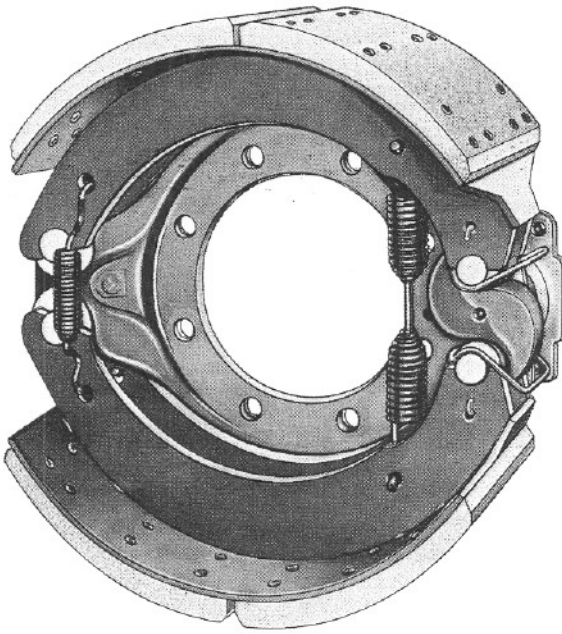


**“Q”TM SERIES
CAM-MASTER[®]
BRAKES
SERVICE
PARTS
BOOK**



16½" x 5", 16½" x 6", 16½" x 7", 16½" x 8⅝", 16½" x 10"
TRUCKS, TRACTORS, TRAILERS



Rockwell International

...where science gets down to business

BRAKES BRAKES BRAKES BRAKES BRAKES



“Q”TM SERIES CAM-MASTER[®] BRAKES SERVICE PARTS BOOK

GENUINE ROCKWELL PARTS

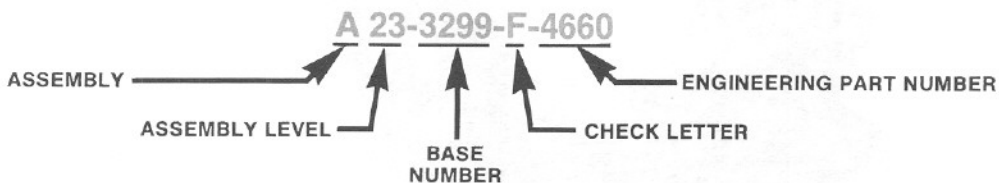
Rockwell replacement parts are manufactured under the same exacting standards as original equipment brake components. They consist of the same long-life, reliable features. Also, they spell reduced maintenance costs for all operators.

When you buy genuine Rockwell parts you get parts made by the world's largest independent supplier of brake components for heavy trucks

and commercial vehicles. Approximately 75% of all highway tractors have Rockwell brakes.

We build the entire brake and component assembly. This means you get “single source” responsibility. With backing like this, it's easy to be a Rockwell customer. Remember, to do your job better, always insist on genuine Rockwell parts.

ROCKWELL NUMBERING SYSTEM



BASE NUMBERS USED IN THIS CATALOG

Base Number	Description	Base Number	Description
10X	Capscrews	1779	Miscellaneous
19X	Pins	2210	Camshafts
1199	Miscellaneous	2258	Springs
1205	Seals	2297	Miscellaneous
1218	Springs & Locks	3211	Spiders
1225	Bushings	3222	Brake Shoes
1229	Washers	3236	Dust shields
1245	Links	3275	Slack Adjusters
1250	Plugs	3280	Miscellaneous
1259	Anchor Pins	3299	Brackets

Due to the safety related nature of the parts used in Rockwell brake assemblies, only the use of Genuine Rockwell Parts is recommended to ensure original equipment performance.

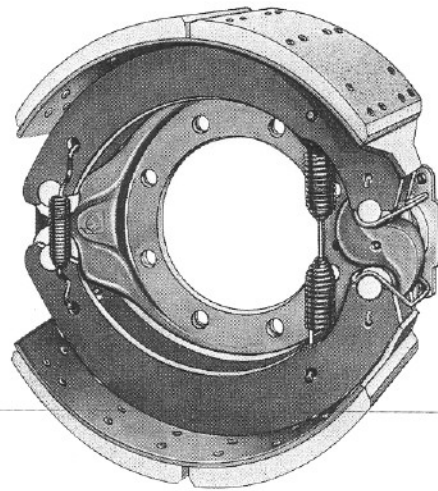


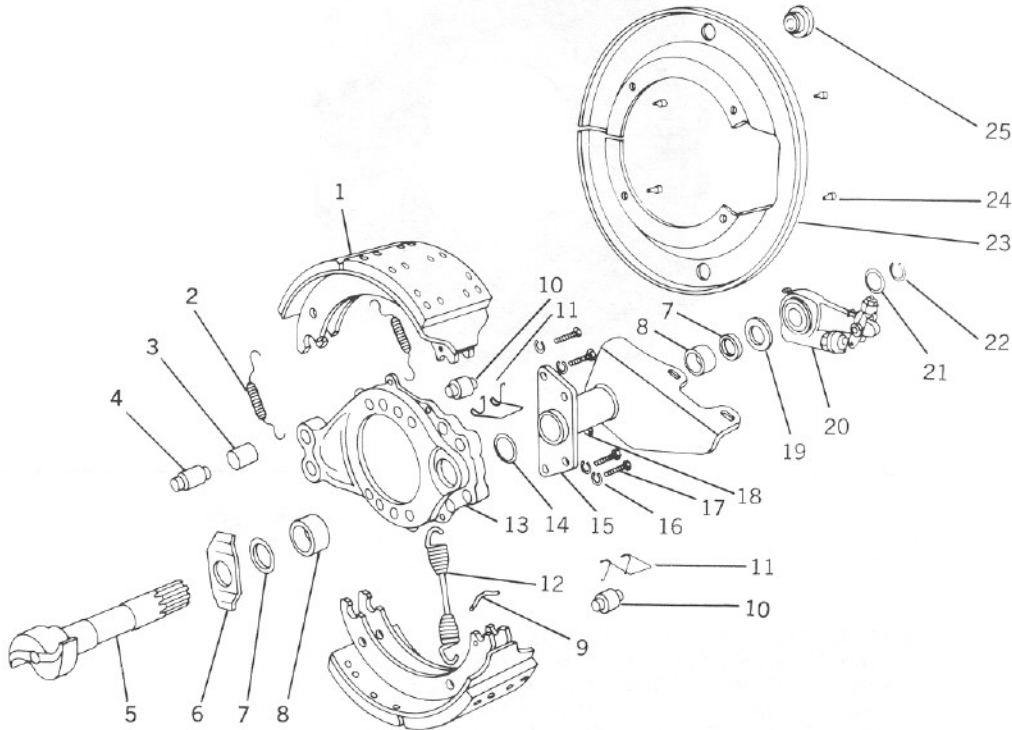
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“Q”™ SERIES CAM-MASTER® BRAKES



BRAKE SIZES: 16½" x 5" AND 6"
(FOR TRUCK & TRACTOR APPLICATIONS)



ITEM	DESCRIPTION	QTY.	PART NUMBER	REC. STK.*	REMARKS
1	Brake shoe and lining assy.	2	See REF. A, pg. 6	20	#
2	Spring — brake shoe retaining	2	2258-Q-615	20	#†▲Painted Orange
3	Bushing — anchor pin (steel)	2	1225-B-496	20	#†
4	Anchor pin — brake shoe	2	1259-N-274	10	#†
5	Camshaft — "S" head	1	See REF. C, pg. 10	10	
6	Washer — camhead (flat)	1	1229-D-2250	10	
7	Seal — camshaft (grease)	2	A-1205-V-1556	20	
8	Bushing — camshaft, spider & bracket	2	1225-N-378	40	
9	Pin — brake shoe return spring	2	1218-G-18	40	
10	Roller — brake shoe	2	1779-R-18	20	#†
11	Retainer—shoe roller	2	See REF. F, pg. 18	20	
12	Return spring — brake shoe	1	2258-U-619	20	#†▲Painted Orange
13	Spider — brake	1	See REF. B, pg. 8	10	
14	Gasket — chamber bracket	1	1779-J-1024	20	
15	Bracket — camshaft & chamber	1	See REF. D, pg. 12	10	
16	Washers — bracket capcrew	4	1229-W-1505	40	
17	Capcrew — chamber bracket	4	S-2812-1	40	
18	Fitting — grease	1	1199-N-1860	10	
19	Washer — camshaft (thick)	—	1229-S-2697	10	As Required
20	Slack adjuster assy. (automatic)	1	See REF. E, pg. 14	10	
21	Washer — spacing (standard)	—	1229-Q-433	20	As Required
22	Lockring — camshaft	1	1229-X-1116	20	
23	Dust shield	1	3236-Q-2097	10	
24	Capcrew — dust shield	4	10X-1176	40	
25	Plug	2	1250-C-419	20	

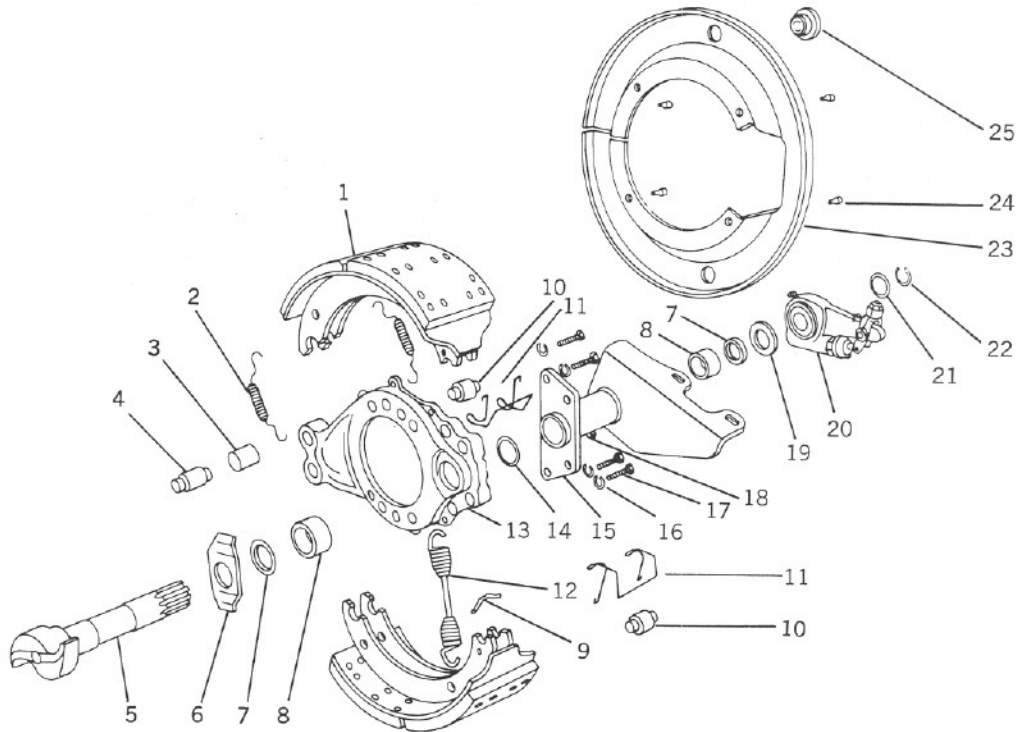
*Recommended Stock is Based on 100 Brake Assemblies.

#Included in Major Overhaul Kits, Page 19.

†Included in Minor Kit 8000, Page 25.

▲Included in Minor Kit 8002SS, Page 25.

BRAKE SIZES: 16½" x 7", 8⅝" AND 10"
(FOR TRUCK, TRACTOR & TRAILER APPLICATIONS)



ITEM	DESCRIPTION	QTY.	PART NUMBER	REC. STK.*	REMARKS
1	Brake shoe and lining assy.	2	See REF. A, pg. 7	20	#
2	Spring — brake shoe retaining	2	2258-Q-615	20	#†▲Painted Orange
3	Bushing — anchor pin (steel)	2	1225-B-496	20	#†
4	Anchor pin — brake shoe	2	1259-N-274	10	#†
5	Camshaft — "S" head	1	See REF. C, pg. 10	10	
6	Washer — camhead (flat)	1	1229-D-2250	10	
7	Seal — camshaft (grease)	2	A-1205-V-1556	20	
8	Bushing — camshaft, spider & bracket	2	1225-N-378	40	
9	Pin — brake shoe return spring	2	1218-G-18	40	
10	Roller — brake shoe	2	1779-R-18	20	#†
11	Retainer—shoe roller	2	See REF. F, pg. 18	20	
12	Return spring — brake shoe	1	2258-U-619	20	#†▲Painted Orange
13	Spider — brake	1	See REF. B, pg. 8	10	
14	Gasket — chamber bracket	1	1779-J-1024	20	
15	Bracket — camshaft & chamber	1	See REF. D, pg. 12	10	
16	Washers — bracket capscrew	4	1229-W-1505	40	
17	Capscrew — chamber bracket	4	S-2812-1	40	
18	Fitting — grease	1	1199-N-1860	10	
19	Washer — camshaft (thick)	—	1229-S-2697	10	As Required
20	Slack adjuster assy. (automatic)	1	See REF. E, pg. 14	10	
21	Washer — spacing (standard)	—	1229-Q-433	20	As Required
22	Lockring — camshaft	1	1229-X-1116	20	
23	Dustshield	1	3236-Q-2097	10	
24	Capscrew — dust shield	4	10X-1176	40	
25	Plug	2	1250-C-419	20	

*Recommended Stock is Based on 100 Brake Assemblies.

