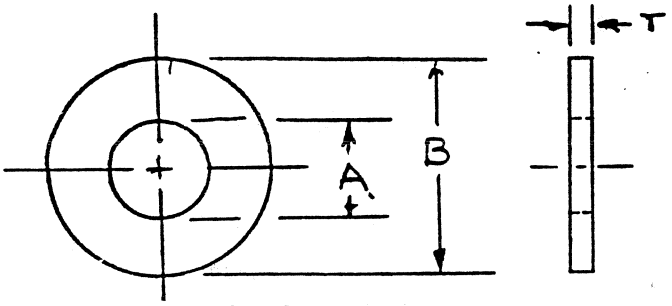
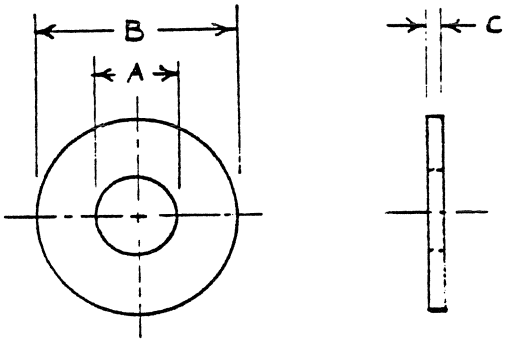
WASHER FLAT



A I.D.	B O.D.	T THICKNESS		PLAIN	PLATED	STAINLESS
3/32	1/4	.Ø25	.Ø16	23-11218-ØØ2	23-ØØ6ØØ-ØØ2	
1/8	5/16	.Ø4Ø	.Ø25	-ØØ4	-ØØ4	
5/32	3/8	.Ø65	.Ø36	-ØØ6	-ØØ6	
3/16	7/16	.Ø65	.Ø36	-ØØ8	-ØØ8	
7/32	1/2	.Ø65	.Ø36	-Ø1Ø	-Ø1Ø	
1/4	9/16	.Ø65	.Ø36		-Ø12	
9/32	5/8	.Ø8Ø	.Ø51	-Ø25	-Ø25	23-1Ø9ØØ-Ø25
11/32	11/16	.Ø8Ø	.Ø51	-Ø31	-Ø31	-Ø31
13/32	13/16	.Ø8Ø	.Ø51	-Ø38	-Ø38	-Ø38
15/32	59/64	.Ø8Ø	.Ø51	-Ø44	-Ø44	
17/32	1-1/16	.121	.Ø74	-Ø5Ø	-Ø5Ø	-Ø5Ø
19/32	1-3/16	.121	.Ø74	-Ø56	-Ø56	
21/32	1-5/16	.121	.Ø74	-Ø62	-Ø62	
13/16	1-1/2	.16Ø	.1Ø8	-Ø75	-Ø75	
13/16	2	.177	.1Ø8	-Ø78	-Ø78	
15/16	1-3/4	.16Ø	.1Ø8	-Ø88	-Ø88	
1- 1/16	2	.16Ø	.1Ø8	-1ØØ	-1ØØ	
1- 1/4	2-1/2	.192	.136	-1Ø1	-1Ø1	

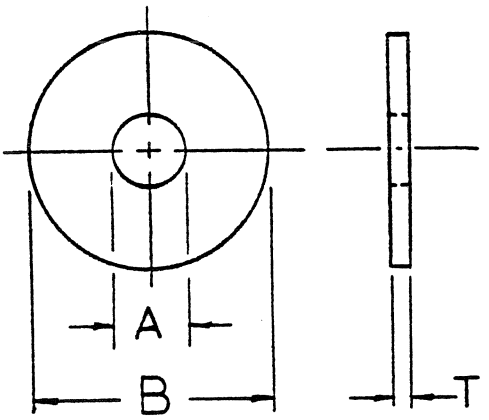
WASHER, PLAIN, CD PLATED, TYPE A, WIDE SERIES



23-09427

Preferred For Nominal Screw or Bolt Size			Inside Dia. A			Outside Dia. B			Thickness C			F/L Part Number Dash No.
			Basic	Tolerance Plus	Minus	Basic	Tolerance Plus	Minus	Basic	Max.	Min.	
1/4	(0.250)	W	0.312	0.015	0.005	0.734*	0.015	0.007	0.065	0.080	0.051	-025
5/16	(0.312)	W	0.375	0.015	0.005	0.875	0.030	0.007	0.083	0.104	0.064	-031
3/8	(0.375)	W	0.438	0.015	0.005	1.000	0.030	0.007	0.083	0.104	0.064	-038
7/16	(0.438)	W	0.500	0.015	0.005	1.250	0.030	0.007	0.083	0.104	0.064	-044
1/2	(0.500)	W	0.562	0.015	0.005	1.375	0.030	0.007	0.109	0.132	0.086	-050
9/16	(0.562)	W	0.625	0.015	0.005	1.469*	0.030	0.007	0.109	0.132	0.086	-056
5/8	(0.625)	W	0.688	0.030	0.007	1.750	0.030	0.007	0.134	0.160	0.108	-062
3/4	(0.750)	W	0.812	0.030	0.007	2.000	0.030	0.007	0.148	0.177	0.122	-075
7/8	(0.875)	W	0.938	0.030	0.007	2.250	0.030	0.007	0.165	0.192	0.136	-088
1	(1.000)	W	1.062	0.030	0.007	2.500	0.030	0.007	0.165	0.192	0.136	-100
1-1/8	(1.125)	W	1.250	0.030	0.007	2.750	0.030	0.007	0.165	0.192	0.136	-112
1-1/4	(1.250)	W	1.375	0.030	0.007	3.000	0.030	0.007	0.165	0.192	0.136	-125
1-3/8	(1.375)	W	1.500	0.045	0.010	3.250	0.045	0.010	0.180	0.213	0.153	-138
1-1/2	(1.500)	W	1.625	0.045	0.010	3.500	0.045	0.010	0.180	0.213	0.153	-150

WASHERS,
SPECIAL SIZES



WASHER, PLAIN, BRASS

NOM SIZE	A BASIC I.D.	B BASIC O.D.	T BASIC THICK.	FREIGHTLINER PART NUMBER
#6 0.138	0.156	.375	.049	23-10278-006
#8 .164	.188	.438		-008
#10 .190	.219	.500		-010
#12 .216	.250	.562	.065	-012
1/4 .250	.281	.625		-025
5/16 .312	.344	.688		-031
3/8 .375	.406	.812		-038

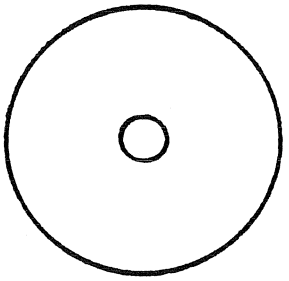
WASHER, PLAIN
ADDITIONAL TYPE "A" SIZES

I.D.			O.D.			T			FREIGHTLINER PART NUMBER
BASIC	TOLERANCE +	TOLERANCE -	BASIC	TOLERANCE +	TOLERANCE -	BASIC	MAX.	MIN.	
.531			1.75			14 GA			23-9042
.812	.030	.007	2.875	.030	.007	.165	.192	.136	23-10239-082

FLAT WASHERS
SPECIAL SIZES

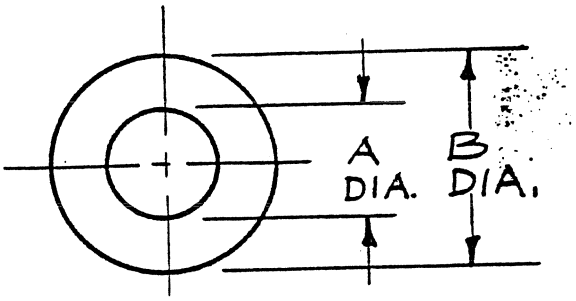
I.D.	O.D.	THICKNESS	FINISH	FREIGHTLINER PART NUMBER
11/16	2.38	3/32	PLAIN	23-9012-001
15/32	1.75	14 ga. (0.0749)	PLAIN	-002
1-11/16	3.50	0.100-0.120	PLAIN	-005
17/32	1.750	14 ga. (0.0749)	PLAIN	-006
17/32	1.250	16 ga. (0.0598)	PLAIN	-007
13/16	1.469	10 ga. (0.1345)	BRIGHT NICKEL	-008
.265±.005	.562	18 ga. (0.048)	PLAIN (3)	-009
.265	.500	16 ga. (0.065)	ZINC & CHROMATE (4)	-010

WASHER, FLAT
EXTRA WIDE, CD PLATED STL.



