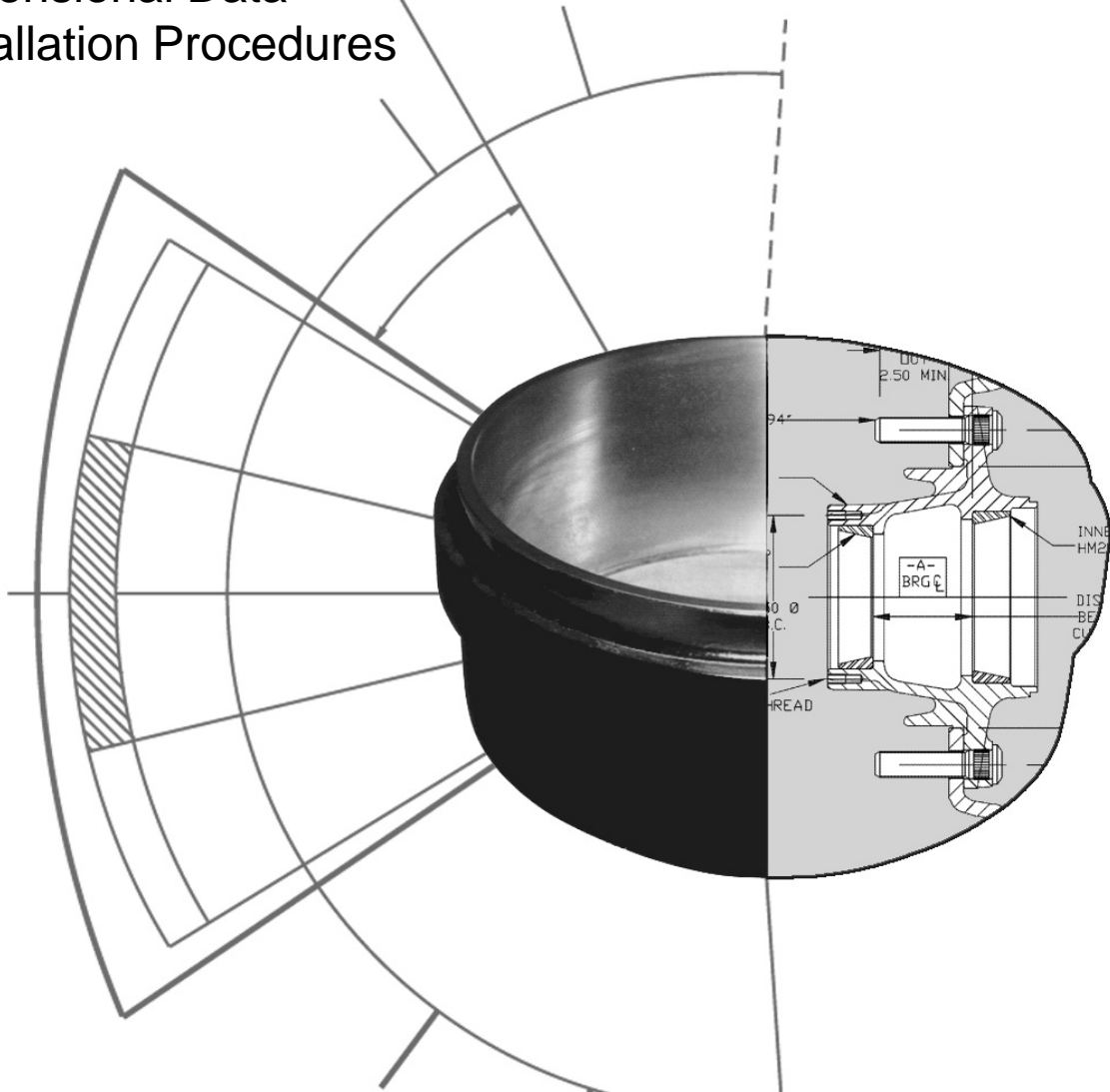




Brake Drum Catalog

Cross Reference
Dimensional Data
Installation Procedures



KIC Holdings Inc.
4109 Fruit Valley Road
Vancouver, WA 98660
Phone 800.488.5422
Fax 800.733.3132
www.kic-group.com

TABLE OF CONTENTS

BRAKE DRUM NUMBERING SYSTEM.....	2
BRAKE DRUM NOMENCLATURE.....	2
BRAKE DRUM TYPES	3
KIC/REYCO PART NUMBER DIMENSIONAL DATA.....	4
INTERCHANGE	7
COMPETITIVE INTERCHANGE.....	11
BRAKE DRUM INSTALLATION & REPLACEMENT GUIDE*.....	14
BRAKE DRUM FAILURE ANALYSIS*	21

*Information provided courtesy of The Maintenance Council (TMC), RP 608, "Brake Drums and Rotors," from TMC's 1996-97 Recommended Maintenance Practices Manual. Tel: (703) 838-1763.

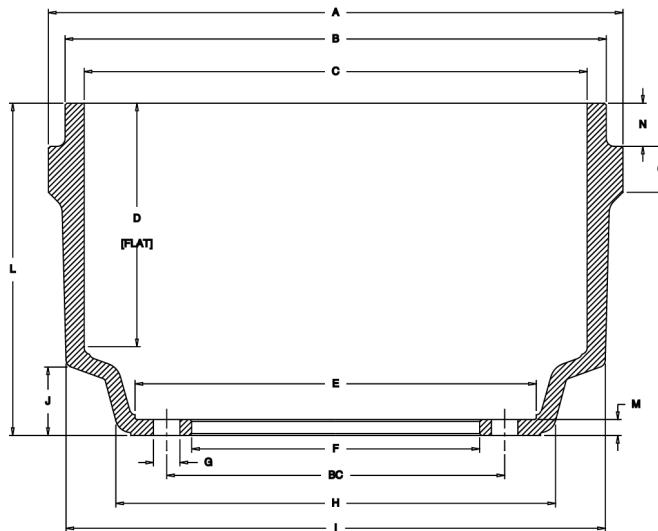
BRAKE DRUM NUMBERING SYSTEM

All brake drum numbers with prefix "5" indicate that the drum is made of standard iron. All numbers with prefix "6" indicate that the drum is made of special alloy. The four digits following one of the above prefix numbers are the chronologically assigned number to a family of drums made from the same pattern.

Following the above series will be a two or three digit suffix number to indicate the particular processes applied to that drum. Standard suffix numbers are as follows:

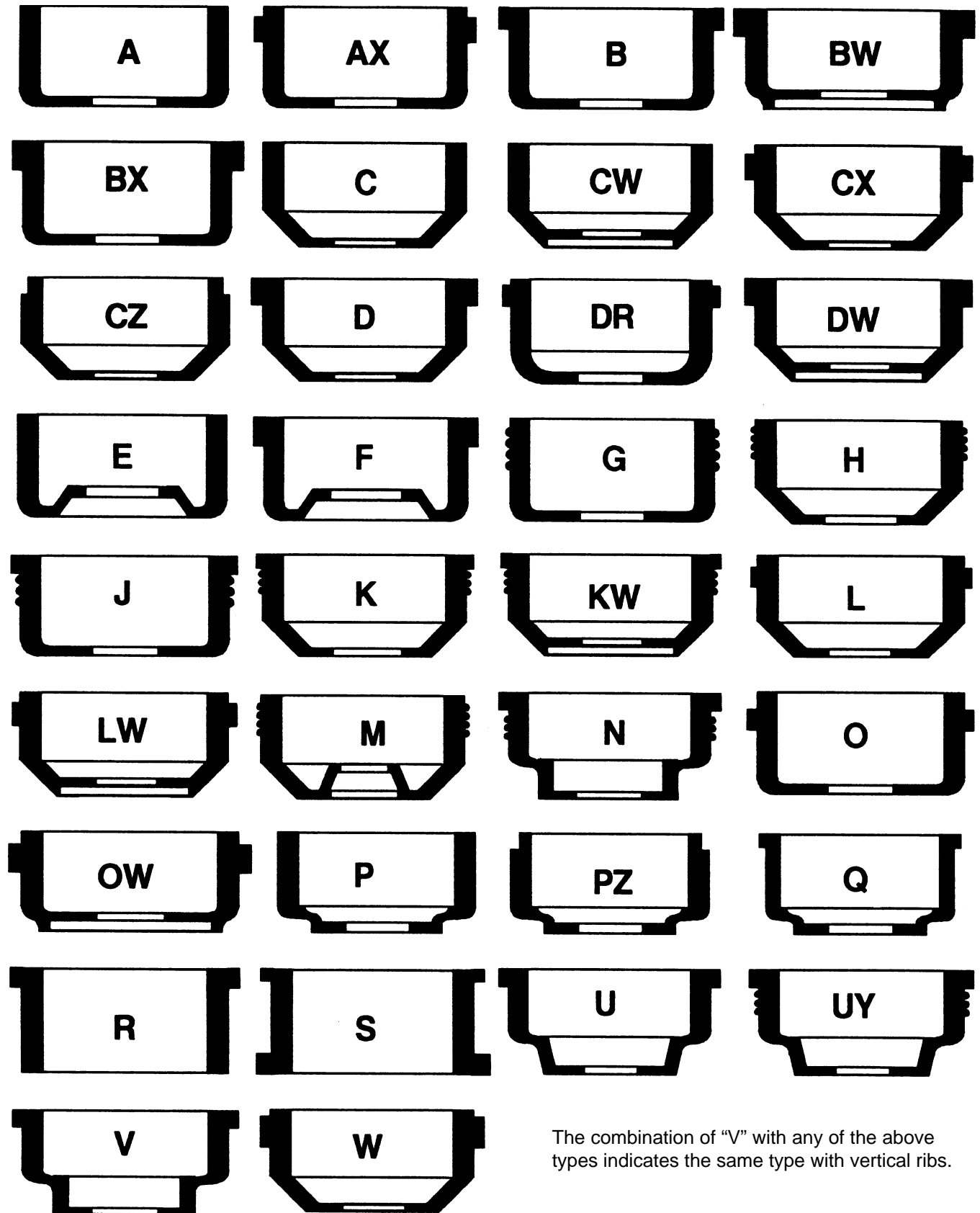
- 00 Rough Casting only.
- 01 Completely machined and drilled drum with single drilling operation.
- 03 Completely machined drum without drilling
- 04 Identical to 01 except brake face diameter is .040" undersize.
- 10 - 19 Indicates a standard drum with either double drilling operation or drilling different from a 01 drum. (14 always indicates a drum same as 10 except brake face diameter is .040" undersize).
- 20 - 29 Indicates a standard drum with deviation in hub bore diameter.
- 30 - 59 Indicates differences from standard drum other than drilling or hub bore diameter.
- 60 - 69 Indicates a standard drum that is drilled and tapped to mount an Eaton antiskid rotor ring.
- 90 - 99 Indicates a drum to receive special process as paint or special tolerance.
- 007 Casting for drums with A-C antiskid.
- 107 Indicates a drum that is identical to a 10 except that it has cast grooves around periphery of braking surface opening for A-C antiskid.
- 117 Same as above except for 11 drum.
- 003/103 Cast and finished drums made special less vents.
- 018 Identical to 01 except balanced with welded weights.
- 019 Identical to 017 except balanced with welded weights.