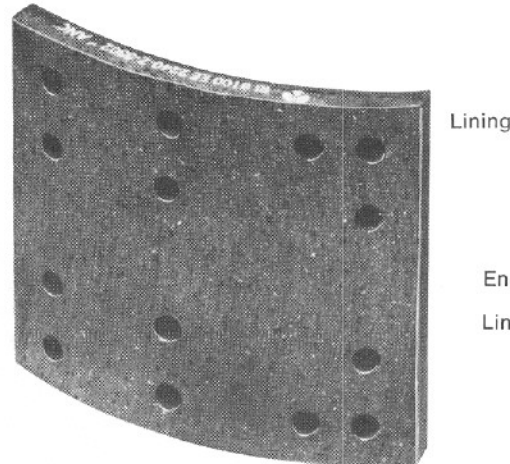
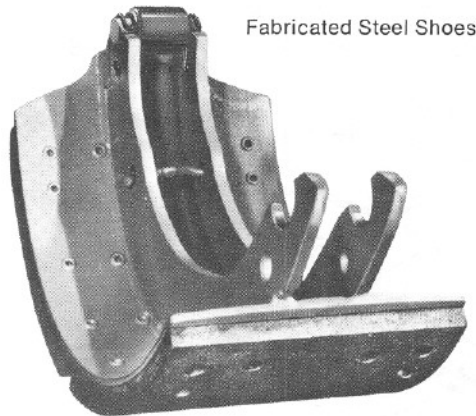
#Included in Major Overhaul Kits, Page 23.

†Included in Minor Kit 8000, Page 25.

▲Included in Minor Kit 8002SS, Page 25.

BRAKE SHOES AND LININGS

**REFERENCE A — BRAKE SHOES WITH LININGS, CLIPS & ROLLERS
FOR 16½" x 5" & 6" BRAKES**



Engineering Approved
Premium Lining
Lining Arc Length 108°

16½" x 5" FMSI 4524D NOTE: Unlined Shoe Assembly — A-3222-E-1383

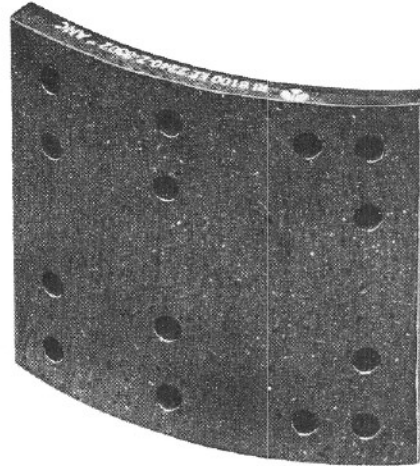
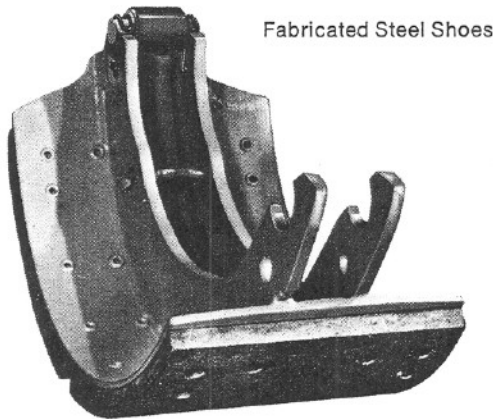
BRAKE SHOE AND LINING ASSY. NO.	FRICTION CODE	KIT NO.	REMARKS
A 1-3222-E-1383	EE/FF Combination	Kit 8118 CF	Primary Secondary
A 2-3222-E-1383			
A 3-3222-E-1383	EE	Kit 8117 EE	
A 4-3222-E-1383	GH	Kit 8119 GH	
A 5-3222-E-1383	GG	Kit 8120 GG	
A 6-3222-E-1383	EE	Kit 8121 EE	
A 7-3222-E-1383	EF	Kit 8122 EF	
A 9-3222-E-1383	EF	Kit 8123 EF	
A10-3222-E-1383	GH	Kit 8124 GH	
A11-3222-E-1383	GG	Kit 8125 GG	
A12-3222-E-1383	FF	Kit 8126 FF	
*A 1-3222-J-1440	GH	Kit 8127 GH	Special for Mack Trucks Unlined Shoe Assembly — A-3222-J-1440

*Must use 2258-R-642 shoe return spring.

16½" x 6" FMSI 4514GD NOTE: Unlined Shoe Assembly — A-3222-C-1381

BRAKE SHOE AND LINING ASSY. NO.	FRICTION CODE	KIT NO.	REMARKS
A 2-3222-C-1381	GH	Kit 8128 GH	
A 3-3222-C-1381	GG	Kit 8129 GG	
A 4-3222-C-1381	EF	Kit 8130 EF	
A 5-3222-C-1381	EF	Kit 8131 EF	
A 6-3222-C-1381	EE/EF Combination	Kit 8132 CF	Primary Secondary
A 7-3222-C-1381			
A 8-3222-C-1381	FF	Kit 8133 FF	
A 9-3222-C-1381	FF	Kit 8134 FF	
A10-3222-C-1381	GG	Kit 8135 GG	
A11-3222-C-1381	EE	Kit 8136 EE	

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.

BRAKE SHOES AND LININGS
**REFERENCE A — BRAKE SHOES WITH LININGS, RETAINERS & ROLLERS
FOR 16½" x 7", 8⅝" & 10" BRAKES**


Engineering Approved
Premium Lining
Lining Arc Length 108°

16½" x 7" FMSI 4515GD NOTE: Unlined Shoe Assembly—A-3222-S-1293

BRAKE SHOE AND LINING ASSY. NO.	FRICTION CODE	KIT NO.	REMARKS
A 1-3222-S-1293	GG	Kit 8104 GG	
A 2-3222-S-1293	GH	Kit 8105 GH	
A 3-3222-S-1293	GH	Kit 8108 GH	
A 4-3222-S-1293	GG	Kit 8103 GG	
A 5-3222-S-1293	EF	Kit 8101 EF	
A12-3222-S-1293	FF	Kit 8106 FF	
A13-3222-S-1293	EE	Kit 8102 EE	
A18-3222-S-1293	EE	Kit 8107 EE	Bonded Brake Shoes
A47-3222-S-1293	FF	Kit 8144 FF	

FOR 16½" x 7" FRUEHAUF AND OLD STYLE ROCKWELL F5 SERIES AXLES SEE PG. 22.

16½" x 8⅝" FMSI 4551D NOTE: Unlined Shoe Assembly—A-3222-T-1346

BRAKE SHOE AND LINING ASSY. NO.	FRICTION CODE	KIT NO.	REMARKS
A 1-3222-T-1346	GH	Kit 8137 GH	
A 2-3222-T-1346	GG	Kit 8138 GG	
A 4-3222-T-1346	FF	Kit 8142 FF	

16½" x 10" FMSI 4549D & FMSI 4514GD NOTE: Unlined Shoe Assembly — A-3222-D-1356

BRAKE SHOE AND LINING ASSY. NO.	FRICTION CODE	KIT NO.	REMARKS
A 1-3222-D-1356	GH	Kit 8139 GH	
A 2-3222-D-1356	GG	Kit 8140 GG	

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.

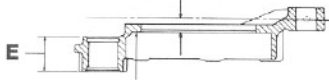
BRAKE SPIDERS

REFERENCE B — BRAKE SPIDERS

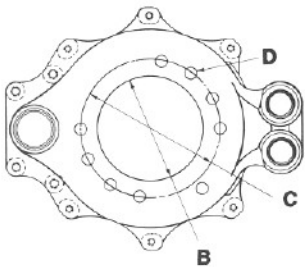
STEPS TO IDENTIFY BRAKE SPIDERS:

1. Part Number
2. Offset — A
3. Pilot Diameter — B
4. Bolt Circle — C
5. Hole Size — D
6. Quantity of Bolt Holes

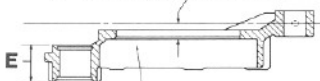
A - BRAKE C/L OFFSET



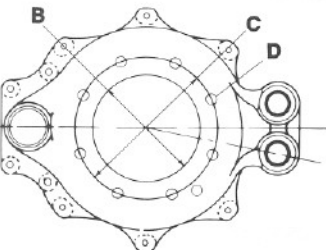
PART NO. ON
MACHINED SURFACE



A - BRAKE C/L OFFSET



PART NUMBER LOCATION



FRONT BRAKE APPLICATIONS (ALL SPIDERS FURNISHED WITH BUSHINGS AND SEALS)

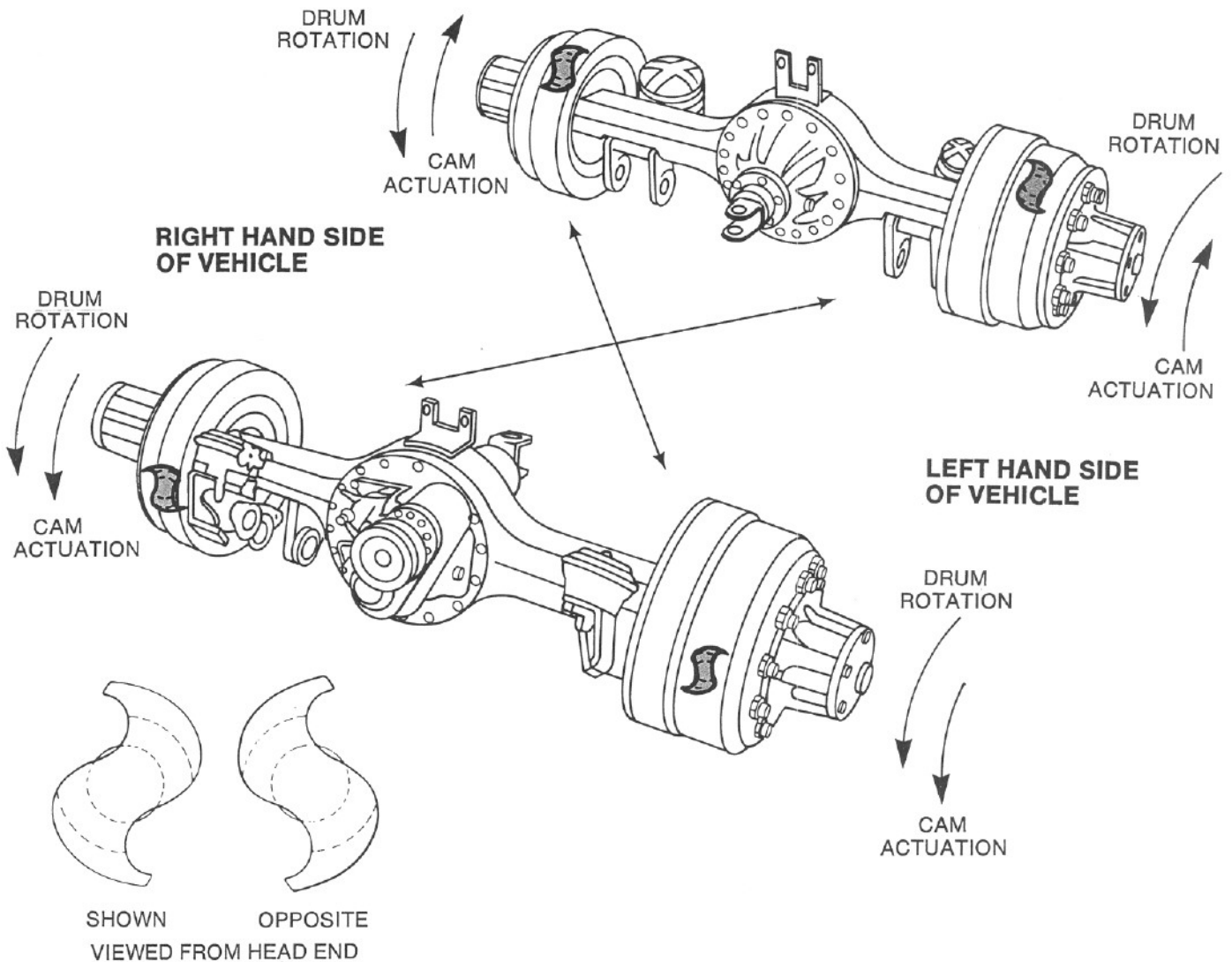
PART NUMBER	B	C	BOLT HOLES	D	E	REMARKS
	PILOT DIAMETER ± .003	BOLT CIRCLE		HOLE SIZE	CAM BOSS THICKNESS	
A - OFFSET: 1 1/16"						
A-3211-Q-3709	6.003"	7 1/8"	8	17/32"	1 7/8"	Shown Opposite
A-3211-R-3710	6.003"	7 1/8"	8	17/32"	1 7/8"	
A - OFFSET: 1 5/8"						
A-3211-U-3427	6.003"	7 1/4"	8	21/32"	1 27/32"	Shown Opposite
A-3211-V-3428	6.003"	7 1/4"	8	21/32"	1 27/32"	
A - OFFSET: 1 3/4"						
A-3211-Q-3423	5.753"	7 1/4"	8	25/32"	2 1/32"	Shown Opposite
A-3211-R-3424	5.753"	7 1/4"	8	25/32"	2 1/32"	
A-3211-Y-3431	5.753"	7 1/4"	8	25/32"	2 1/32"	Shown Opposite
A-3211-Z-3432	5.753"	7 1/4"	8	25/32"	2 1/32"	
A-3211-C-3435	5.753"	7 1/4"	7	25/32"	2 1/32"	Shown Opposite
A-3211-D-3436	5.753"	7 1/4"	7	25/32"	2 1/32"	
A-3211-G-3439	5.753"	7 1/4"	7	21/32"	2 1/32"	Shown Opposite
A-3211-H-3440	5.753"	7 1/4"	7	21/32"	2 1/32"	
A-3211-G-3595	5.503"	7 1/4"	7	21/32"	2 1/32"	Shown Opposite
A-3211-H-3596	5.503"	7 1/4"	7	21/32"	2 1/32"	