BOLT SIZE	O.D.	THICKNESS		MANUFACTURER'S NUMBERS AUV		FREIGHTLINER PART NUMBER
3/16	1/2	.050		2007		23-9426-101
	3/4	.050		1183		-102
1/4	1	.072		-		-203
	5/8	.050		2008		-201
	1-1/4	.050		2333		-202
5/16	3/4	.050		1376		-301
	1-1/4	.050		768		-302
	1-1/2	.050		1700		-303
3/8	3/4	.050		3551		-401
	1-1/4	.050		3553		-402
	1-1/2	.050		2227		-403
	1-3/4	.050		1294		-404
1/2	3/4	.050		3552		-501
	1-1/4	.050		3554		-502
	1-1/2	.050		3556		-503
5/8	1-1/4	.050		3555		-601
	1-1/2	.050		3557		-602

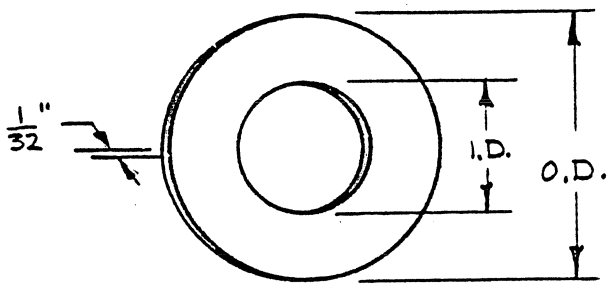
WASHER, BEARING



Thickness: 0.149 (9 Gage)

NOMINAL SIZE (I.D.)	A DIAMETER	B DIAMETER		FREIGHTLINER PART NUMBER
5/8	.646/.666	1.322/1.302		23-9114-000
7/16	.458/.478	.916/.896		-001
3/8	.396/.416	.822/.802		-002
1/2	.521/.541	1.160/1.140		-003 23-9113-000
3/4	.781/.822	1.479/1.459		23-9114 -004
7/8	.910/.950	1.810/1.750		-005
5/16	.334/.354	.698/.678		-006
5/8	.700/.720	1.230/1.210		-007
1.00	1.021/ 1.041	2.000/2.030		-008

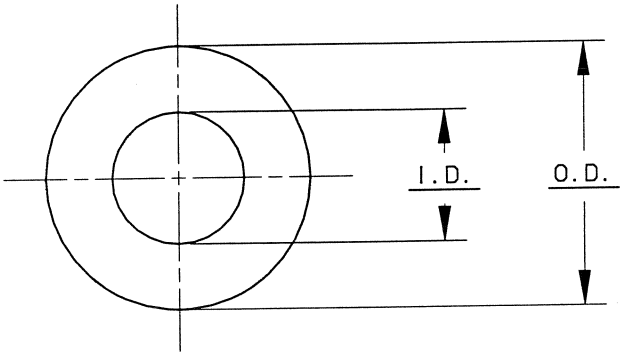
WASHER, SPACING
STEEL (1/32")



SIZE			MANUFACTURER'S NUMBER		FREIGHTLINER PART NUMBER
I.D. A	O.D. B		DRM		
1/4	5/8		W1		23-9860-001
3/8	3/4		W2		-002
7/16	13/16		W3		-003
1/2	7/8		W4		-004
5/8	1		W5		-005
11/16	1- 1/16		W6		-006
3/4	1- 1/8		W7		-007
13/16	1- 3/16		W8		-008
7/8	1- 3/8		W9		-009
1	1- 1/2		W10		-010
1- 1/8	1- 5/8		W11		-011
1- 1/4	1- 7/8		W12		-012
1- 3/8	2- 1/8		W13		-013
1- 1/2	2- 3/8		W14		-014
1- 5/8	2- 1/2		W15		-015
1- 3/4	2- 3/4		W16		-016
2	3		W17		-017
2- 1/8	3- 1/4		W18		-018
2- 1/4	3- 1/2		W19		-019
9/16	1		W20		-020
5/16	11/16		W21		-021

DRAWN	CGD	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-STEEL ZINC PLATED	23-00600	
DATE	03/30/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. K
CATIA ORIGINAL				

SKETCH:



SPECIFICATIONS:

NOMINAL SIZE		INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS*		FREIGHTLINER PART NUMBER
		BASIC	TOLERANCE		BASIC	TOLERANCE				
			PLUS	MINUS		PLUS	MINUS	MAX.	MIN.	
NO. 2	.086	.094	.000	.005	.250	.000	.005	.025	.016	23-00600-002
NO. 4	.112	.125	.008	.005	.312	.008	.005	.040	.025	23-00600-004
NO. 6	.138	.156	.008	.005	.375	.015	.005	.065	.036	23-00600-006
NO. 8	.164	.188	.008	.005	.438	.015	.005	.065	.036	23-00600-008
NO.10	.190	.219	.008	.005	.500	.015	.005	.065	.036	23-00600-010
NO.12	.216	.250	.015	.005	.562	.015	.005	.080	.051	23-00600-012
1/4	.250	.281	.015	.005	.625	.015	.005	.080	.051	23-00600-025
5/16	.313	.344	.015	.005	.688	.015	.007	.080	.051	23-00600-031
3/8	.375	.406	.015	.005	.812	.015	.007	.080	.051	23-00600-038
7/16	.438	.469	.015	.005	.922	.015	.007	.080	.051	23-00600-044
1/2	.500	.531	.015	.005	1.062	.030	.007	.121	.074	23-00600-050
9/16	.563	.594	.015	.005	1.156	.030	.007	.121	.074	23-00600-056
5/8	.625	.656	.030	.007	1.312	.030	.007	.121	.074	23-00600-062
3/4	.750	.812	.030	.007	1.469	.030	.007	.160	.108	23-00600-075
3/4 WIDE	.750	.812	.030	.007	2.000	.030	.007	.177	.122	23-00600-078
7/8	.875	.938	.030	.007	1.750	.030	.007	.160	.108	23-00600-088
1	1.000	1.062	.030	.007	2.000	.030	.007	.160	.108	23-00600-100
1-1/8	1.125	1.250	.030	.007	2.250	.030	.007	.160	.108	23-00600-101

*NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. . THE LIMITS REPRESENT A TOLERANCE OF ± ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

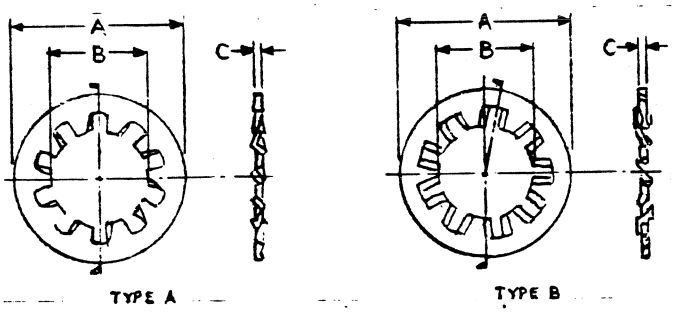
ENGINEERING NOTES:

1. MATERIAL: STEEL SAE 1010-1020.
2. SPECS: MUST MEET ASA B 27.2 STANDARDS (REF. SAE J488).
3. FINISH: ZINC PLATE PER F/L SPEC. 49-00005-403.

CHG	JOB NO	DATE	BY	REVISION
K	PA2042-93	03/30/99	CGD	REVISED AND REDRAWN IN CATIA.

