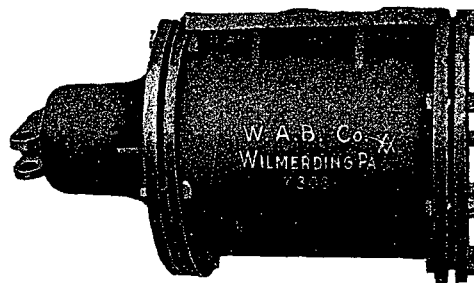


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Westinghouse Air Brake Company

Pittsburgh, Pa., U. S. A.



Locomotive Brake Cylinders

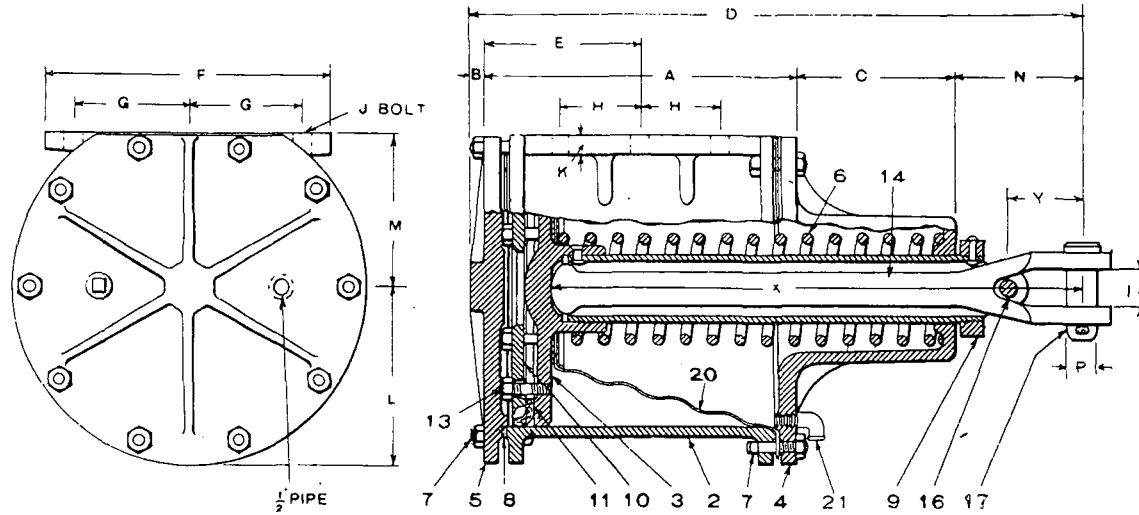
For Driver, Truck and Tender Brakes

Part Catalog No. 3214-1

May, 1935

(SUPERSEDING ISSUE OF AUGUST, 1929)

TYPE B DRIVER BRAKE CYLINDERS WITH PUSH RODS



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	B	C	D	E	F	G	H	J	K	L	M	N	P	X	Y	Net Weight
Dia.	Stroke																	
6"	6"	8 $\frac{5}{8}$ "	$\frac{1}{2}$ "	5 $\frac{1}{8}$ "	18 $\frac{13}{16}$ "	4 $\frac{1}{4}$ "	9 $\frac{3}{4}$ "	3 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "	$\frac{5}{8}$ "	1 $\frac{11}{16}$ "	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	4 $\frac{9}{16}$ "	1 $\frac{1}{8}$ "	15 $\frac{7}{8}$ "	3 $\frac{1}{8}$ "	60 lbs.
6"	8"	11 $\frac{9}{16}$ "	$\frac{7}{16}$ "	5 $\frac{1}{8}$ "	21 $\frac{13}{16}$ "	5 $\frac{1}{8}$ "	9 $\frac{3}{8}$ "	3 $\frac{3}{4}$ "	2 $\frac{13}{16}$ "	$\frac{5}{8}$ "	$\frac{9}{16}$ "	4 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	4 $\frac{33}{16}$ "	1 $\frac{1}{8}$ "	18 $\frac{7}{8}$ "	3 $\frac{1}{8}$ "	92 lbs.
8"	6"	9 $\frac{9}{16}$ "	$\frac{7}{16}$ "	5"	19 $\frac{3}{4}$ "	4 $\frac{13}{16}$ "	10 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	2 $\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	5 $\frac{7}{16}$ "	4 $\frac{5}{8}$ "	4 $\frac{3}{4}$ "	1 $\frac{1}{8}$ "	16 $\frac{7}{8}$ "	2 $\frac{7}{8}$ "	98 lbs.
8"	7"	10 $\frac{13}{16}$ "	$\frac{7}{16}$ "	5"	21 $\frac{1}{8}$ "	5 $\frac{1}{2}$ "	10 $\frac{1}{4}$ "	4 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	5 $\frac{7}{16}$ "	4 $\frac{5}{8}$ "	4 $\frac{3}{4}$ "	1 $\frac{1}{8}$ "	18 $\frac{1}{4}$ "	2 $\frac{7}{8}$ "	111 lbs.
8"	12"	16 $\frac{1}{16}$ "	$\frac{7}{16}$ "	6 $\frac{15}{16}$ "	28 $\frac{1}{8}$ "	8 $\frac{1}{8}$ "	10 $\frac{1}{8}$ "	4 $\frac{1}{16}$ "	4 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{16}$ "	5 $\frac{7}{16}$ "	4 $\frac{9}{16}$ "	4 $\frac{9}{16}$ "	1 $\frac{1}{8}$ "	25 $\frac{1}{4}$ "	2 $\frac{7}{8}$ "	140 lbs.
10"	6"	9 $\frac{5}{8}$ "	$\frac{7}{16}$ "	6 $\frac{15}{16}$ "	21 $\frac{13}{16}$ "	4 $\frac{7}{8}$ "	11"	4 $\frac{1}{2}$ "	1 $\frac{7}{8}$ "	$\frac{7}{8}$ "	1 $\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	4 $\frac{13}{16}$ "	1 $\frac{1}{8}$ "	18 $\frac{7}{8}$ "	3 $\frac{1}{8}$ "	156 lbs.
10"	8"	11 $\frac{5}{8}$ "	$\frac{7}{16}$ "	6 $\frac{15}{16}$ "	23 $\frac{15}{16}$ "	5 $\frac{7}{8}$ "	11"	4 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	$\frac{7}{8}$ "	1 $\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	4 $\frac{15}{16}$ "	1 $\frac{1}{8}$ "	21"	3 $\frac{1}{8}$ "	175 lbs.
10"	10"	13 $\frac{5}{8}$ "	$\frac{7}{16}$ "	6 $\frac{15}{16}$ "	25 $\frac{15}{16}$ "	6 $\frac{7}{8}$ "	11"	4 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	$\frac{7}{8}$ "	1 $\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	4 $\frac{15}{16}$ "	1 $\frac{1}{8}$ "	23"	3 $\frac{1}{8}$ "	185 lbs.
10"	12"	15 $\frac{1}{2}$ "	$\frac{7}{16}$ "	6 $\frac{15}{16}$ "	27 $\frac{13}{16}$ "	7 $\frac{13}{16}$ "	11"	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	1 $\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	4 $\frac{15}{16}$ "	1 $\frac{1}{8}$ "	24 $\frac{3}{4}$ "	3 $\frac{1}{8}$ "	195 lbs.
12"	8"	11 $\frac{13}{16}$ "	$\frac{7}{16}$ "	7"	24 $\frac{13}{16}$ "	6"	12 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	5 $\frac{7}{16}$ "	1 $\frac{1}{8}$ "	21 $\frac{1}{2}$ "	3 $\frac{1}{16}$ "	233 lbs.
12"	10"	13 $\frac{9}{16}$ "	$\frac{7}{16}$ "	7"	26 $\frac{9}{16}$ "	6 $\frac{13}{16}$ "	12 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	5 $\frac{9}{16}$ "	1 $\frac{1}{8}$ "	23"	3 $\frac{1}{16}$ "	253 lbs.
12"	12"	15 $\frac{9}{16}$ "	$\frac{7}{16}$ "	7"	28 $\frac{9}{16}$ "	7 $\frac{13}{16}$ "	12 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{3}{8}$ "	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	5 $\frac{9}{16}$ "	1 $\frac{1}{8}$ "	25 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	270 lbs.
14"	10"	13 $\frac{11}{16}$ "	$\frac{3}{4}$ "	7 $\frac{1}{16}$ "	26 $\frac{7}{8}$ "	6 $\frac{7}{8}$ "	15 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	3 $\frac{7}{8}$ "	$\frac{7}{8}$ "	1 $\frac{1}{16}$ "	8 $\frac{5}{8}$ "	7 $\frac{13}{16}$ "	5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	23"	3 $\frac{1}{16}$ "	352 lbs.
14"	12"	15 $\frac{11}{16}$ "	$\frac{3}{4}$ "	7 $\frac{1}{16}$ "	29 $\frac{1}{8}$ "	8"	15 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	1 $\frac{1}{16}$ "	8 $\frac{5}{8}$ "	7 $\frac{13}{16}$ "	5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	25 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	378 lbs.
16"	10"	14 $\frac{5}{16}$ "	$\frac{5}{8}$ "	7"	27 $\frac{3}{8}$ "	7 $\frac{3}{16}$ "	19"	8 $\frac{1}{4}$ "	4"	1"	1 $\frac{1}{8}$ "	9 $\frac{3}{4}$ "	9 $\frac{1}{4}$ "	5 $\frac{7}{16}$ "	1 $\frac{1}{4}$ "	23 $\frac{3}{4}$ "	3 $\frac{1}{8}$ "	470 lbs.
16"	12"	16 $\frac{5}{16}$ "	$\frac{5}{8}$ "	7"	29 $\frac{1}{4}$ "	8 $\frac{3}{8}$ "	19 $\frac{1}{2}$ "	8 $\frac{1}{4}$ "	4 $\frac{3}{4}$ "	1"	1 $\frac{1}{8}$ "	9 $\frac{3}{4}$ "	9"	5 $\frac{7}{16}$ "	1 $\frac{1}{4}$ "	25 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	482 lbs.

TYPE B DRIVER BRAKE CYLINDERS WITH PUSH RODS

Ref. No.		PIECE NUMBERS															
		6"x6"	6"x8"	8"x6"	8"x7"	8"x12"	10"x6"	10"x8"	10"x10"	10"x12"	12"x8"	12"x10"	12"x12"	14"x10"	14"x12"	16"x10"	16"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing and Protector).....	88521	87913	87914	87915	87916	87917	87918	87919	87920	87921	87922	87878	87193	87923	87924	87966
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pin, Push Rod Holder Pin) Case Hardened (with WABCO Packing and Protector).....	88929	88567		87985			87986	87987		87988	87989	87990	89669	89003		87991
	Brake Cylinder, complete, (with WABCO Packing) without Protector.....	70215	70217	70224	70226	70230	70135	70105	70129	69874	70150	70075	69862	69746	69843	69822	70076
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pin, Push Rod Holder Pin) Case Hardened (with WABCO Packing) without Protector.....	70219	87462		70227			70126	70130		70181	70175	70177	69847	69844		70077
2	Cylinder Body.....	2530	8613	1149	1135	24853	1193	1116	1121	1102	1093	1027	1087	1002	1098	21814	72393
3	Piston and Rod (includes 13 only).....	22147	1235	1150	1138	1218	9684	1117	1122	1105	7317	7338	7377	7202	7259	22039	7446
4	†Non-Pressure Head for Cylinder with Protector (includes 21).....	88679	87959	89167	89167	89169	89173	89173	89173	89173	89175	89175	89175	89177	89177	89177	88007
4	†Non-Pressure Head for Cylinder without Protector.....	22057	1234	89166	89166	89168	89172	89172	89172	89172	89174	89174	89174	89176	89176	89176	89032
5	Pressure Head.....	1975	8614	1136	1136	1136	49071	49071	49071	49071	1028	1028	1028	1003	1003	21815	1071
†6	Release Spring.....	1239	1239	1239	1239	1110	1239	1110	1110	1110	1034	1034	1090	1034	1077	1034	1077
7	Cylinder Head Bolt and Nut or Cap Screw.....	1080	4889	4889	4889	4889	4889	4889	4889	4889	11004	11004	11004	6612	6612	5190	5190
		9 req'd	10 req'd	11 req'd	11 req'd	11 req'd	12 req'd	12 req'd	12 req'd	12 req'd	13 req'd	13 req'd	13 req'd	14 req'd	14 req'd	17 req'd	17 req'd
8	Cylinder Gasket.....	1243	1243	1147	1147	1147	1114	1114	1114	1114	1038	1038	1038	1023	1023	1083	1083
9	Push Rod Holder.....	1019	1019	1019	1019	1019	1019	1019	1019	1019	7142	7142	7142	7142	7142	7142	7142
10	Follower.....	1238	1238	1142	1142	1142	1108	1108	1108	1108	1033	1033	1033	1010	1010	1076	1076
11	WABCO Packing Cup.....	68577	68577	68578	68578	68578	68579	68579	68579	68579	68580	68580	68580	68581	68581	68582	68582
	Packing Leather.....	28709	28709	28710	28710	28710	28711	28711	28711	28711	28712	28712	28712	28713	28713	28714	28714
	*Packing Expander.....	1241	1241	1145	1145	1145	1112	1112	1112	1112	1036	1036	1036	1015	1015	1079	1079
13	Follower Stud and Nut.....	27345	27345	2305	2305	2305	2305	2305	2305	2305	5184	5184	5184	5184	5184	12792	12792
		3 req'd	3 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	6 req'd	6 req'd	6 req'd	6 req'd	6 req'd	8 req'd	8 req'd
14	Push Rod, with Pin and Cotter (Inc. 17).....	6638	9686	6624	6642	9385	9686	6635	6626	6637	9377	6626	9385	6626	9385	24622	24801
16	1/2" Pipe Plug.....	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310
17	Push Rod Holder Pin, with Cotter.....	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144
20	Push Rod Pin, with Cotter.....	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6633	6633
21	Protector.....	87073	87073	86836	86836	86044	86837	86837	86045	86045	86838	86046	86046	86046	86047	86048	86048
	St. Ell.....	84819	84819	41890	41890	41890	41890	41890	41890	41890	41890	41890	41890	41891	41891	41891	41891

NOTE A—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be supported by six bolts and cylinders of 8" stroke or less by four bolts. Bolt holes are drilled 1/16" smaller than the bolt to be used, and reamed to a snug fit by the customer.