BRAKE DRUM NOMENCLATURE



- | | | | |
|-----------|---------------------------------------|------------|------------------------------------|
| A. | Overall Diameter | I. | Diameter at Taper |
| B. | Dust Shield Recess Diameter | J. | Distance of Face to Taper |
| C. | Brake Face Diameter | BC. | Bolt Circle Diameter |
| D. | Brake Face | L. | Overall Height |
| E. | Inside Finished Diameter | M. | Flange Thickness |
| F. | Hub Pilot | N. | Depth of Dust Shield Recess |
| G. | Bolt Hole Diameter, Number | O. | Squealer Band Thickness |
| H. | Diameter to Beginning of Taper | | |

BRAKE DRUM TYPES



The combination of "V" with any of the above types indicates the same type with vertical ribs.

KIC/REYCO PART NUMBER DIMENSIONAL DATA

(BY PART NUMBER)

KIC/REYCO PART #	Drum Type	Weight	Brake Face dia.	Overall Depth	Brake Face Width	Hub Fit	Bolt Hole Circle	Bolt Holes		Special Info
								No.	Dia.	
0555-01811	L	141	18.000	9.750	7.880	9.440	13.190	10	1.060	
0555-18006B	DR	138	18.000	8.750	7.500	9.500	11.250	6	0.660	Banded
0555-2003B	O	211	20.000	10.250	8.750	9.440	13.190	10	1.060	Banded
0555-20056	DR	205	20.000	12.630	8.630	9.440	13.190	10	1.060	
0555-20057B	DR	238	20.000	12.630	8.630	11.000	13.190	10	1.060	Banded
0555-2005B	DR	242	20.000	12.500	8.500	10.630	13.190	10	1.060	Banded
0555-2009B	DR	198	20.000	10.250	8.750	10.630	13.190	6	0.810	Banded
0555-2021B	O	209	20.000	9.250	7.750	13.250	15.000	12	0.780	13.50" Pilot, Banded
0555-2023	O	240	20.000	10.940	8.610	13.250	15.000	12	0.780	13.50" Pilot
0555-2027	B	218	20.000	10.940	8.610	11.000	12.500	12	0.660	11.25" Pilot
333-01602	P	119	16.500	13.130	10.380	9.440	11.250	10	1.310	5 mtg holes .562, O.B. Pilot 12.750
333-14513	KV	171	14.500	12.880	10.500	9.440	12.250	10	1.610	5 mtg holes .562, O.B. Pilot 12.750
333-14518	KV	94	14.500	8.690	6.440	9.440	11.250	10	1.310	5 mtg holes .562, O.B. Pilot 12.750
333-14519	KV	99	14.500	8.310	6.060	9.440	11.250	10	1.310	5 mtg holes .562, O.B. Pilot 12.750
333-15806	AX	108	16.000	10.000	8.750	8.078	11.25	8	0.89	
333-15807	AX	90	16.000	7.280	5.690	9.063	11.25	8	0.89	
444-01521	D	66	16.250	5.530	3.720	7.500	9.000	5	0.530	
444-01612	L	85	16.500	8.000	5.750	6.250	8.750	6	0.810	
444-13037	U	50	13.000	6.440	3.060	4.590	6.500	8	0.560	2 mtg holes .437
444-13038	U	50	13.000	6.440	3.060	4.590	6.500	8	0.630	2 mtg holes .437
444-13911	U	30	14.130	5.940	3.300	6.750	8.000	5	0.910	
444-14025	AX	110	15.000	9.090	8.590	11.060	13.190	10	1.040	
444-14154	AX	52	15.000	6.060	5.000	9.500	11.250	10	1.250	
444-15441	U	68	16.000	7.060	4.380	6.280	8.750	6	1.030	3 mtg holes .531
444-15735	U	59	16.000	8.660	3.000	7.130	8.750	6	0.810	
444-16054	DR	94	16.500	8.750	7.500	11.000	12.500	12	0.660	11.25 pilot
444-16409	DR	90	16.500	9.000	7.500	11.250	12.750	6	0.660	
444-16913	DR	105	16.500	9.250	7.500	11.000	12.500	12	0.650	Step hub pilot 11.25"
5142101	P	66	17.250	7.500	7.812	9.875	11.250	10	0.813	
5166501	AX	30	12.000	5.375	5.000	8.250	9.250	8	0.516	Balanced
5166504	AX	30	12.000	5.375	5.000	8.250	9.250	8	0.516	
5177101	AX	125	17.000	7.440	6.440	8.660	11.250	10	1.280	
5188501	CX	50	14.125	7.438	14.125	5.625	8.000	5	0.781	
5195201	O	108	16.500	8.125	7.438	11.000	12.750	6	0.641	6 holes, spotfaced
5195210	AX	108	16.500	8.125	7.438	11.000	12.750	12	0.641	
5195211	D	108	16.500	8.125	7.438	11.000	12.750	5&6	0.641	
5196101	CX	105	16.500	8.438	7.500	11.000	12.500	6	0.781	
5196110	CX	105	16.500	8.438	7.500	11.000	12.500	5 & 6	0.656	
5196120	CX	105	16.500	8.438	7.500	11.250	12.750	6	0.766	
5202001	CX	99	16.500	9.500	7.625	9.438	11.250	10	0.813	
5203411	CX	88	16.500	8.750	7.500	11.250	12.750	5 6	0.765625 0.640625	
5205930	CX	103	16.500	10.188	7.500	9.438	11.250	10	0.813	1[5 holes],5,12.75" Pilot
52120-12	CX	100	16.500	8.438	7.438	11.250	12.750	5&6	0.781	
52120128	G	100	16.5	8.44	7.37	11.25	12.75	5&6	0.78	
5215301	CX	54	12.250	7.625	6.000	7.500	8.750	6	0.813	
5221901	L	119	16.500	11.250	9.063	9.438	11.250	10	0.813	
5223010	CX	99	16.500	8.188	7.375	9.438	11.000	5 6	0.78125 0.65625	
5223030	CX	99	16.500	8.188	7.375	9.438	11.250	10	1.031	
5223031	CX	99	16.500	8.188	7.375	9.438	11.250	10	0.813	
5232710	DR	108	16.500	8.750	7.500	9.500	11.250	10	0.813	

1-Outboard mount, 2-Outside Hub Fit, 3-Circular Ribs, 4-Vertical Ribs, 5-Vents, 6-Undersized Brake Face, 7-Drilled for Noise Dampener, 8-Drilled for Electric Brakes, 9-Drilled for 121 Exciter, 10-Notched for 121 Exciter

KIC/REYCO PART NUMBER DIMENSIONAL DATA

(BY PART NUMBER)