23-701

PRINT ISSUED	TITLE	PART NO.
	LOCKWASHER, INTERNAL TOOTH SAE STANDARD J 489	23-701
LAST CHG. LTR. B		SHEET OF



(1) Material:

Carbon steel treated to hardness of 40-50 Rockwell C Scale.

PART NUMBER	NOM. SIZE	A		B		C	
		MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
23-701-002	No.2	0.200	0.175	0.095	0.089	0.015	0.010
23-701-003	No.3	0.232	0.215	0.109	0.102	0.019	0.012
23-701-004	No.4	0.270	0.245	0.123	0.115	0.019	0.015
23-701-005	No.5	0.280	0.255	0.136	0.129	0.021	0.017
23-701-006	No.6	0.295	0.275	0.150	0.141	0.021	0.017
23-701-008	No.8	0.340	0.325	0.175	0.168	0.023	0.018
23-701-010	No.10	0.381	0.365	0.204	0.195	0.025	0.020
23-701-012	No.12	0.410	0.394	0.231	0.221	0.025	0.020
23-701-025	1/4	0.478	0.460	0.267	0.256	0.028	0.023
23-701-031	5/16	0.610	0.594	0.332	0.320	0.034	0.028
23-701-038	3/8	0.692	0.670	0.398	0.384	0.040	0.032
23-701-044	7/16	0.789	0.740	0.464	0.448	0.040	0.032
23-701-050	1/2	0.900	0.867	0.530	0.512	0.045	0.037
23-701-056	9/16	0.985	0.957	0.596	0.576	0.045	0.037
23-701-062	5/8	1.071	1.045	0.663	0.640	0.050	0.042
23-701-069	11/16	1.166	1.130	0.728	0.704	0.050	0.042
23-701-075	3/4	1.245	1.220	0.795	0.769	0.055	0.047
23-701-081	13/16	1.315	1.290	0.861	0.832	0.055	0.047
23-701-088	7/8	1.410	1.364	0.927	0.894	0.060	0.052
23-701-100	1	1.637	1.590	1.060	1.019	0.067	0.059
23-701-112	1 1/8	1.830	1.799	1.192	1.144	0.067	0.059
23-701-125	1 1/4	1.975	1.921	1.325	1.275	0.067	0.059

1. Finish: Zinc Plate per 49-00005-403
2. Internal tooth Lockwashers herein specified shall conform in all pertinent respects with SAE Standard J 489.

		DATE DRAWN		MATERIAL	MASTER NO.	
COMPILED	H.J.R.	6-14-68		(1)	01010	000D1
APPROVED	H.J.R.					

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS
A	SW	2-6-80	Added note 2 76617.
B	FHF	7-12-85	Rev. Note 1 to include 49-00005-403, and Master No. (1876D)

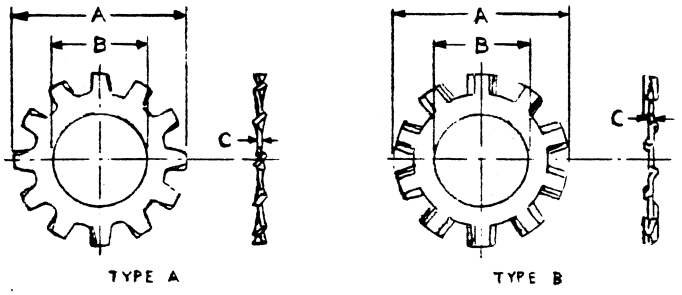
WAS RC 700

B A

E-183

23-702

PRINT ISSUED	TITLE	PART NO.
	LOCKWASHER, EXTERNAL TOOTH SAE STANDARD J489a	23-702
LAST CHG. LTR. B		SHEET OF



(1) **Material:**

Carbon steel treated to hardness of 40-50 Rockwell C scale

PART NUMBER	SIZE	A		B		C	
		MAX	MIN	MAX	MIN	MAX	MIN
23-702-002	No. 2						
23-702-003	No. 3						
23-702-004	No. 4	0.260	0.245	0.123	0.115	0.019	0.015
23-702-005	No. 5						
23-702-006	No. 6	0.320	0.305	0.150	0.141	0.022	0.016
23-702-008	No. 8	0.381	0.365	0.176	0.168	0.023	0.018
23-702-010	No.10	0.410	0.395	0.204	0.195	0.025	0.020
23-702-012	No.12	0.475	0.460	0.231	0.221	0.028	0.023
23-702-025	1/4	0.510	0.494	0.267	0.256	0.028	0.023
23-702-031	5/16	0.610	0.588	0.332	0.320	0.034	0.028
23-702-038	3/8	0.694	0.670	0.398	0.384	0.040	0.032
23-702-044	7/8	0.760	0.740	0.464	0.448	0.040	0.032
23-702-050	1/2	0.900	0.880	0.530	0.513	0.045	0.037
23-702-056	9/16	0.985	0.960	0.596	0.576	0.045	0.037
23-702-062	5/8	1.070	1.045	0.663	0.641	0.050	0.042
23-702-069	11/16	1.155	1.130	0.728	0.704	0.050	0.042
23-702-075	3/4	1.260	1.220	0.795	0.768	0.055	0.047
23-702-081	13/16	1.315	1.290	0.861	0.833	0.055	0.040
23-702-088	7/8	1.410	1.380	0.927	0.897	0.060	0.052
23-702-100	1	1.620	1.590	1.060	1.025	0.067	0.059

1. These washers will conform to SAE Specification J489a.
2. Finish: Zinc Plate per 49-00005-403

CHG	BY	DATE	WAS

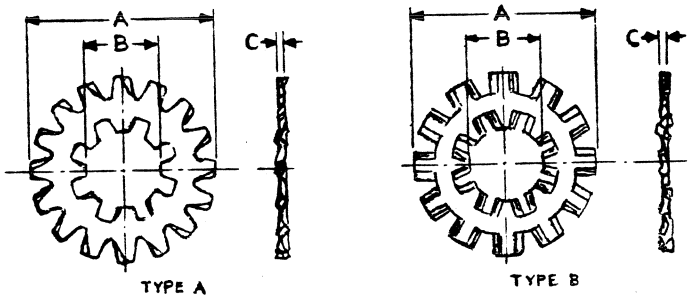
CHG	BY	DATE	WAS
A	SW	2-6-80	Added Note 2 76617.
B	FHF	7-12-85	Rev. Note 2 to inc. 49-00005-403, add Master No. (1876D)

COMPILED	K.J.A.	DATE DRAWN		MATERIAL	MASTER NO.
APPROVED	K.J.A.	8-30-68		(1)	02030 000D1

Portland FREIGHTLINER CORPORATION Oregon 97208

B A

PRINT ISSUED	TITLE	PART NO.
	LOCKWASHERS, INTERNAL-EXTERNAL TOOTH SAE STANDARD J489a	23-703
LAST CHG. LTR. A		SHEET 1 OF 2



① **Material:**

Carbon steel treated to hardness of 40-50 Rockwell C Scala

PART NUMBER	SIZE	A, OUTSIDE DIA		B, INSIDE DIA		C, THICKNESS	
		MAX	MIN	MAX	MIN	MAX	MIN
23-703-004	No. 4	0.475 0.510 0.610	0.460 0.495 0.580	0.123	0.115	0.021 0.021 0.021	0.017 0.017 0.017
23-703-006	No. 6	0.510 0.610 0.690	0.495 0.580 0.670	0.150	0.141	0.028 0.028 0.028	0.023 0.023 0.023
23-703-008	No. 8	0.610 0.690 0.760	0.580 0.670 0.740	0.176	0.168	0.034 0.034 0.034	0.028 0.028 0.028
23-703-010	No.10	0.610 0.690 0.760 0.900	0.580 0.670 0.740 0.880	0.204	0.195	0.034 0.040 0.040 0.040	0.028 0.032 0.032 0.032
23-703-012	No.12	0.690 0.760 0.900 0.985	0.670 0.725 0.880 0.965	0.231	0.221	0.040 0.040 0.040 0.045	0.032 0.032 0.032 0.037
23-703-025	1/4	0.760 0.900 0.985 1.070	0.725 0.880 0.965 1.045	0.267	0.256	0.040 0.040 0.045 0.045	0.032 0.032 0.037 0.037
23-703-031	5/16	0.900 0.985 1.070 1.155	0.865 0.965 1.045 1.130	0.332	0.320	0.040 0.045 0.050 0.050	0.032 0.037 0.042 0.042

cont...