†NOTE B—Non-Pressure heads of 6" Cylinders with Protector are furnished with one tapped drain hole, with street ell, located as shown. All other

sizes are furnished with four (4) tapped holes, so located as to permit the insertion of the street ell, when protector is used, in the proper position for drain. When protector is not used all the drain holes are plugged. Piece numbers shown in the schedule for these non-pressure heads include the plugs.

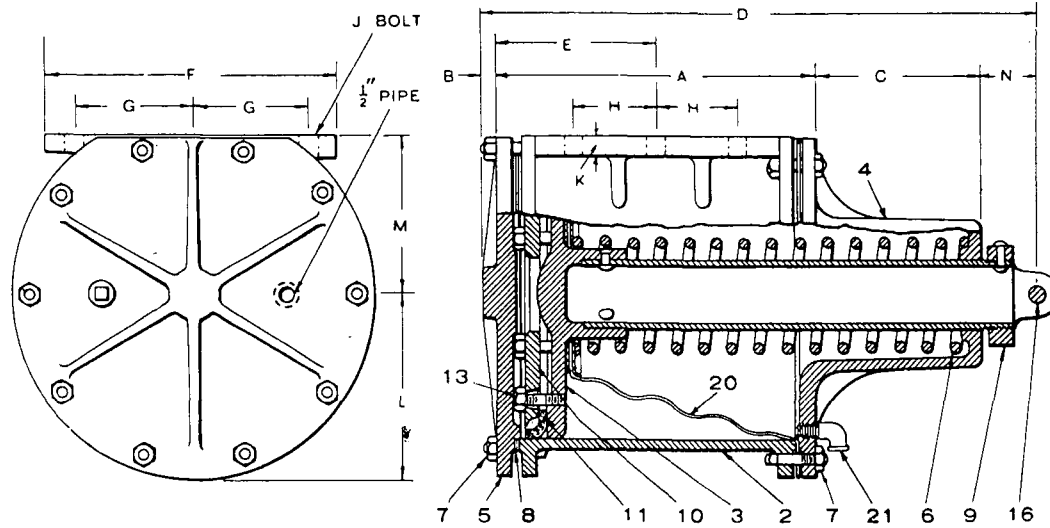
*NOTE C—Packing Expander used only with Leather Packing.

†NOTE D—For Spring Identification Table, see page 23.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

TYPE B BRAKE CYLINDERS LESS PUSH RODS



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	B	C	D	E	F	G	H	J	K	L	M	N	Net Weight
Dia.	Stroke														
6"	6"	8 ⁵ / ₈ "	1/2"	5 ¹ / ₈ "	16"	4 ¹ / ₂ "	9 ³ / ₄ "	3 ³ / ₄ "	1 ³ / ₄ "	5 ⁸ / ₈ "	1 ¹ / ₁₆ "	4 ¹ / ₈ "	3 ³ / ₈ "	1 ³ / ₄ "	55 lbs.
6"	8"	11 ⁹ / ₁₆ "	7/16"	5 ¹ / ₈ "	19 ³ / ₁₆ "	5 ¹³ / ₁₆ "	9 ³ / ₈ "	3 ³ / ₄ "	2 ¹ / ₂ "	5 ⁸ / ₈ "	1 ¹ / ₁₆ "	4 ³ / ₈ "	3 ¹ / ₂ "	2 ¹ / ₁₆ "	80 lbs.
8"	6"	9 ⁹ / ₁₆ "	7/16"	5"	16 ⁹ / ₁₆ "	4 ¹¹ / ₁₆ "	10 ¹ / ₄ "	4 ¹ / ₂ "	2 ¹ / ₂ "	3/4"	5 ⁸ / ₈ "	5 ⁷ / ₁₆ "	4 ⁵ / ₈ "	1 ⁹ / ₁₆ "	90 lbs.
8"	7"	10 ¹ / ₁₆ "	7/16"	5"	17 ¹ / ₁₆ "	5 ¹ / ₂ "	10 ¹ / ₄ "	4 ¹ / ₂ "	2 ³ / ₄ "	3/4"	5 ⁸ / ₈ "	5 ¹ / ₁₆ "	4 ⁵ / ₈ "	1 ⁹ / ₁₆ "	92 lbs.
8"	12"	16 ³ / ₁₆ "	7/16"	6 ¹ / ₁₆ "	24 ¹ / ₁₆ "	8 ¹ / ₈ "	10 ¹ / ₈ "	4 ¹ / ₁₆ "	4 ¹ / ₂ "	5 ⁸ / ₈ "	2 ¹ / ₁₆ "	5 ⁷ / ₁₆ "	4 ⁹ / ₁₆ "	1 ³ / ₈ "	130 lbs.
10"	6"	9 ⁵ / ₈ "	7/16"	6 ¹ / ₁₆ "	18 ¹ / ₁₆ "	4 ⁷ / ₈ "	11"	4 ¹ / ₂ "	1 ⁷ / ₈ "	7/8"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	1 ¹ / ₁₆ "	150 lbs.
10"	8"	11 ⁵ / ₈ "	7/16"	6 ¹ / ₁₆ "	20 ¹ / ₁₆ "	5 ⁷ / ₈ "	11"	4 ¹ / ₂ "	2 ³ / ₄ "	7/8"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	1 ¹ / ₁₆ "	165 lbs.
10"	10"	13 ⁵ / ₈ "	7/16"	6 ¹ / ₁₆ "	22 ¹ / ₁₆ "	6 ⁷ / ₈ "	11"	4 ¹ / ₂ "	3 ¹ / ₂ "	7/8"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	1 ¹ / ₁₆ "	175 lbs.
10"	12"	15 ¹ / ₂ "	7/16"	6 ¹ / ₁₆ "	24 ¹ / ₁₆ "	7 ¹ / ₁₆ "	11"	4 ¹ / ₂ "	4 ¹ / ₂ "	7/8"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	1 ¹ / ₁₆ "	185 lbs.
12"	8"	11 ¹ / ₁₆ "	7/16"	7"	21 ³ / ₄ "	6"	12 ⁵ / ₈ "	5 ³ / ₈ "	2 ³ / ₄ "	7/8"	3/4"	7 ⁵ / ₈ "	6 ¹ / ₂ "	2 ³ / ₈ "	225 lbs.
12"	10"	13 ¹ / ₁₆ "	7/16"	7"	23 ¹ / ₄ "	6 ¹ / ₁₆ "	12 ⁵ / ₈ "	5 ³ / ₈ "	3 ¹ / ₂ "	7/8"	3/4"	7 ⁵ / ₈ "	6 ¹ / ₂ "	2 ¹ / ₄ "	245 lbs.
12"	12"	15 ¹ / ₁₆ "	7/16"	7"	25 ¹ / ₁₆ "	7 ¹ / ₁₆ "	12 ⁵ / ₈ "	5 ³ / ₈ "	4 ¹ / ₂ "	7/8"	7/8"	7 ⁵ / ₈ "	6 ¹ / ₂ "	2 ¹ / ₁₆ "	260 lbs.
14"	10"	13 ⁵ / ₈ "	9/16"	7 ¹ / ₁₆ "	23 ¹ / ₁₆ "	6 ¹ / ₁₆ "	15 ¹ / ₂ "	6 ³ / ₄ "	3 ⁷ / ₈ "	7/8"	1 ¹ / ₁₆ "	8 ⁵ / ₈ "	7 ¹ / ₁₆ "	2 ⁷ / ₁₆ "	342 lbs.
14"	12"	15 ⁵ / ₈ "	9/16"	7 ¹ / ₁₆ "	25 ⁷ / ₈ "	7 ¹ / ₁₆ "	15 ¹ / ₂ "	6 ³ / ₄ "	4 ¹ / ₂ "	7/8"	1 ¹ / ₁₆ "	8 ⁵ / ₈ "	7 ¹ / ₁₆ "	2 ³ / ₈ "	365 lbs.
16"	10"	14 ⁵ / ₁₆ "	9/16"	7"	24 ³ / ₈ "	7 ³ / ₁₆ "	19"	8 ¹ / ₄ "	4"	1"	1 ¹ / ₁₆ "	9 ³ / ₄ "	9 ¹ / ₄ "	2 ¹ / ₂ "	463 lbs.
16"	12"	16 ³ / ₁₆ "	9/16"	7"	26 ¹ / ₄ "	8 ¹ / ₈ "	19 ¹ / ₂ "	8 ¹ / ₄ "	4 ³ / ₄ "	1"	1 ¹ / ₁₆ "	9 ³ / ₄ "	9"	2 ¹ / ₂ "	472 lbs.

TYPE B DRIVER BRAKE CYLINDERS COMPLETE LESS PUSH RODS

Ref. No.		PIECE NUMBERS																			
		6"x6"	6"x8"	8"x6"	8"x7"	8"x12"	10"x6"	10"x8"	10"x10"	10"x12"	12"x8"	12"x10"	12"x12"	14"x10"	14"x12"	16"x10"	16"x12"				
	Standard Brake Cylinder, complete (with WABCO Packing and Protector).....		88502			88503	88505				88506	88508			88511	88513	88514	88516	88518	88519	
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pin, Push Rod Holder Pin) Case Hardened (with WABCO Packing and Protector).....					88504					88507	88509	88510	88512			88515	88517	90868	88520	
	Brake Cylinder, complete less Push Rod (with WABCO Packing) without Protector.....	70220	70218	70225	70228	70231	70136	70127	70131	70133	70182	70153	70178	69848	69845	69823	70078				
	Brake Cylinder, complete, with Wearing Parts Case Hardened, less Push Rod (with WABCO Packing) without Protector.....					70229	71356	70137	70128	70132	70134	70183	70176	70179	69849	69846	70117	70079			
2	Cylinder Body.....	2530	8613	1149	1135	24853	1193	1116	1121	1102	1093	1027	1087	1002	1098	21814	72393				
3	Piston and Rod (includes 13 only).....	22147	1235	1150	1138	1218	9684	1117	1122	1105	7317	7338	7377	7202	7259	22039	7446				
4	Non-Pressure Head for Cylinder with Protector (includes 23).....	88679	87959	89167	89167	89169	89173	89173	89173	89173	89175	89175	89175	89177	89177	89177	89007	89032			
4	Non-Pressure Head for Cylinder without Protector.....	22057	1234	89166	89166	89168	89172	89172	89172	89172	89174	89174	89174	89176	89176	89176	21813	89215			
5	Pressure Head.....	1975	8614	1136	1136	1136	49071	49071	49071	49071	1028	1028	1028	1003	1003	21815	1071				
7	Release Spring.....	1239	1239	1239	1239	1110	1239	1110	1110	1110	1034	1034	1090	1034	1077	1034	1077				
7	Cylinder Head Bolt and Nut or Cap Screw.....	1980	4889	4889	4889	4889	4889	4889	4889	4889	11004	11004	11004	11004	6612	6612	5190	5190			
		9 req'd	10 req'd	11 req'd	11 req'd	11 req'd	12 req'd	12 req'd	12 req'd	12 req'd	13 req'd	13 req'd	13 req'd	14 req'd	14 req'd	17 req'd	17 req'd				
8	Cylinder Gasket.....	1243	1243	1147	1147	1147	1114	1114	1114	1114	1038	1038	1038	1023	1023	1083	1083				
9	Push Rod Holder.....	1019	1019	1019	1019	1019	1019	1019	1019	1019	7142	7142	7142	7142	7142	7142	7142				
10	Follower.....	1238	1238	1142	1142	1142	1108	1108	1108	1108	1033	1033	1033	1010	1010	1076	1076				
11	WABCO Packing Cup.....	68577	68577	68578	68578	68578	68579	68579	68579	68579	68580	68580	68580	68581	68581	68582	68582				
	Packing Leather.....	28709	28709	28710	28710	28710	28711	28711	28711	28711	28712	28712	28712	28713	28713	28714	28714				
	*Packing Expander.....	1241	1241	1145	1145	1145	1112	1112	1112	1112	1036	1036	1036	1015	1015	1079	1079				
13	Follower Stud and Nut.....	27345	27345	2305	2305	2305	2305	2305	2305	2305	5184	5184	5184	5184	5184	12792	12792				
		3 req'd	3 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	6 req'd	6 req'd	6 req'd	6 req'd	6 req'd	8 req'd	8 req'd				
	1/2" Pipe Plug.....	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310				
16	Push Rod Holder Pin, with Cotter.....	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144	7144				
20	Protector.....	87073	87073	86836	86836	86044	86837	86837	86045	86045	86838	86046	86046	86047	86047	86048	86048				
21	St. Ell.....	84819	84819	41890	41890	41890	41890	41890	41890	41890	41890	41890	41890	41891	41891	41891	41891				

NOTE A—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be supported by six bolts and cylinders of 8" stroke or less by four bolts. Bolt holes are drilled 1/8" smaller than the bolt to be used, and reamed to a snug fit by the customer.

NOTE B—Non-Pressure heads of 6" Cylinders with protector are furnished with one tapped drain hole, with street ell, located as shown. All other

sizes are furnished with four (4) tapped holes, so located as to permit the insertion of the street ell, when protector is used, in the proper position for drain. When protector is not used all the drain holes are plugged. Piece numbers shown in the schedule for these non-pressure heads include the plugs.