KIC/REYCO PART #	Drum Type	Weight	Brake Face dia.	Overall Depth	Brake Face Width	Hub Fit	Bolt Hole Circle	Bolt Holes		Special Info
								No.	Dia.	
52327107	DR	108	16.500	8.750	7.500	9.500	11.250	10	0.813	
5232711	DR	108	16.500	8.750	7.500	9.500	11.250	5	0.813	
5233610	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,7,12.75" Pilot, Can use 5230410 or 5293310
5233614	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,6,7,12.75" Pilot, Can use 5230414 or 5293314
5233620	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot,
5233624	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot,
5233630	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot,
5233635	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,7,12.75" Pilot,
5233644	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,6,12.75" Pilot,
5233654	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,6,12.75" Pilot,
5233690	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot,
5233691	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot,
5233694	K	169	14.500	12.813	10.563	9.438	11.250	10	1.313	1[5 holes],3,5,6,12.75" Pilot,
5241401	L	60	12.250	9.000	6.500	6.250	8.750	6	0.875	
5241411	L	60	12.250	9.063	6.625	7.125	8.750	10	0.813	
5244801	BW	379	26.000	12.310	11.250	19.500	21.000	10	0.880	
5247211	K	79	14.500	8.000	5.313	9.438	11.250	10	1.313	1[5 holes],3,5,6,7,12.75" Pilot
5247231	K	79	14.500	8.000	5.313	9.438	11.250	10	1.313	1[5 holes],3,5,6,7,12.75" Pilot
5248010	K	125	14.500	11.500	8.438	9.438	11.250	10	1.281	1[5 holes],3,5,13" Pilot
5248014	K	125	14.500	11.500	8.438	9.438	11.250	10	1.281	1[5 holes],3,5,6,13" Pilot
5251101	CX	79	12.250	9.063	8.000	7.000	8.250	6	0.656	
5254410	K	112	14.500	8.313	6.063	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot
5254414	K	112	14.500	8.313	6.063	9.438	11.250	10	1.313	1[5 holes],3,5,6,12.75" Pilot
5254430	K	112	14.500	8.313	6.063	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot
5260720	V	77	16.500	7.375	5.813	9.438	11.250	10	0.781	7 [9 holes]
5264711	OW	94	16.500	8.250	7.375	14.250	12.750	5 & 6	0.656	2, 11.25 Hub Bore
5270530	CX	114	16.500	10.563	7.750	9.000	11.250	10	0.813	
5270532	CX	114	16.500	10.563	7.750	9.000	11.250	8	0.813	1 [3 holes]
5270535	CX	114	16.500	10.313	7.531	9.000	11.250	10	0.844	
5274311	CX	66	12.250	9.000	8.125	8.500	10.000	3 & 6	0.641	
5275712	K	103	14.500	8.000	5.313	9.438	11.250	10	1.313	1[5 holes],3,6,7,12.75" Pilot
5275730	D	112	14.500	8.000	5.313	9.438	11.250	10	1.313	1[5 holes],12.75" Pilot
5282410	K	125	14.500	8.688	6.438	9.438	11.250	10	1.313	1[5 holes],3,5,12.75" Pilot
5282411	K	125	14.500	8.688	6.438	9.438	11.250	10	1.313	1[5 holes],3,5,12.75 Pilot can use 5282410
5282412	K	125	14.500	8.688	6.438	9.438	11.250	10	1.313	1[5holes],3,5,7,12.75"Pilot
5282413	K	125	14.500	8.688	6.438	9.438	11.250	10	1.313	1[5holes],3,5,7,12.75"Pilot
5282414	K	125	14.500	8.688	6.438	9.438	11.250	10	1.313	1[5holes],3,5,6,12.75"Pilot
5282415	K	125	14.500	8.688	6.563	9.438	11.250	10	1.313	1[5holes],3,5,7,12.75"Pilot
5287711	CX	121	16.500	10.750	7.563	9.438	11.250	10	0.813	1 [3 holes]
5287801	CX	105	16.500	10.438	7.625	8.531	11.250	10	0.813	Cast-in Grease Slinger
5289012	CX	103	16.500	8.750	7.625	10.500	12.750	5	0.781	
5289013	CX	103	16.500	8.750	7.625	10.500	12.750	5&6	0.781	
52908117	DV	187	15.000	12.438	10.250	9.438	11.250	10	1.313	1[5holes],4,5,10,12.75"Pilot
52908147	DV	187	15.000	12.438	10.250	9.438	11.250	10	1.313	1[5holes],4,5,6,10,12.75"Pilot
5291801	CX	167	16.500	13.375	10.563	8.531	11.250	10	0.797	5, Cast-in Grease Slinger
5291804	CX	167	16.500	13.375	10.563	8.531	11.250	10	0.797	
5291824	CX	167	16.500	13.375	10.563	9.000	11.250	10	1.281	
5291901	CX	110	16.500	9.719	6.563	9.000	11.250	10	1.313	
52919017	CX	110	16.500	9.750	6.500	9.000	11.250	10	1.313	
5291904	CX	110	16.500	9.719	6.563	9.000	11.250	10	1.313	6

1-Outboard mount, 2-Outside Hub Fit, 3-Circular Ribs, 4-Vertical Ribs, 5-Vents, 6-Undersized Brake Face, 7-Drilled for Noise Dampener, 8-Drilled for Electric Brakes, 9-Drilled for 121 Exciter, 10-Notched for 121 Exciter

KIC/REYCO PART NUMBER DIMENSIONAL DATA

(BY PART NUMBER)

KIC/REYCO PART #	Drum Type	Weight	Brake Face dia.	Overall Depth	Brake Face Width	Hub Fit	Bolt Hole Circle	Bolt Holes		Special Info
								No.	Dia.	
5291914	CX	110	16.500	9.719	6.563	9.000	11.250	10	1.313	6
52965107	D	205	15.125	12.375	10.375	9.438	11.250	10	1.313	
52965137	D	205	15.156	12.375	10.375	9.438	11.250	10	1.313	1[5holes],5,10,12.75"Pilot
52965147	D	205	15.125	12.375	10.375	9.438	11.250	10	1.313	1[5holes],5,6,10,12.75"Pilot
5297511	L	83	16.141	8.375	6.625	11.734	13.188	10	0.906	1[2holes],14.53125"Pilot
5297514	L	83	16.141	8.375	6.625	11.734	13.188	10	0.906	1[2holes],6,14.53125"Pilot
5297594	L	83	16.141	8.375	6.625	11.734	13.188	10	0.906	1[2holes],6,14.53125"Pilot
5297611	L	110	16.141	11.813	9.188	11.734	13.188	15	0.906	1[2holes],14.53125"Pilot
5297614	L	110	16.141	11.813	9.188	11.734	13.188	15	0.906	1[2holes],6,14.53125"Pilot
5298101	I	80	15	8.76	4.5	9	11.25	10	1.28	
5302601	CX	114	16.500	10.625	7.813	8.531	11.250	10	0.813	
5303301	U	114	16.500	10.594	7.594	8.781	11.250	10	0.969	
5303310	U	114	16.500	10.594	7.594	8.781	11.250	10	0.813	
5303330	U	114	16.500	10.625	7.625	9.000	10.844	8	0.969	
5303901	CX	74	12.250	10.469	8.250	7.125	8.750	10	0.813	
5303901	L	84	12.25	10.47	8.12	7.12	8.75	10	0.81	
5305910	L	138	14.500	11.781	8.500	9.438	11.250	10	1.313	1[5holes]5,12.75"
5307501	I	79	15	9.04	4.5	8.78	11.25	10	0.94	
54201108	H	84	15	8.86	4.72	8.87	11.25	10	1.28	
5420201	K	110	16.5	10.3	7.3	8.78	11.25	10	0.94	
5420301	AX	134	18	8.24	7.38	11	12.75	6	0.66	
5420401	I	110	16.5	8.92	7.4	9.38	11.25	10	0.81	
5420501	I	137	16.14	11.26	9.11	12.91	11.25	10	1.28	9.41 Hub Bore
54206018	L	115	16.14	9.22	6.46	13	11.25	10	1.28	9.47 Hub Bore
5420701	G	69	15	5.84	4.5	9.25	11.25	5/6	0.78	
5420801	K	118	16.5	10.25	7.38	8.53	11.25	10	0.81	
54209018	K	112	16.5	10.31	7.5	9	11.25	10	0.81	
54210018	B	105	16.5	7.44	6.38	11.25	12.75	6	0.78	
5421101	L	72	15	7.84	4.44	8.66	11.25	10	1.28	
5421201	L	117	16.5	9.69	7.31	8.78	11.25	10	1.28	
5421301	Q	114	16.5	11.18	7.44	8.78	11.25	10	0.94	
5421401	L	87	15	9.22	5.5	8.78	11.25	10	1.28	
5421501	AX	79	12.25	9.07	8	8.5	10	6	0.66	
5421601	Q	90	16.5	8.1	5.48	8.78	11.25	10	1.28	
5421701	AX	87	16.5	6.41	5.33	10	12.75	5/6	0.78	
5421801	CX	99	16.5	8.78	7.41	11.25	12.78	5/6	0.78	
5421901	L	100	15	8.5	7.5	10.5	12.75	5/6	0.78	
5472701	U	132	16.500	12.390	9.630	8.780	11.250	10	0.940	
54965117	M	188	15.145	12.38	10.25	12.75	11.25	10	1.28	9.44 Hub Bore
54966107	M	120	15.145	8.65	6.5	12.75	11.25	10	1.28	9.44 Hub Bore

The interchange reference information listed on the following pages is based on the best available information at the time of publication and is to be used as a guide only. For specific application of usage refer to the vehicle application section. Although every care has been taken in order to insure the accuracy of these interchanges, KIC Holdings Inc. does not assume any liability for errors, changes, omissions or for harm resulting therefrom. It is recommended that all parts be thoroughly checked for proper form, fit and function prior to installation and usage to determine interchangeability.