TRUCK & TRACTOR APPLICATIONS (ALL SPIDERS FURNISHED WITH BUSHINGS AND SEALS)

PART NUMBER	B	C	BOLT HOLES	D	E	REMARKS
	PILOT DIAMETER ± .003	BOLT CIRCLE		HOLE SIZE	CAM BOSS THICKNESS	
A - OFFSET: 2 5/32"						
A-3211-T-3582	5.878"	7 1/8"	11	19/32"	2 1/32"	Shown Opposite
A-3211-J-3676	5.878"	7 1/8"	11	19/32"	2 1/32"	
A - OFFSET: 1 5/8"						
A-3211-B-3538	6.316"	8 3/8"	8	21/32"	1 27/32"	Shown Opposite
A-3211-C-3539	6.316"	8 3/8"	8	21/32"	1 27/32"	
A - OFFSET: 1 3/4"						
A-3211-P-3188	6.754"	8 1/4"	12	21/32"	2 1/32"	Symmetrical
A-3211-X-3196	6.754"	8 1/4"	8	21/32"	2 1/32"	Symmetrical
A-3211-S-3295	6.754"	8 1/4"	10	21/32"	2 1/32"	Symmetrical
A-3211-B-3304	6.754"	8 1/4"	16	21/32"	2 1/32"	Symmetrical
A-3211-W-3481	6.754"	8 1/8"	10	21/32"	2 1/32"	Shown Opposite
A-3211-X-3482	6.754"	8 1/8"	10	21/32"	2 1/32"	
A-3211-Y-3483	6.754"	8 1/8"	10	21/32"	2 1/32"	Shown Opposite
A-3211-Z-3484	6.754"	8 1/8"	10	21/32"	2 1/32"	
A-3211-K-3521	6.754"	8 1/8"	9	21/32"	2 1/32"	Shown Opposite
A-3211-L-3522	6.754"	8 1/8"	9	21/32"	2 1/32"	
A-3211-G-3543	6.754"	8 1/8"	9	21/32"	2 1/32"	Shown Opposite
A-3211-H-3544	6.754"	8 1/8"	9	21/32"	2 1/32"	
A-3211-K-3547	6.754"	8 1/8"	9	21/32"	2 1/32"	Shown Opposite
A-3211-L-3548	6.754"	8 1/8"	9	21/32"	2 1/32"	
A-3211-Q-3553	6.754"	8 1/8"	9	21/32"	2 1/32"	Shown Opposite
A-3211-R-3554	6.754"	8 1/8"	9	21/32"	2 1/32"	
A-3211-M-3575	6.754"	8 1/4"	16	21/32"	2 1/32"	Symmetrical

FOR ADDITIONAL BRAKE SPIDER INFORMATION SEE CATALOG SP-8012

Below is a brief explanation of why cam designations on single and tandem axles are expressed as “shown” and “opposite” rather than “left” and “right”.

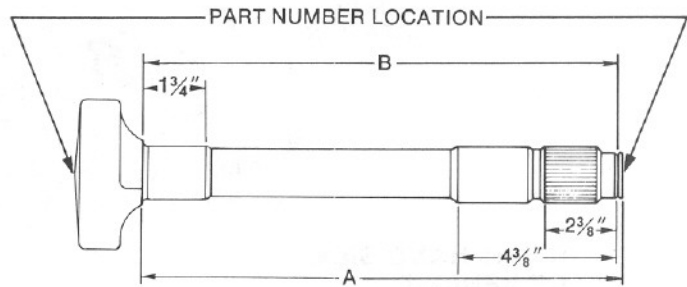
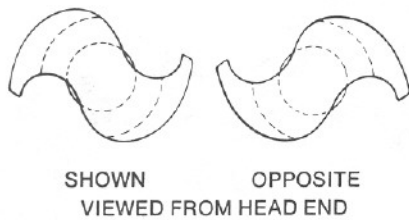


Because bracket location is near the front-upper part of the brake drum in a forward axle, and near the back-upper portion of a rear axle the cam actuation necessitates a differently shaped or positioned cam head for stopping ability. Therefore, the identical camshaft could not be used on one side of a vehicle. The cam is the same on the left hand forward-right hand rear and the same on the left hand rear-right hand forward.

The above also applies to locating camshaft brackets shown on pages 12 and 13.

CAMSHAFTS — “S” HEAD

REFERENCE C — “S” HEAD CAMSHAFTS



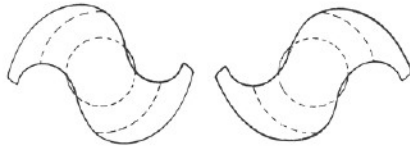
1 1/2" DIAMETER—28 SPLINE

PART NUMBER	A	B	REMARKS
2210-C-5463 2210-D-5464	6 1/16"	6 1/2"	Shown Opposite
2210-W-5457 2210-X-5458	7 7/8"	7 13/16"	Shown Opposite
2210-G-5337 2210-H-5338	8 3/8"	8 3/16"	Shown Opposite
2210-U-5455 2210-V-5456	9 11/32"	9 5/32"	Shown Opposite
2210-Q-5373 2210-R-5374	9 17/32"	9 11/32"	Shown Opposite
2210-S-5427 2210-T-5428	9 3/4"	9 9/16"	Shown Opposite
2210-U-5429 2210-V-5430	10 11/32"	10 5/32"	Shown Opposite
2210-E-5361 2210-F-5362	10 3/4"	10 9/16"	Shown Opposite
2210-A-5435 2210-B-5436	11 1/32"	10 27/32"	Shown Opposite
2210-Y-5433 2210-Z-5434	11 9/32"	10 31/32"	Shown Opposite
2210-S-5323 2210-T-5324	11 7/16"	11 1/4"	Shown Opposite
2210-U-5325 2210-V-5326	11 27/64"	11 15/64"	Shown Opposite
2210-A-5331 2210-B-5332	11 25/32"	11 19/32"	Shown Opposite
2210-K-5367 2210-L-5368	11 25/32"	11 19/32"	Shown Opposite

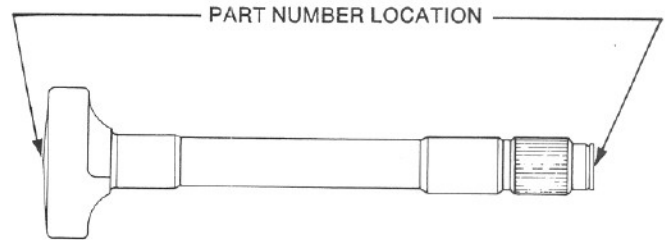
PART NUMBER	A	B	REMARKS
2210-Y-5329 2210-Z-5330	12 1/4"	12 1/16"	Shown Opposite
2210-W-5327 2210-X-5328	12 3/4"	12 9/16"	Shown Opposite
2210-K-5341 2210-L-5342	13 7/32"	13 1/32"	Shown Opposite
2210-C-5533 2210-D-5534	13 15/32"	13 9/32"	Shown Opposite
2210-G-5441 2210-H-5442	13 21/32"	13 15/32"	Shown Opposite
2210-M-5395 2210-N-5396	13 23/32"	13 17/32"	Shown Opposite
2210-W-5431 2210-X-5432	13 27/32"	13 21/32"	Shown Opposite
2210-S-5453 2210-T-5454	13 15/16"	13 3/4"	Shown Opposite
2210-M-5369 2210-N-5370	14 11/32"	14 5/32"	Shown Opposite
2210-M-5343 2210-N-5344	14 25/32"	14 19/32"	Shown Opposite
2210-K-5445 2210-L-5446	14 7/8"	14 11/16"	Shown Opposite
2210-Q-5451 2210-R-5452	15 7/32"	15 1/32"	Shown Opposite
2210-M-5447 2210-N-5448	16 25/32"	16 19/32"	Shown Opposite

FOR ADDITIONAL CAMSHAFT INFORMATION SEE CATALOG SP-8012

CAMSHAFT CROSS REFERENCE — 1½”-10 TO 1½”-28 SPLINE



SHOWN OPPOSITE
VIEWED FROM HEAD END



1½”-10 TO 1½”-28 SPLINE

P-SERIES 1½”-10 SPLINE PART NO.	Q-SERIES OLD STYLE 1½”-28 SPLINE PART NO.	Q-SERIES NEW STYLE 1½”-28 SPLINE PART NO.
2210-Q-2981	2210-G-4869	2210-A-5331
2210-P-2980	2210-H-4870	2210-B-5332
2210-H-2400	2210-P-5086	2210-S-5323
2210-G-2399	2210-Q-5087	2210-T-5324
2210-R-3736	2210-R-5088	2210-Q-5373
2210-Q-3735	2210-S-5089	2210-R-5374
2210-J-3234	2210-T-5090	2210-C-5333
2210-K-3235	2210-U-5091	2210-D-5334
2710-D-212	2210-V-5092	2210-E-5361
2710-C-211	2210-W-5093	2210-F-5362
2210-V-3740	2210-X-5094	2210-S-5427
2210-U-3739	2210-Y-5095	2210-T-5428
2210-Q-2773	2210-Z-5096	2210-M-5395
2210-R-2774	2210-A-5097	2210-N-5396
2210-X-3092	2210-B-5098	2210-U-5429
2210-W-3091	2210-C-5099	2210-V-5430
2210-M-2405	2210-D-5100	2210-W-5327
2210-L-2404	2210-E-5101	2210-X-5328
2210-G-3335	2210-F-5102	2210-W-5431
2210-H-3336	2210-G-5103	2210-X-5432
2210-B-3226	2210-K-5107	2210-Y-5433
2210-A-3225	2210-L-5108	2210-Z-5434
2210-K-4977	2210-M-5109	2210-A-5435
2210-J-4976	2210-N-5110	2210-B-5436
2210-V-4780	2210-P-5112	2210-K-5367
2210-U-4779	2210-Q-5113	2210-L-5368
2210-C-4787	2210-R-5114	2210-Y-5329