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	SW	2-6-80	See Sheet 2 76617.

COMPILED	K.J.A.	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	8-30-68		①	GENERAL USE PART

Portland FREIGHTLINER CORPORATION Oregon 97208 A

23-703

PRINT ISSUED	TITLE	PART NO.
	LOCKWASHERS, INTERNAL-EXTERNAL TOOTH SAE STANDARD J489a	23-703
LAST CHG. LTR. A		SHEET 2 OF 2

PART NUMBER	SIZE	A, OUTSIDE DIA		B, INSIDE DIA		C, THICKNESS	
		MAX	MIN	MAX	MIN	MAX	MIN
cont...							
		0.985	0.965			0.045	0.037
23-703-038	3/8	1.070	1.045	0.398	0.384	0.050	0.042
		1.155	1.130			0.050	0.042
		1.260	1.220			0.050	0.042
		1.070	1.045			0.050	0.042
23-703-044	7/16	1.155	1.130	0.464	0.448	0.050	0.042
		1.260	1.220			0.055	0.047
		1.315	1.290			0.055	0.047
		1.260	1.220			0.055	0.047
23-703-050	1/2	1.315	1.290	0.530	0.512	0.055	0.047
		1.410	1.380			0.060	0.052
		1.620	1.590			0.067	0.059
		1.315	1.290			0.055	0.047
23-703-056	9/16	1.430	1.080	0.596	0.576	0.060	0.052
		1.620	1.590			0.067	0.059
		1.830	1.797			0.067	0.059
		1.410	1.320			0.060	0.052
23-703-062	5/8	1.620	1.590	0.663	0.640	0.067	0.059
		1.830	1.797			0.067	0.059
		1.975	1.935			0.067	0.059

1. These washers will conform to SAE Specification J489a.
2. Finish: Electrogalvanize or cadmium plate. Use suitable bake treatment as necessary for prevention of hydrogen embrittlement.

CHG	BY	DATE	WAS

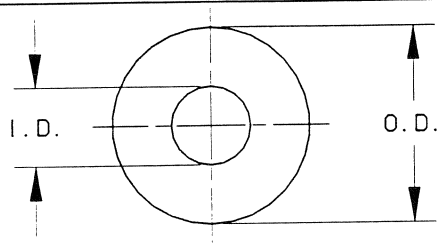
CHG	BY	DATE	WAS
A	SW	2.6.80	Added note 2 76617.

COMPILED	K.J.A.	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	8-30-68			GENERAL USE PART

Portland FREIGHTLINER CORPORATION Oregon 97208

A

DRAWN	CKR	TITLE	DRAWING NUMBER	
APPRV	ANF	WASHER-FLAT SPECIAL SIZES	23-09012	
DATE	05/29/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2	CHG. LTR. AK
CATIA ORIGINAL				



	I.D.	O.D.	THICKNESS	FINISH (2)	FREIGHTLINER PART NUMBER
	.198 ±.005	1.250 ±.020	.050 ±.010	ZINC	23-09012-027
	.265	.500	16 GA(0.065)	ZINC	(4) 23-09012-010
	.265 ±.005	.562	18 GA(0.048)	PLAIN	(3) 23-09012-009
	.343	1.000	12 GA(0.1046)	ZINC	23-09012-014
AK	.318 - .391	1.438 ±.020	.053 - .067	PAINT, BLACK	(8) 23-09012-023
	.359	3.187	11 GA(0.1196)	ZINC	23-09012-021
	.395	2.000	11 GA(0.1196)	ZINC, YELLOW	(10) 23-09012-029
	.406-.453	2.000 ±.010	.127 -.188	ZINC	(7) 23-09012-022
	.469	1.750	14 GA(0.0749)	PLAIN	23-09012-002
	.469	1.750	14 GA(0.0749)	ZINC	23-09012-019
	.469	1.750	.187	ZINC	23-09012-015
	.469	2.000	.108 - .160	ZINC	(7) 23-09012-028
	.516	1.750	.187	ZINC	23-09012-011
	.516	2.000	12 GA(0.1046)	CADIUM PLATE	(5) 23-09012-012
	.516	2.000	11 GA(0.1196)	PLAIN	23-09012-020
	.516	2.000	.187	ZINC	23-09012-013
	.531	1.250	16 GA(0.0598)	PLAIN	23-09012-007
	.531	1.750	14 GA(0.0749)	PLAIN	23-09012-006
	.531 ±.010	3.000 ±.010	11 GA(0.1196)	ZINC	23-09012-030
AK	.656+.016 -.004	2.500	.250	ZINC YELLOW	(10) 23-09012-033
	.656	1.312	16 GA(0.0598)	PLAIN	(6) 23-09012-018
	.656	1.750	.187	ZINC	23-09012-016

CHG	JOB NO	DATE	BY	REVISION
AH	P02738-04	06/16/97	DAJ	REVISED AND REDRAWN IN CATIA. ADDED -031.
AJ	P00469-02	02/02/98	DAJ	ADDED -032.
AK	P05049-31	04/23/99	CGD	±.020 WAS ±.375. ADDED -033.

DRAWN	CKR	TITLE	DRAWING NUMBER	
APPRV	ANF	WASHER-FLAT SPECIAL SIZES	23-09012	
DATE	05/29/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2	CHG. LTR. AK
CATIA ORIGINAL				

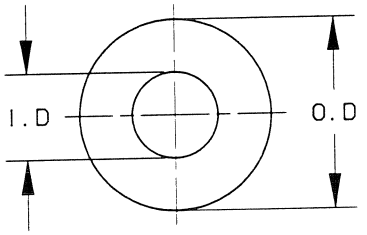
	I.D.	O.D.	THICKNESS	FINISH (2)	FREIGHTLINER PART NUMBER
	.688	2.375	.094	PLAIN	23-09012-001
AJ	.688	2.375	.187	ZINC	23-09012-032
	.750 +.03/-.007	1.500	.0625	ZINC	23-09012-031
	1.031 ±.015	1.500	11 GA(0.1196)	ZINC	23-09012-017
	1.078	1.817	.060	ZINC	(9) 23-09012-026
	1.765 ±.010	3.250 ±.010	.053 - .067	PLAIN	23-09012-024
	1.765 ±.010	3.250 ±.010	.178 - .200	PLAIN	23-09012-025

ENGINEERING NOTES:

1. UNLESS OTHERWISE SPECIFIED MTL TO BE SAE 1010-1020 STL OR EQUIVALENT.
(2) FINISH: SEE TABLE
(3) VENDOR PART NO.: SEASTROM 5702-249-048
(4) ALT. VENDOR PART NO.: AN/960-416
(5) ALT. VENDOR PART NO.: AN/970-8
(6) MATERIAL: 48-00005-016, ALT MTL.: 48-00701-116
(7) ZINC PLATE PER 49-00005-403
(8) BLACK PHOSPHATE PER GM6174
(9) VENDOR YELLOW PLATE PER 49-00005-203
(10) MATERIAL: 48-00731-825, ALT MTL.: 48-00843-250

CHG	JOB NO	DATE	BY	REVISION
AH	P02738-04	06/16/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -031.
AJ	P00469-02	02/02/98	DAJ	ADDED -032, SEE SHEET 1.
AK	P05049-31	04/23/99	CGD	±.020 WAS ±.375, ADDED -033, SEE SHEET 1.