INTERCHANGE

(BY KIC PART NUMBER)

KIC PART #	AWECO	DAYTON	DURAMETAL	ERIE	GUNITE	MOTOR WHEEL	NWRA	WEBB	KIC
0555-01811	-	-	1811	-	-	-	-	-	0555-01811
0555-18006B	-	-	18006	-	-	-	-	-	0555-18006B
0555-2003B	-	-	2003B	-	-	-	-	-	0555-2003B
0555-20056	-	-	20056	-	-	-	-	-	0555-20056
0555-20057B	-	-	20057B	-	-	-	-	-	0555-20057B
0555-2005B	-	-	2005	-	-	86654A	-	-	0555-2005B
0555-2009B	-	-	2009B	-	-	-	-	-	0555-2009B
0555-2021B	-	-	2021B	-	-	-	-	-	0555-2021B
0555-2023	-	-	2023	-	-	-	-	-	0555-2023
0555-2027	-	-	2027	-	-	-	-	62027	0555-2027
333-01602	-	-	1602	-	-	-	-	-	333-01602
333-14513	93015	-	14513	-	3415	-	X60602	64115	333-14513
333-14518	93003	-	14518	-	1412	-	X60119	64117	333-14518
333-14519	-	-	14519	-	-	-	-	64113	333-14519
333-15806	-	-	15806	-	-	-	-	-	333-15806
333-15807	-	-	15807	-	-	-	-	-	333-15807
444-01521	-	-	1521	-	2908A	-	-	-	444-01521
444-01612	-	-	1612	-	-	-	-	-	444-01612
444-13037	-	-	13037	-	-	-	-	-	444-13037
444-13038	-	-	13038	-	-	-	-	-	444-13038
444-13911	-	-	13911	-	-	-	-	-	444-13911
444-14025	-	-	14025	-	-	-	-	-	444-14025
444-14154	-	-	14154	-	-	87288	-	-	444-14154
444-15441	-	-	15441	-	-	-	-	-	444-15441
444-15735	-	-	15735	-	-	-	-	-	444-15735
444-16054	-	-	16054	-	-	-	-	-	444-16054
444-16409	-	-	16409	-	3544	-	-	68903	444-16409
444-16913	-	-	16913	-	-	-	-	-	444-16913
5142101	-	-	-	-	-	-	-	-	-
5166501	-	-	-	-	-	-	-	-	-
5166504	-	-	-	-	-	-	-	-	-
5177101	-	-	1771	-	-	-	-	-	444-01771
5188501	-	-	-	-	-	-	-	-	444-13579
5195201	97097	120743	16907	2765	8656	85826	X60481	68897	-
5195210	97097	120743	16907	2765	8656	85826	X60481	68897	-
5195211	97097	120743	16907	2765	8656	85826	X60481	68897	-
5195211		120743	16907		8656			68879	
5196101	97077	120059	16878	-	2177	-	X60038	61777	-
5196110	97086	120754	16149	2762	2577A	87435	X60700	61780	-
5196110		120754	16149		2577A			61780	
5196120	97082	120025	16778	2770	3295	85968	X60041	68416	555-16778
5202001	97060	12582	1629	2760	2705	85831	X60046	62200	555-01629
5203411	97060	123418	16325	2760	2730	85831	X60046	61730	-
5205930	97186	-	16368	-	3410A	-	X60733	66886B	-
52120128		122601	16778		3295			68981B	
5215301	-	-	-	-	-	-	-	-	-
5221901	97192	120882	16296	-	3383	86302	X60517	68891	-
5223010	97018	122222	16874	2738-1	2983C	86141	X60114	67518	555-16874
5223030	97019	-	1630	-	2281	85476	X60066	67519	-
5223031	97021	12734	1631	-	2702	85474	X60067	67537	-

INTERCHANGE

(BY KIC PART NUMBER)

KIC PART #	AWECO	DAYTON	DURAMETAL	ERIE	GUNITE	MOTOR WHEEL	NWRA	WEBB	KIC
5202001	97060	12582	1629	2760	2705	85831	X60046	62200	555-01629
5203411	97060	123418	16325	2760	2730	85831	X60046	61730	-
5205930	97186	-	16368	-	3410A	-	X60733	66886B	-
52120128		122601	16778		3295			68981B	
5215301	-	-	-	-	-	-	-	-	-
5221901	97192	120882	16296	-	3383	86302	X60517	68891	-
5223010	97018	122222	16874	2738-1	2983C	86141	X60114	67518	555-16874
5223030	97019	-	1630	-	2281	85476	X60066	67519	-
5223031	97021	12734	1631	-	2702	85474	X60067	67537	-
5232710	97038	122126	1639	2740-1	3018A	85130	X60077	68730	-
52327107	97017	122182	1428	-	2517	86559	X60397	61600B	-
5232711	97039	120586	1640	2740	2546C	86356	X60076	68765	555-01640
5233610	93015	-	14513	-	3415	-	X60602	64115	333-14513
5233614	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233620	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233624	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233630	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233635	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233644	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233654	93015	-	14513	-	3415	-	X60602	6415	333-14513
5233690	-	-	-	-	-	-	-	-	-
5233691	-	-	-	-	-	-	-	-	-
5233694	-	-	-	-	-	-	-	-	-
5241401	-	-	1209	-	-	-	X60821	-	-
5241411	-	-	-	-	-	-	-	-	-
5244801	-	-	2603	-	-	-	-	-	-
5247211	93002	120408	14512	-	2566	-	X60561	64004	-
5247231	93002	120408	14512	-	2566	-	X60561	64004	-
5248010	93009	120406	14508	-	2568	-	X60132	64009	-
5248014	93009	120406	14508	-	2568	-	X60132	64009	-
5251101	91027	122606	12637	2700-10	3467	-	X60105	63637	-
5251101		122971	12637		3467			63637	
5254410	93003	122750	14515	-	3412R	-	X60119	64113	-
5254414	93003	122750	14515	-	3412R	-	X60119	64113	-
5254430	-	-	-	-	-	-	-	-	-
5260720	-	-	-	-	-	-	-	-	-
5264711	97056	122455	16139	2773	3136A	85790	X60458	68942	444-16139
5264711		122455	16139		3136A			68942	
5270530	97144	122550	16798	2771	3141	87156	X60420	66895B	555-16798
5270532	97145	-	16141	-	-	88797	X60789	66875	-
5270535	-	123297	-	-	-	-	X61110	-	-
5274311	91147	122376	12617	2752	3174	-	X60505	63617	-
5275712	93004	120408	14503	-	2566	-	X60995	65004	-
5275730	93004	-	14503	-	2566	-	X60561	64004	-
5282410	93003	-	14518	-	1412	-	X60119	64117	333-14518
5282411	93003	-	14518	-	1412	-	X60119	64117	333-14518
5282412	93003	-	14518	-	1412	-	X60119	64117	333-14518
5282413	93003	-	14518	-	1412	-	X60119	64117	333-14518
5282414	93003	-	14518	-	1412	-	X60119	64117	333-14518
5282415	93003	-	14518	-	1412	-	X60119	64117	333-14518

INTERCHANGE

(BY KIC PART NUMBER)

KIC PART #	AWECO	DAYTON	DURAMETAL	ERIE	GUNITE	MOTOR WHEEL	NWRA	WEBB	KIC
5287711	97167	120877	16729	-	3120	-	X60464	60876	-
5287801	97165	122453	16797	-	3543	87295	X60575	66892	555-16797
5289012	97789	122009	16997	-	2997	-	X60434	62997	555-16997
5289013	97789	122009	16997	-	2997	-	X60434	62997	555-16997
5289013		122009	16997		2997			62997	
52908117	94631	-	1404	2768	3414	-	X60631	64038	-
52908147	94631	-	1404	2768	3414	-	X60631	64038	-
5291801	-	-	1607	-	3475	-	X60716	66812	333-01607
5291804	-	-	1607	-	3475	-	X60716	66812	333-01607
5291824	-	-	1607	-	3475	-	X60716	66812	333-01607
5291901	97160	-	16155	-	3513	-	X60610	65167B	-
52919017	97160	-	1606	-	3513	-	X60816	65169B	333-01606
5291904	97160	-	16155	-	3513	-	X60610	65167B	-
5291914	97160	-	16155	-	3513	-	X60610	65167B	-
52965107	-	-	14048	2777	-	-	X60980	64048	-
52965137	-	-	14048	2777	-	-	X60980	64048	-
52965147	-	-	14048	2777	-	-	X60980	64048	-
5297511	-	-	15115	-	-	-	X60775	64040	-
5297514	-	-	15115	-	-	-	X60775	64040	-
5297594	-	-	15115	-	-	-	X60775	64040	-
5297611	-	-	15113	-	-	-	X60774	64039	-
5297614	-	-	15113	-	-	-	X60774	64039	-
5298101		123312	14158		3158			65541B	
5302601	97164	122607	16795	2764	3166	86879	X60611	66893	-
5303301	97173	123207	16792	2764-5	3600A	89996	X60794	66884	555-16792
53033018		123207	16792		3600A			66864B	
5303310	97173	123207	16792	2764-5	3600A	89996	X60794	66884	555-16792
5303330	97145	-	16141	-	3141B	88797	X60789	66875	-
5303330		-	16141		3141B			66875	
5303901	91131	-	1244	-	3557	-	X60734	63631	555-01244
5303901		-	1244		3557			63631	
5305910	-	-	-	-	-	-	-	-	-
5307501									
5307501		123254	14541		3721AX			65545B	
5420110									
54201108		-	-		3721AX			61528B	
5420201									
5420201		-	-		3402			66873	
5420301									
5420301		120936	18788		3197			61788	
5420401									
5420401		-	-		3618			68918	
5420501								64059	
54206018								64059	
5420701									
5420701		122104	-		3760B			65514B	
5420801									
5420801		-	-		3699			66852	
5420901									
54209018		-	-		3441			66865B	

INTERCHANGE

(BY KIC PART NUMBER)

KIC PART #	AWECO	DAYTON	DURAMETAL	ERIE	GUNITE	MOTOR WHEEL	NWRA	WEBB	KIC
5421001									
54210018		-	-		3022B			65266B	
5421101									
5421101		120981	-		3674			64481	
5421201									
5421201		-	-		-			62671	
5421301									
5421301		-	-		3757			66353	
5421401									
5421401		-	-		3726X			65554B	
5421501									
5421501		122376	12617		3174			63647	
5421601									
5421601		-	-		3595			68845	
5421701									
5421701		-	16289		3289			62117B	
5421801									
5421801		12574	16325		2974			62240	
5421901									
5421901		122100	14201		3485B			63035	
5472701	-	-	-	-	-	-	-	66814	-
54965117			14048					64048	
54966107			14038					64046	

COMPETITIVE INTERCHANGE

The interchange reference information listed herein is based on the best available information at the time of publication and is to be used as a guide only. For specific application of usage refer to the vehicle application section. Although every care has been taken in order to insure the accuracy of these interchanges, KIC Holdings Inc. does not assume any liability for errors, changes, omissions or for harm resulting therefrom. It is recommended that all parts be thoroughly checked for proper form, fit and function prior to installation and usage to determine interchangeability.