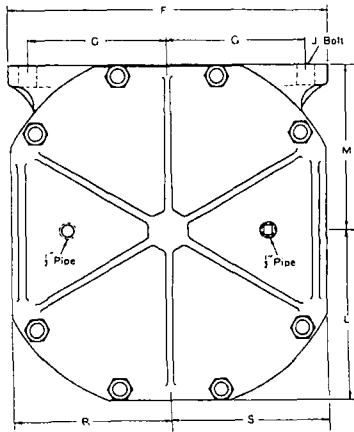
*NOTE C—Packing Expander used only with Leather Packing.

†NOTE D—For Spring Identification Table, see page 23.

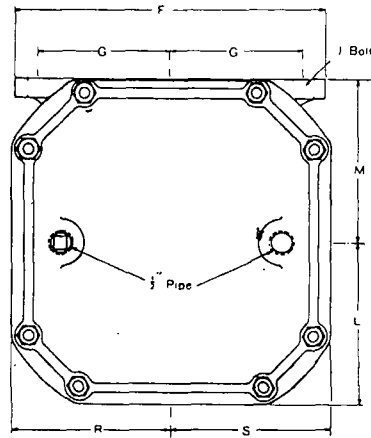
Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

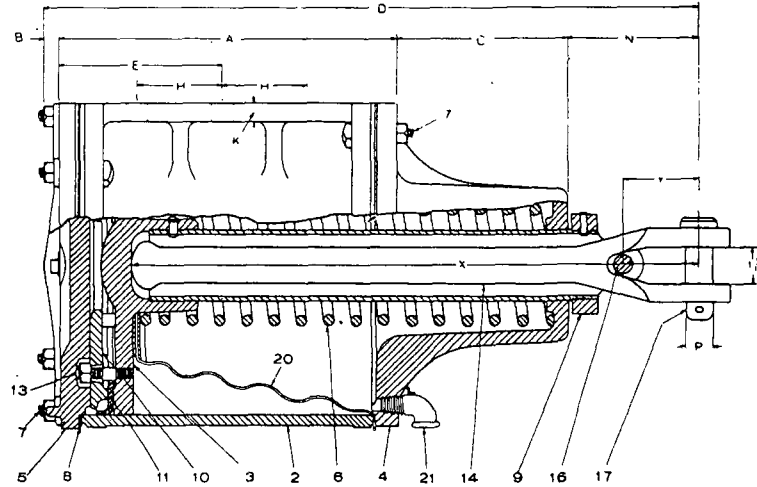
TYPE B DRIVER BRAKE CYLINDERS WITH FLANGES REMOVED



Pressure Head End of 14" Dia. Cyl.



Pressure Head End of 12" Dia. Cyl.



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	X	Y	Net Weight
Dia.	Stroke																			
14"	10"	13 $\frac{11}{16}$ "	$\frac{3}{16}$ "	7 $\frac{1}{15}$ "	26 $\frac{11}{16}$ "	6 $\frac{7}{8}$ "	15 $\frac{1}{4}$ "	6 $\frac{3}{4}$ "	3 $\frac{7}{8}$ "	$\frac{7}{8}$ "	1 $\frac{1}{16}$ "	8 $\frac{1}{8}$ "	7 $\frac{15}{16}$ "	5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	7 $\frac{5}{8}$ "	7 $\frac{5}{8}$ "	23"	3 $\frac{1}{16}$ "	325 lbs.
14"	12"	15 $\frac{11}{16}$ "	$\frac{3}{16}$ "	7 $\frac{1}{16}$ "	28 $\frac{15}{16}$ "	8"	15 $\frac{1}{4}$ "	6 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	1 $\frac{1}{16}$ "	8 $\frac{1}{8}$ "	7 $\frac{15}{16}$ "	5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	7 $\frac{5}{8}$ "	7 $\frac{5}{8}$ "	25 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	370 lbs.
12"	10"	13 $\frac{11}{16}$ "	$\frac{11}{16}$ "	6 $\frac{7}{8}$ "	26 $\frac{9}{16}$ "	6 $\frac{11}{16}$ "	12 $\frac{5}{8}$ "	5 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "	$\frac{7}{8}$ "	1 $\frac{1}{16}$ "	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	5 $\frac{5}{16}$ "	1 $\frac{1}{8}$ "	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	23"	3 $\frac{1}{16}$ "	

TYPE B DRIVER BRAKE CYLINDERS WITH FLANGES REMOVED

Ref. No.		BRAKE CYLINDER COMPLETE			BRAKE CYLINDER LESS PUSH ROD		
		12"x10"	14"x10"	14"x12"	12"x10"	14"x10"	14"x12"
		Piece No.	Piece No.	Piece No.	Piece No.	Piece No.	Piece No.
	Standard Brake Cylinder, complete, (with WABCO Packing and Protector).....		88493	88495		88497	88499
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pin, Push Rod Holder Pin) Case Hardened (with WABCO Packing and Protector).....	88500	88494	88496	88501	88498	86546
	Brake Cylinder, complete, (with WABCO Packing) without Protector.....		69853	69850		69854	69851
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pin, Push Rod Holder Pin) Case Hardened (with WABCO Packing) without Protector.....	83928	68661	69753	85392	68703	69852
2	Cylinder Body.....	83898	66799	66800	83898	66799	66800
3	Piston and Rod (includes 13 only).....	7338	7202	7259	7338	7202	7259
14	Non-Pressure Head for cylinder with protector (includes 23).....	88680	86545	86545	88680	86545	86545
14	Non-Pressure Head for Cylinder without protector.....	83894	66798	66798	83894	66798	66798
5	Pressure Head.....	83893	15592	15592	83893	15592	15592
16	Release Spring.....	1034	1034	1077	1034	1034	1077
7	Cylinder Head Bolt and Nut (12 Req'd).....	25004	6612	6612	25004	6612	6612
8	Cylinder Gasket.....	1038	1023	1023	1038	1023	1023
9	Push Rod Holder.....	7142	7142	7142	7142	7142	7142
10	Follower.....	1033	1010	1010	1033	1010	1010
11	WABCO Packing Cup.....	68580	68581	68581	68580	68581	68581
11	Packing Leather.....	28712	28713	28713	28712	28713	28713
11	*Packing Expander.....	1036	1015	1015	1036	1015	1015
13	Follower Stud and Nut (6 Req'd).....	5184	5184	5184	5184	5184	5184
14	Push Rod, with Pin and Cotter (includes 17).....	6626	6626	9385			
16	1/2" Pipe Plug.....	33310	33310	33310	33310	33310	33310
17	Push Rod Holder Pin, with Cotter.....	7144	7144	7144	7144	7144	7144
17	Push Rod Pin, with Cotter.....	6616	6616	6616			
20	Protector.....	86046	86047	86047	86046	86047	86047
21	St. Ell.....	41890	41891	41891	41890	41891	41891

NOTE A—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be supported by six bolts. Bolt holes are drilled $\frac{1}{16}$ " smaller than the bolt to be used, and reamed to a snug fit by the customer.

†NOTE B—Non-Pressure heads of 6" Cylinders with protector are furnished with one tapped drain hole, with street ell, located as shown. All other sizes are furnished with four (4) tapped holes, so located as to permit

the insertion of the street ell, when protector is used, in the proper position for drain. When protector is not used all the drain holes are plugged. Piece numbers shown in the schedule for these non-pressure heads include the plugs.

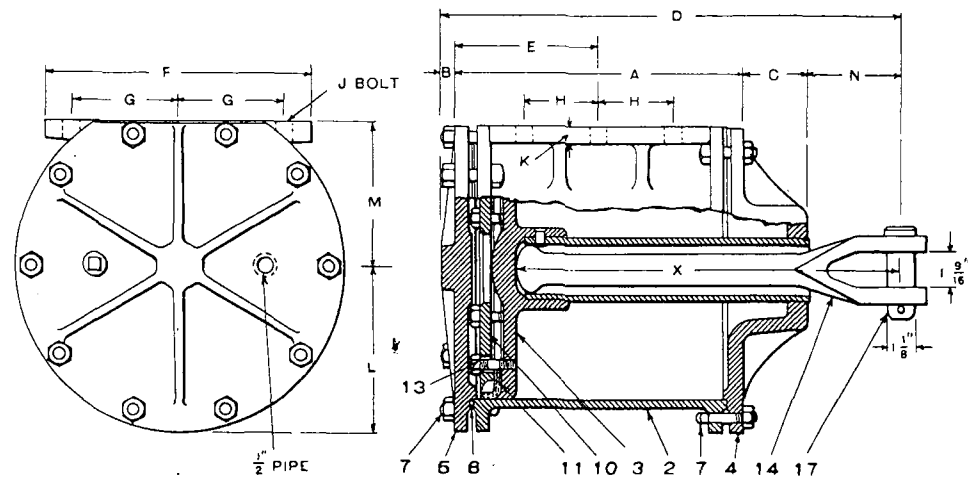
†NOTE C—For Spring Identification Table, see page 23.

*NOTE D—Packing Expander used only with Leather Packing.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

TYPE C DRIVER BRAKE CYLINDERS



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	B	C	D	E	F	G	H	J	K	L	M	N	X	Net Weight
Dia.	Stroke															
8"	6"	9 ⁹ / ₁₆ "	7 ⁷ / ₁₆ "	3 ¹ / ₁₆ "	17"	4 ¹¹ / ₁₆ "	10 ¹ / ₄ "	4 ¹ / ₄ "	2 ¹ / ₂ "	3 ³ / ₄ "	5 ⁷ / ₁₆ "	4 ⁵ / ₈ "	3 ¹⁵ / ₁₆ "	14 ¹ / ₄ "	100 lbs.	
8"	7"	10 ¹¹ / ₁₆ "	7 ⁷ / ₁₆ "	3 ¹ / ₁₆ "	18 ³ / ₈ "	5 ¹ / ₂ "	10 ¹ / ₄ "	4 ¹ / ₄ "	2 ³ / ₄ "	3 ³ / ₄ "	5 ⁷ / ₁₆ "	4 ⁵ / ₈ "	4 ¹ / ₁₆ "	15 ⁷ / ₈ "	115 lbs.	
10"	6"	9 ¹¹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	17 ¹ / ₈ "	4 ⁷ / ₈ "	11"	4 ¹ / ₂ "	1 ⁷ / ₈ "	7 ⁷ / ₈ "	6 ⁵ / ₈ "	5 ³ / ₄ "	4"	14 ¹ / ₄ "	150 lbs.	
10"	8"	11 ¹¹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	19 ¹ / ₄ "	5 ⁷ / ₈ "	11"	4 ¹ / ₂ "	2 ³ / ₄ "	7 ⁷ / ₈ "	6 ⁵ / ₈ "	5 ³ / ₄ "	4 ¹ / ₈ "	16 ³ / ₈ "	165 lbs.	
10"	10"	13 ¹¹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	21 ¹ / ₈ "	6 ⁷ / ₈ "	11"	4 ¹ / ₂ "	3 ¹ / ₂ "	7 ⁷ / ₈ "	6 ⁵ / ₈ "	5 ³ / ₄ "	4"	18 ¹ / ₄ "	180 lbs.	
10"	12"	15 ³ / ₁₆ "	7 ⁷ / ₁₆ "	3"	23"	7 ¹³ / ₁₆ "	11"	4 ¹ / ₂ "	4 ¹ / ₂ "	7 ⁷ / ₈ "	6 ⁵ / ₈ "	5 ³ / ₄ "	4"	20 ¹ / ₈ "	190 lbs.	
12"	8"	11 ¹¹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	19 ³ / ₁₆ "	6"	12 ⁵ / ₈ "	5 ¹ / ₈ "	2 ³ / ₄ "	7 ⁷ / ₈ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	4 ³ / ₁₆ "	16 ³ / ₈ "	240 lbs.	
12"	10"	13 ⁹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	21 ¹ / ₁₆ "	6 ¹¹ / ₁₆ "	12 ⁵ / ₈ "	5 ¹ / ₈ "	3 ¹ / ₂ "	7 ⁷ / ₈ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	4 ⁷ / ₁₆ "	18 ¹ / ₄ "	250 lbs.	
12"	12"	15 ⁹ / ₁₆ "	7 ⁷ / ₁₆ "	3"	23 ³ / ₁₆ "	7 ¹³ / ₁₆ "	12 ⁵ / ₈ "	5 ¹ / ₈ "	4 ¹ / ₂ "	7 ⁷ / ₈ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	4 ⁷ / ₁₆ "	20 ¹ / ₈ "	270 lbs.	
14"	10"	13 ⁹ / ₁₆ "	9 ⁹ / ₁₆ "	3 ¹ / ₈ "	21 ³ / ₁₆ "	6 ¹³ / ₁₆ "	15 ¹ / ₂ "	6 ³ / ₄ "	3 ⁷ / ₈ "	7 ⁷ / ₈ "	8 ⁵ / ₈ "	7 ¹ / ₁₆ "	3 ¹¹ / ₁₆ "	17 ¹ / ₂ "	331 lbs.	
14"	12"	15 ¹¹ / ₁₆ "	9 ⁹ / ₁₆ "	3 ¹ / ₈ "	23 ¹ / ₁₆ "	7 ¹⁵ / ₁₆ "	15 ¹ / ₂ "	6 ³ / ₄ "	4 ¹ / ₂ "	7 ⁷ / ₈ "	8 ⁵ / ₈ "	7 ¹ / ₁₆ "	3 ¹¹ / ₁₆ "	19 ³ / ₄ "	354 lbs.	