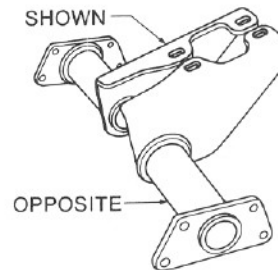
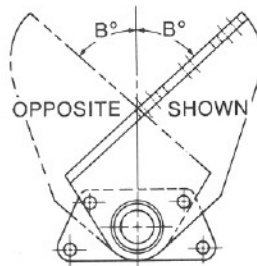
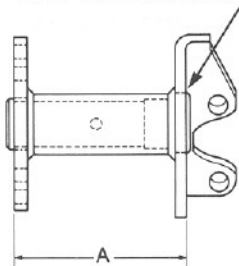
P-SERIES 1½”-10 SPLINE PART NO.	Q-SERIES OLD STYLE 1½”-28 SPLINE PART NO.	Q-SERIES NEW STYLE 1½”-28 SPLINE PART NO.
2210-B-4786	2210-S-5115	2210-Z-5330
2210-F-5050	2210-C-5125	2210-K-5341
2210-E-5049	2210-D-5126	2210-L-5342
2210-S-2567	2210-E-5127	2210-M-5369
2210-T-2568	2210-F-5128	2210-N-5370
2210-Y-3483	2210-Q-5139	2210-G-5337
2210-Z-3484	2210-R-5140	2210-H-5338
2210-C-3487	2210-S-5141	2210-M-5343
2210-D-3488	2210-T-5142	2210-N-5344
2210-G-4557	2210-W-5145	2210-G-5441
2210-H-4558	2210-X-5146	2210-H-5442
2210-Q-3111	2210-Y-5147	2210-K-5445
2210-R-3112	2210-Z-5148	2210-L-5446
2210-R-2488	2210-A-5149	2210-M-5447
2210-S-2489	2210-B-5150	2210-N-5448
2210-S-4465	2210-C-5151	2210-Q-5451
2210-T-4466	2210-D-5152	2210-R-5452
2210-J-3104	2210-E-5153	2210-S-5453
2210-K-3105	2210-F-5154	2210-T-5454
2210-Z-4264	2210-L-5160	2210-U-5455
2210-A-4265	2210-M-5161	2210-V-5456
2210-S-2437	2210-R-5166	2210-W-5457
2210-R-2436	2210-S-5167	2210-X-5458
2210-K-3027	2210-Y-5173	2210-U-5325
2210-L-3023	2210-Z-5174	2210-V-5326
2210-Y-3067	2210-S-5193	2210-C-5463
2210-X-3066	2210-T-5194	2210-D-5464

FOR ADDITIONAL CAMSHAFT INFORMATION SEE CATALOG SP-8012

CAMSHAFT BRACKETS

REFERENCE D – CAMSHAFT AND CHAMBER SUPPORT BRACKETS

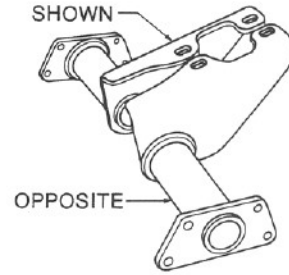
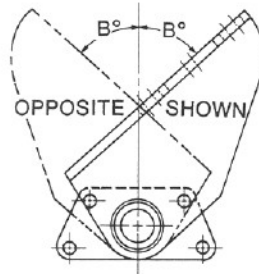
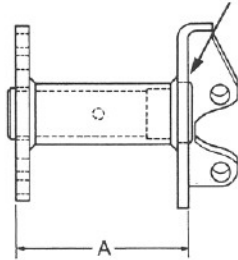
PART NUMBER LOCATION



All Brackets Furnished with Bushings and Seals

SUPPORT BRACKET PART NUMBER	A	B°	SLACK ADJUSTER LENGTH	REMARKS
	LENGTH OF BRACKET	CHAMBER MOUNTING ANGLE		
A 1-3299-F-3984	2 ¹ / ₃₂ "	52.50°	5 ¹ / ₂ "	Shown
A 1-3299-H-3986	2 ¹ / ₃₂ "	52.50°	5 ¹ / ₂ "	Opposite
A 1-3299-B-4864	3 ⁵ / ₃₂ "	52.50°	5 ¹ / ₂ "	Shown
A 1-3299-D-4866	3 ⁵ / ₃₂ "	52.50°	5 ¹ / ₂ "	Opposite
A 3-3299-F-4660	3 ⁷ / ₈ "	302°	6" - 6 ¹ / ₂ "	Shown
A 3-3299-G-4661	3 ⁷ / ₈ "	302°	6" - 6 ¹ / ₂ "	Opposite
A23-3299-M-4927	4 ¹ / ₁₆ "	20°	5 ¹ / ₂ " - 6"	Shown
A23-3299-N-4928	4 ¹ / ₁₆ "	20°	5 ¹ / ₂ " - 6"	Opposite
B23-3299-R-1552	4 ¹ / ₁₆ "	72°	5" - 5 ¹ / ₂ "	Shown
B23-3299-S-1553	4 ¹ / ₁₆ "	72°	5" - 5 ¹ / ₂ "	Opposite
A62-3299-K-2013	4 ⁹ / ₁₆ "	312°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Shown
A62-3299-L-2014	4 ⁹ / ₁₆ "	312°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Opposite
F48-3299-T-1554	5 ⁵ / ₁₆ "	72°	6" - 6 ¹ / ₂ "	Shown
F48-3299-U-1555	5 ⁵ / ₁₆ "	72°	6" - 6 ¹ / ₂ "	Opposite
B67-3299-R-1552	5 ⁵ / ₁₆ "	72°	5" - 5 ¹ / ₂ "	Shown
B67-3299-S-1553	5 ⁵ / ₁₆ "	72°	5" - 5 ¹ / ₂ "	Opposite
A35-3299-K-2013	5 ²⁵ / ₃₂ "	323°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Shown
A35-3299-L-2014	5 ²⁵ / ₃₂ "	323°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Opposite
A15-3299-F-4660	6"	325°	6" - 6 ¹ / ₂ "	Shown
A15-3299-G-4661	6"	325°	6" - 6 ¹ / ₂ "	Opposite
A 5-3299-K-2013	6 ³ / ₁₆ "	330°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Shown
A 5-3299-L-2014	6 ³ / ₁₆ "	330°	5 ¹ / ₂ " - 6 ¹ / ₂ "	Opposite
A11-3299-M-4927	6 ¹³ / ₃₂ "	101.50°	5 ¹ / ₂ " - 6"	Shown
A11-3299-N-4928	6 ¹³ / ₃₂ "	101.50°	5 ¹ / ₂ " - 6"	Opposite
A 7-3299-M-4927	6 ¹³ / ₃₂ "	45°	5 ¹ / ₂ " - 6"	Shown
A 7-3299-N-4928	6 ¹³ / ₃₂ "	45°	5 ¹ / ₂ " - 6"	Opposite
A 9-3299-M-4927	6 ¹³ / ₃₂ "	56°	5 ¹ / ₂ " - 6"	Shown
A 9-3299-N-4928	6 ¹³ / ₃₂ "	56°	5 ¹ / ₂ " - 6"	Opposite
A 1-3299-M-4927	6 ¹³ / ₃₂ "	69°	5 ¹ / ₂ " - 6"	Shown
A 1-3299-N-4928	6 ¹³ / ₃₂ "	69°	5 ¹ / ₂ " - 6"	Opposite
A 1-3299-T-1554	6 ³ / ₄ "	26°	6" - 6 ¹ / ₂ "	Shown
A 1-3299-U-1555	6 ³ / ₄ "	26°	6" - 6 ¹ / ₂ "	Opposite
C25-3299-T-1554	6 ³ / ₄ "	45°	6" - 6 ¹ / ₂ "	Shown
C25-3299-U-1555	6 ³ / ₄ "	45°	6" - 6 ¹ / ₂ "	Opposite
A 5-3299-R-1552	6 ³ / ₄ "	53°	5" - 5 ¹ / ₂ "	Shown
A 5-3299-S-1553	6 ³ / ₄ "	53°	5" - 5 ¹ / ₂ "	Opposite

FOR ADDITIONAL CAMSHAFT BRACKET INFORMATION SEE CATALOG SP-8012

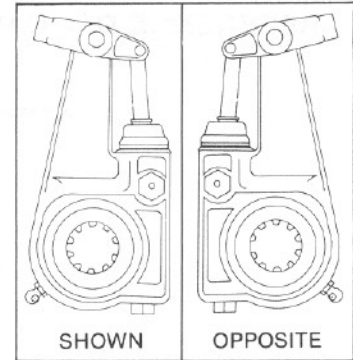
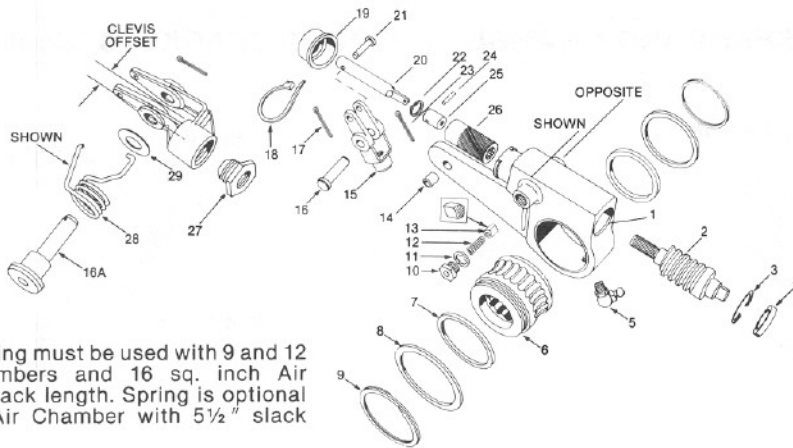
CAMSHAFT BRACKETS (Cont'd)
REFERENCE D – CAMSHAFT AND CHAMBER SUPPORT BRACKETS (Cont'd)
PART NUMBER LOCATION


All Brackets Furnished with Bushings and Seals

SUPPORT BRACKET PART NUMBER	A	B°	SLACK ADJUSTER LENGTH	REMARKS
	LENGTH OF BRACKET	CHAMBER MOUNTING ANGLE		
A13-3299-T-1554	6 $\frac{3}{4}$ "	53°	6"-6 $\frac{1}{2}$ "	Shown
A13-3299-U-1555	6 $\frac{3}{4}$ "	53°	6"-6 $\frac{1}{2}$ "	Opposite
A 9-3299-F-4660	6 $\frac{3}{4}$ "	56°	6"-6 $\frac{1}{2}$ "	Shown
A 9-3299-G-4661	6 $\frac{3}{4}$ "	56°	6"-6 $\frac{1}{2}$ "	Opposite
E87-3299-T-1554	6 $\frac{3}{4}$ "	60°	6"-6 $\frac{1}{2}$ "	Shown
E87-3299-U-1555	6 $\frac{3}{4}$ "	60°	6"-6 $\frac{1}{2}$ "	Opposite
A61-3299-R-1552	6 $\frac{3}{4}$ "	60°	5"-5 $\frac{1}{2}$ "	Shown
A61-3299-S-1553	6 $\frac{3}{4}$ "	60°	5"-5 $\frac{1}{2}$ "	Opposite
A 9-3299-T-1554	6 $\frac{3}{4}$ "	69°	6"-6 $\frac{1}{2}$ "	Shown
A 9-3299-U-1555	6 $\frac{3}{4}$ "	69°	6"-6 $\frac{1}{2}$ "	Opposite
B13-3299-R-1552	6 $\frac{3}{4}$ "	72°	5"-5 $\frac{1}{2}$ "	Shown
B13-3299-S-1553	6 $\frac{3}{4}$ "	72°	5"-5 $\frac{1}{2}$ "	Opposite
B31-3299-T-1554	6 $\frac{3}{4}$ "	72°	6"-6 $\frac{1}{2}$ "	Shown
B31-3299-U-1555	6 $\frac{3}{4}$ "	72°	6"-6 $\frac{1}{2}$ "	Opposite
A99-3299-R-1552	6 $\frac{3}{4}$ "	80°	5"-5 $\frac{1}{2}$ "	Shown
A99-3299-S-1553	6 $\frac{3}{4}$ "	80°	5"-5 $\frac{1}{2}$ "	Opposite
F 4-3299-T-1554	6 $\frac{3}{4}$ "	80°	6"-6 $\frac{1}{2}$ "	Shown
F 4-3299-U-1555	6 $\frac{3}{4}$ "	80°	6"-6 $\frac{1}{2}$ "	Opposite
A60-3299-T-1554	6 $\frac{3}{4}$ "	83°	6"-6 $\frac{1}{2}$ "	Shown
A60-3299-U-1555	6 $\frac{3}{4}$ "	83°	6"-6 $\frac{1}{2}$ "	Opposite
C97-3299-T-1554	6 $\frac{3}{4}$ "	85°	6"-6 $\frac{1}{2}$ "	Shown
C97-3299-U-1555	6 $\frac{3}{4}$ "	85°	6"-6 $\frac{1}{2}$ "	Opposite
E61-3299-R-1552	6 $\frac{3}{4}$ "	334°	5"-5 $\frac{1}{2}$ "	Shown
E61-3299-S-1553	6 $\frac{3}{4}$ "	334°	5"-5 $\frac{1}{2}$ "	Opposite
A 1-3299-F-4660	6 $\frac{3}{4}$ "	334°	6"-6 $\frac{1}{2}$ "	Shown
A 1-3299-G-4661	6 $\frac{3}{4}$ "	334°	6"-6 $\frac{1}{2}$ "	Opposite
A 1-3299-E-4763	7 $\frac{7}{32}$ "	151°	5 $\frac{1}{2}$ "-6"	Shown
A 1-3299-F-4764	7 $\frac{7}{32}$ "	151°	5 $\frac{1}{2}$ "-6"	Opposite
B59-3299-T-1554	7 $\frac{23}{32}$ "	50°	6"-6 $\frac{1}{2}$ "	Shown
B59-3299-U-1555	7 $\frac{23}{32}$ "	50°	6"-6 $\frac{1}{2}$ "	Opposite
A52-3299-K-2013	8 $\frac{1}{2}$ "	323°	5 $\frac{1}{2}$ "-6 $\frac{1}{2}$ "	Shown
A52-3299-L-2014	8 $\frac{1}{2}$ "	323°	5 $\frac{1}{2}$ "-6 $\frac{1}{2}$ "	Opposite
B55-3299-T-1554	8 $\frac{13}{16}$ "	53°	6"-6 $\frac{1}{2}$ "	Shown
B55-3299-U-1555	8 $\frac{13}{16}$ "	53°	6"-6 $\frac{1}{2}$ "	Opposite
B77-3299-R-1552	8 $\frac{13}{16}$ "	69°	5"-5 $\frac{1}{2}$ "	Shown
B77-3299-S-1553	8 $\frac{13}{16}$ "	69°	5"-5 $\frac{1}{2}$ "	Opposite

