## 5 H T O N

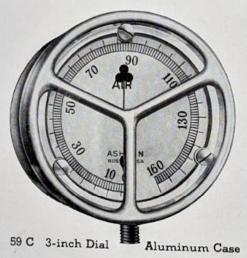
### Air Brake and Standard Test Gages



Duplex Air Brake Test Gage

The Duplex Air Brake Test Gage is designed more particularly for use on test rack for indicating reservoir and brake cylinder pressures. The silvered dial is graduated in 1-lb. increments, 5-lb. spacings, and 20-lb. figures, up to 160 lbs. maximum, and marked "Red Hand—Aux. Res.," "Black Hand—Brake Pipe," unless otherwise specified. Made in the 6-inch dial size, brass case only.

Weights and Dimensions on page 28

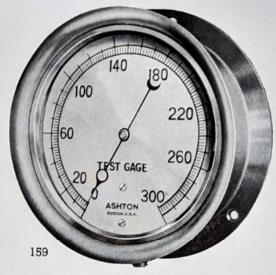


Part Lists Weights and Dimensions on pages 26, 27 and 28

Protected Dial Gage

The Ashton Protected Dial Gage is specially designed to suit the requirements in air brake service and particularly in connection with the rear end train brake cock. With such a gage rear end trainmen having in charge the backing of trains can know at a glance the exact pressure on the brake system, assuring perfect control. It is also a handy and practical instrument for use of Air Brake Inspectors in repair, classification and passenger-car yards.

The face of the Gage is protected from damage by having the transparent celluloid disc and the dial set considerably below the top rim, and furthermore by protecting crossbars. These bars will not only prevent ordinary projections from penetrating the Gage, but will also stand being struck with considerable force without breaking. This Gage is made in the 3-inch dial size, with 1/4-inch pipe connection, and has aluminum case and ring with the crossbars combined with the ring in one casting.



The Ashton Standard Test Gage is constructed for extreme accuracy and sensitiveness, and can be relied upon, whether used for testing other gages or for indicating pressure under conditions calling for extreme precision.

Every care is exercised both in workmanship and selection of material; each Gage is tested by Dead Weight Gage Tester and graduated as shown above. Regularly graduated to 300 pounds, but can be graduated to any desired pressure. Sizes 31/2, 41/2, 6, 63/4, 81/2, 10 and 12-inch dials. Orders should specify style of case and maximum pressure.

		maximum		 	1 pound	marks
		maximum	 	 	2 pound	marks
500	pounds	maximum	 	 	5 pound	marks



### Standard Pocket Test Gage

A neat, light Test Gage of suitable size for carrying in the pocket or tool box. It weighs only about one pound. For perfect protection of dial and hand, this Gage has bevel plate glass front with metal cover. Used principally by air-brake inspectors, boiler inspectors, and master mechanics, it is graduated for any desired pressure up to 500 pounds. The 3-inch diameter of dial limits the graduations as follows:

160 pounds maximum ...... 1 pound marks

300 pounds maximum 2 pound marks
500 pounds maximum 5 pound marks
Made in brass case, N. P. case or aluminum case. Dial is silvered. Connection is 1/4-inch pipe size, male. Orders should specify style number of Gage and maximum pressure.

## Special Caboose and Single Air Brake Gages

Designed especially for caboose service. It is a constant indicator of the train line or brake pipe pressure—a telltale for the freight train conductor. It has large prominent figures and hand, so that train men may read it from a distance. The flush ring also gives a better view of the

51-23 5-inch Dial

dial, and being threaded on the case, reduces the chance of broken glass so common because of shocks and vibration.

Made in 5-inch size, of the single spring type, iron or brass case, graduated to 150 pounds, with socket extension supporting movement and dial. The sturdy construction of this Gage, including movement with phosphor bronze bushings and sector, nickel silver pinion and shafts and above-mentioned threaded ring in contrast to light movement, spun ring or slip ring held on with screws commonly used on cheap gages, makes it particularly desirable for the severe use to which it is subjected. Orders should specify style number of Gage, iron or brass case. Dial is silvered. Connection is 1/4-inch pipe size, male.



Iron or Brass Case

Part Lists Weights and Dimensions on page 23



51-20 31/2, 41/2, and 5-inch Dial

This Gage of the single spring type is made with socket extension supporting movement and dial and used in connection with Straight Air Brake Equipment on locomotives and also on test racks in repair shops. The dial graduation is similar to that of the Duplex Air Brake Gage. The large figures and flush threaded ring give a full and unobstructed view of the dial, making it possible to read the Gage at greater distance than can be done with the ordinary gage used for this service. Made in sizes  $3\frac{1}{2}$ ,  $4\frac{1}{2}$ , and 5-inch, without cocks or fittings. Iron or brass case graduated 160 or 200 pounds as specified. Dial is silvered. Connection 4-inch pipe size. Orders should specify style number of Gage, style of case, maximum pressure graduation.

### Double Spring Locomotive Steam Heat and Single Spring Air Brake Service Gages

Part Lists Weights and

Dimensions

This Gage is for indicating the pressure in the train heating system. It is of the same general design and high quality as our No. 52 LBC, but smaller, usually with 4½-inch dial, and graduated to 200, 230 or 300 pounds.