TYPE C DRIVER BRAKE CYLINDERS

Ref. No.		PIECE NUMBERS										
		8"x6"	8"x7"	10"x6"	10"x8"	10"x10"	10"x12"	12"x8"	12"x10"	12"x12"	14"x10"	14"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing)	70236	70237	70238	70239	70240	70241	70232	70233	70235	69875	70216
2	Cylinder Body.....	1149	1135	1193	1116	1121	1102	1093	1027	1087	1002	1098
3	Piston and Rod (includes 13 only).....	1209	4848	1194	1199	1186	1205	1171	1176	1180	1260	1266
	Hollow Piston Rod (Undrilled).....	1195	4850	1195	1200	1187	1181	1200	1187	1181	1262	1267
4	Non-Pressure Head.....	1208	1208	1185	1185	1185	1185	1170	1170	1170	1259	1259
5	Pressure Head.....	1136	1136	49071	49071	49071	49071	1028	1028	1028	1003	1003
7	Cylinder Head Bolt and Nut.....	4889 11 req'd	4889 11 req'd	4889 12 req'd	4889 12 req'd	4889 12 req'd	4889 12 req'd	11004 13 req'd	11004 13 req'd	11004 13 req'd	6612 14 req'd	6612 14 req'd
8	Cylinder Gasket.....	1147	1147	1114	1114	1114	1114	1038	1038	1038	1023	1023
10	Follower.....	1142	1142	1108	1108	1108	1108	1033	1033	1033	1010	1010
11	WABCO Packing Cup.....	68578	68578	68579	68579	68579	68579	68580	68580	68580	68581	68581
11	Packing Leather.....	28710	28710	28711	28711	28711	28711	28712	28712	28712	28713	28713
13	*Packing Expander.....	1145	1145	1112	1112	1112	1112	1036	1036	1036	1015	1015
	Follower Stud and Nut.....	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd
14	Push Rod, with Pin and Cotter (includes 17).....	6641	6638	6641	6639	6642	6643	6639	6642	6643	6640	6644
17	1/2" Pipe Plug.....	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310
	Push Rod Pin with Cotter.....	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616	6616

NOTE A—The Cylinders listed above will be furnished with outer and side flanges full unless order specifies to the contrary. Either outer or side flanges will be removed when so specified on orders, in which case complete directions, with print showing exact dimensions desired, should accompany order.

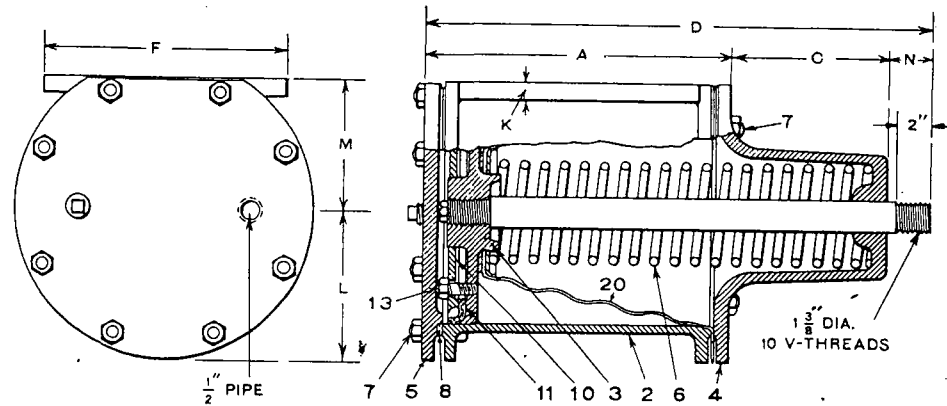
NOTE B—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be supported by six bolts and cylinders of 8" stroke or less by four bolts. Bolt holes are drilled $\frac{1}{16}$ " smaller than the bolt to be used, and reamed to a snug fit by the customer.

*NOTE C—Packing Expander used only with Leather Packing.

Prices will be quoted upon application

Orders should give **PIECE NUMBER** and **NAME** of part wanted

PUSH-DOWN TYPE DRIVER BRAKE CYLINDERS



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	C	D	F	K	L	M	N	Net Weight
Dia.	Stroke									
6"	6"	8 1/2"	3 1/16"	14 11/16"	9 3/4"	1 1/16"	4 1/8"	3 3/8"	2 1/2"	60 lbs.
6"	8"	10 5/8"	3 1/16"	16 11/16"	9 3/4"	1 1/16"	4 1/8"	3 3/8"	2 1/2"	70 lbs.
8"	6"	9 9/16"	5"	16 5/8"	10 1/4"	5/8"	5 7/16"	4 5/8"	2 1/16"	75 lbs.
8"	7"	10 1/16"	5"	17 3/8"	10 1/4"	5/8"	5 7/16"	4 5/8"	1 7/16"	98 lbs.
10"	6"	9 1/4"	7"	18 5/8"	11"	1 1/16"	6 5/8"	5 3/4"	1 11/16"	140 lbs.
10"	8"	11 1/16"	7"	20 5/8"	11"	1 1/16"	6 5/8"	5 3/4"	1 11/16"	159 lbs.
10"	10"	13 1/16"	7"	22 5/8"	11"	1 1/16"	6 5/8"	5 3/4"	1 11/16"	175 lbs.
10"	12"	15 1/16"	7"	24 5/8"	11"	1 1/16"	6 5/8"	5 3/4"	2 1/16"	195 lbs.
12"	8"	11 1/16"	7"	20 1/4"	12 5/8"	3/4"	7 5/8"	6 1/2"	1 5/16"	225 lbs.
12"	10"	13 3/16"	7"	22 1/4"	12 5/8"	3/4"	7 5/8"	6 1/2"	1 11/16"	245 lbs.
12"	12"	15 1/16"	7"	24 1/4"	12 5/8"	1 1/16"	7 5/8"	6 1/2"	1 11/16"	250 lbs.
14"	10"	14 1/4"	7 1/16"	23 1/2"	15 1/2"	1 1/16"	8 5/8"	7 11/16"	2 3/16"	350 lbs.
14"	12"	16 3/8"	7 1/16"	25 3/4"	15 1/2"	1 1/16"	8 5/8"	7 11/16"	2 3/16"	360 lbs.

PUSH-DOWN TYPE DRIVER BRAKE CYLINDERS

Ref. No.		PIECE NUMBERS												
		6"x6"	6"x8"	8"x6"	8"x7"	10"x6"	10"x8"	10"x10"	10"x12"	12"x8"	12"x10"	12"x12"	14"x10"	14"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing and Protector)	**	**	87927	87928	87978	87929	87979	87930	87980	87931	87932	87933	87934
	Brake Cylinder, complete (with WABCO Packing) less Protector	70251	70252	70174	70115	70247	70248	70249	70250	70244	70245	70246	70242	70243
2	Cylinder Body	2530	1584	1149	1135	1193	1116	1121	1102	1093	1027	1087	1002	1098
3	Piston and Rod (includes 13 only)	2531	1973	1359	1313	1335	1340	1343	1346	1321	1326	1330	1355	1350
4	Non-Pressure Head	1976	1976	1312	1312	1334	1334	1334	1334	1320	1320	1320	1349	1349
5	Pressure Head	1975	1975	1136	1136	49071	49071	49071	49071	1028	1028	1028	1003	1003
†6	Release Spring	1979	1979	1239	1239	1110	1110	1110	1110	1034	1034	1090	1034	1077
7	Cylinder Head Bolt and Nut, or Cap Screw	1980 9 req'd	1980 9 req'd	4879 11 req'd	4879 11 req'd	4889 12 req'd	4889 12 req'd	4889 12 req'd	4889 12 req'd	11004 13 req'd	11004 13 req'd	11004 13 req'd	6612 14 req'd	6612 14 req'd
8	Cylinder Gasket Crosshead (See Page 22)	1243	1243	1147	1147	1114	1114	1114	1114	1038	1038	1038	1023	1023
10	Follower	1238	1238	1142	1142	1108	1108	1108	1108	1033	1033	1033	1010	1010
11	WABCO Packing Cup	68577	68577	68578	68578	68579	68579	68579	68579	68580	68580	68580	68581	68581
11	Packing Leather	28709	28709	28710	28710	28711	28711	28711	28711	28712	28712	28712	28713	28713
	*Packing Expander	1241	1241	1145	1145	1112	1112	1112	1112	1036	1036	1036	1015	1015
13	Follower Stud and Nut	63775 3 req'd	63775 3 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd
20	1/2" Pipe Plug Protector	33310 **	33310 **	33310 86836	33310 86836	33310 86837	33310 86837	33310 86045	33310 86045	33310 86838	33310 86046	33310 86046	33310 86047	33310 86047

NOTE A—The Cylinders listed above will be furnished with outer and side flanges full unless order specifies to the contrary. Either outer or side flanges will be removed when so specified on orders, in which case complete directions, with print showing exact dimensions desired, should accompany order.

NOTE B—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be supported by six bolts and cylinders of 8" stroke or less by four bolts. Bolt holes are drilled $\frac{1}{8}$ " smaller than the bolt to be used, and reamed to a snug fit by the customer.

NOTE C—The illustration used on page 10 shows the piston rod screwed into the piston, while only the 12" cylinder piston and rod are assembled in this manner. For the other sizes of cylinders the rods are pressed into the pistons and riveted.

†NOTE D—For Spring Identification Table, see page 23.

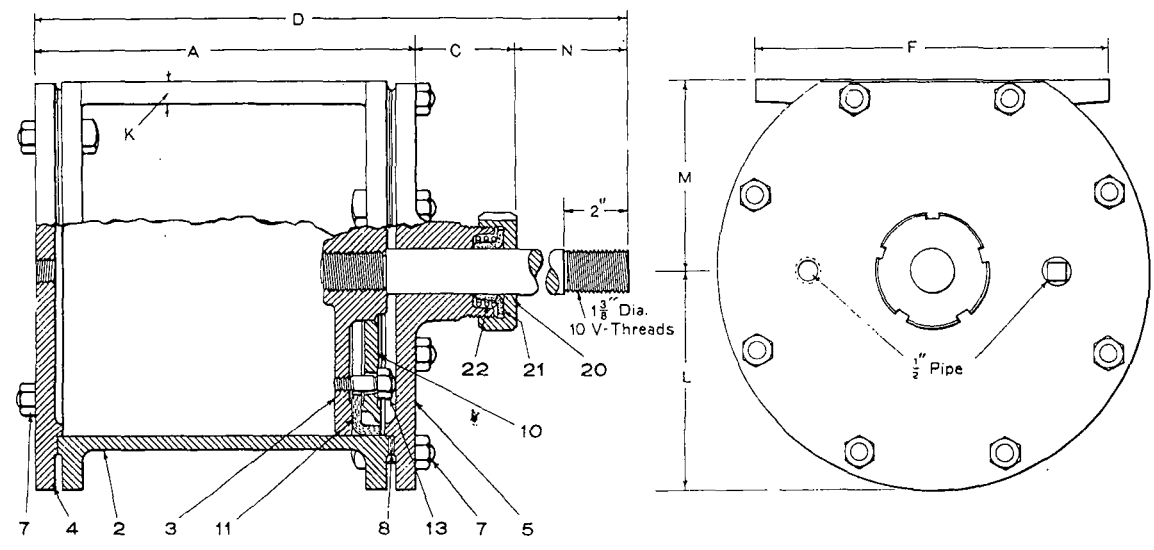
*NOTE E—Packing Expander used only with Leather Packing.

**NOTE F—Brake Cylinder Protectors are not furnished with the 6" size of Push-Down Type Driver Brake Cylinders.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

PULL-UP TYPE DRIVER BRAKE CYLINDERS



DIMENSIONS AND NET WEIGHTS

CYLINDERS		A	C	D	F	K	L	M	N	Net Weight
Dia.	Stroke									
6"	6"	8 ⁷ / ₁₆ "	3 ¹ / ₁₆ "	19 ¹³ / ₁₆ "	9 ³ / ₄ "	1 ¹ / ₁₆ "	4 ¹ / ₈ "	3 ³ / ₈ "	8 ⁵ / ₁₆ "	60 lbs.
6"	8"	10 ⁹ / ₁₆ "	3 ¹ / ₁₆ "	24 ¹ / ₁₆ "	9 ³ / ₄ "	1 ¹ / ₁₆ "	4 ¹ / ₈ "	3 ³ / ₈ "	10 ¹ / ₁₆ "	80 lbs.
6"	12"	15 ⁵ / ₈ "	3 ¹ / ₁₆ "	34 ¹ / ₁₆ "	9 ³ / ₈ "	5 ⁵ / ₈ "	4 ³ / ₈ "	3 ⁹ / ₁₆ "	16 ¹ / ₄ "	92 lbs.
8"	6"	9 ⁹ / ₁₆ "	3 ¹ / ₁₆ "	20 ⁷ / ₁₆ "	10 ¹ / ₄ "	5 ⁵ / ₈ "	5 ⁷ / ₁₆ "	4 ⁵ / ₈ "	7 ¹ / ₁₆ "	90 lbs.
8"	7"	10 ¹³ / ₁₆ "	3 ¹ / ₁₆ "	22 ¹³ / ₁₆ "	10 ¹ / ₄ "	5 ⁵ / ₈ "	5 ⁷ / ₁₆ "	4 ⁵ / ₈ "	8 ¹ / ₁₆ "	100 lbs.
10"	8"	11 ¹¹ / ₁₆ "	3 ¹ / ₁₆ "	24 ¹¹ / ₁₆ "	11"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	9 ¹ / ₁₆ "	140 lbs.
10"	10"	13 ¹¹ / ₁₆ "	3 ¹ / ₁₆ "	28 ¹¹ / ₁₆ "	11"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	12 ¹ / ₁₆ "	165 lbs.
10"	12"	15 ⁹ / ₁₆ "	3 ¹ / ₁₆ "	32 ⁹ / ₁₆ "	11"	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ³ / ₄ "	13 ¹ / ₁₆ "	180 lbs.
12"	8"	11 ¹⁵ / ₁₆ "	2 ¹⁵ / ₁₆ "	24 ¹¹ / ₁₆ "	12 ⁵ / ₈ "	3 ⁴ / ₄ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	9 ¹³ / ₁₆ "	240 lbs.
12"	10"	13 ⁹ / ₁₆ "	2 ¹⁵ / ₁₆ "	28 ⁹ / ₁₆ "	12 ⁵ / ₈ "	3 ⁴ / ₄ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	11 ⁹ / ₁₆ "	250 lbs.
12"	12"	15 ⁹ / ₁₆ "	2 ¹⁵ / ₁₆ "	32 ⁹ / ₁₆ "	12 ⁵ / ₈ "	7 ⁵ / ₈ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	13 ¹³ / ₁₆ "	260 lbs.
14"	10"	13 ⁵ / ₈ "	3 ¹ / ₈ "	28 ⁹ / ₁₆ "	15 ¹ / ₂ "	1 ¹ / ₁₆ "	8 ⁵ / ₈ "	7 ¹⁵ / ₁₆ "	11 ¹³ / ₁₆ "	350 lbs.
14"	12"	15 ⁷ / ₈ "	3 ¹ / ₈ "	32 ¹³ / ₁₆ "	15 ¹ / ₂ "	1 ¹ / ₁₆ "	8 ⁵ / ₈ "	7 ¹⁵ / ₁₆ "	13 ¹³ / ₁₆ "	365 lbs.