FOR ADDITIONAL CAMSHAFT BRACKET INFORMATION SEE CATALOG SP-8012

REFERENCE E—FRONT BRAKE AUTOMATIC SLACK ADJUSTERS



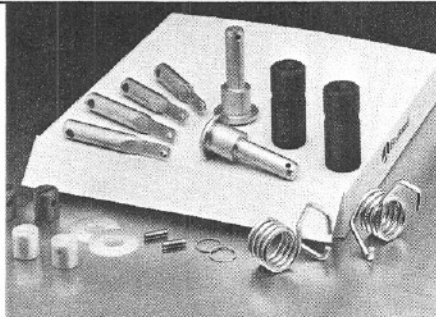
NOTE: External Spring must be used with 9 and 12 sq. inch Air Chambers and 16 sq. inch Air Chamber with 5" slack length. Spring is optional with 16 sq. inch Air Chamber with 5½" slack length.

ITEM	DESCRIPTION	QTY.	PART NUMBER	REMARKS
1 ^①	Housing & bushing assembly	1	A-3275-T-592	5" Shown
			A-3275-Z-598	5" Opposite
			A-3275-U-593	5½" Shown
			A-3275-A-599	5½" Opposite
2 ^①	Gear—worm	1	3280-Y-6161	
3	Ring—retaining	1	1199-Y-3743	
4	Seal—oil	1	A-1205-Q-1447	
5	Fitting—grease	1	1898-R-720	
6 ^①	Gear	1	3280-X-6160	1½" Dia.-10 Spline
			3280-X-6940	1¼" Dia.-10 Spline
			3280-Z-6162	1½" Dia.-28 Spline
7	Seal—worm and body	2	2297-J-2844	
8	Washer—thrust	2	1229-D-2500	
9	Ring—retaining	2	1199-W-3741	
10	Capscrew—pressure relief	1	*A-2206-Y-51	
11	Gasket	1	*A-1729-B-262	
12	Spring	1	* 2258-U-567	
13	Pawl—guide	1	*A-1199-S-3737	
14	Bushing	1	1225-C-835	
15	Clevis	1	A-1245-D-394	⅝" Offset
			A-1245-E-395	Straight
16	Pin—clevis	1	19X-60	
16A	Pin—clevis	1	19X-98	
17	Cotter Pin	1	K-235	
18	Clamp	1	2257-N-40	
19	Boot	1	2297-V-2856	
20	Rod—actuator: For 5" Slack For 5½" Slack	1	2297-X-2936	
			2297-Y-2937	
21	Pin—clevis	1	19X-127	
22	Ring—retaining	1	1199-V-3740	
23	Cotter Pin	1	K-248	
24	Roller	1	1199-U-3739	
25	Piston—actuator	1	2297-W-3637	Red-used with 9, 12, & 16 sq. inch air chambers only
			2297-H-2842	Green-used with 20 sq. inch air chamber
26	Actuator	1	2297-W-2857	
27	Adaptor—Quick Connect	1	2207-L-12	½"-20 thread
			2207-M-13	⅝"-18 thread
28	Spring	1	2258-A-625	Shown-painted red
			2258-B-626	Opposite-painted green
29	Washer	1	1229-P-2798	

*Items 10, 11, 12, 13 may be purchased as assembly A1-1199-S-3737.
^①Not sold separately. For identification only.

REFERENCE E—FRONT BRAKE AUTOMATIC SLACK ASSEMBLIES

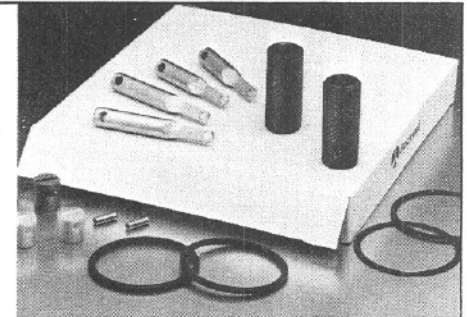
ASSEMBLY PART NUMBER	LEVER LENGTH	SPLINE SIZE	CLEVIS OFFSET	CLEVIS THREAD	CHAMBER SIZE	REMARKS
A 6-3275-T-592S A 6-3275-Z-598S	5"	1¼" Dia.-10	0	½"-20	9,12,16	Shown Opposite
A 8-3275-T-592S A 8-3275-Z-598S	5"	1½" Dia.-10	0	½"-20	9,12,16	Shown Opposite
A 8-3275-U-593S A 7-3275-A-599S	5½"	1¼" Dia.-10	0	½"-20	9,12	Shown Opposite
A10-3275-U-593S A 9-3275-A-599S	5½"	1½" Dia.-10	0	½"-20	9,12	Shown Opposite
A 7-3275-T-592S A 7-3275-Z-598S	5"	1¼" Dia.-10	⅝"	½"-20	9,12,16	Shown Opposite
A 9-3275-T-592S A 9-3275-Z-598S	5"	1½" Dia.-10	⅝"	½"-20	9,12,16	Shown Opposite
A 9-3275-U-593S A 8-3275-A-599S	5½"	1¼" Dia.-10	⅝"	½"-20	9,12	Shown Opposite
A11-3275-U-593S A10-3275-A-599S	5½"	1½" Dia.-10	⅝"	½"-20	9,12	Shown Opposite
A 7-3275-U-593S A 6-3275-A-599S	5½"	1½" Dia.-10	0	½"-20	16	Shown Opposite
A14-3275-U-593S A13-3275-A-599S	5½"	1¼" Dia.-10	0	⅝"-18	20	Shown Opposite
A15-3275-U-593S A14-3275-A-599S	5½"	1¼" Dia.-10	0	½"-20	16	Shown Opposite
A12-3275-U-593S A11-3275-A-599S	5½"	1¼" Dia.-10	⅝"	½"-20	16	Shown Opposite
A13-3275-U-593S A12-3275-A-599S	5½"	1¼" Dia.-10	⅝"	⅝"-18	20	Shown Opposite
A10-3275-T-592S A10-3275-Z-598S	5"	1½" Dia.-28	0	½"-20	9,12	Shown Opposite
A17-3275-U-593S A16-3275-A-599S	5½"	1½" Dia.-28	0	½"-20	9,12	Shown Opposite
A18-3275-U-593S A17-3275-A-599S	5½"	1½" Dia.-28	0	½"-20	16	Shown Opposite

SERVICE KITS
KIT 1382*


- Application: Rebuild kit for front brake automatic slack adjusters with external spring (on clevis).
- One kit contains enough parts to rebuild one right and one left slack adjuster.
- Recommended stock based on 100 automatic slack adjuster assemblies is 10.
- Kit includes:

PART NO.	DESCRIPTION	QTY.
19X-98	Clevis Pin	2
2297-X-2936	Actuator Rod (5" Slack)	2
2297-Y-2937	Actuator Rod (5½" Slack)	2
1199-V-3740	Retaining Ring	2
1199-U-3739	Roller	2
2297-W-3637	Actuator Piston	2
2297-H-2842	Actuator Piston	2
2297-W-2857	Actuator	2
2258-A-625	Spring	1
2258-B-626	Spring	1
1229-P-2798	Washer	2
2257-N-40	Clamp	2
2297-V-2856	Boot	2

*Kit also includes template and instructions.

KIT 1383*


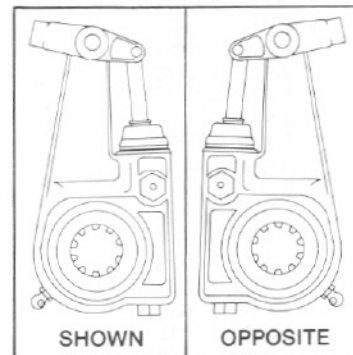
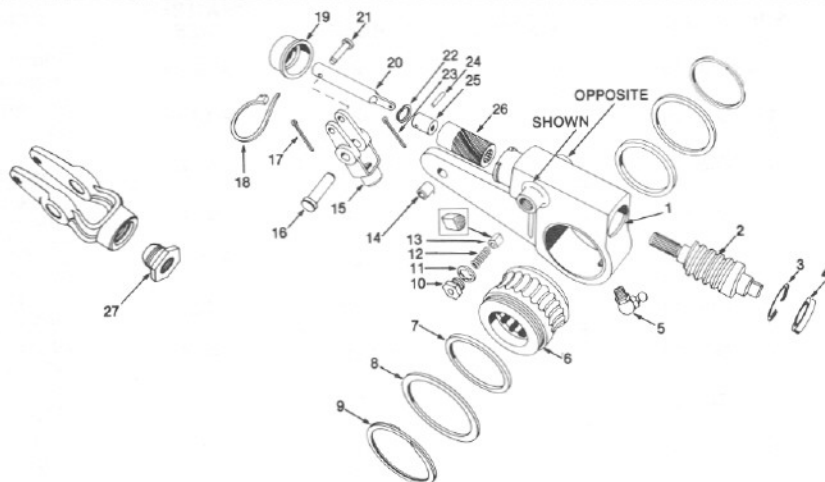
- Application: Rebuild kit for front brake automatic slack adjusters without external spring (on clevis).
- One kit contains enough parts to rebuild one right and one left slack adjuster.
- Recommended stock based on 100 automatic slack adjuster assemblies is 10.
- Kit includes:

PART NO.	DESCRIPTION	QTY.
2297-X-2936	Actuator Rod (5" Slack)	2
2297-Y-2937	Actuator Rod (5½" Slack)	2
1199-V-3740	Retaining Ring	2
1199-U-3739	Roller	2
2297-W-3637	Actuator Piston	2
2297-H-2842	Actuator Piston	2
2297-W-2857	Actuator	2
2257-N-40	Clamp	2
2297-V-2856	Boot	2

*Kit also includes template and instructions.

*For complete rebuild use with Kit 963 (Basic seals kit with related small hardware items).