The double spring construction mini-

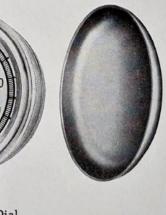
mizes vibration and permits tubes to be drained to prevent freezing. Now made with socket extension supporting movement and dial. It is furnished with silvered, black, or white enamel dial as specified. The figures on the dial are large and prominent. The ring is flush style threaded. Two hundred thirty pound silvered dial is standard. Orders should specify style of Gage, size, style of case, iron or brass case, style of dial and maximum graduation. Connection is 4-inch pipe size, male. Siphons must be used with all steam Gages.

110 130 90

52-23 41/2- and 5-inch Dial

on pages 23 and 27

51 AH 3-inch Dial



The above 3-inch dial Air Brake Service Gage is similar in design and construction to the style No. 159-1 Pocket Test Gage illustrated on preceding page. It is especially adaptable for checking air brake pressures on train lines where a light-weight, sturdy and accurate Gage is required. Made only in 3-inch size, brass nickel plated case, silvered dial, graduated 160 pounds. 1/4-inch pipe size, male connection. Weight one and a quarter pounds.

## Locomotive Booster Steam and Feed Water Heater Gages



52 BB-13 5-inch Dial

The Gage illustrated above is of sturdy construction, built to give dependable service on auxiliary power units or Locomotive Boosters where the service is intermittent. It is of double spring construction, made in brass or iron case with brass flush threaded ring, silvered, black or white porcelain enameled dials. Orders should specify the above details. Ample siphons must be provided and filled with water to protect all steam Gages.



Part Lists Weights and Dimensions on pages 25 and 28

PATENTED

Booster and Feed Water Heater Gages are protected with chokes in sockets to minimize pulsations, also disc on back of case to prevent accumulation of pressure therein.



5-inch (Worthington) 51 S 6-inch (Elesco)

These Gages were designed to withstand extreme and rapid variations of pressure. The No. 51 E is extensively used on Locomotive Feed Water Heaters and has given good satisfaction in this very severe service. The above style Gages when so specified can be furnished with hard chrome plated movements to resist wear of the pinion and sector teeth. This may also be accomplished by protecting Gages in this service with the Ashton Pulsation Retard Device No. 120 described on page 7. It is regularly made in the 5-inch size in unfinished cast brass case, with black dial graduated to 400 pounds. Worthington dial. Designating numbers of Gages other than above are: Nos. 51 EA-51 E without Worthington dial. Flush threaded ring is standard. The No. 51 S is used for similar service. It is regularly made in either iron

or finished brass case, with black or white porcelain dial graduated to 400 pounds. Both styles have a spring stop for the sector which prevents damage to the hand on sudden release of pressure. Connection is 1/4-inch pipe size, male.

### Hydraulic Gages

Iron or Brass Case

Part Lists Weights and Dimensions on application

2500 2000 3000 1500 3500 1000 4000 4500 5000 155-1 4½, 5, 6, 8½, 10 and 12-inch Dials

Ashton Standard Hydraulic Gages, Nos. 155 and 155-1, are intended for use on high pressures. The steel tube or spring is bored from solid bar stock, carefully heat treated and rust proofed to prevent corrosion. These Gages are accurate and durable. Standard square inch and corresponding "tons on ram." All orders should state exact diameter of ram and also maximum and minimum working pressures on which the Gage will be used. No. 155-1 Gage has general construction same as No. 155 above, but with dial marked only and smaller, and cast slip ring in larger sizes. All brass case Gages have cast brass threaded ring.

THE ASHTON VALVE COMPANY

### Dead-Weight Gage Tester



179-180

#### WITH DOUBLE AREA PISTON

The Ashton Dead-Weight Gage Tester, as shown above, offers in convenient form an improved method for accurately testing Pressure Gages by means of weights, and is a recognized standard extensively adopted for this important service. Its accuracy closely approaches that of the mercury column, and has the added advantage of compactness, portability, and much lower cost.

This Tester is also an improvement over the ordinary styles of Dead-Weight Testers because of its distinctive construction with double area plunger. This exclusive feature renders it possible to make tests within its designated range of pressure with only one-fourth the usual number of weights, which is a matter of considerable convenience as well as economy of time. The Gage shown in above illustration is not furnished, being merely an illustration of a gage as applied for test.

When testing at low pressures, the instrument should be adjusted to use the combined large and small areas of plunger. This is accomplished by closing the cock on left-hand side of vertical cylinder and opening the right-hand one. For testing at high pressures no additional weights are required, it being merely necessary to reverse the adjustment of the cylinder cocks. Before reversing the adjustment, however, it is advisable to remove all pressure in the Tester by unscrewing the hand wheel. Then the cock on the left should be opened and that on the right closed. This makes use of only the small area of the plunger, and the pressure then exerted will be four times as great as before, and applies to the weight holder as well as to each of the weights, increasing the testing capacity to full maximum.

The pressures exerted on the Gage are as follows:

	Area	Area
Plunger and Weight Holder	5 lbs.	20 lbs.
	11/4 lbs.	5 lbs.
1/4 pound weight	2½ lbs.	10 lbs.
½ pound weight	5 lbs.	20 lbs.
l pound weight		40 lbs.
2 pound weight	10 100	
4 pound weight	20 lbs.	80 lbs.

Each weight is marked with the number of pounds per square inch it will exert on the Gage with either combined area adjustment or small area adjustment. When additional testing capacity is desired, it can be accomplished up to 2,000 pounds by ordering extra weights at a nominal expense.