PULL-UP TYPE DRIVER BRAKE CYLINDERS

Ref. No.		PIECE NUMBERS												
		6"x6"	6"x8"	6"x12"	8"x6"	8"x7"	10"x8"	10"x10"	10"x12"	12"x8"	12"x10"	12"x12"	14"x10"	14"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing)	70253	70254	87323	70256	70255	70257	70258	70259	70262	70261	70260	70263	70264
2	Cylinder Body.....	3641	1584	93745	1149	1135	1116	1121	1102	1093	1027	1087	1002	1098
3	Piston and Rod (includes 13 only).....	4606	4612	86898	4532	4528	4526	4492	4524	4522	4520	4506	4509	4512
4	Non-Pressure (Upper) Head.....	4604	3651	86889	4529	4529	4493	4493	4493	4504	4504	4504	4508	4508
5	Pressure (Lower) Head.....	3655	3655	86888	4330	4530	17404	17404	17404	4505	4505	4505	4510	4510
7	Cylinder Head Bolt and Nut, or Cap Screw.....	1980 10 req'd	1980 9 req'd	25001 10 req'd	4889 11 req'd	4889 11 req'd	4889 12 req'd	4889 12 req'd	4889 12 req'd	11004 13 req'd	11004 13 req'd	11004 13 req'd	6612 14 req'd	6612 14 req'd
8	Cylinder Gasket.....	1243	1243	1243	1147	1147	1114	1114	1114	1038	1038	1038	1023	1023
10	Crosshead (see Page 22) Follower.....	1238	1238	1238	1142	1142	1108	1108	1108	1033	1033	1033	1010	1010
11	WABCO Packing Cup	68577	68577	68577	68578	68578	68579	68579	68579	68580	68580	68580	68581	68581
11	Packing Leather.....	28709	28709	28709	28710	28710	28711	28711	28711	28712	28712	28712	28713	28713
13	*Packing Expander.....	1241	1241	1241	1145	1145	1112	1112	1112	1036	1036	1036	1015	1015
13	Follower Stud and Nut.....	63775 3 req'd	63775 3 req'd	63775 3 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	2305 4 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd	5184 6 req'd
20	Packing Nut.....	3656	3656	3656	3656	3656	3656	3656	3656	3656	3656	3656	3656	3656
21	Cup Leather.....	3658	3658	3658	3658	3658	3658	3658	3658	3658	3658	3658	3658	3658
22	Packing Spring.....	3657	3657	3657	3657	3657	3657	3657	3657	3657	3657	3657	3657	3657
	1/2" Pipe Plug.....	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310	33310

NOTE A—The Cylinders listed above will be furnished with outer and side flanges full unless order specifies to the contrary. Either outer or side flanges will be removed when so specified on orders, in which case complete directions, with print showing exact dimensions desired, should accompany order.

NOTE B—Holes in supporting flange are not drilled unless so specified on order. Cylinders having 10" or 12" stroke are designed to be sup-

ported by six bolts and cylinders of 8" stroke or less by four bolts. Bolt holes are drilled 1/8" smaller than the bolt to be used, and reamed to a snug fit by the customer.

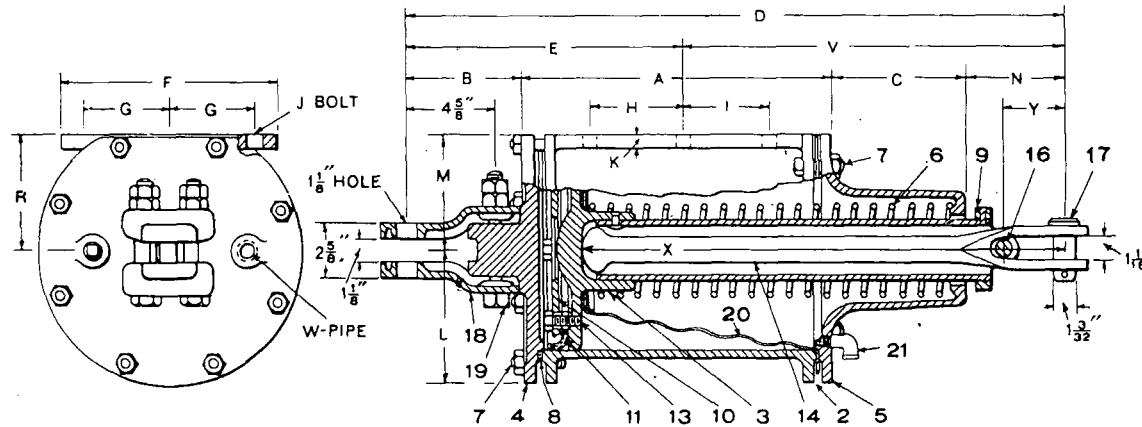
NOTE C—The illustration used on page 12 shows the piston rod screwed into the piston, while only the 12" and 14" cylinder pistons and rods are assembled in this manner. For the other sizes of cylinders the rods are pressed into the pistons and riveted.

*NOTE D—Packing Expander used only with Leather Packing.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

TYPE D ENGINE-TRUCK BRAKE CYLINDERS



DIMENSIONS AND NET WEIGHTS

Cylinders		A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	V	W Pipe	X	Y	Net Weight
Dia.	Stroke																				
6"	8"	11 $\frac{3}{16}$ "	6 $\frac{7}{8}$ "	5 $\frac{1}{8}$ "	28 $\frac{7}{16}$ "	12 $\frac{11}{16}$ "	9 $\frac{3}{8}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{9}{16}$ "	4 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	4 $\frac{7}{8}$ "	3 $\frac{1}{2}$ "	15 $\frac{3}{4}$ "	$\frac{1}{2}$ "	18 $\frac{5}{8}$ "	2 $\frac{7}{8}$ "	100 lbs.
8"	7"	10 $\frac{1}{16}$ "	6"	5"	26 $\frac{3}{8}$ "	11 $\frac{1}{2}$ "	10 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	2 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	5 $\frac{7}{16}$ "	4 $\frac{5}{8}$ "	4 $\frac{11}{16}$ "	4 $\frac{5}{8}$ "	15 $\frac{1}{8}$ "	$\frac{1}{2}$ "	18 $\frac{1}{8}$ "	3"	125 lbs.
8"	12"	16 $\frac{3}{16}$ "	6"	6 $\frac{1}{16}$ "	33 $\frac{13}{16}$ "	14 $\frac{1}{8}$ "	10 $\frac{1}{8}$ "	4 $\frac{1}{16}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{11}{16}$ "	5 $\frac{3}{8}$ "	4 $\frac{9}{16}$ "	4 $\frac{11}{16}$ "	4 $\frac{9}{16}$ "	19 $\frac{11}{16}$ "	$\frac{1}{2}$ "	25 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	150 lbs.
10"	8"	11 $\frac{5}{8}$ "	6"	6 $\frac{1}{16}$ "	29 $\frac{1}{16}$ "	11 $\frac{7}{8}$ "	11"	4 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	5 $\frac{3}{16}$ "	5 $\frac{3}{4}$ "	17 $\frac{15}{16}$ "	$\frac{1}{2}$ "	21 $\frac{1}{4}$ "	3 $\frac{3}{8}$ "	180 lbs.
10"	10"	13 $\frac{5}{8}$ "	6"	6 $\frac{1}{16}$ "	31 $\frac{9}{16}$ "	12 $\frac{7}{8}$ "	11"	4 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	5"	5 $\frac{3}{4}$ "	18 $\frac{11}{16}$ "	$\frac{1}{2}$ "	23"	3 $\frac{1}{8}$ "	195 lbs.
10"	12"	15 $\frac{1}{4}$ "	6"	6 $\frac{1}{16}$ "	33 $\frac{3}{8}$ "	13 $\frac{1}{8}$ "	11"	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{5}{8}$ "	5 $\frac{3}{4}$ "	4 $\frac{11}{16}$ "	5 $\frac{3}{4}$ "	19 $\frac{9}{16}$ "	$\frac{1}{2}$ "	24 $\frac{13}{16}$ "	3 $\frac{3}{16}$ "	240 lbs.
12"	8"	11 $\frac{1}{16}$ "	6 $\frac{5}{16}$ "	7"	30 $\frac{7}{16}$ "	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	5 $\frac{3}{16}$ "	6 $\frac{1}{2}$ "	18 $\frac{1}{8}$ "	$\frac{1}{2}$ "	21 $\frac{9}{16}$ "	3 $\frac{1}{8}$ "	250 lbs.
12"	12"	15 $\frac{3}{16}$ "	6 $\frac{3}{16}$ "	7"	33 $\frac{13}{16}$ "	14 $\frac{1}{8}$ "	12 $\frac{5}{8}$ "	5 $\frac{3}{8}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{7}{8}$ "	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	4 $\frac{11}{16}$ "	6 $\frac{1}{2}$ "	19 $\frac{1}{16}$ "	$\frac{1}{2}$ "	24 $\frac{13}{16}$ "	2 $\frac{11}{16}$ "	280 lbs.

TYPE D ENGINE-TRUCK BRAKE CYLINDERS

Ref. No.		PIECE NUMBERS							
		6"x8"	8"x7"	8"x12"	10"x8"	10"x10"	10"x12"	12"x8"	12"x12"
	Standard Brake Cylinder, complete, (supporting Flange Drilled) with WABCO Packing and Protector.....	87935	87981	87937	87938	87939	87940	87982	87879
	Standard Brake Cylinder, complete, (supporting Flange not Drilled) with WABCO Packing and Protector.....	88490	92358	88616	88492				
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pins, Push Rod Holder Pin), Case Hardened (supporting Flange Drilled) with WABCO Packing and Protector.....			88491	87941				
	Brake Cylinder, complete (supporting Flange Drilled) (with WABCO Packing) without Protector.....	70267	70192	70103	70274	70272	70270	70278	70280
	Brake Cylinder, complete (supporting Flange Not Drilled) (with WABCO Packing) without Protector.....	70269	70193	70191	70276	70273	70271	70279	70281
	Brake Cylinder, complete, with Wearing Parts (Push Rod Jaws, Push Rod Pins, Push Rod Holder Pin), Case Hardened (supporting Flange Drilled) (with WABCO Packing) without Protector.....	70268		70187	70275				
2	Cylinder Body (Supporting Flange Drilled).....	40805	40814	40816	40824	40826	40828	7523	40830
2	Cylinder Body (Supporting Flange Not Drilled).....	8613	1135	24853	1116	1121	1102	1093	1087
3	Piston and Rod (includes 13 only).....	1235	1138	1218	1117	1122	1105	7317	7377
4	Pressure Head, with Lever Brackets.....	4941	4775	4775	4776	4776	4776	7582	7582
15	Non-Pressure Head for cylinder with protector (includes 23).....	87959	87960	87961	86244	86244	86244	86339	86339
15	Non-Pressure Head for cylinder without protector.....	1234	1137	1217	1104	1104	1104	1029	1029
16	Release Spring.....	1239	1239	1110	1110	1110	1110	1034	1090
7	Cylinder Head Bolt and Nut.....	4889	4889	4889	4889	4889	4889	4889	4889
		10 req'd	11 req'd	11 req'd	12 req'd	12 req'd	12 req'd	13 req'd	13 req'd
8	Cylinder Gasket.....	1243	1147	1147	1114	1114	1114	1038	1038
9	Push Rod Holder.....	1019	1019	1019	1019	1019	1019	7142	7142
10	Follower.....	1238	1142	1142	1108	1108	1108	1033	1033
11	WABCO Packing Cup.....	68577	68578	68578	68579	68579	68579	68580	68580
11	Packing Leather.....	28709	28710	28710	28711	28711	28711	28712	28712
	*Packing Expander.....	1241	1145	1145	1112	1112	1112	1036	1036
13	Follower Stud and Nut.....	27345	2305	2305	2305	2305	2305	5184	5184
		3 req'd	4 req'd	4 req'd	4 req'd	4 req'd	4 req'd	6 req'd	6 req'd
14	Push Rod, with Pin and Cotter (includes 17).....	9700	6646	6650	84740	6648	6652	9699	6652
16	1/4" Pipe Plug.....		33310	33310	33310	33310	33310	33310	33310
17	Push Rod Holder Pin, with Cotter.....	7144	7144	7144	7144	7144	7144	7144	7144
17	Push Rod Pin, with Cotter.....	6647	6647	6647	6647	6647	6647	6647	6647
18	Detachable Lever Bracket (2 Req'd).....	1456	1456	1456	1456	1456	1456	1456	1456
19	Lever Bracket Bolt and Nuts (2 Req'd).....	10819	10819	10819	10819	10819	10819	10819	10819
20	Protector.....	87073	86836	86044	86837	86045	86045	86838	86046
21	St. Ell.....	84819	41890	41890	41890	41890	41890	41890	41890

NOTE A—Engine-Truck Brake Cylinders are not arranged for Slack Adjuster connection unless specified on orders. Slack Adjusters are not recommended with Engine-Truck Brake Cylinders when used with No. 6 ET Brake Equipment. If Slack Adjusters are to be used with any other equipment, orders should so state and Slack Adjuster connection will be drilled up under the flange for 6" Piston Travel, unless otherwise specified. (See Page 23 for location of connection).