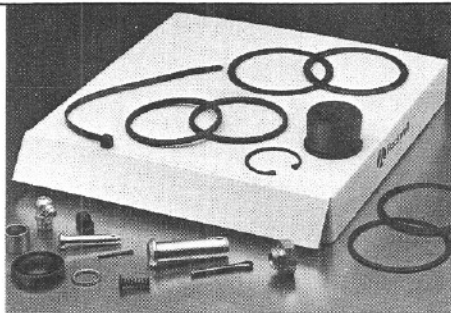
REFERENCE E—REAR BRAKE AUTOMATIC SLACK ADJUSTERS



ITEM	DESCRIPTION	QTY.	PART NUMBER	REMARKS
1 ①	Housing & Bushing Assembly	1	A-3275-T-592	5" Shown
			A-3275-Z-598	5" Opposite
			A-3275-U-593	5½" Shown
			A-3275-A-599	5½" Opposite
			A-3275-V-594	6" Shown
			A-3275-B-600	6" Opposite
			A-3275-W-595	6½" Shown
			A-3275-C-601	6½" Opposite
2 ①	Worm	1	3280-Y-6161	
3	Ring—retaining	1	1199-Y-3743	
4	Seal—oil	1	A-1205-Q-1447	
5	Fitting—grease	1	1898-R-720	
6 ①	Gear	1	3280-X-6160	1½" Dia.-10 Spline
			3280-Z-6162	1½" Dia.-28 Spline
			3280-X-6706	1⅝" Dia.-37 Spline Fruehauf
7	Seal—worm and body	2	2297-J-2844	
8	Washer—thrust	2	1229-D-2500	
9	Ring—retaining	2	1199-W-3741	
10	Capscrew—pressure relief	1	*A-2206-Y-51	
11	Guide—gasket plunger	1	* 1729-B-262	
12	Spring	1	* 2258-U-567	
13	Pawl—guide	1	* 1199-S-3737	
14	Bushing	1	1225-C-835	
15	Clevis	1	A-1245-E-395	
16	Pin—clevis	1	19X-60	
17	Cotter Pin	1	K-235	
18	Clamp	1	2257-N-40	
19	Boot	1	2297-V-2856	
20	Rod—actuator: 5" Slack	1	2297-X-2936	
	5.5" Slack		2297-Y-2937	
	6.0" Slack		2297-Z-2938	
	6.5" Slack		2297-A-2939	
21	Pin—clevis	1	19X-127	
22	Ring—retaining	1	1199-V-3740	
23	Cotter Pin	1	K-248	
24	Roller	1	1199-U-3739	
25	Piston—actuator	1	2297-H-2842	
26	Actuator	1	2297-W-2857	
27	Adaptor—Quick Connect	1	2207-L-12	½"-20 Thread, used only with Quick Connect clevis No. A-1245-E-395
			2207-M-13	⅜"-18 Thread, used only with Quick Connect clevis No. A-1245-E-395

REFERENCE E—REAR BRAKE AUTOMATIC SLACK ASSEMBLIES

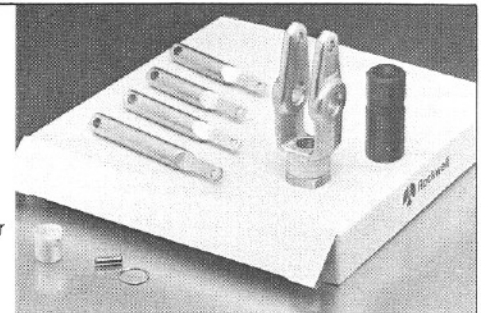
ASSEMBLY PART NUMBER	LEVER LENGTH	SPLINE SIZE		REMARKS
A1-3275-T-592S	5"	1½" Dia.-10		Shown
A1-3275-Z-598S	5"	1½" Dia.-10		Opposite
A1-3275-U-593S	5½"	1½" Dia.-10		Shown
A1-3275-A-599S	5½"	1½" Dia.-10		Opposite
A1-3275-V-594S	6"	1½" Dia.-10		Shown
A1-3275-B-600S	6"	1½" Dia.-10		Opposite
A1-3275-W-595S	6½"	1½" Dia.-10		Shown
A1-3275-C-601S	6½"	1½" Dia.-10		Opposite
A2-3275-T-592S	5"	1½" Dia.-28		Shown
A2-3275-Z-598S	5"	1½" Dia.-28		Opposite
A2-3275-U-593S	5½"	1½" Dia.-28		Shown
A2-3275-A-599S	5½"	1½" Dia.-28		Opposite
A2-3275-V-594S	6"	1½" Dia.-28		Shown
A2-3275-B-600S	6"	1½" Dia.-28		Opposite
A2-3275-W-595S	6½"	1½" Dia.-28		Shown
A2-3275-C-601S	6½"	1½" Dia.-28		Opposite
A5-3275-T-592S	5"	1⅝" Dia.-37	Fruehauf	Shown
A5-3275-Z-598S	5"	1⅝" Dia.-37	Fruehauf	Opposite
A5-3275-U-593S	5½"	1⅝" Dia.-37	Fruehauf	Shown
A5-3275-A-599S	5½"	1⅝" Dia.-37	Fruehauf	Opposite
A5-3275-V-594S	6"	1⅝" Dia.-37	Fruehauf	Shown
A5-3275-B-600S	6"	1⅝" Dia.-37	Fruehauf	Opposite
A5-3275-W-595S	6½"	1⅝" Dia.-37	Fruehauf	Shown
A5-3275-C-601S	6½"	1⅝" Dia.-37	Fruehauf	Opposite

SERVICE KITS
KIT 963


- Application: Minor rebuild kit for ALL automatic slack adjusters.
- One kit contains enough parts to rebuild one slack adjuster.
- Recommended stock based on 100 automatic slack adjuster assemblies is 10.
- Kit includes:

PART NO.	DESCRIPTION	QTY.
1199-Y-3743	Retaining Ring	1
A-1205-Q-1447	Oil Seal	1
1898-R-720	Grease Fitting	1
2297-J-2844	Seal, worm and body	2
1229-D-2500	Thrust Washer	2
1199-W-3741	Retaining Ring	2
A-2206-Y-51	Capscrew, pressure relief	1
1729-B-262	Gasket	1
2258-U-567	Spring	1
1199-S-3737	Guide Pawl	1
1225-C-835	Bushing	1
19X-60	Clevis Pin (Large)	1
K-248	Cotter Pin	1
2257-N-40	Clamp	1
2297-V-2856	Boot	1
19X-127	Clevis Pin (Small)	1
K-235	Cotter Pin	1

•Kit also includes template and instructions.

KIT 1350*


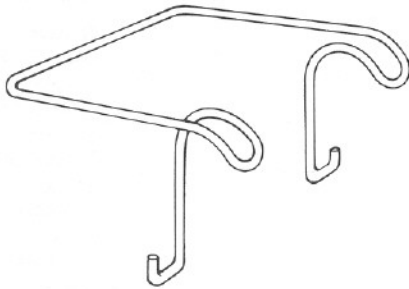
- Application: Major rebuild kit for REAR brake automatic slack adjusters.
- One kit contains enough parts to rebuild one slack adjuster.
- Recommended stock based on 100 automatic slack adjuster assemblies is 10.
- Kit includes:

PART NO.	DESCRIPTION	QTY.
A2-1245-E-395	Clevis Assembly	1
2297-X-2936	Actuator Rod (5" Slack)	1
2297-Y-2937	Actuator Rod (5½" Slack)	1
2297-Z-2938	Actuator Rod (6" Slack)	1
2297-A-2939	Actuator Rod (6½" Slack)	1
1199-V-3740	Retaining Ring	1
1199-U-3739	Roller	1
2297-H-2842	Actuator Piston	1
2297-W-2857	Actuator	1

•Kit also includes template and instructions.

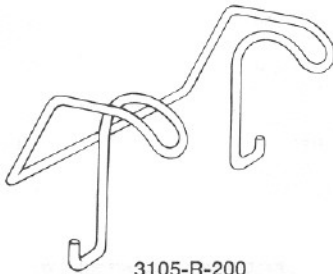
*For complete rebuild use with Kit 963 (Basic seals kit with related small hardware items).

REFERENCE F — SHOE ROLLER RETAINER



3105-L-194

- Used on ALL front and rear Rockwell “Q” Brake OEM installations.
- Can be found in ALL “Q” Series Brake Assemblies available through Rockwell Service Parts Division.
- Also found in ALL “Q” Series Kits containing shoe roller retainers.
- Is interchangeable with 3105-R-200.



3105-R-200

- Found primarily on Trailer applications using Rockwell “Q” Brake Assemblies.
- Used on SOME front and rear Rockwell “Q” Brake OEM installations.
- Is NOT available through Rockwell Service Parts Division.
- Is interchangeable with 3105-L-194.

RETAINER HOLE LOCATION

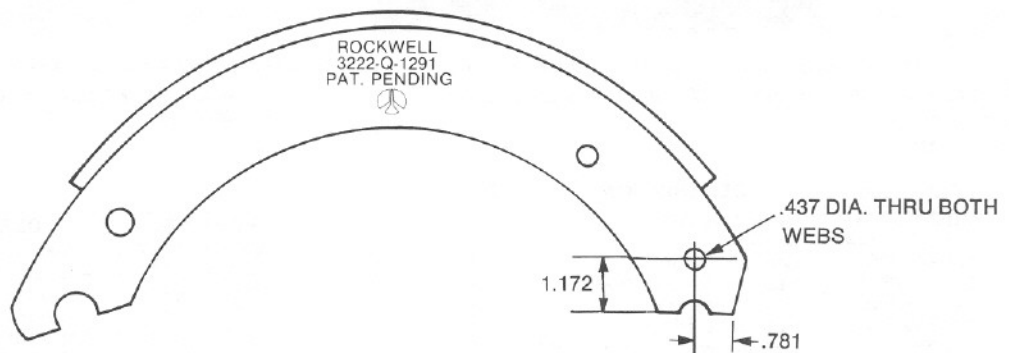
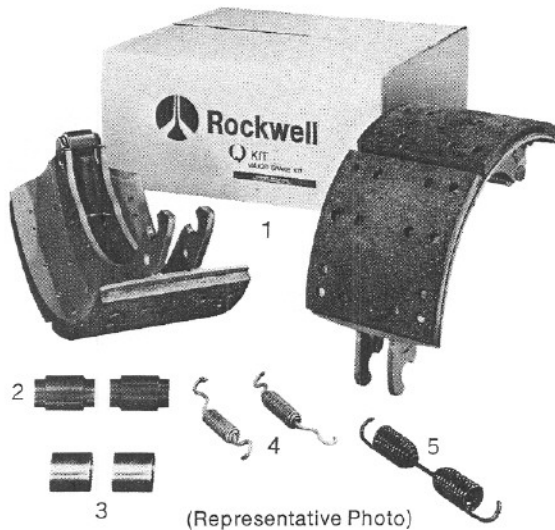


Illustration Showing Hole Location for Use with 3105-L-194 Shoe Roller Retainer.

MAJOR SHOE OVERHAUL KITS

ROCKWELL "Q" Brake Major Overhaul Kit
To RETRO-FIT "P" Series Brake



CHANGE "Q" CAM-MASTER BRAKE SHOES IN LESS THAN 2 MINUTES

NOTE: Aside from containing enough parts to service one (1) brake assembly, the Major Brake Kit is also planned to convert a CAM-MASTER "P" brake to a "Q" brake. Conversion instructions are included in each kit.

CONTENTS — MAJOR BRAKE OVERHAUL KIT

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Brake Shoe, Lining, Retainer & Roller Assy.	2	Varies With Kits
2	Pins — Brake Shoe Anchor	2	1259-N-274
3	Bushing — Anchor Pin	2	1225-B-496
4	Spring — Brake Shoe Retainer	2	2258-Q-615
5	Spring — Brake Shoe Return	1	2258-U-619

16½" x 5" BRAKES — FMSI 4524D

BRAKE OVERHAUL KIT APPLICATIONS Letter suffix after kit number indicates brake lining friction code.	Rockwell Brake Shoe And Lining No.
KIT NO. 8117EE (PRE FMVSS-121) Recommended for all Trucks & Tractors using Medium Friction linings.	A3-3222-E-1383 Medium Friction "EE" lining
KIT NO. 8118CF (PRE FMVSS-121) Recommended for all Trucks & Tractors using Medium Friction combination linings.	A1-3222-E-1383 A2-3222-E-1383 Combination Medium Friction "EE/FF" lining
KIT NO. 8119GH (POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction linings.	A4-3222-E-1383 High Friction "GH" lining
KIT NO. 8120GG (POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction Linings.	A5-3222-E-1383 High Friction "GG" lining
KIT NO. 8121EE (PRE & POST FMVSS-121) Recommended for all Trucks & Tractors using Medium Friction linings.	A6-3222-E-1383 Medium Friction "EE" lining
KIT NO. 8122EF (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors & Inter-city Buses using Medium Friction linings.	A7-3222-E-1383 Medium Friction "EF" lining
KIT NO. 8123EF (PRE & POST FMVSS-121) Recommended for all School Buses using Medium Friction linings.	A9-3222-E-1383 Medium Friction "EF" lining
KIT NO. 8124GH (PRE & POST FMVSS-121) Recommended for all Fire Trucks using High Friction linings.	A10-3222-E-1383 High Friction "GH" lining
KIT NO. 8125GG (PRE & POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction linings.	A11-3222-E-1383 High Friction "GG" lining
KIT NO. 8126FF (PRE & POST FMVSS-121) Recommended for all Transit Buses using Medium Friction linings.	A12-3222-E-1383 Medium Friction "FF" lining
KIT NO. 8127GH (POST FMVSS-121) Special Kit recommended for all Mack Trucks & Tractors using High Friction linings.	A1-3222-J-1440 High Friction "GH" lining Must use 2258-R-642 shoe return spring.

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.