DRAWN	RDF	TITLE	DRAWING NUMBER	
APPRV	RCK	WASHER-FLAT PLATED, HARDENED STEEL	23-09114	
DATE	06/10/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2	CHG. LTR. AE
CATIA ORIGINAL				



	NOMINAL SIZE	INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS		FREIGHTLINER PART NUMBER
		BASIC	TOLERANCE		BASIC	TOLERANCE		MAX.	MIN.	
			PLUS	MINUS		PLUS	MINUS			
AC	1/4 .250	.281	.031	.000	.625	.031	.031	.080	.051	23-09114-016
	5/16 .312	.344	.031	.000	.688	.031	.031	.080	.051	23-09114-006
	3/8 .375	.406	.031	.000	.812	.031	.031	.080	.051	23-09114-002
	3/8 .375	.406	.031	.000	.875	.010	.010	.140	.110	23-09114-011
	3/8 .375	.406	.031	.000	.875	.010	.010	.199	.177	23-09114-012
	7/16 .438	.469	.031	.000	.922	.031	.031	.080	.051	23-09114-001
AE	7/16 .438	.470	.031	.000	.920	.031	.031	.199	.177	23-09114-019
	7/16 .438	.500	.015	.005	1.250	.030	.007	.104	.064	(7) 23-09114-015
	1/2 .500	.531	.031	.000	1.062	.031	.031	.177	.097	23-09114-003
AD	1/2 .500	.531	.031	.000	1.375	.031	.031	.177	.122	23-09114-017
	9/16 .563	.594	.010	.010	1.000	.010	.010	.140	.110	23-09114-013
	5/8 .625	.710	.010	.010	1.220	.010	.010	.177	.122	(4) 23-09114-007
	5/8 .625	.688	.031	.000	1.312	.031	.031	.177	.122	23-09114-000
	5/8 .625	.688	.031	.000	.937	.010	.010	.117	.062	23-09114-010
AD	5/8 .625	.688	.031	.000	1.062	.010	.010	.177	.122	(7) 23-09114-018
	3/4 .750	.812	.031	.000	1.125	.030	.007	.177	.122	(4) 23-09114-014
	3/4 .750	.812	.031	.000	1.469	.031	.031	.177	.122	23-09114-004
	7/8 .875	.938	.031	.000	1.750	.031	.031	.177	.136	23-09114-005
	1 1.000	1.125	.031	.000	2.000	.031	.031	.177	.136	23-09114-008
	1 1/8 1.125	1.250	.031	.000	2.250	.031	.031	.177	.136	23-09114-009

CHG	JOB NO	DATE	BY	REVISION
AB	P02735-01	04/29/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -015.
AC	P06065-02	10/13/98	DAJ	ADDED SHEET 2 AND -016.
AD	PH0702-80	01/25/99	FSC	ADDED -017 AND -018.
AE	P08919-01	07/29/99	CGD	ADDED 23-09114-019.

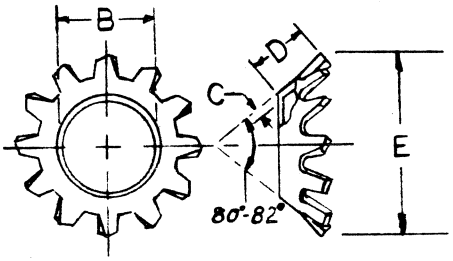
DRAWN	RDF	TITLE	DRAWING NUMBER	
APPRV	RCK	WASHER-FLAT PLATED, HARDENED STEEL	23-09114	
DATE	06/10/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2	CHG. LTR. AE
CATIA ORIGINAL				

ENGINEERING NOTES:

1. MATERIAL: STEEL PER ASTM A325 (F436)
2. HARDNESS: 38-45 HRC
3. FINISHED: ZINC PLAT PER 49-00005-403
4. NOT MILL STOCK
5. NOT INTENDED FOR USE AS SHIM STOCK
6. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT
7. FINISH: YELLOW ZINC PER 49-0005-203

CHG	JOB NO	DATE	BY	REVISION
AB	P02735-01	04/29/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -015.
AC	P06065-02	10/13/98	DAJ	ADDED SHEET 2 AND -016.
AD	PH0702-80	01/25/99	FSC	ADDED -017 AND -018.
AE	P08919-01	07/29/99	CGD	ADDED 23-09114-019.

PRINT ISSUED	TITLE	PART NO
	COUNTERSUNK EXTERNAL TOOTH LOCK WASHERS MEETS SAE J489 STANDARD TYPE A	23-9170
LAST CHG. LTR.		SHEET OF



FL PART NO	SIZE	B		C		D		E APPROX OD
		MAX	MIN	MAX	MIN	MAX	MIN	
-001	No. 4	0.123	0.113	0.019	0.015	0.065	0.050	0.213
-002	No. 6	0.150	0.140	0.021	0.017	0.092	0.082	0.289
-003	No. 8	0.177	0.167	0.021	0.017	0.105	0.088	0.322
-004	No. 10	0.205	0.195	0.025	0.020	0.099	0.083	0.354
-005	No. 12	0.231	0.220	0.025	0.020	0.128	0.118	0.421
-006	1/4	0.267	0.255	0.025	0.020	0.128	0.113	0.454
-007	No. 16	0.287	0.273	0.028	0.023	0.147	0.137	0.505
-008	5/16	0.333	0.318	0.028	0.023	0.192	0.165	0.599
-009	3/8	0.398	0.383	0.034	0.028	0.255	0.242	0.765
-010	7/16	0.463	0.448	0.045	0.037	0.270	0.260	0.867
-011	1/2	0.529	0.512	0.045	0.037	0.307	0.294	0.976

(1) MATERIAL: Carbon Steel Heat Treated to RC 40-50

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	9-25-68		(1)	VEHICLE

Portland FREIGHTLINER CORPORATION Oregon 97208

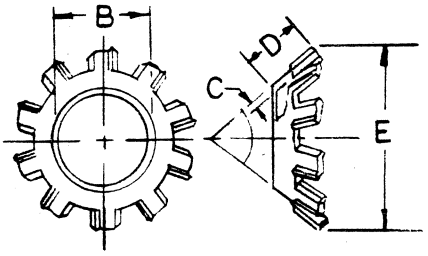
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WAS / DATE / BY / CHG

1-3-68

PRINT ISSUED		TITLE	PART NO
		COUNTERSUNK EXTERNAL TOOTH LOCK WASHERS MEETS SAE J489 STANDARD TYPE B	23-9171
LAST CHG. LTR.			SHEET OF

WAS				
DATE				
BY				
CHG				



FL PART NO	SIZE	B		C		D		E APPROX OD
		MAX	MIN	MAX	MIN	MAX	MIN	
-001	No. 4	0.123	0.113	0.019	0.015	0.065	0.050	0.213
-002	No. 6	0.150	0.140	0.021	0.017	0.092	0.082	0.289
-003	No. 8	0.177	0.167	0.021	0.017	0.105	0.088	0.322
-004	No. 10	0.205	0.195	0.025	0.020	0.099	0.083	0.354
-005	No. 12	0.231	0.220	0.025	0.020	0.128	0.118	0.421
-006	1/4	0.267	0.255	0.025	0.020	0.128	0.113	0.454
-007	No. 16	0.287	0.273	0.028	0.023	0.147	0.137	0.505
-008	5/16	0.333	0.318	0.028	0.023	0.192	0.165	0.599
-009	3/8	0.398	0.383	0.034	0.028	0.255	0.242	0.765
-010	7/16	0.463	0.448	0.045	0.037	0.270	0.260	0.867
-011	1/2	0.529	0.512	0.045	0.037	0.307	0.294	0.976

WAS				
DATE				
BY				
CHG				

(1) MATERIAL: Carbon Steel Heat Treated to RC 40-50

COMPLIED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	9-26-68		(1)	VEHICLE