NOTE B—Holes in supporting flange are drilled as shown unless order speci-

fies to the contrary. Cylinders having 10" or 12" stroke are designed to be supported by six bolts, and cylinders of 8" stroke or less by four bolts.

†NOTE C—For Spring Identification Table, see page 23.

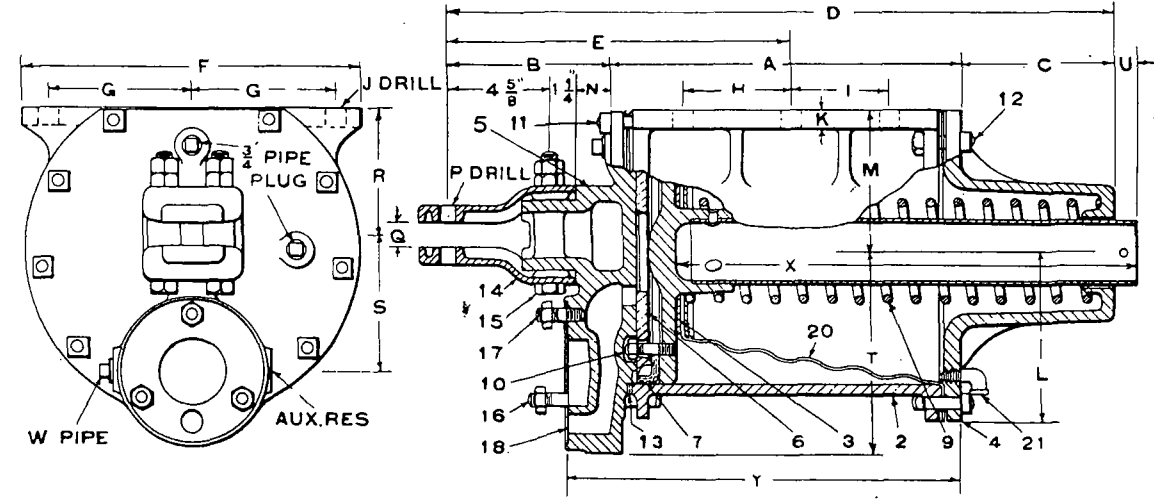
*NOTE D—Packing Expander used only with Leather Packing.

†NOTE E—Non-Pressure heads for brake cylinders without protectors, are tapped and plugged to permit future application of the protector.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

TYPE K TENDER BRAKE CYLINDERS
 With Detachable Lever Brackets and Seat for Type P or H Triple Valve



DIMENSIONS AND NET WEIGHTS

Cylinder Complete			A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	W Pipe	X	Y	Net Weight
Dia.	Stroke	Pc. No.																								
8"	12"	87983	16 $\frac{3}{16}$ "	8 $\frac{13}{16}$ "	6 $\frac{15}{16}$ "	31 $\frac{15}{16}$ "	16 $\frac{15}{16}$ "	10 $\frac{1}{8}$ "	4 $\frac{1}{16}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	1 $\frac{1}{16}$ "	5 $\frac{7}{8}$ "	5 $\frac{7}{16}$ "	4 $\frac{9}{16}$ "	2 $\frac{15}{16}$ "	1 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	4 $\frac{1}{16}$ "	6 $\frac{1}{16}$ "	8 $\frac{7}{8}$ "	1 $\frac{11}{16}$ "	1/2"	21 $\frac{5}{16}$ "	19 $\frac{7}{16}$ "	165 lbs.
10"	12"	87949	15 $\frac{5}{8}$ "	7 $\frac{5}{16}$ "	6 $\frac{15}{16}$ "	29 $\frac{7}{8}$ "	14 $\frac{1}{2}$ "	11"	4 $\frac{11}{16}$ "	4 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	1 $\frac{1}{16}$ "	6 $\frac{3}{8}$ "	5 $\frac{11}{16}$ "	1 $\frac{1}{16}$ "	1 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	5 $\frac{3}{16}$ "	6 $\frac{1}{16}$ "	8 $\frac{15}{16}$ "	7/8"	3/4"	20 $\frac{3}{4}$ "	17 $\frac{3}{8}$ "	210 lbs.
12"	12"	87950	15 $\frac{15}{16}$ "	7 $\frac{9}{16}$ "	7"	30 $\frac{3}{8}$ "	15 $\frac{1}{4}$ "	15 $\frac{1}{4}$ "	6 $\frac{1}{2}$ "	4 $\frac{3}{8}$ "	4 $\frac{3}{8}$ "	1 $\frac{1}{16}$ "	1 $\frac{1}{8}$ "	7 $\frac{3}{8}$ "	6 $\frac{1}{2}$ "	1 $\frac{1}{16}$ "	1 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	5 $\frac{3}{4}$ "	6 $\frac{1}{4}$ "	9 $\frac{1}{16}$ "	1 $\frac{1}{16}$ "	3/4"	21"	17 $\frac{11}{16}$ "	301 lbs.
14"	12"	87951	15 $\frac{15}{16}$ "	7 $\frac{7}{16}$ "	7 $\frac{1}{16}$ "	30 $\frac{7}{16}$ "	15 $\frac{7}{16}$ "	15 $\frac{1}{2}$ "	6 $\frac{3}{8}$ "	4 $\frac{5}{8}$ "	4 $\frac{5}{8}$ "	1 $\frac{1}{16}$ "	1"	8 $\frac{5}{8}$ "	7 $\frac{15}{16}$ "	1 $\frac{9}{16}$ "	1 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	7 $\frac{15}{16}$ "	6 $\frac{3}{8}$ "	9 $\frac{15}{16}$ "	1 $\frac{1}{4}$ "	3/4"	21"	17 $\frac{11}{16}$ "	375 lbs.
16"	12"	87952	16 $\frac{3}{16}$ "	7 $\frac{9}{16}$ "	7"	30 $\frac{3}{4}$ "	15 $\frac{11}{16}$ "	19 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	4 $\frac{5}{8}$ "	4 $\frac{5}{8}$ "	1 $\frac{1}{16}$ "	7/8"	9 $\frac{3}{4}$ "	0"	1 $\frac{11}{16}$ "	1 $\frac{1}{4}$ "	1 $\frac{1}{4}$ "	9"	7 $\frac{1}{2}$ "	10 $\frac{15}{16}$ "	1 $\frac{3}{16}$ "	3/4"	21"	18 $\frac{3}{8}$ "	510 lbs.

TYPE K TENDER BRAKE CYLINDERS

Ref. No.	CYLINDERS	PIECE NUMBERS				
		8"x12"	10"x12"	12"x12"	14"x12"	16"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing and Protector).....	87983	87949	87950	87951	87952
	Brake Cylinder, complete, Arranged for Combined Automatic and Straight-Air (with WABCO Packing and Protector).....	87984	87953	87954	87956	87958
	†Brake Cylinder, Arranged for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing and Protector).....					
	†Brake Cylinder, Arranged for Combined Automatic and Straight-Air and for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing and Protector).....			87955	87957	
	Brake Cylinder, complete (with WABCO Packing) without Protector.....	70111	70154	70140	70210	70284
	Brake Cylinder, complete, Arranged for Combined Automatic and Straight-Air (with WABCO Packing) without Protector.....	70113	70172	70142	70212	70286
	†Brake Cylinder, Arranged for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing) without Protector.....	70112	70171	70141	70211	70285
	†Brake Cylinder, Arranged for Combined Automatic and Straight-Air and for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing) without Protector.....	70114	70173	70144	70213	70287
2	Cylinder Body.....	67928	72048	59064	8653	72424
2	Cylinder Body (arranged for Slack Adjuster), complete.....	72079	95083	5174	8654	72456
3	Piston and Rod (includes 10 only).....	1246	5037	3631	5287	24819
	Hollow Piston Rod (Undrilled).....		3626	3626	3626	3626
14	Non-Pressure Head for cylinder with protector (includes 23).....	87961	86244	86339	88000	87996
14	Non-Pressure Head for cylinder without protector.....	1217	1104	1029	1005	6369
5	Pressure Head, with Brackets.....	55817	56151	3630	8617	24766
5	Pressure Head, less Brackets.....	55816	56152	15293	14092	24767
5	Pressure Head, with Brackets (for Combined Automatic and Straight-Air).....	23086	19644	55806	17923	24768
5	Pressure Head, less Brackets (for Combined Automatic and Straight-Air).....	23087	10947	55805	10949	24769
6	Follower.....	1142	1108	1033	1010	1076
7	WABCO Packing Cup.....	68578	68579	68580	68581	68582
7	Packing Leather.....	28710	28711	28712	28713	28714
	*Packing Expander.....	1145	1112	1036	1015	1079
††9	Release Spring.....	1110	1110	1090	1077	1077
10	Follower Stud and Nut.....	2305	2305	5184	5184	12792
		4 req'd	4 req'd	6 req'd	6 req'd	8 req'd
11	Pressure Head Bolt and Nut.....	4883	4883	15067	15067	8733
		7 req'd	6 req'd	8 req'd	8 req'd	10 req'd
12	Non-Pressure Head Bolt and Nut.....	4883	4883	9701	15067	8733
		4 req'd	4 req'd	5 req'd	4 req'd	5 req'd
13	Cylinder Gasket.....	1147	1114	1038	1023	1083
14	Lever Bracket (2 req'd).....	1456	1456	1456	4010	4010
15	Lever Bracket Bolt and Nuts (2 req'd).....	10819	10819	10819	10819	10819
16	Triple Valve Bolt and Nut (2 req'd).....	9518	5185	5187	5187	5187
17	Triple Valve Stud and Nut.....			4887	4887	4887
18	††Triple Valve Gasket.....	2427	2427	4760	4760	4760
20	Protector.....	86044	86045	86046	86047	86048
21	Street Ell.....	41890	41890	41890	41891	41891

NOTE A—Holes in supporting flange are drilled as shown unless order specifies to the contrary. Cylinders having 12" stroke are designed to be supported by six bolts.

†NOTE B—For Slack Adjuster connection, see page 23.

††NOTE C—For Spring Identification Table, see page 23.

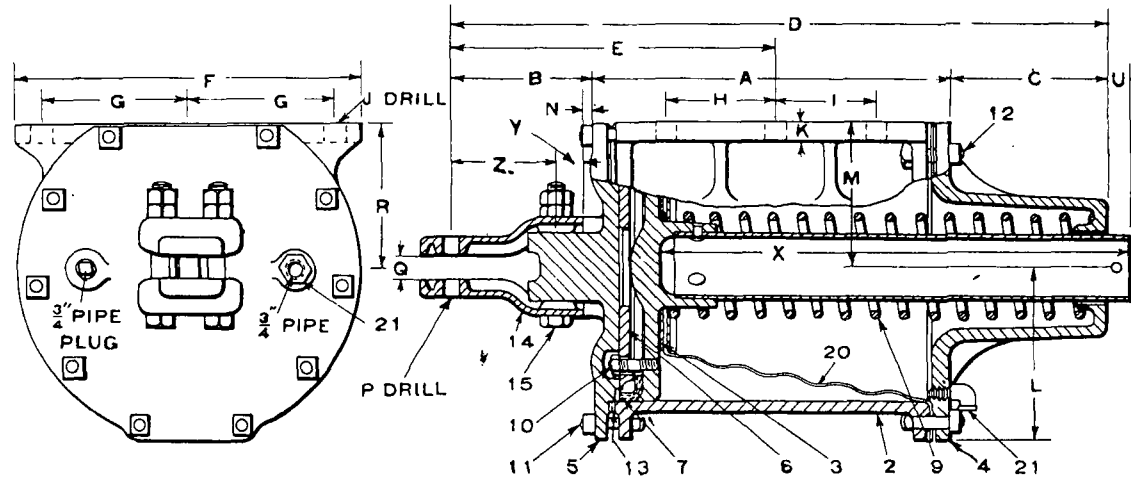
††NOTE D—Listed for convenience only. Not included in complete Brake Cylinder.

*NOTE E—Packing Expander used only with Leather Packing.

†NOTE F—Non-Pressure heads for brake cylinders without protectors, are tapped and plugged to permit future application of the protector.