MAJOR SHOE OVERHAUL KITS

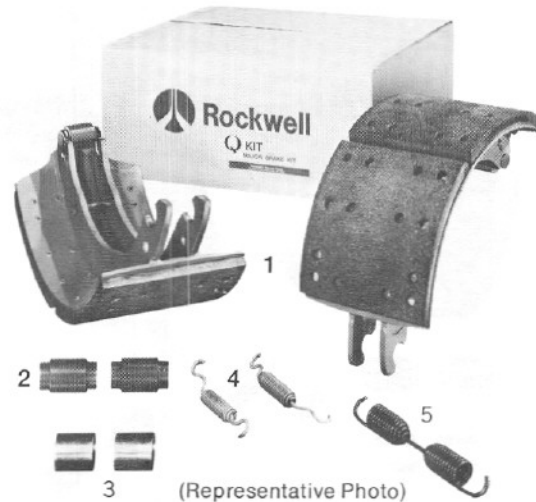
ROCKWELL "Q" Brake Major Overhaul Kit
To RETRO-FIT "P" Series Brake

CHANGE "Q" CAM-MASTER BRAKE SHOES IN LESS THAN 2 MINUTES

NOTE: Aside from containing enough parts to service one (1) brake assembly, the Major Brake Kit is also planned to convert a CAM-MASTER "P" brake to a "Q" brake. Conversion instructions are included in each kit.

CONTENTS — MAJOR BRAKE OVERHAUL KIT

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Brake Shoe, Lining, Retainer & Roller Assy.	2	Varies With Kits
2	Pins — Brake Shoe Anchor	2	1259-N-274
3	Bushing — Anchor Pin	2	1225-B-496
4	Spring — Brake Shoe Retainer	2	2258-Q-615
5	Spring — Brake Shoe Return	1	2258-U-619



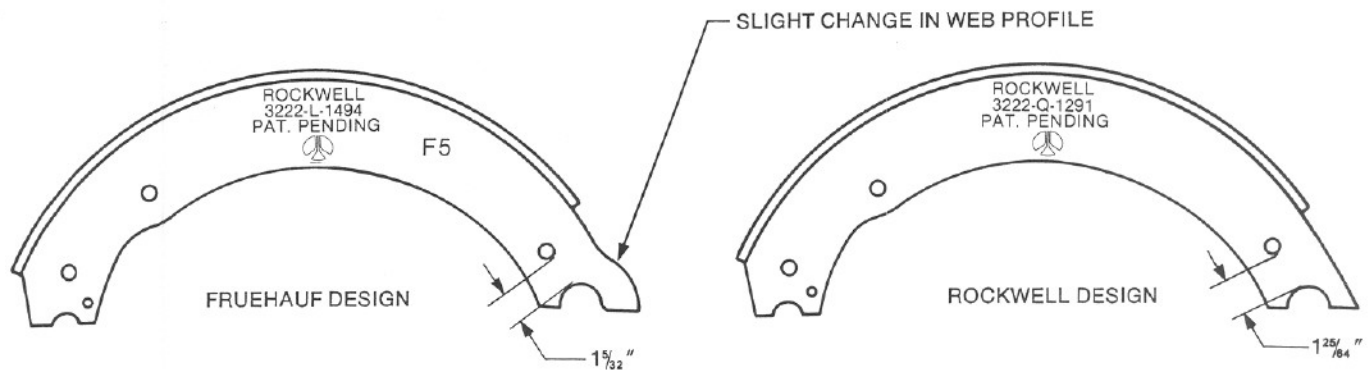
16½" x 6" BRAKES — FMSI 4514D

BRAKE OVERHAUL KIT APPLICATIONS Letter suffix after kit number indicates brake lining friction code.	Rockwell Brake Shoe And Lining No.
KIT NO. 8128GH (POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction linings	A2-3222-C-1381 High Friction "GH" lining
KIT NO. 8129GG (POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction linings	A3-3222-C-1381 High Friction "GG" lining
KIT NO. 8130EF (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors & Inter-City Buses using Medium Friction linings	A4-3222-C-1381 Medium Friction "EF" lining
KIT NO. 8131EF (PRE & POST FMVSS-121) Recommended for all School Buses using Medium Friction linings	A5-3222-C-1381 Medium Friction "EF" lining
KIT NO. 8132CF (PRE FMVSS-121) Recommended for all Trucks & Tractors using Medium Friction Combination linings	A6-3222-C-1381 A7-3222-C-1381 Combination Medium Friction "EE/EF" lining
KIT NO. 8133FF (PRE & POST FMVSS-121) Recommended for all Transit Buses using Medium Friction linings	A8-3222-C-1381 Medium Friction "FF" lining
KIT NO. 8134FF (PRE & POST FMVSS-121) Recommended for all Transit Buses using Medium Friction linings — linings are bolted	A9-3222-C-1381 Medium Friction "FF" lining
KIT NO. 8135GG (PRE & POST FMVSS-121) Recommended for all Trucks & Tractors using High Friction linings	A10-3222-C-1381 High Friction "GG" lining
KIT NO. 8136EE (PRE & POST FMVSS-121) Recommended for all Trucks & Tractors using Medium Friction linings	A11-3222-C-1381 Medium Friction "EE" lining

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.

ROCKWELL “Q” BRAKE SHOE IDENTIFICATION

ROCKWELL “Q” BRAKE SHOES NOW COME IN TWO VERSIONS IN THE 16½” x 7” SIZE. THE STANDARD ROCKWELL “Q” BRAKE WHICH CAN BE USED ON ALL 16½” x 7” CAM-MASTER BRAKES AND NOW A ROCKWELL FRUEHAUF “Q” SERIES BRAKE. IN ORDER TO IDENTIFY A GENUINE ROCKWELL “Q” BRAKE SHOE FROM A GENUINE ROCKWELL FRUEHAUF “Q” BRAKE SHOE, ROCKWELL IS STAMPING AN “F5” ON THE WEB OF THE FRUEHAUF VERSION.



TO FURTHER IDENTIFY GENUINE ROCKWELL “Q” BRAKE SHOES FOR 16½” x 7” BRAKES SEE TABLE BELOW.

PART NUMBER	DESCRIPTION	WHERE USED
A-3222-N-1496	“Q” Brake Shoe (Fruehauf)	All Fruehauf Trailer Applications and Old Style Rockwell F5 Trailer Axles
A6-3222-N-1496	“Q” Brake Shoe with Pin, Retainer & Roller	
3222-L-1494	“Q” Brake Shoe Web	In the following Rockwell Fruehauf “Q” Shoes A-3222-N-1496, A6-3222-N-1496 and All Shoe & Lining Assys.
A-3222-S-1293	“Q” Brake Shoe (Rockwell)	All Truck, Tractor, and Trailer Applications where a 16½ Inch Dia. Brake Except Fruehauf
A35-3222-S-1293	“Q” Brake Shoe with Pin, Retainer & Roller	
3222-Q-1291	“Q” Brake Shoe Web	In the following Rockwell “Q” Shoes A-3222-S-1293, A35-3222-S-1293 and All Shoe & Lining Assys.

CAUTION: These “Q” Series Brake Shoes are **NOT** Interchangeable. There is a ½ inch difference in the location of the Anchor Pins between a Rockwell and a Fruehauf Version Brake. Severe braking problems will result if these “Q” Brake Shoes are mixed in application.

MAJOR SHOE OVERHAUL KITS FOR FRUEHAUF AND OLD STYLE ROCKWELL F5 SERIES AXLES

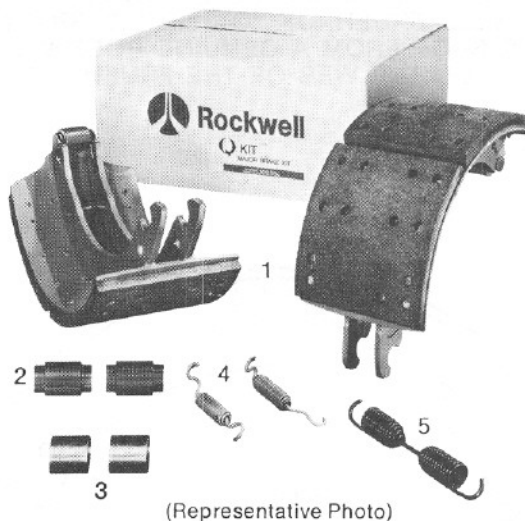
ROCKWELL “Q” Brake Major Overhaul Kit
To RETRO-FIT “P” Series Brake

CHANGE “Q” CAM-MASTER BRAKE SHOES IN LESS THAN 2 MINUTES

Note: Aside from containing enough parts to service one (1) brake assembly, the Major Brake Kit is also planned to convert a CAM-MASTER “P” brake to a “Q” brake. Conversion instructions are included in each kit.

CONTENTS — MAJOR BRAKE OVERHAUL KIT

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Brake Shoe, Lining, Retainer & Roller Assy.	2	Varies With Kits
2	Pins — Brake Shoe Anchor	2	1259-N-274
3	Bushing — Anchor Pin	2	1225-B-496
4	Spring — Brake Shoe Retainer	2	2258-Q-615
5	Spring — Brake Shoe Return	1	2258-U-619
6	Roller — Brake Shoe	2	1779-R-18



16½" x 7" BRAKES — BONDED LININGS

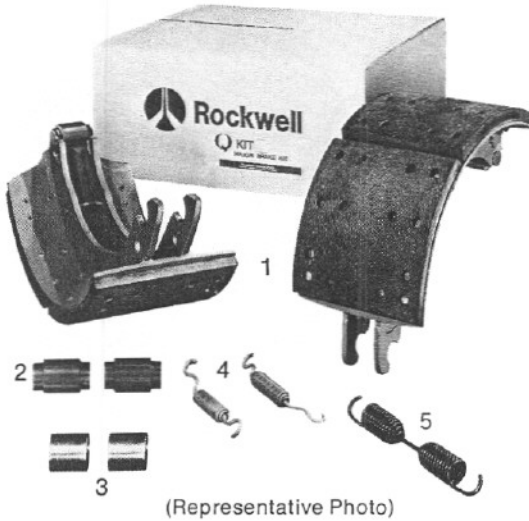
BRAKE OVERHAUL KIT APPLICATIONS	*Rockwell Brake Shoe And Lining No.
KIT NO. 8301-F5 (PRE & POST FMVSS-121) Recommended for all Fruehauf Trailers and early style Rockwell F5 series axles using Medium Friction linings	A1-3222-N-1496 Medium Friction “EE” lining

16½" x 7" BRAKES — FMSI 4515GD

BRAKE OVERHAUL KIT APPLICATIONS Letter suffix after kit number indicates brake lining friction code.	*Rockwell Brake Shoe And Lining No.
KIT NO. 8304EF (PRE & POST FMVSS-121) Recommended for all Fruehauf Trailers and early style Rockwell F5 series axles using Medium Friction linings	A2-3222-N-1496 Medium Friction “EF” lining
KIT NO. 8305GG (PRE & POST FMVSS-121) Recommended for all Fruehauf Trailers and early style Rockwell F5 series axles using High Friction linings	A3-3222-N-1496 Medium Friction “GG” lining
KIT NO. 8306EE (PRE & POST FMVSS-121) Recommended for all Fruehauf Trailers and early style Rockwell F5 series axles using Medium Friction linings	A4-3222-N-1496 High Friction “EE” lining

*Unlined Shoe Assembly — A-3222-N-1496

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.



MAJOR SHOE OVERHAUL KITS

ROCKWELL "Q" Brake Major Overhaul Kit
To RETRO-FIT "P" Series Brake

CHANGE "Q" CAM-MASTER BRAKE SHOES IN LESS THAN 2 MINUTES

NOTE: Aside from containing enough parts to service one (1) brake assembly, the Major Brake Kit is also planned to convert a CAM-MASTER "P" brake to a "Q" brake. Conversion instructions are included in each kit.