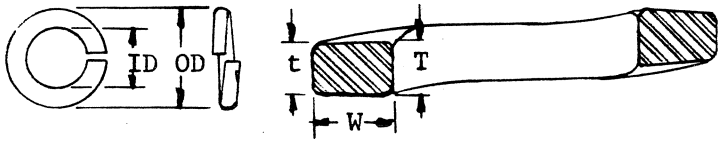
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Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

PRINT ISSUED	TITLE	PART NO.
5/18/71	LOCK WASHERS CARBON STEEL - LIGHT DUTY	23-9317
LAST CHG. LTR A		SHEET 1 OF 2

SKETCH



PART NUMBERS

SCREW OR BOLT SIZE		INSIDE DIAMETER		LIGHT DUTY			FREIGHTLINER PART NUMBER
				WASHER SECTION MIN.		OUTSIDE DIAMETER	
NOMINAL	ACTUAL	MIN.	MAX.	W WIDTH	$\frac{T+t}{2}$ THICKNESS	MAX (3)	
No. 2	0.086	0.088	0.094	0.030	0.015	0.162	23-9317-001
No. 3	0.099	0.101	0.107	0.035	0.020	0.185	-002
No. 4	0.112	0.115	0.121	0.035	0.020	0.199	-003
No. 5	0.125	0.128	0.134	0.040	0.025	0.222	-004
No. 6	0.138	0.141	0.148	0.040	0.025	0.236	-005
No. 8	0.164	0.168	0.175	0.047	0.031	0.277	-006
No. 10	0.190	0.194	0.202	0.055	0.040	0.320	-007
No. 12	0.216	0.221	0.229	0.062	0.047	0.361	-008
1/4	0.250	0.255	0.263	0.107	0.047	0.485	-009
5/16	0.312	0.318	0.328	0.117	0.056	0.570	-010
3/8	0.375	0.382	0.393	0.136	0.070	0.673	-011
7/16	0.438	0.446	0.459	0.154	0.085	0.775	-012
1/2	0.500	0.509	0.523	0.170	0.099	0.871	-013
9/16	0.562	0.572	0.587	0.186	0.113	0.967	-014
5/8	0.625	0.636	0.653	0.201	0.126	1.075	-015
11/16	0.688	0.700	0.718	0.216	0.138	1.170	-016
3/4	0.750	0.763	0.783	0.233	0.153	1.269	-017
13/16	0.812	0.826	0.847	0.249	0.168	1.365	-018
7/8	0.875	0.890	0.912	0.264	0.179	1.460	-019
15/16	0.938	0.954	0.978	0.277	0.191	1.552	-020

(Part No.'s Cont'd. P. 2)

ENGINEERING NOTES

(1) Material: Carbon Steel; Hardness: 45-53 Rc

A 2. **Finish: Electrogalvanize or cadmium plate. Use suitable bake treatment as necessary for prevention of hydrogen embrittlement.**

(3) The maximum outside diameter specified; allow for the Commercial tolerances on cold drawn wire and hot rolled rod.

CHG	BY	DATE	WAS
A	HJR	4-28-71	Note (b); no finish; Format

CHG	BY	DATE	WAS
A			

COMPILED	KJA	DATE DRAWN		MATERIAL	
APPROVED		2-17-70		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

PRINT ISSUED	TITLE	PART NO.
5/18/71	LOCK WASHERS CARBON STEEL - LIGHT DUTY	23-9317
LAST CHG. LTR A		SHEET 2 OF 2

PART NUMBERS (Cont'd)

SCREW OR BOLT SIZE		INSIDE DIAMETER		LIGHT DUTY			FREIGHTLINER PART NUMBER
				WASHER SECTION MIN.		OUTSIDE DIAMETER	
NOMINAL	ACTUAL	MIN.	MAX.	W WIDTH	$\frac{T+t}{2}$ THICKNESS	MAX (3)	
1	1.000	1.017	1.042	0.289	0.202	1.645	23-9317-021
1-1/16	1.062	1.080	1.107	0.301	0.213	1.734	-022
1-1/8	1.125	1.144	1.172	0.314	0.224	1.825	-023
1-3/16	1.188	1.208	1.237	0.324	0.234	1.910	-024
1-1/4	1.250	1.271	1.302	0.336	0.244	1.999	-025
1-5/16	1.312	1.334	1.366	0.346	0.254	2.083	-026
1-3/8	1.375	1.398	1.432	0.356	0.264	2.169	-027
1-7/16	1.438	1.462	1.497	0.366	0.273	2.254	-028
1-1/2	1.500	1.525	1.561	0.375	0.282	2.336	-029

COMPILED	KJA	DATE DRAWN		MATERIAL	
APPROVED	K.J.A.	2-17-70		(See Sht. 1)	

Portland, Oregon FREIGHTLINER CORPORATION

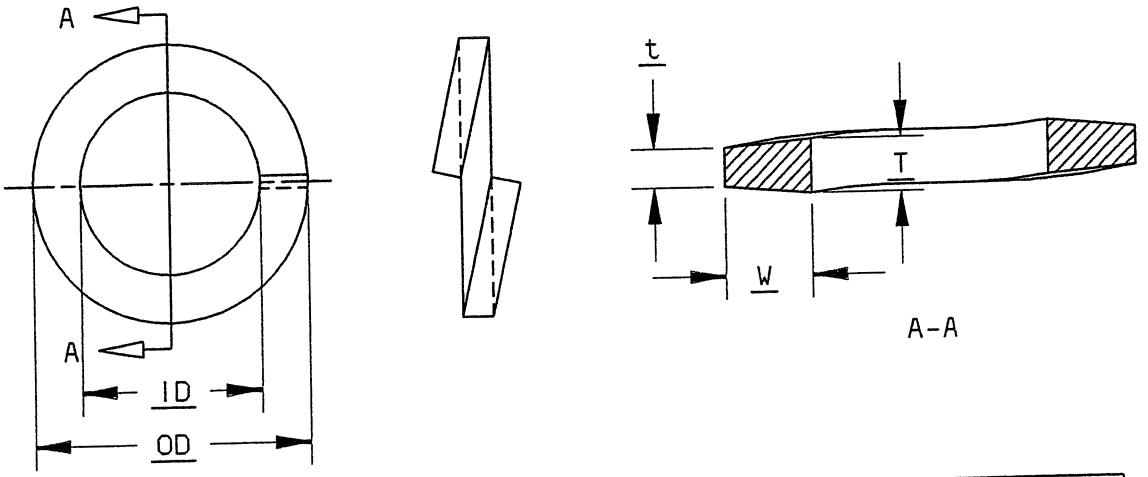
WAS
CHG	BY	DATE
A		

WAS
CHG	BY	DATE
A	HJR	4-28-71

(See Sheet 1)

)RIENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER
APPRV	DAJ	WASHER-LOCKING STEEL, REGULAR DUTY	23-09318
DATE	05/29/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. E
CATIA ORIGINAL			



SCREW/BOLT SIZE		INSIDE DIAMETER		WASHER SECTION		OUTSIDE DIAMETER	FREIGHTLINER PART NUMBER
NOM	ACTUAL	MIN	MAX	W WIDTH	THK (T+t)/2		
NO. 2	.086	.088	.094	.035	.020	.172	23-09318-001
NO. 5	.125	.127	.133	.047	.031	.236	23-09318-004
NO. 8	.164	.167	.174	.055	.040	.293	23-09318-006
NO. 10	.190	.193	.200	.062	.047	.334	23-09318-007
NO. 12	.216	.220	.227	.070	.056	.377	23-09318-008
1/4	.250	.252	.260	.109	.062	.487	23-09318-009
5/16	.312	.314	.322	.125	.078	.583	23-09318-010
3/8	.375	.377	.385	.141	.094	.680	23-09318-011
7/16	.438	.440	.450	.156	.109	.776	23-09318-012
1/2	.500	.502	.512	.171	.125	.869	23-09318-013
9/16	.562	.564	.574	.188	.141	.965	23-09318-014
5/8	.625	.628	.640	.203	.156	1.072	23-09318-015
11/16	.688	.691	.703	.219	.172	1.169	23-09318-016
3/4	.750	.753	.765	.234	.188	1.264	23-09318-017
13/16	.812	.816	.828	.250	.203	1.359	23-09318-018
7/8	.875	.878	.890	.266	.219	1.455	23-09318-019
15/16	.938	.941	.953	.281	.234	1.551	23-09318-020

E

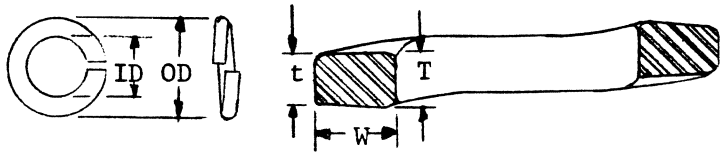
ENGINEERING NOTES:

1. MATERIAL: CARBON STEEL, AISI 1065/1066
2. HARDNESS: 38-46 HRC
3. FINISH: ZINC PLATE PER FREIGHTLINER SPEC 49-00005-403
4. MUST MEET ASME B18.21.1

CHG	JOB NO	DATE	BY	REVISION
E	P05573-01	05/28/98	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -008.