AWECO	REYCO	AWECO	REYCO	DAYTON	PART #	DURAMETAL	KIC #
91027	5251101	97082	5196120	122182	52327107	14513	5233610
91131	5303901	97086	5196110	122222	5223010	14513	5233614
91147	5274311	97097	5195201	122376	5274311	14513	5233620
93002	5247211	97097	5195210	122453	5287801	14513	5233624
93002	5247231	97097	5195211	122455	5264711	14513	5233630
93003	333-14518	97144	5270530	122550	5270530	14513	5233635
93003	5254410	97145	5270532	122606	5251101	14513	5233644
93003	5254414	97145	5303330	122607	5302601	14513	5233654
93003	5282410	97160	5291901	122750	5254410	14515	5254410
93003	5282411	97160	52919017	122750	5254414	14515	5254414
93003	5282412	97160	5291904	123207	5303301	14518	333-14518
93003	5282413	97160	5291914	123207	5303310	14518	5282410
93003	5282414	97164	5302601	123297	5270535	14518	5282411
93003	5282415	97165	5287801	123418	5203411	14518	5282412
93004	5275712	97167	5287711	12582	5202001	14518	5282413
93004	5275730	97173	5303301	12734	5223031	14518	5282414
93009	5248010	97173	5303310	DURAMETAL	KIC #	14518	5282415
93009	5248014	97186	5205930	1209	5241401	14519	333-14519
93015	333-14513	97192	5221901	1244	5303901	15113	5297611
93015	5233610	97789	5289012	12617	5274311	15113	5297614
93015	5233614	97789	5289013	12637	5251101	15115	5297511
93015	5233620	DAYTON	PART #	13037	444-13037	15115	5297514
93015	5233624	120025	5196120	13038	444-13038	15115	5297594
93015	5233630	120059	5196101	13911	444-13911	1521	444-01521
93015	5233635	120406	5248010	14025	444-14025	15441	444-15441
93015	5233644	120406	5248014	1404	52908117	15735	444-15735
93015	5233654	120408	5247211	1404	52908147	15806	333-15806
94631	52908117	120408	5247231	14048	52965107	15807	333-15807
94631	52908147	120408	5275712	14048	52965137	1602	333-01602
97017	52327107	120586	5232711	14048	52965147	16054	444-16054
97018	5223010	120743	5195201	14154	444-14154	1606	52919017
97019	5223030	120743	5195210	1428	52327107	1607	5291801
97021	5223031	120743	5195211	14503	5275712	1607	5291804
97038	5232710	120754	5196110	14503	5275730	1607	5291824
97039	5232711	120877	5287711	14508	5248010	1612	444-01612
97056	5264711	120882	5221901	14508	5248014	16139	5264711
97060	5202001	122009	5289012	14512	5247211	16141	5270532
97060	5203411	122009	5289013	14512	5247231	16141	5303330
97077	5196101	122126	5232710	14513	333-14513	16149	5196110

COMPETITIVE INTERCHANGE

DURAMETAL	KIC #	ERIE	KIC #	GUNITE	KIC #	MOTOR WHEEL	KIC #
16155	5291901	2752	5274311	3018A	5232710		
16155	5291904	2760	5202001	3120	5287711	85790	5264711
16155	5291914	2760	5203411	3136A	5264711	85826	5195201
1629	5202001	2762	5196110	3141	5270530	85826	5195210
16296	5221901	2764	5302601	3141B	5303330	85826	5195211
1630	5223030	2764-5	5303301	3166	5302601	85831	5202001
1631	5223031	2764-5	5303310	3174	5274311	85831	5203411
16325	5203411	2765	5195201	3295	5196120	85968	5196120
16368	5205930	2765	5195210	3383	5221901	86141	5223010
1639	5232710	2765	5195211	3410A	5205930	86302	5221901
1640	5232711	2768	52908117	3412R	5254410	86356	5232711
16409	444-16409	2768	52908147	3412R	5254414	86559	52327107
16729	5287711	2770	5196120	3414	52908117	86654A	0555-2005B
16778	5196120	2771	5270530	3414	52908147	86879	5302601
16792	5303301	2773	5264711	3415	333-14513	87156	5270530
16792	5303310	2777	52965107	3415	5233610	87288	444-14154
16795	5302601	2777	52965137	3415	5233614	87295	5287801
16797	5287801	2777	52965147	3415	5233620	87435	5196110
16798	5270530	GUNITE	KIC #	3415	5233624	88797	5270532
16874	5223010	1412	333-14518	3415	5233630	88797	5303330
16878	5196101	1412	5282410	3415	5233635	89996	5303301
16907	5195201	1412	5282411	3415	5233644	89996	5303310
16907	5195210	1412	5282412	3415	5233654	NWRA	KIC #
16907	5195211	1412	5282413	3467	5251101	X60038	5196101
16913	444-16913	1412	5282414	3475	5291801	X60041	5196120
16997	5289012	1412	5282415	3475	5291804	X60046	5202001
16997	5289013	2177	5196101	3475	5291824	X60046	5203411
1771	5177101	2281	5223030	3513	5291901	X60066	5223030
18006	0555-18006B	2517	52327107	3513	52919017	X60067	5223031
1811	0555-01811	2546C	5232711	3513	5291904	X60076	5232711
2003B	0555-2003B	2566	5247211	3513	5291914	X60077	5232710
2005	0555-2005B	2566	5247231	3543	5287801	X60105	5251101
20056	0555-20056	2566	5275712	3544	444-16409	X60114	5223010
20057B	0555-20057B	2566	5275730	3557	5303901	X60119	333-14518
2009B	0555-2009B	2568	5248010	3600A	5303301	X60119	5254410
2021B	0555-2021B	2568	5248014	3600A	5303310	X60119	5254414
2023	0555-2023	2577A	5196110	8656	5195201	X60119	5282410
2027	0555-2027	2702	5223031	8656	5195210	X60119	5282411
2603	5244801	2705	5202001	8656	5195211	X60119	5282412
ERIE	KIC #	2730	5203411	MOTOR		X60119	5282413
2700-10	5251101	2908A	444-01521	WHEEL	KIC #	X60119	5282414
2738-1	5223010	2983C	5223010	85130	5232710	X60119	5282415
2740	5232711	2997	5289012	85474	5223031	X60132	5248010
2740-1	5232710	2997	5289013	85476	5223030	X60132	5248014

COMPETITIVE INTERCHANGE

NWRA	KIC #	NWRA	KIC #	WEBB	KIC #
X60397	52327107	X60794	5303310	64117	5282412
X60420	5270530	X60816	52919017	64117	5282413
X60434	5289012	X60821	5241401	64117	5282414
X60434	5289013	X60980	52965107	64117	5282415
X60458	5264711	X60980	52965137	6415	5233614
X60464	5287711	X60980	52965147	6415	5233620
X60481	5195201	X60995	5275712	6415	5233624
X60481	5195210	X61110	5270535	6415	5233630
X60481	5195211	WEBB	KIC #	6415	5233635
X60505	5274311	60876	5287711	6415	5233644
X60517	5221901	61600B	52327107	6415	5233654
X60561	5247211	61730	5203411	65004	5275712
X60561	5247231	61777	5196101	65167B	5291901
X60561	5275730	61780	5196110	65167B	5291904
X60575	5287801	62027	0555-2027	65167B	5291914
X60602	333-14513	62200	5202001	65169B	52919017
X60602	5233610	62997	5289012	66812	5291801
X60602	5233614	62997	5289013	66812	5291804
X60602	5233620	63617	5274311	66812	5291824
X60602	5233624	63631	5303901	66814	5472701
X60602	5233630	63637	5251101	66875	5270532
X60602	5233635	64004	5247211	66875	5303330
X60602	5233644	64004	5247231	66884	5303301
X60602	5233654	64004	5275730	66884	5303310
X60610	5291901	64009	5248010	66886B	5205930
X60610	5291904	64009	5248014	66892	5287801
X60610	5291914	64038	52908117	66893	5302601
X60611	5302601	64038	52908147	66895B	5270530
X60631	52908117	64039	5297611	67518	5223010
X60631	52908147	64039	5297614	67519	5223030
X60700	5196110	64040	5297511	67537	5223031
X60716	5291801	64040	5297514	68416	5196120
X60716	5291804	64040	5297594	68730	5232710
X60716	5291824	64048	52965107	68765	5232711
X60733	5205930	64048	52965137	68891	5221901
X60734	5303901	64048	52965147	68897	5195201
X60774	5297611	64113	333-14519	68897	5195210
X60774	5297614	64113	5254410	68897	5195211
X60775	5297511	64113	5254414	68903	444-16409
X60775	5297514	64115	333-14513	68942	5264711
X60775	5297594	64115	5233610		
X60789	5270532	64117	333-14518		
X60789	5303330	64117	5282410		
X60794	5303301	64117	5282411		