CONTENTS – MAJOR BRAKE OVERHAUL KIT

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Brake Shoe, Lining, Retainer & Roller Assy.	2	Varies With Kits
2	Pins – Brake Shoe Anchor	2	1259-N-274
3	Bushing – Anchor Pin	2	1225-B-496
4	Spring – Brake Shoe Retainer	2	2258-Q-615
5	Spring – Brake Shoe Return	1	2258-U-619

16½" x 7" BRAKES – FMSI 4515GD

BRAKE OVERHAUL KIT APPLICATIONS Letter suffix after kit number indicates brake lining friction code.	Rockwell Brake Shoe And Lining No.
KIT NO. 8101EF (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors and Trailers using Medium Friction linings	A5-3222-S-1293 Medium Friction "EF" lining
KIT NO. 8102EE (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors, and Trailers using Medium Friction linings	A13-3222-S-1293 Medium Friction "EE" lining
Kit NO. 8103GG (PRE & POST FMVSS-121) Recommended for all Trucks and Tractors using High Friction linings	A4-3222-S-1293 High Friction "GG" lining
KIT NO. 8104GG (POST FMVSS-121) Recommended for all Trucks, Tractors and Trailers using High Friction linings	A1-3222-S-1293 High Friction "GG" lining
KIT NO. 8105GH (POST FMVSS-121) Recommended for all Trucks, Tractors and Trailers using High Friction linings	A2-3222-S-1293 High Friction "GH" lining
KIT NO. 8106FF (PRE & POST FMVSS-121) Recommended for heavy duty use on a variety of multi-stop heavily loaded vehicles such as Garbage Compactors	A12-3222-S-1293 Special Medium Friction "FF" lining
KIT NO. 8107EE (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors, and Trailers using Medium Friction linings	A18-3222-S-1293 Medium Friction "EE" lining
KIT NO. 8108GH (POST FMVSS-121) Recommended for all Trucks, Tractors and Trailers using High Friction linings	A3-3222-S-1293 High Friction "GH" lining
KIT NO. 8141EE (PRE & POST FMVSS-121) Recommended for all Trucks, Tractors, and Trailers using Medium Friction linings	A8-3222-S-1293 Medium Friction "EE" lining
KIT NO. 8144FF (PRE & POST FMVSS-121) Recommended for heavy-duty use on a variety of multi-stop heavily loaded vehicles such as Garbage Compactors	A47-3222-S-1293 Special Medium Friction "FF" lining

16½" x 8⅝" BRAKES – FMSI 4551D

KIT NO. 8137GH (POST FMVSS-121) Recommended for all Trailers using High Friction linings	A1-3222-T-1346 High Friction "GH" lining
KIT NO. 8138GG (POST FMVSS-121) Recommended for all Trailers using High Friction linings	A2-3222-T-1346 High Friction "GG" lining
KIT NO. 8142FF (POST FMVSS-121) Recommended for all Trailers using Medium Friction linings	A4-3222-T-1346 Medium Friction "FF" lining

16½" x 10" BRAKES – FMSI 4549D AND FMSI 4514GD

KIT NO. 8139GH (POST FMVSS-121) Recommended for all Fire Trucks & Trailers using High Friction linings – Shoes are reinforced welded.	A1-3222-D-1356 High Friction "GH" lining
KIT NO. 8140GG (POST FMVSS-121) Recommended for all Fire Trucks and Trailers using High Friction linings – Shoes are reinforced welded.	A2-3222-D-1356 High Friction "GG" lining

IMPORTANT: All Brake Linings contain Asbestos Fibers. Avoid creating dust. Breathing Asbestos Dust may cause serious bodily harm.

**MINOR OVERHAUL KITS
(WITH BRAKE LININGS)
FOR 16½" x 7" BRAKES**

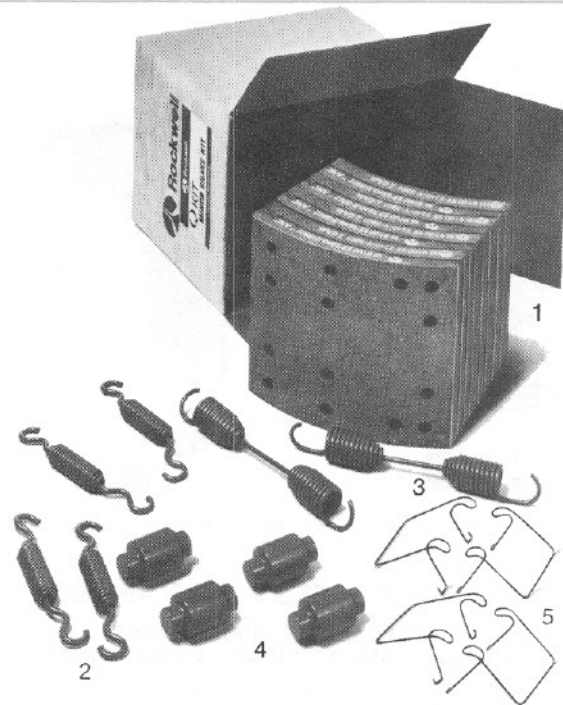
Kits contain the most popular friction rated linings, EE, EF, FF, GH, and GG (less brake shoes), plus all the parts needed to service two (2) wheel brake assemblies.

NOTE: The MINOR BRAKE KITS listed below are to be used to service the "Q" brakes, and only those "P" brakes that have been converted to a "Q" brake. These kits contain only LININGS (plus hardware), no brake shoes.

CAUTION: ALWAYS REPLACE (KIT) BRAKE PARTS IN AXLE PAIRS.

CONTENTS – MINOR BRAKE OVERHAUL KITS

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Brake Shoe Lining	8	Varies By Application
2	Spring – Brake Shoe Retainer	4	2258-Q-615
3	Spring – Brake Shoe Return	2	2258-U-619
4	Roller – Brake Shoe	4	1779-R-18
5	Retainer—Shoe Roller	4	3105-L-194



16½" x 6" BRAKES—FMSI 4514D

KIT NO. 8216GG—	Contains High Friction "GG" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks and Tractors.
KIT NO. 8219EE—	Contains Medium Friction "EE" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks and Tractors.

All kits include engineering approved premium 4514D lining.

16½" x 7" BRAKES—FMSI 4515GD

KIT NO. 8201EF—	Contains Medium Friction "EF" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks, Tractors, and Trailers. The kit to use for satisfactory performance in 90% of the applications.
KIT NO. 8202EE—	Contains Medium Friction "EE" Premium Linings. Recommended for PRE & POST FMVSS-121 Trailers.
KIT NO. 8203GH—	Contains High Friction "GH" Premium Linings. Recommended for POST FMVSS-121 Trucks and Tractors.
KIT NO. 8204GG—	Contains High Friction "GG" Premium Linings. Recommended for POST FMVSS-121 Trucks, Tractors, and Trailers.
KIT NO. 8205GG—	Contains High Friction "GG" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks, Tractors, and Trailers.
KIT NO. 8206FF—	Contains Special Medium Friction "FF" Premium Linings. Recommended for PRE & POST FMVSS-121 heavy-duty use on variety of multistop heavily loaded vehicles.
KIT NO. 8207EF—	Contains Medium Friction "EF" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks, Tractors, and Trailers.
KIT NO. 8208EE—	Contains Medium Friction "EE" Premium Linings. Recommended for PRE & POST FMVSS-121 Trucks, Tractors, and Trailers.
KIT NO. 8209EE—	Contains Medium Friction "EE" Premium Linings for bonded brake shoes. Recommended for PRE & POST FMVSS-121 Trucks, Tractors, and Trailers.

All kits include engineering approved premium 4515GD lining.

16½" x 10" BRAKES—FMSI 4549D AND FMSI 4514GD

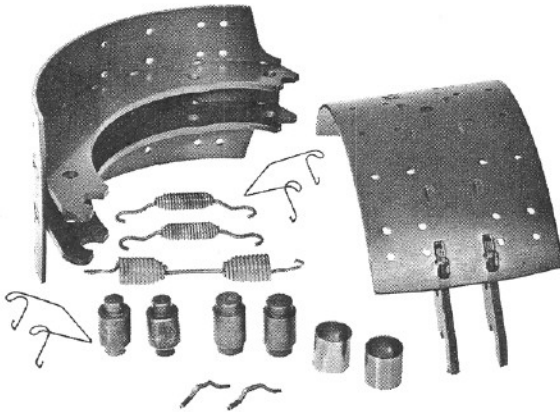
KIT NO. 8211GG—	Contains High Friction "GG" Premium Linings. Recommended for POST FMVSS-121 Fire Trucks and Trailers.
KIT NO. 8212GH—	Contains High Friction "GH" Premium Linings. Recommended for POST FMVSS-121 Fire Trucks and Trailers.
*KIT NO. 8213CF—	Contains Medium Friction Combination "EE/EF" Premium Linings. Recommended for POST FMVSS-121 Transit Buses.
*KIT NO. 8214CF—	Contains Medium Friction Combination "EE/EF" Premium Linings. Recommended for POST FMVSS-121 Transit Buses.
KIT NO. 8215EF—	Contains Medium Friction "EF" Premium Linings. Recommended for POST FMVSS-121 School Buses.

All kits include engineering approved premium 4549D and 4514GD

*For proper lining installation see TSA-6-64

IMPORTANT: All brake linings contain asbestos fibers. Avoid creating dust. Breathing asbestos dust may cause serious bodily harm.

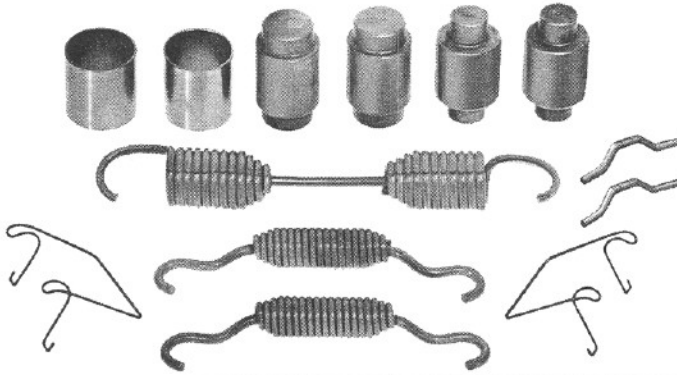
MINOR OVERHAUL KITS WITHOUT LININGS



KIT 8001 UL UNLINED SHOE KIT
16½" x 7" "Q" BRAKE

QTY.	PART NO.	DESCRIPTION
2	A-3222-S-1293	Shoe Assy.
2	2258-Q-615	Spring — Shoe Retainer
1	2258-U-619	Spring — Shoe Return
2	1779-R-18	Roller
2	1259-N-274	Pin — Anchor
2	1225-B-496	Bushing — Anchor Pin
2	1218-G-85	Pin — Return Spring
2	3105-L-194	Retainer—Shoe Roller

Services one Brake Assembly.

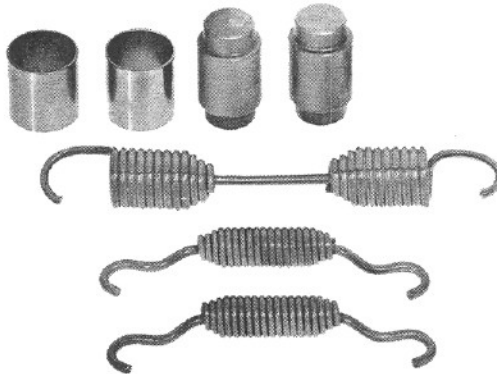


KIT 8000 MINOR REPAIR KIT "Q" BRAKE

QTY.	PART NO.	DESCRIPTION
2	1225-B-496	Bushing — Anchor Pin
2	1259-N-274	Pin — Anchor
2	1779-R-18	Roller
1	2258-U-619	Spring — Shoe Return
2	2258-Q-615	Spring — Shoe Retainer
2	1218-G-85	Pin—Return Spring
2	3105-L-194	Retainer—Shoe Roller

Services one Brake Assembly.

NOTE: This Kit services all "Q" Brake sizes including Fruehauf except those on FL-931 Axles.

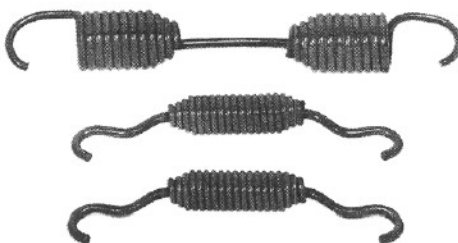


KIT 8003 MINOR REPAIR KIT
"Q" BRAKE

QTY.	PART NO.	DESCRIPTION
2	1225-B-496	Bushing — Anchor Pin
2	1259-N-274	Pin — Anchor
1	2258-U-619	Spring — Shoe Return
2	2258-Q-615	Spring — Shoe Retainer

Services one Brake Assembly.

NOTE: This Kit services all "Q" Brake sizes including Fruehauf except those on FL-931 Axles.



KIT 8002 SS "Q" BRAKE SPRING KIT

QTY.	PART NO.	DESCRIPTION
1	2258-U-619	Spring — Shoe Return
2	2258-Q-615	Spring — Shoe Retainer

Services one Brake Assembly.

NOTE: This Kit services all "Q" Brake sizes including Fruehauf except those on FL-931 Axles.

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ROCKWELL WARRANTY

We warrant all new parts for one year from date of shipment to the buyer against defective material or workmanship (but not against damage caused by accident or abuse) when such parts are used on vehicles the specifications of which have been approved by our Engineering Department.

We will at our option repair or replace such parts, free of charge, if found on examination by us to be defective and if any necessary return charges are prepaid. The above warranty and the above obligation to repair or replace are complete and exclusive; we disclaim liability for special or consequential damages of any nature.

If it is necessary to return any parts under this warranty, the buyer agrees not to make any deduction on account thereof from remittances or current accounts while claims are in process of disposition. Any expense incurred without our consent for repairs or replacement will not be allowed.

The use of any but genuine Rockwell parts will nullify this warranty.

FOR ORIGINAL EQUIPMENT QUALITY ...
SPECIFY ORIGINAL EQUIPMENT PARTS



Rockwell International

Automotive Operations
2135 West Maple Road
Troy, Michigan 48084 U.S.A.

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