PRINT ISSUED	TITLE	PART NO.
5/18/71	LOCK WASHERS CARBON STEEL HEAVY DUTY	23-9319
LAST CHG. LTR. A		SHEET 1 OF 2

SKETCH



PART NUMBERS

SCREW OR BOLT SIZE		INSIDE DIAMETER		HEAVY DUTY WASHER SECTION MIN		HEAVY DUTY OUTSIDE DIAMETER	FREIGHTLINER PART NUMBER
NOMINAL	ACTUAL	MIN.	MAX.	W WIDTH	$\frac{T+t}{2}$ THICKNESS	MAX (3)	
No. 2	0.086	0.088	0.094	0.040	0.025	0.182	23-9319-001
No. 3	0.099	0.101	0.107	0.047	0.031	0.209	-002
No. 4	0.112	0.115	0.121	0.047	0.031	0.223	-003
No. 5	0.125	0.128	0.134	0.055	0.040	0.252	-004
No. 6	0.138	0.141	0.148	0.055	0.040	0.266	-005
No. 8	0.164	0.168	0.175	0.062	0.047	0.307	-006
No. 10	0.190	0.194	0.202	0.070	0.056	0.350	-007
No. 12	0.216	0.221	0.229	0.077	0.063	0.391	-008
1/4	0.250	0.255	0.263	0.110	0.077	0.491	-009
5/16	0.312	0.318	0.328	0.130	0.097	0.596	-010
3/8	0.375	0.382	0.393	0.145	0.115	0.691	-011
7/16	0.438	0.446	0.459	0.160	0.133	0.787	-012
1/2	0.500	0.509	0.523	0.176	0.151	0.883	-013
9/16	0.562	0.572	0.587	0.193	0.170	0.981	-014
5/8	0.625	0.636	0.653	0.210	0.189	1.093	-015
11/16	0.688	0.700	0.718	0.227	0.207	1.192	-016
3/4	0.750	0.763	0.783	0.244	0.226	1.291	-017
13/16	0.812	0.826	0.847	0.262	0.246	1.391	-018
7/8	0.875	0.890	0.912	0.281	0.266	1.494	-019
15/16	0.938	0.954	0.978	0.298	0.284	1.594	-020

ENGINEERING NOTES

(Part No.'s cont'd. P. 2)

(1) Material: Carbon Steel; Hardness: 45-53 Rc

2. Finish: Electrogalvanize or cadmium plate. Use suitable bake treatment as necessary for prevention of hydrogen embrittlement.

(3) The maximum outside diameter specified; allow for the Commercial tolerances on cold drawn wire and hot rolled rod.

4 Meets applicable provisions of SAE J489a.

CHG	BY	DATE	WAS
A	HJR	4-28-71	Note (b); no finish; Format

CHG	BY	DATE	WAS
A			

COMPILED	KJA	DATE DRAWN		MATERIAL	
APPROVED	KJA	2-27-70		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

23-9319

PRINT ISSUED	TITLE	PART NO.
5/18/71	LOCK WASHERS CARBON STEEL HEAVY DUTY	23-9319
LAST CHG. LTR. A		SHEET 2 OF 2

CHG	BY	DATE	WAS

A

PART NUMBERS (Cont'd)

SCREW OR BOLT SIZE		INSIDE DIAMETER		HEAVY DUTY WASHER SECTION MIN.		HEAVY DUTY OUTSIDE DIAMETER	FREIGHTLINER PART NUMBER
NOMINAL	ACTUAL	MIN.	MAX.	W WIDTH	$\frac{T+t}{2}$ THICKNESS	MAX (3)	
1	1.000	1.017	1.042	0.319	0.306	1.705	23-9319-021
1-1/16	1.062	1.080	1.107	0.338	0.326	1.808	-022
1-1/8	1.125	1.144	1.172	0.356	0.345	1.909	-023
1-3/16	1.188	1.208	1.237	0.373	0.364	2.008	-024
1-1/4	1.250	1.271	1.302	0.393	0.384	2.113	-025
1-5/16	1.312	1.334	1.366	0.410	0.403	2.211	-026
1-3/8	1.375	1.398	1.432	0.427	0.422	2.311	-027
1-7/16	1.438	1.462	1.497	0.442	0.440	2.406	-028
1-1/2	1.500	1.525	1.561	0.458	0.458	2.502	-029

CHG	BY	DATE	WAS
A	HJR	4-28-71	(See Sheet 1)

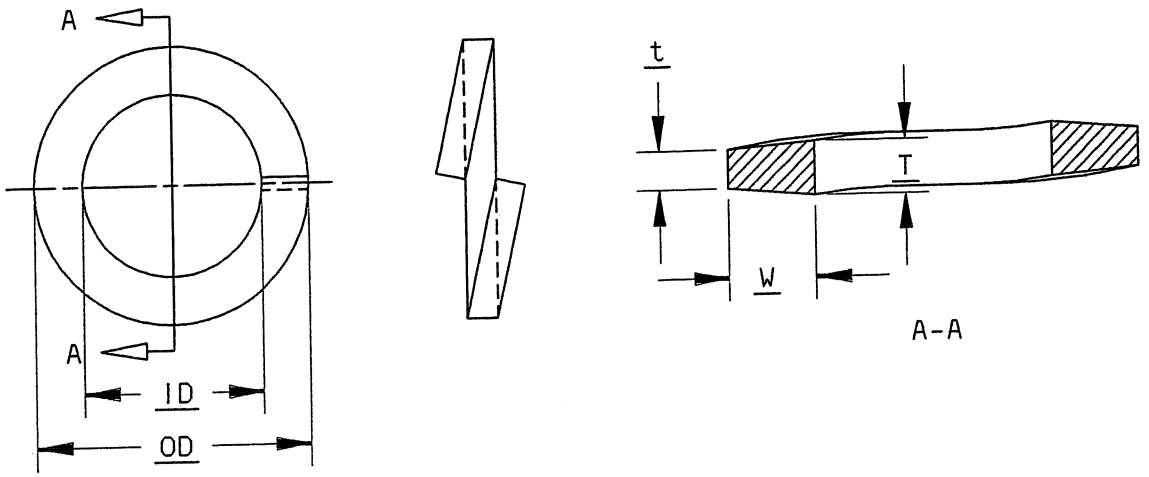
COMPILED	KJA	DATE DRAWN		MATERIAL	
APPROVED	K.J.A.	2-27-70		(See Sht. 1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

MF

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE WASHER-LOCKING STEEL, HEAVY DUTY	DRAWING NUMBER 23-09320
APPRV	DAJ		
DATE	05/29/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. B
CATIA ORIGINAL			



SCREW/BOLT SIZE		INSIDE DIAMETER		WASHER SECTION		OUTSIDE DIAMETER	FREIGHTLINER PART NUMBER
NOM	ACTUAL	MIN	MAX	W WIDTH	THK (T+t)/2		
1/4	.250	.255	.263	.132	.084	.535	23-09320-009
5/16	.312	.318	.328	.143	.108	.622	23-09320-010
3/8	.375	.382	.393	.170	.123	.741	23-09320-011