Brake Drum & Rotor Identification & Replacement (TMC Recommended Procedure)

Brake Drum Identification

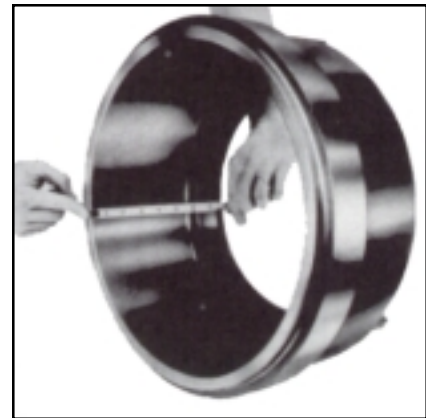
1. When specifying replacement brake drums & rotors the following information is required:
 - The manufacturer's name
 - The manufacturer's part or casting number
 - Description of any other markings appearing on the drum or rotor.
2. If that information isn't available, the following is the next best:
 - Vehicle manufacturer
 - Vehicle model
 - Axle or spindle size
 - Whether disc or spoke wheel application
 - Brake size and type of actuation (S-cam, Wedge, Air, Hydraulic, etc.)
 - Whether inboard or outboard mounting
3. If that information isn't available, the following is required.
 - It will be necessary to make accurate measurements to determine the type and size of the brake drum or rotor needed, particularly if the part number can not be determined. The photographs following show the items to measure and check prior to ordering a new brake drum or rotor.



**Diameter brake surface
(allow for drum wear)**



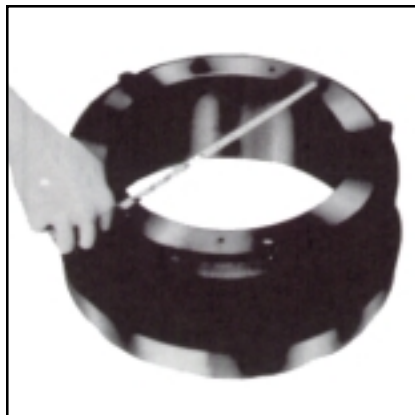
Width of braking surface



Overall depth



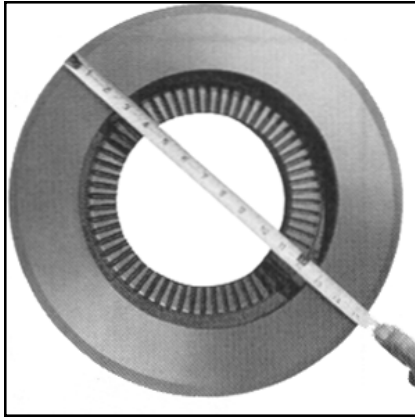
Pilot/hub diameter



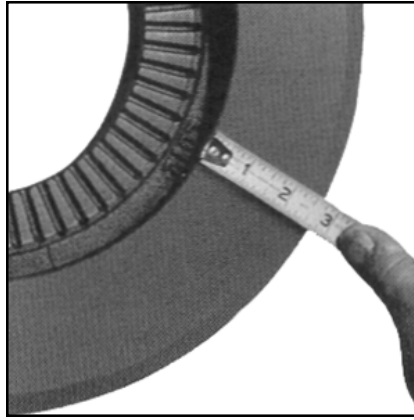
Bolt circle diameter



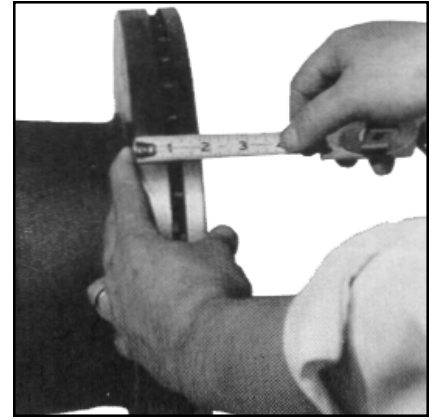
Size & number of bolt holes



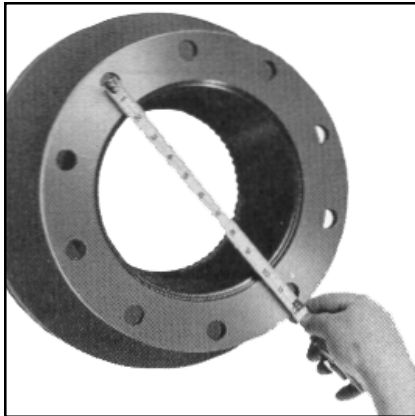
Outside diameter of rotor



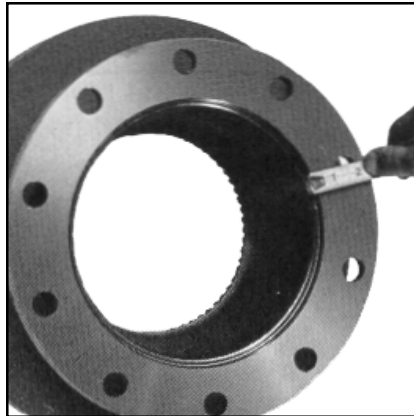
Width of braking surface



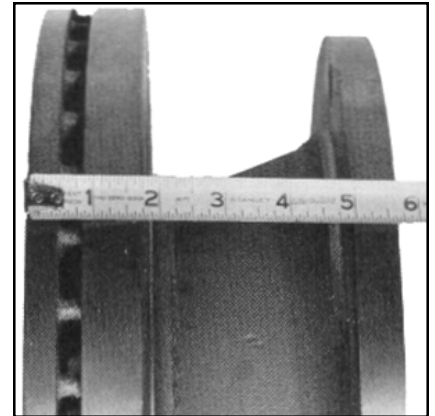
Rotor width



**Bolt circle diameter
and pilot diameter**



Size and number of bolts.



**Overall depth of U-section and
hat section rotors.**

Installation Instructions-Hub Mounting

The installation procedure will depend upon the wheel hub design.

All hub components (including the bearing cups) should be inserted into the hub prior to attaching the brake drum. Be sure to use the correct stud length. The use of an incorrect stud will not allow the wheel end to function properly. (see Stud Standout section).

Inboard mount with serrated studs.

1. Place the hub on a flat surface with the hub cap or drive flange end down. Place the brake drum on the hub, aligning the mounting holes. Make sure the drum pilot matches the hub pilot and that the brake drum is resting flat against the hub mounting face. There should be no interference between the brake drum pilot chamfer and the corner radius on the hub. If interference exists, the brake drum will not function properly.
2. Insert the serrated studs down through the brake drum and into the hub. You may use a press to insert the studs. If a press is not used, you may drive the studs into the hub by tapping them with a hammer until they are flush against the back plate of the brake drum. In any case, support the hub flange when inserting the studs to guard against excessive flange flexing.

Inboard mount with shoulder studs

1. Make sure the stud shoulder fits into the groove cut into the hub and insert the shoulder stud through the hub. Be sure to support the hub flange when inserting the stud to guard against bending the flange. Make sure the stud shoulder seats firmly against the bottom of the groove cut in the hub. If the stud shoulder does not fit into the hub groove or the hub flange is distorted, the hub will not function properly.
2. Place the hub on a flat surface with the hub cap end or drive flange down. Place the brake drum on the hub, aligning the mounting holes. Make sure the drum pilot matches the hub pilot and that the brake drum is resting flat against the hub mounting face. There should be no interference between the brake drum pilot chamfer and the corner radius on the hub. If interference exists, the brake drum will not function properly. Place a hardened flat washer and a locknut on each stud. Failure to utilize a hardened flat washer will lead to uneven stress distribution and may significantly reduce product life. Tighten the locknut in accordance with the assembly torque specifications.

Outboard mount with serrated studs or non-serrated clipped head studs.

1. Place the hub on a flat surface with the hub cap or drive flange end down. Insert the stud down through the hub. You may use a press to insert the serrated stud. If a press is not used to insert the stud, you may drive the studs into the hub by tapping them with a hammer until they are flush against the back of the hub. In any case, support the hub flange when inserting the studs to guard against excessive flange flexing. Take care to avoid damaging the stud or hub assembly when inserting the serrated stud. Install the hub assembly in accordance with the hub manufacturer's instructions.
2. Place the drum over the hub and brake shoes while being careful not to damage the stud threads. Make sure the drum seats flat against the hub flange and mates properly with the hub pilot. There should be no interference between the brake drum pilot chamfer and the corner radius on the hub. If interference exists, the hub will not function properly.

Installations instructions-spoke wheel mountings

The installation procedure for the brake drum will depend on the spoke wheel design.

Spoke wheels require high strength bolts to support the necessary pre-loads and operating forces. Use only Grade 8 bolts with thru-hardened flat washers.