Prices will be quoted upon application
Orders should give PIECE NUMBER and NAME of part wanted

TYPE L TENDER BRAKE CYLINDERS
With Detachable Lever Brackets



DIMENSIONS AND NET WEIGHTS

Cylinder Complete			A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	U	X	Y	Z	Net Weight
Dia.	Stroke	Pc. No.																						
6"	8"	88522	11 ⁹ / ₁₆ "	6 ⁷ / ₈ "	5 ¹ / ₈ "	23 ⁹ / ₁₆ "	12 ¹¹ / ₁₆ "	9 ³ / ₈ "	3 ³ / ₄ "	2 ⁹ / ₁₆ "	2 ³ / ₈ "	1 ¹ / ₁₆ "	5 ⁸ / ₁₆ "	4 ³ / ₈ "	3 ⁹ / ₁₆ "	1"	1 ¹ / ₈ "	1 ¹ / ₈ "	3 ⁹ / ₁₆ "	1 ¹ / ₂ "	15 ¹ / ₄ "	1 ¹ / ₄ "	4 ⁵ / ₈ "	90 lbs.
8"	8"	88523	10 ¹¹ / ₁₆ "	6"	6 ¹ / ₁₆ "	23 ⁷ / ₈ "	11 ¹ / ₂ "	10 ¹ / ₄ "	4 ³ / ₁₆ "	2 ¹¹ / ₁₆ "	2 ¹ / ₁₆ "	1 ¹ / ₁₆ "	1 ¹ / ₁₆ "	5 ⁷ / ₁₆ "	4 ¹¹ / ₁₆ "	1 ¹ / ₈ "	1 ¹ / ₈ "	1 ¹ / ₈ "	4 ¹¹ / ₁₆ "	2 ³ / ₁₆ "	16 ¹ / ₁₆ "	1 ¹ / ₄ "	4 ⁵ / ₈ "	120 lbs.
8"	12"	87942	16 ³ / ₁₆ "	6"	6 ¹ / ₁₆ "	29 ¹ / ₈ "	14 ¹ / ₈ "	10 ¹ / ₈ "	4 ¹ / ₁₆ "	4 ¹ / ₂ "	4 ¹ / ₂ "	1 ¹ / ₁₆ "	5 ⁸ / ₁₆ "	5 ⁷ / ₁₆ "	4 ⁹ / ₁₆ "	1 ¹ / ₈ "	1 ¹ / ₈ "	1 ¹ / ₈ "	4 ⁹ / ₁₆ "	1 ¹ / ₁₆ "	21 ¹ / ₁₆ "	1 ¹ / ₄ "	4 ⁵ / ₈ "	135 lbs.
10"	12"	87944	15 ⁵ / ₈ "	6 ¹ / ₄ "	6 ¹ / ₁₆ "	28 ⁹ / ₁₆ "	13 ³ / ₁₆ "	11"	4 ¹ / ₁₆ "	4 ¹ / ₄ "	4 ¹ / ₄ "	1 ¹ / ₁₆ "	1 ¹ / ₁₆ "	6 ⁵ / ₈ "	5 ¹ / ₁₆ "	1 ¹ / ₈ "	1 ¹ / ₈ "	1 ¹ / ₈ "	5 ¹ / ₁₆ "	7 ⁸ / ₁₆ "	20 ³ / ₄ "	1 ¹ / ₄ "	4 ⁵ / ₈ "	183 lbs.
12"	12"	87946	15 ¹¹ / ₁₆ "	6 ⁵ / ₁₆ "	7"	29 ¹ / ₈ "	14"	15 ¹ / ₄ "	6 ¹ / ₂ "	4 ³ / ₈ "	4 ⁷ / ₈ "	1 ¹ / ₁₆ "	1 ¹ / ₁₆ "	7 ⁵ / ₈ "	6 ¹ / ₂ "	1 ¹ / ₁₆ "	1 ¹ / ₈ "	1 ¹ / ₈ "	6 ¹ / ₂ "	1 ¹ / ₁₆ "	21"	1 ¹ / ₄ "	4 ⁵ / ₈ "	280 lbs.
14"	12"	87194	15 ¹¹ / ₁₆ "	6 ¹ / ₄ "	7 ¹ / ₁₆ "	29 ¹ / ₄ "	14 ¹ / ₄ "	15 ¹ / ₂ "	6 ⁵ / ₈ "	4 ⁵ / ₈ "	4 ⁵ / ₈ "	1 ¹ / ₁₆ "	1"	8 ⁵ / ₈ "	7 ¹ / ₁₆ "	3 ⁸ / ₁₆ "	1 ¹ / ₄ "	1 ¹ / ₄ "	7 ¹ / ₁₆ "	1 ¹ / ₄ "	21"	1 ¹ / ₄ "	4 ⁵ / ₈ "	372 lbs.
16"	12"	87877	16 ³ / ₁₆ "	6 ¹ / ₄ "	7"	29 ¹ / ₁₆ "	14 ³ / ₈ "	19 ¹ / ₂ "	8 ³ / ₈ "	4 ⁵ / ₈ "	4 ⁵ / ₈ "	1 ¹ / ₁₆ "	3 ⁸ / ₁₆ "	9 ³ / ₄ "	9"	3 ⁸ / ₁₆ "	1 ¹ / ₄ "	1 ¹ / ₄ "	9"	1 ⁹ / ₁₆ "	21"	1 ¹ / ₄ "	4 ⁵ / ₈ "	490 lbs.
18"	12"	88525	17 ⁵ / ₈ "	9 ¹ / ₁₆ "	7 ¹ / ₂ "	34 ¹ / ₁₆ "	17 ¹¹ / ₁₆ "	21 ¹ / ₂ "	9 ³ / ₈ "	4 ⁵ / ₈ "	4 ⁵ / ₈ "	1 ¹ / ₁₆ "	1"	10 ³ / ₄ "	10 ¹ / ₄ "	9 ⁸ / ₁₆ "	1 ¹ / ₂ "	1 ³ / ₈ "	10 ¹ / ₄ "	1 ⁷ / ₃₂ "	23"	1 ¹ / ₂ "	4 ⁷ / ₈ "	

TYPE L TENDER BRAKE CYLINDERS

Ref. No.	CYLINDER	PIECE NUMBERS							
		6"x8"	8"x8"	8"x12"	10"x12"	12"x12"	14"x12"	16"x12"	18"x12"
	Standard Brake Cylinder, complete, (with WABCO Packing and Protector).....	88522	88523	87942	87944	87946	87194	87877	88525
	†Brake Cylinder arranged for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing and Protector).....		88524	87943	87945	86547	87947	87948	
	Brake Cylinder, complete, (with WABCO Packing) without Protector..	70288	70107	69815	70116	70118	68666	70282	77423
	†Brake Cylinder arranged for Slack Adjuster, complete, less Lever Brackets (with WABCO Packing) without Protector.....		70109	70110	69876	70139	70209	70283	
2	Cylinder Body.....	93691	2562	67928	93752	59064	5385	72424	84981
2	Cylinder Body (arranged for Slack Adjuster) complete.....		6655	72079	95082	5174	5394	72456	
3	Piston and Rod (includes 10 only).....	2435	8502	1246	5037	3631	5287	24819	31945
	Hollow Piston Rod (Undrilled).....	2434	8504	3626	3626	3626	3626	3626	31832
14	Non-Pressure Head for Cylinder with Protector (includes 23).....	87959	87961	87961	86244	86339	88000	87996	87668
14	Non-Pressure Head for Cylinder without Protector.....	1234	1217	1217	1104	1029	1005	6369	12723
5	Pressure Head, less Bracket.....	56162	15470	15470	14084	14088	14091	15472	
5	Pressure Head, with Bracket.....	56161	4775	4775	4776	4777	4942	4943	50401
6	Follower.....	1238	1142	1142	1108	1033	1010	1076	12640
7	WABCO Packing Cup.....	68577	68578	68578	68579	68580	68581	68582	68583
7	Packing Leather.....	28709	28710	28710	28711	28712	28713	28714	28715
	*Packing Expander.....	1241	1145	1145	1112	1036	1015	1079	12745
††9	Release Spring.....	1239	1239	1110	1110	1090	1077	1077	12802
10	Follower Stud and Nut.....	27345	2305	2305	2305	5184	12792	12792	12791
		3 req'd	4 req'd	4 req'd	4 req'd	6 req'd	6 req'd	8 req'd	8 req'd
11	Pressure Head Bolt and Nut.....	4883	4883	4883	4883	15067	15067	8733	12783
		6 req'd	7 req'd	7 req'd	8 req'd	10 req'd	10 req'd	12 req'd	10 req'd
12	Non-Pressure Head Bolt and Nut.....	4883	4883	4883	4883	9701	15067	8733	12783
		4 req'd	4 req'd	4 req'd	4 req'd	5 req'd	4 req'd	5 req'd	10 req'd
13	Cylinder Gasket.....	1243	1147	1147	1114	1038	1023	1083	12779
14	Lever Bracket (2 req'd).....	1456	1456	1456	1456	1456	4010	4010	50285
15	Lever Bracket Bolt and Nuts (2 req'd).....	10819	10819	10819	10819	10819	10819	10819	12977
20	Protector.....	87073	86836	86044	86045	86046	86047	86048	86049
21	St. Ell.....	84819	41890	41890	41890	41890	41891	41891	41891
21	Reducing Bush ¾" to ½".....		9332	9332	9332	9332	9332	9332	
21	Reducing Bush 1" to ¾".....	6983							

NOTE A—Holes in supporting flange are drilled as shown unless order specifies to the contrary. Cylinders having 12" stroke are designed to be supported by six bolts and cylinders of 8" stroke by four bolts.

*NOTE B—Packing Expander used only with Leather Packing

†NOTE C—Slack Adjusters are not recommended for use with the No. 6 ET Equipment. If Slack Adjusters are to be used with any other equip-

ment, orders should so state and Slack Adjuster connection will be provided. (See page 23 for location of connection.)

††NOTE D—For Spring Identification Table, see page 23.

†NOTE E—Non-Pressure heads for brake cylinders without protectors, are tapped and plugged to permit future application of the protector.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

PRESSURE HEADS FOR TRUCK AND TENDER BRAKE CYLINDERS

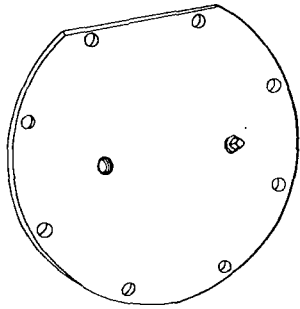


Fig. 1

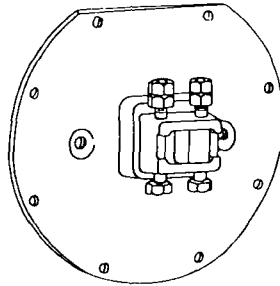


Fig. 2

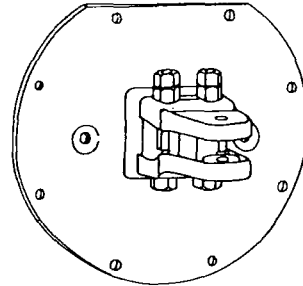


Fig. 3

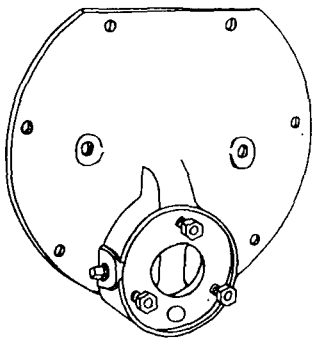


Fig. 4

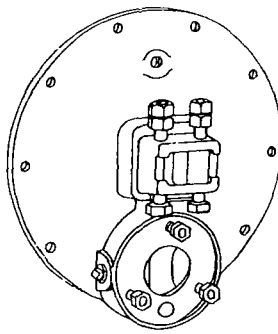


Fig. 5

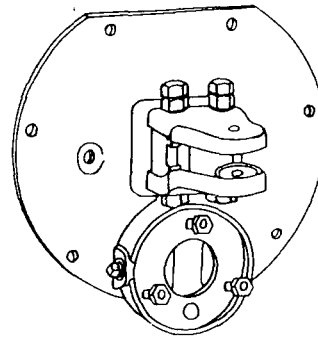


Fig. 6

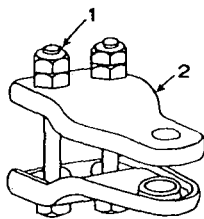


Fig. 7

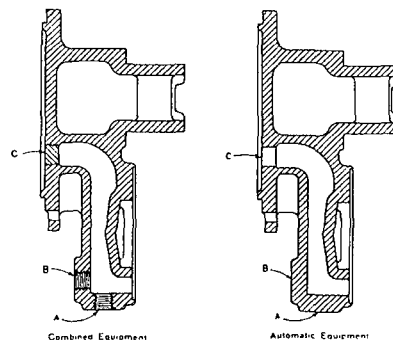
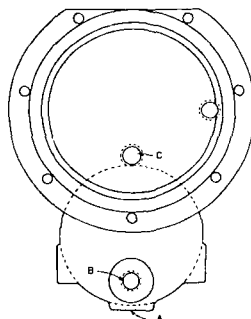


Fig. 8

NOTE—All Tender Brake Cylinder Pressure Heads with connection for Quick-Action Triple Valve are now furnished as shown in Fig. 8, except that for ordinary equipments Port C is not tapped, and bosses A and B are not drilled. When ordering such Pressure Heads for the combined Automatic and Straight Air Brake Equipment, schedule SWA-SWB, it is necessary to specify that Port C should be tapped for 3/4-inch pipe and plugged, plug to be flush on cylinder side of head; also that either of bosses A or B should be drilled and tapped for 1/2-inch pipe. Boss "A" may be tapped in 8", 10", 12", 14" and 16" Pressure Heads. Boss "B" may be tapped in 8" and 10" Pressure Heads only.