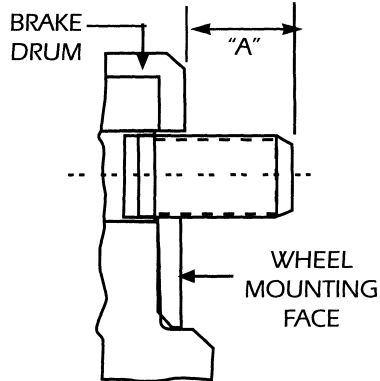
Spoke wheels with tapped bolt holes

1. Spoke wheels with drilled and tapped bolt holes require a special epoxy adhesive locking material to be applied to the drum bolt threads to prevent the bolt from loosening during operation. Failure to use adhesive locking material may result in loose brake drums and could result in an accident.
2. Place the wheel on a flat surface with the hub cap or drive flange end down. Place the brake drum on the wheel, aligning the mounting holes. Make sure the brake drum contacts the wheel only at the mounting pads. There should be clearance between the spoke and the brake drum. If this is not the case, the brake drum will not function properly.
3. Insert the bolt through the drum and into the wheel while turning the bolt. If the assembly originally had a washer under the bolt head, replace with a hardened washer. Failure to do so will result in uneven stress distribution, which may significantly reduce service life. Tighten the drum bolt to the torque specifications in Table 1.

Table 1

THREAD SIZE	ROTATE	TORQUE REQUIRED FOOT POUNDS			
		Phos/Oil Nuts (Black)		Cad/Wax Nuts (Silver)	
		MIN.	MAX.	MIN.	MAX.
5/8-18 (Tapped Holes)	Rotate Bolt	150	200	-	-
5/8-18 (Thru Holes)	Rotate Nut	150	175	95	130
3/4-10	Rotate Nut	250	275	-	-
3/4-16 (Wheels)	Rotate Nut	275	325	200	250
3/4-16 (Hubs)	Rotate Nut	100	225	40	55
1-14	Rotate Nut	175	225	-	-

OUTBOARD DRUM MOUNTING



INBOARD DRUM MOUNTING

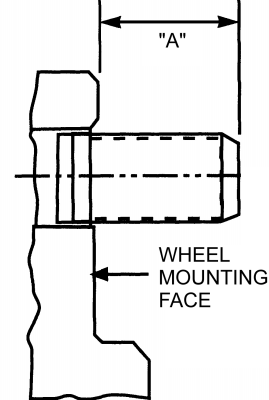


Table 2

BALL SEAT MOUNTING APPLICATIONS (All dimensions in inches)			
No. of Studs	Bolt Circle Diameter	"A" Dimension	
		Ferrous Wheel	Aluminum Wheel
6	8.75	Single 1.25 min.	Single 1.50 min.
		Dual 1.31 - 1.44	Dual 1.31 - 1.44
10	8.75	Single 1.25 min.	-
		Dual 1.31 - 1.44	-
10	11.25	Single 1.25 min.	Single 1.68 min.
		Dual 1.31 - 1.44	Dual 1.31 - 1.44

I.S.O. METRIC (HUB PILOTED) APPLICATIONS (All dimensions in mm)			
No. of Studs	Bolt Circle Diameter	"A" Dimension	
		Ferrous Wheel	Aluminum Wheel
8	275	Single 48	Single 54
		Dual 62	Dual 79
10	285.75	Single 48	Single 59
		Dual 62	Dual 84
10	335	Single 48	Single 59
		Dual 62	Dual 84

W.H.D. METRIC (HUB PILOTED) APPLICATIONS (All dimensions in mm)			
No. of Studs	Bolt Circle Diameter	"A" Dimension	
		Ferrous Wheel	Aluminum Wheel
8	275	Single 49	Single 60
		Dual 63	Dual 85

Proper torque is important. Use a torque wrench to assure proper torque. Insufficient torque can lead to bolt breakage. Over-torque can over stress the bolts and strip the threads. Do not deviate from the recommended torques.

Spoke wheels with thru hole

1. Place the wheel on a flat surface with the hub cap or drive flange end down. Place the brake drum on the wheel, aligning the mounting holes. Make sure the brake drum contacts the wheel only at the mounting pads. There should be clearance between the spoke and the brake drum. If this is not the case, the brake drum will not function properly.
2. Insert the mounting bolt down through the brake drum and through the web between the spokes. Place the hardened flat washer and locknut on the bolt and tighten until the flat washer is flush against the wheel. Use only a Grade C lock nut and hardened flat washer. Failure to do so will result in uneven stress distribution and may significantly reduce service life.
3. Tighten the locknut, holding the bolt stationary, in accordance with the torque specifications given in Table 1.

Stud standout

When changing from a composite drum to a full cast drum, the hub studs have to be changed in most applications. The added mounting surface thickness of a full cast drum does not give a long enough stud standout. See Table 2, pg. 17, for proper wheel mounting specifications. When changing studs or hubs, it is important to have the correct stud standout to insure proper wheel mounting.

Brake Drum Replacement

Brake drum replacement is required if any of the following conditions exist:

- The brake drum is cracked
- The surface is heat checked, ground, or worn beyond the maximum diameter or minimum thickness limits.
- The mounting flange is cracked
- The bolt holes are elongated
- The brake drum is known to have been severely overheated.
- The brake drum is out-of-round.

Brake drums should be replaced in pairs on an axle to achieve the same braking power on both wheels and maintain an even braking load on the axle. Failure to replace both brake drums on an axle will result in uneven braking load on the axle and may significantly reduce the performance, service life, and/or safety of the vehicle.

Brake Drum Resurfacing.

Note: Brake drum resurfacing is not recommended by most manufacturers, but it may be desirable to turn the drum's surface to remove small heat checks or other surface defects resulting from normal use.

The maximum diameter cast into the back plate or barrel portion of the brake drum is the maximum diameter or discard diameter to which the brake drum may be worn and still be usable. If any portion of the braking surface exceeds the maximum diameter, the brake drum must be discarded. The maximum allowable drum diameter is 0.120 inch greater than the nominal new diameter unless stated otherwise on the casting.

Caution: When resurfacing a drum, allow at least 0.040 inches under the maximum diameter for additional wear. This usually means the drum may be turned a total of 0.080 inch more than the brake surface diameter of a new brake drum.

When resurfacing a drum, the following tolerances apply: The surface finish should be 150-200 micro-finish. Runout

with pilot should be 0.010 inch, maximum. Diameter should not exceed 0.080 inch over the new diameter. It is unsafe and illegal in some states to use a brake drum which is below the discard dimension.

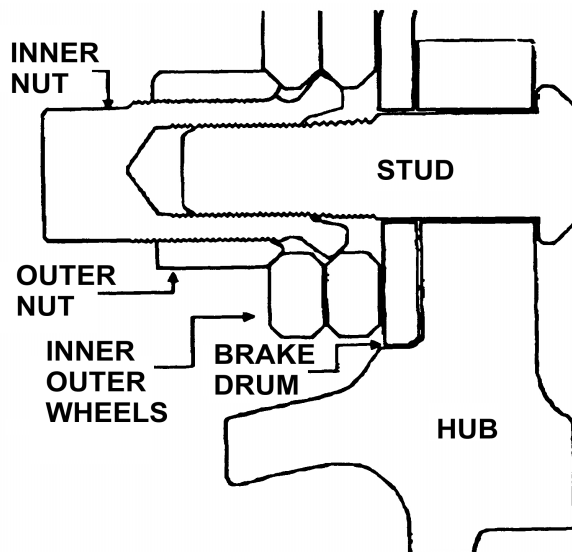
Hub Piloted vs. Ball Seat Drums

Note: Make certain the correct product has been chosen for your application. Incorrect or mismatched parts may result in loose or broken mounting studs or wheel ends and can cause an accident. If you are unsure about an application, contact the manufacturer.

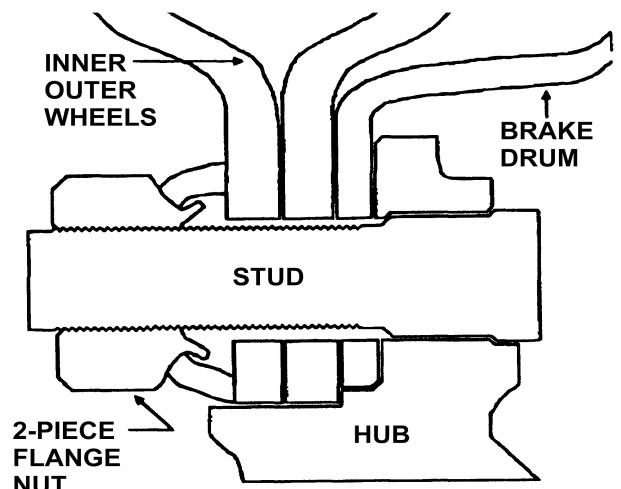
Older ball seat mountings have a close fit between the drum and stud holes and the stud diameter. The drum is installed on the hub pilot. The wheels are piloted on the studs using inner and outer cap nuts.

Hub piloted mountings have a close fit between the drum pilot and the machined pilot (continuous or interrupted) on the hub. The drum bolt mounting holes are larger than the stud diameter. The wheels and drum are piloted on the hub.

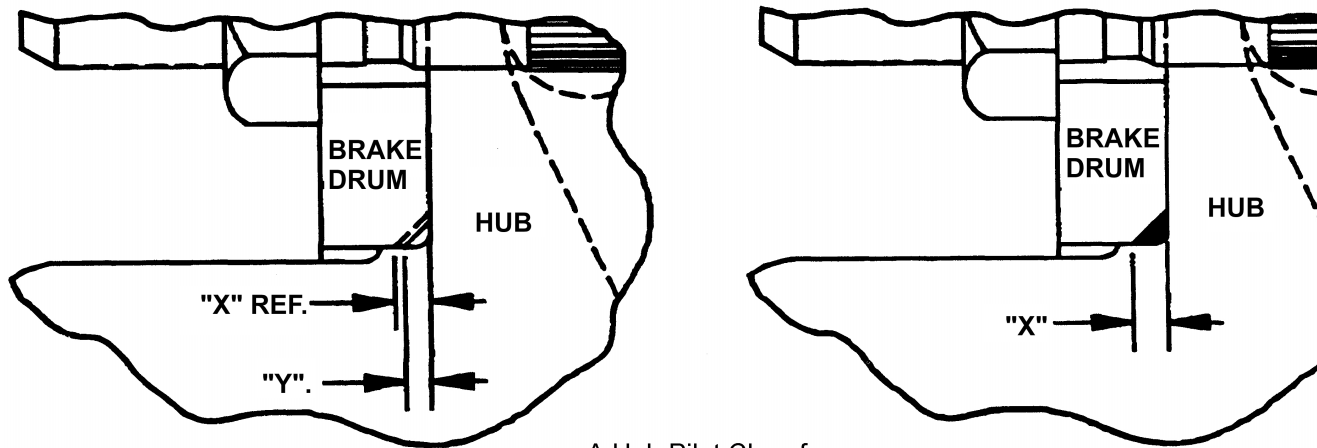
New drum designs will allow you to use the same drum for ball seat and hub piloted applications when matched with the proper hub. These new drums can not be used with older hubs with a different pilot diameter. Matching the drums with the proper hub is critical in maintaining the support of the wheel end.



A Ball Seat Disc Wheel Mount



A Hub Piloted Disc Wheel Mount



A Hub Pilot Chamfer

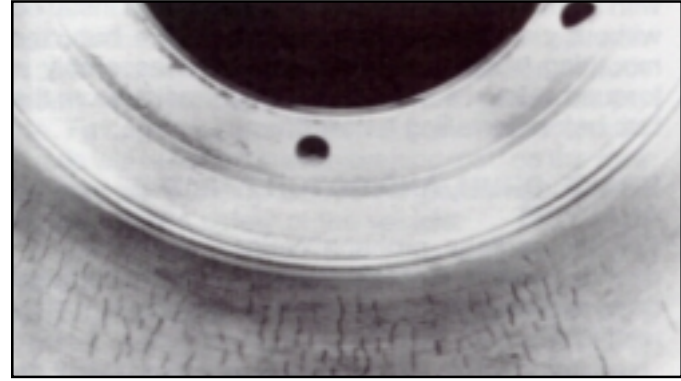

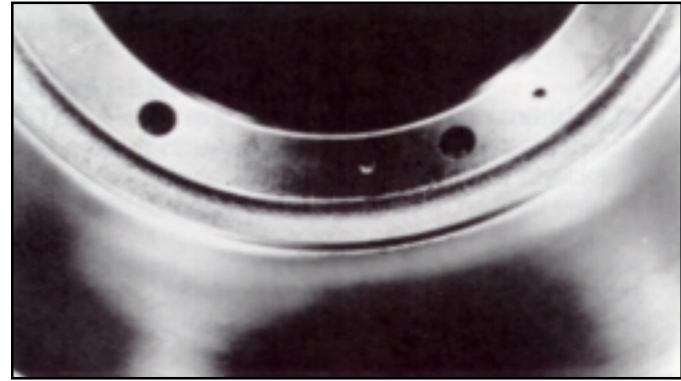
Pilot Chamfers

Drum manufacturers make different pilot chamfers where the drum mates the hub. If corrosion builds up behind the chamfer (x in fig.) and a drum with a small chamfer (y in fig) is installed without cleaning the corrosion from the hub, the mounting flange can break when the assembly is torqued. Use a scraper to clean corrosion from the hub before installing a new drum.

Brake Drum Failure Analysis

The photographs, probable causes, and recommended actions that follow can be used for brake drum failure analysis and problem rectification.

BRAKE DRUM FAILURE ANALYSIS

Problem	Probable Causes	Recommended Actions
<p data-bbox="181 275 451 331">Heat Checking</p> 	<p data-bbox="857 275 1536 373">This problem is signified by a bluish color and disfiguration of the brake parts.</p> <p data-bbox="857 394 1187 583">Heat-checking is a normal condition of the brake drum caused by constant heating and cooling of the braking surface.</p>	<p data-bbox="1187 394 1536 520">Heat checking does not impair brake performance, reuse drum if within tolerance.</p> <p data-bbox="1187 548 1536 646">If deep cracks have developed, replace drum immediately</p>
<p data-bbox="181 850 467 907">Cracked Drums</p> 	<p data-bbox="857 850 1536 949">Upon inspection, the drum is found to have cracked all the way through the entire wall.</p> <p data-bbox="857 970 1187 1276"> Mishandling(new drum). Excessive heating and cooling. Brake balance. Driver abuse. </p>	<p data-bbox="1187 970 1536 1003">Replace brake drum.</p> <p data-bbox="1187 1031 1536 1129">Check to see if drum is adequate for the application.</p> <p data-bbox="1187 1157 1536 1213">Check for pneumatic or torque balance problems.</p> <p data-bbox="1187 1241 1536 1276">Driver training</p> <p data-bbox="1187 1304 1536 1381">Replace cracked drums immediately.</p>
<p data-bbox="181 1425 402 1482">Blue Drums</p> 	<p data-bbox="857 1425 1536 1524">This problem is signified by a bluish color and disfiguration of the brake part.</p> <p data-bbox="857 1545 1187 1696"> Excessive heat from dragging brakes or brake imbalance. Swollen linings. </p>	<p data-bbox="1187 1545 1536 1633">Look for weak or broken return springs or binding brake actuation.</p> <p data-bbox="1187 1661 1536 1738">Consult lining manufacturer.</p> <p data-bbox="1187 1766 1536 1864">Drum can be used if deep cracks are not present.</p>

BRAKE DRUM FAILURE ANALYSIS

Problem	Probable Causes	Recommended Actions
---------	-----------------	---------------------

Polished Drums

Recognized from a mirror-like finish on the braking surface.



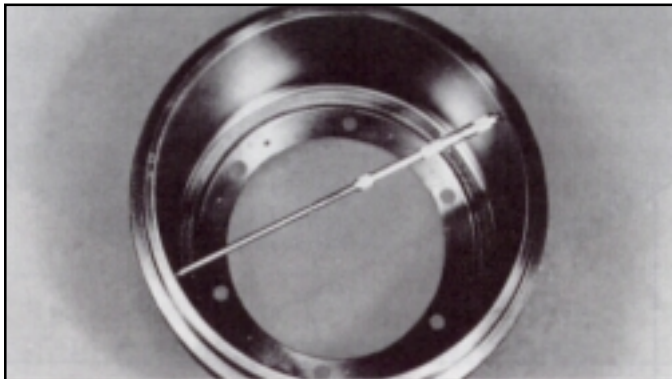
Improper lining friction rating.

Drum resurfaced with too fine of a micro-finish. Light contact of linings to drum.

Consult vehicle or lining manufacture for an alternate lining material. Micro-finish should be 150-200 RMS. Check condition of return springs, camshaft bushings, air system and shoe to drum contact. Remove the gloss with eighty (80) grit emery cloth.

Out-of-round Drums

Variations in drum diameter at different points on the braking surface



Heat distortion

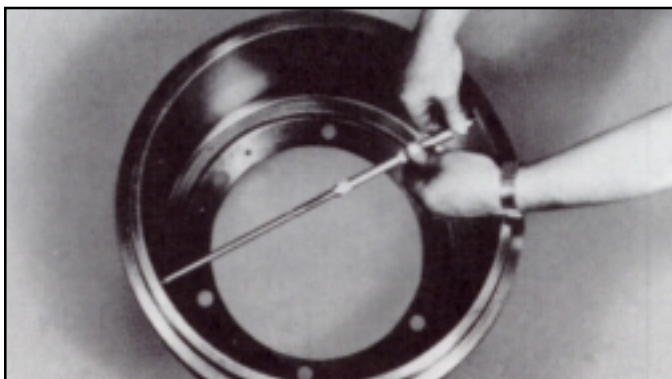
Drum has been dropped or stored on its side.

Improper chucking when turning drum.

Turn brake drum if within limits or replace.

Oversize Worn Drums

Uneven lining wear, or braking surface diameter measures in excess of allowable limits.



Normal wear condition (age).

Replace brake drums and brake linings.

BRAKE DRUM FAILURE ANALYSIS

Problem	Probable Causes	Recommended Actions
---------	-----------------	---------------------

Martensite Spots

The brake surface shows black spots which are slightly raised and are hard and brittle



Martensite is formed by rapidly heated brakes to approximately the 1400° F range followed by rapid cooling. This condition is caused by brake drag or torque imbalance.

Replace brake drum. Check for dragging brake, check balance between tractor/trailer and wheel to wheel (i.e. air distribution, brake adjustment, and power A/L factors.)

Grease Stained Drums

The drum shows discolored spots on surface, with oil or grease on brake assembly



Leaking oil/grease seal or improper lubrication of brake components.

Repair source of oil or grease leak, clean the brake drums and replace the linings.

Scored Drums

The problem is indicated by a grooved appearance on the brake surface



Grooves, loose rivets or bolts, or foreign material in rivet holes. Abrasive material in brake drum.

Repair or install rivet plugs.

Dust shield may cause or cure this problem.

Poor quality brake lining.

Consult lining manufacture.

Turn brake drum if within limits or replace.