PRESSURE HEADS FOR TRUCK AND TENDER BRAKE CYLINDERS

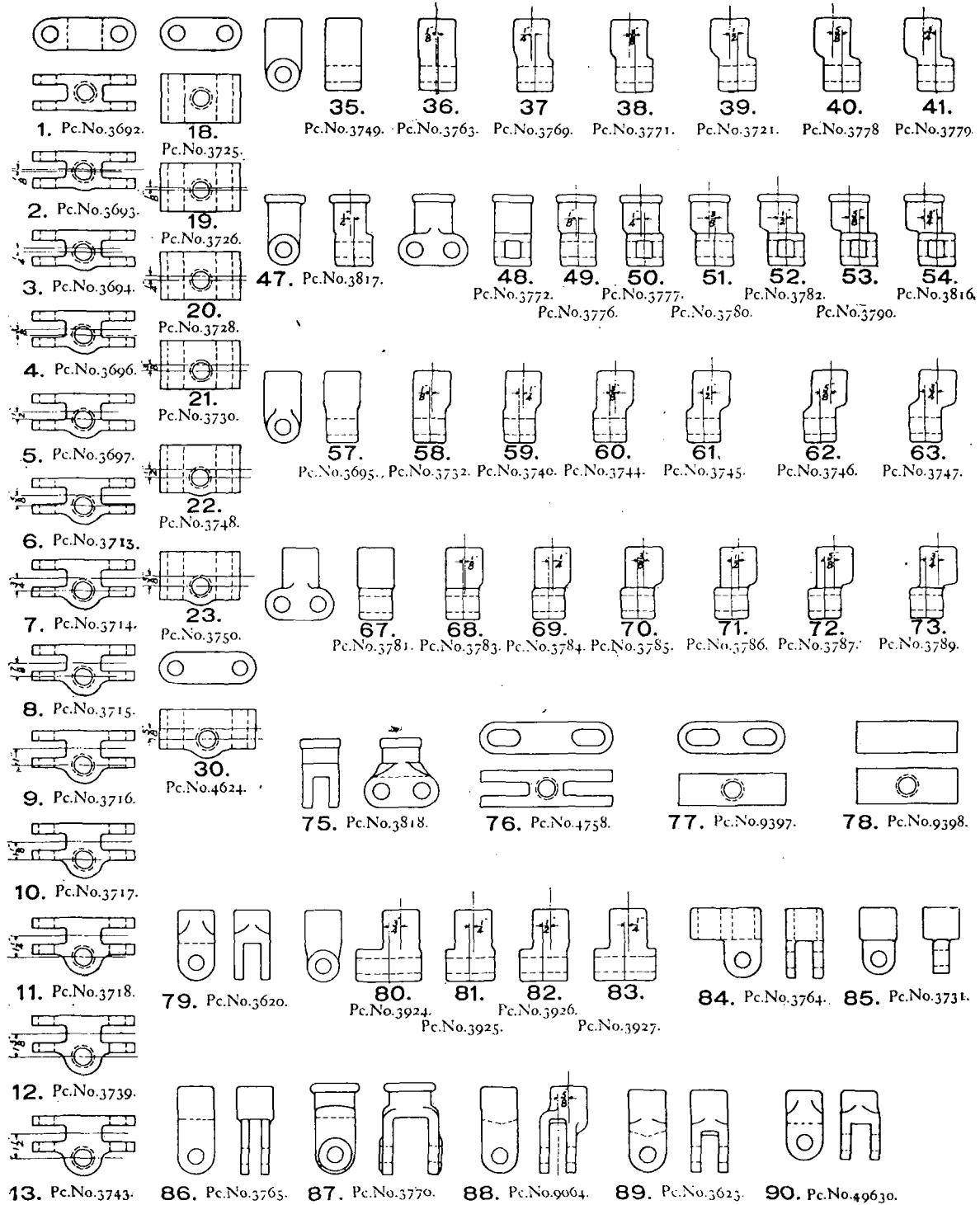
(See cuts on opposite page)

Ref. No.	Fig.	Pc. No.	Type	NAME
				Plain Head for
	1	8614	O	6-inch Cylinder tapped for $\frac{1}{2}$ " Pipe Connection
	1	1136	O	8-inch Cylinder " " " " "
	1	49071	O	10-inch Cylinder " " " " "
	1	3981	O	12-inch Cylinder " " " " "
	1	1003	O	14-inch Cylinder " " " " "
	1	1071	O	16-inch Cylinder " " " " "
	1	32192	O	6-inch Cylinder tapped for $\frac{3}{4}$ " Pipe Connection
	1	41387	O	8-inch Cylinder " " " " "
	1	1103	O	10-inch Cylinder " " " " "
	1	39232	O	12-inch Cylinder " " " " "
	1	55797	O	14-inch Cylinder " " " " "
	1	39124	O	16-inch Cylinder " " " " "
				Plain Head with Lever Bracket Lug, Bolts and Nuts, for
	2	4938	P	6-inch Truck Cylinder
	2	56162	P	6-inch Tender Cylinder
	2	15470	P	8-inch Truck and Tender Cylinder
	2	14084	P	10-inch Truck and Tender Cylinder
	2	14088	P	12-inch Tender Cylinder
	2	18118	P	12-inch Truck Cylinder
	2	14091	P	14-inch Cylinder
	2	15472	P	16-inch Cylinder
				Plain Head with Detachable Bracket, for
	3	4941	Q	6-inch Truck Cylinder
	3	56161	Q	6-inch Tender Cylinder
	3	4775	Q	8-inch Truck and Tender Cylinder
	3	4776	Q	10-inch Truck and Tender Cylinder
	3	4777	Q	12-inch Tender Cylinder
	3	7582	Q	12-inch Truck Cylinder
	3	4942	Q	14-inch Cylinder
	3	4943	Q	16-inch Cylinder
				Plain Head with Connection for Types H or P Triple Valves, for
	4	4781	R	8-inch Cylinder
	4	4779	R	10-inch Cylinder
	4	4945	R	12-inch Cylinder
	4	4946	R	14-inch Cylinder
	4	4947	R	16-inch Cylinder
				Head with Lever Bracket Lug, Bolts and Nuts, and Connection for Types H and P Triple Valves, for
	5	14634	S	6-inch Cylinder
	5	55816	S	8-inch Cylinder
	5	56152	S	10-inch Cylinder
	5	15293	S	12-inch Cylinder
	5	14092	S	14-inch Cylinder
	5	24767	S	16-inch Cylinder
				Head with Detachable Bracket, and Connection for Types H and P Triple Valves, for
	6	10151	T	6-inch Cylinder
	6	55817	T	8-inch Cylinder
	6	56151	T	10-inch Cylinder
	6	3630	T	12-inch Cylinder
	6	8617	T	14-inch Cylinder
	6	24766	T	16-inch Cylinder
	7	10878		Detachable Bracket complete, 6-inch, 8-inch, 10-inch and 12-inch Cylinders
	7	10820		Detachable Bracket complete, 14-inch and 16-inch Cylinders
	7	10819		Detachable Bracket Bolt and Nuts
1	7	1456		Detachable Bracket, 6-inch, 8-inch, 10-inch and 12-inch Cylinders
2	7	4010		Detachable Bracket, 14-inch and 16-inch Cylinders
2				Head with Lever Bracket Lug, Bolts and Nuts, and Connection for Types H and P Triple Valves for use with Combined Automatic and Straight Air Brake, Schedule SWB, for
	8	23087		8-inch Cylinder
	8	10947		10-inch Cylinder
	8	55805		12-inch Cylinder
	8	10949		14-inch Cylinder
	8	24769		16-inch Cylinder

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

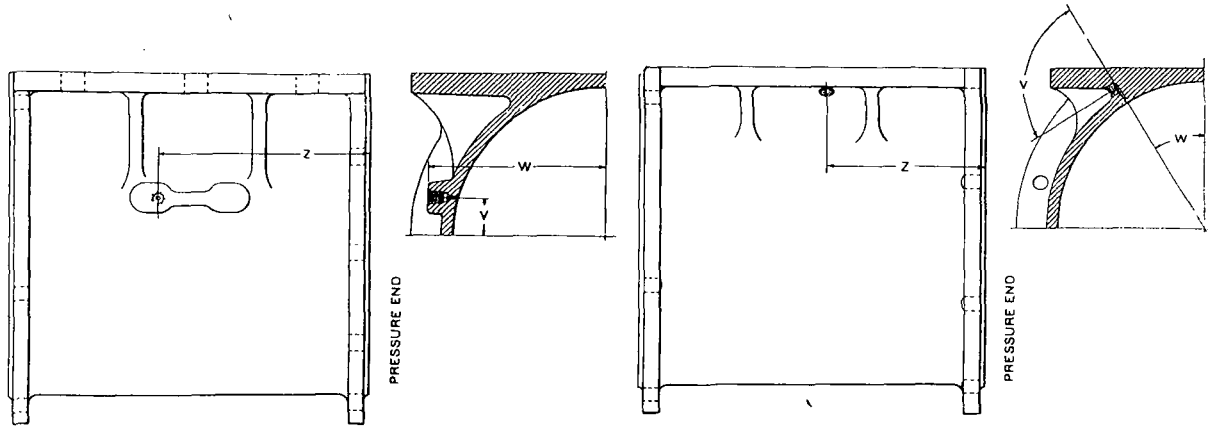
PISTON ROD CROSSHEADS FOR DRIVER BRAKE CYLINDERS



Prices will be quoted upon application

In ordering specify NUMBER of CROSSHEAD wanted, in addition to PIECE NUMBER

CYLINDER TAPPING FOR SLACK ADJUSTER



TENDER BRAKE CYLINDERS

Cylinder	V	W	Z
8" x 8"	1 3/4"	4 3/4"	6 3/8"
8" x 12"	1 3/4"	4 3/4"	8 3/8"
10" x 12"	2"	5 3/4"	8 3/8"
12" x 12"	2 1/4"	6 3/4"	8 3/8"
14" x 12"	2 1/4"	7 3/4"	8 3/8"
16" x 12"	2 3/4"	8 1/8"	8 3/8"

Engine Truck and Tender Brake Cylinders are normally not arranged with taps for Slack Adjuster connection. Slack Adjusters are not recommended for use with the No. 6 ET Equipment. If Slack Adjusters are to be used with any other equipment, orders should so state and Slack Adjuster connection will be arranged as illustrated above.

TRUCK BRAKE CYLINDERS

Cylinder	V	W	Z
6"	90°	25°	6 3/8"
8"	86°	30°	6 3/8"
10"	88°	27°	6 3/8"
12"	90°	32°	6 3/8"
14"	90°	28°	6 3/8"

SPRING IDENTIFICATION

The following table is shown to enable railroad men, storekeepers and all Air Brake men to identify the various springs used in the Locomotive Brake Cylinders cataloged herein. It is based on calculated figures and the actual springs will vary somewhat, due to small differences in wire diameter, coil diameter, number of coils, etc. This tabulation is intended for identification only and should not be used for any other purpose. It does not represent a specification for the springs mentioned.

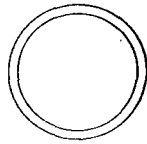
Pc. No.	Out Dia. "A"	Dia. Wire "B"	Free Height "C"	Approx. No. Coils	Material	Name of Spring	Where Used
1034	4 7/8"	7/16"	22 1/8"	15 1/2	Steel	Brake Cylinder Release Spring	Types B, Push-Down, and D Cylinders
1077	4 7/8"	7/16"	27 1/2"	13	Steel	Brake Cylinder Release Spring	Types B, Push-Down, K and L Cylinders
1090	4 7/8"	7/16"	24 1/4"	16 1/2	Steel	Brake Cylinder Release Spring	Types B, Push-Down, D, K and L Cylinders
1110	4 9/16"	1/2"	29 7/8"	21	Steel	Brake Cylinder Release Spring	Types B, Push-Down, D, K and L Cylinders
1239	4 1/2"	5/16"	23 1/4"	16	Steel	Brake Cylinder Release Spring	Types B, Push-Down, D and L Cylinders
1979	3 3/8"	9/32"	13 1/8"	14 1/2	Steel	Brake Cylinder Release Spring	Push-Down Cylinders

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted

SHEET METAL THREAD PROTECTORS

Sheet Metal Thread Protectors in the form of caps, plugs and discs are used to close the openings in various devices, on shipments from our works, for the purpose of protecting threads from injury and preventing dirt from getting inside the apparatus. These are so satisfactory that we list below the protectors used with Locomotive Brake Cylinders, believing that many railroads on account of the small expense involved and the protection insured, will desire to use them when shipping cylinders from point to point or when returning old cylinders to us for repairs.



Piece No. 21195. For $\frac{1}{2}$ " Pipe Tap

Piece No. 21196. For $\frac{3}{4}$ " Pipe Tap

PACKING AND SHIPPING—STANDARD PRACTICE

Brake Cylinders for foreign shipment are packed one in a box, while cylinders for domestic shipment are not boxed.

We strongly recommend that order for WABCO Cups specify quantities conforming to our standard practice in boxing and packing. This will not only assist us in filling orders promptly, but such original packages should prove of advantage to railroad storekeepers, and others through greater convenience and economy in handling, ease of inventory, etc.

WABCO Packing Cups are packed for shipment as follows:

6", 8" and 10" Cups—packed 10, 25 and 100 in a box.

12", 14" and 16" Cups—packed 10 and 25 in a box.

Shipping weights are as follows:

100— 6" Cups 27½ lbs.	25— 6" Cups 7½ lbs.	10— 6" Cups 3½ lbs.
100— 8" Cups 48 lbs.	25— 8" Cups 12½ lbs.	10— 8" Cups 5¼ lbs.
100—10" Cups 58 lbs.	25—10" Cups 16 lbs.	10—10" Cups 7¼ lbs.
	25—12" Cups 20½ lbs.	10—12" Cups 8 lbs.
	25—14" Cups 25 lbs.	10—14" Cups 10 lbs.
	25—16" Cups 27½ lbs.	10—16" Cups 12 lbs.
	25—18" Cups 31 lbs.	10—18" Cups 13½ lbs.

Cylinder gaskets are tied in bundles and packed with other material.

Prices will be quoted upon application

Orders should give PIECE NUMBER and NAME of part wanted