B

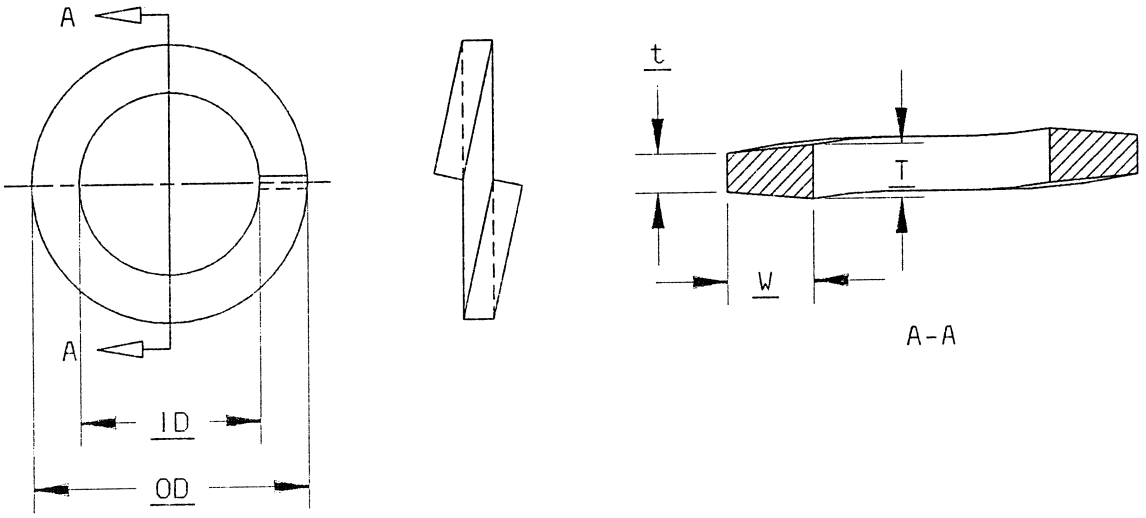
ENGINEERING NOTES:

1. MATERIAL: CARBON STEEL, AISI 1065/1066
2. HARDNESS: 38-46 HRC
3. FINISH: ZINC PLATE PER FREIGHTLINER SPEC 49-00005-403
4. MUST MEET ASME B18.21.1

CHG	JOB NO	DATE	BY	REVISION
B	P05573-01	05/29/98	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -009 & -010.

DRIENNE CHILBERG

DRAWN	K R	TITLE	DRAWING NUMBER
APPRV	ANF	WASHER-LOCKING HI-COLLAR	23-09321
DATE	10/01/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. B
CATIA ORIGINAL			



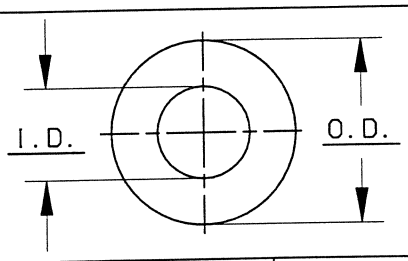
SCREW/BOLT SIZE		INSIDE DIAMETER		WASHER SECTION		OUTSIDE DIAMETER	FREIGHTLINER PART NUMBER
NOM	ACTUAL	MIN	MAX	W WIDTH	THK (T+t)/2		
1/4	.250	.252	.260	.047	.078	.363	23-09321-007
3/8	.375	.382	.393	.076	.125	.553	23-09321-009
5/8	.625	.628	.640	.125	.203	.916	23-09321-013

ENGINEERING NOTES:

1. MATERIAL: CARBON STEEL, AISI 1065/1066
2. HARDNESS: 38-46 HRC
3. FINISH: ZINC PLATE PER FREIGHTLINER SPEC 49-00005-403
4. MUST MEET ASME B18.21.1

CHG	JOB NO	DATE	BY	REVISION
B	P02738-04	06/16/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -009.

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-FLAT EXTRA WIDE, ZN PLATED	23-09426	
DATE	11/19/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. E
CATIA ORIGINAL				



BOLT SIZE	OUTSIDE DIAMETER	THICKNESS	MANUFACTURER'S NUMBER		FREIGHTLINER PART NUMBER
			AUV	SSO	
NO. 8	11/16	.050			23-09426-001
3/16	1/2	.050	2007		23-09426-101
	3/4	.050	1183		23-09426-102
1/4	1	.072			23-09426-203
	5/8	.050	2008		23-09426-201
	1 1/4	.050	2333		23-09426-202
E	1 1/4	.050			(4) 23-09426-204
5/16	3/4	.050	1376		23-09426-301
	1 1/4	.050	768		23-09426-302
	1 1/2	.050	1700		23-09426-303
3/8	3/4	.050	3551		23-09426-401
	1 1/4	.050	3553		23-09426-402
	1 1/2	.050	2227		23-09426-403
	1 1/2	.120		5702-385-120-Z3	23-09426-405
	1 3/4	.050	1294		23-09426-404
1/2	3/4	.050	3552		23-09426-501
	1 1/4	.050	3554		23-09426-502
	1 1/2	.050	3556		23-09426-503
5/8	1 1/4	.050	3555		23-09426-601
	1 1/2	.050	3557		23-09426-602

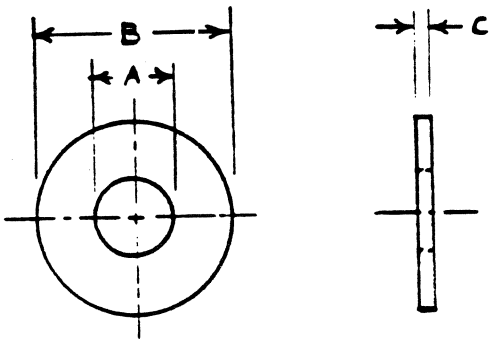
SPECIFICATIONS:

1. MATERIAL: STEEL SAE 1010-1020
2. FINISH: ZINC PLATE PER FREIGHTLINER SPEC. 49-00005-403
3. EQUIVALENT PART ACCEPTABLE WITH ENGINEERING APPROVAL.
4. FINISH: ZINC PLATE PER FL 49-00005-403 WITH BLACK DICHROMATE

CHG	JOB NO	DATE	BY	REVISION
E	PA2042-98	11/19/98	DAJ	REVISED & REDRAWN IN CATIA, ADDED -204 AND NOTE 4.

PRINT ISSUED	TITLE	NO
1/15/71	WASHER, PLAIN, CD PLATED, TYPE A, WIDE SERIES	23-9427
LAST CHG LTR		SHEET 1 OF 1

SKETCH



PART NUMBERS

Preferred For Nominal Screw or Bolt Size	Inside Dia. A			Outside Dia. B			Thickness C			F/L Part Number Dash No.
	Basic	Tolerance Plus	Tolerance Minus	Basic	Tolerance Plus	Tolerance Minus	Basic	Max.	Min.	
1/4 (0.250) W	0.312	0.015	0.005	0.734*	0.015	0.007	0.065	0.080	0.051	-025
5/16 (0.312) W	0.375	0.015	0.005	0.875	0.030	0.007	0.083	0.104	0.064	-031
3/8 (0.375) W	0.438	0.015	0.005	1.000	0.030	0.007	0.083	0.104	0.064	-038
7/16 (0.438) W	0.500	0.015	0.005	1.250	0.030	0.007	0.083	0.104	0.064	-044
1/2 (0.500) W	0.562	0.015	0.005	1.375	0.030	0.007	0.109	0.132	0.086	-050
9/16 (0.562) W	0.625	0.015	0.005	1.469*	0.030	0.007	0.109	0.132	0.086	-056
5/8 (0.625) W	0.688	0.030	0.007	1.750	0.030	0.007	0.134	0.160	0.108	-062
3/4 (0.750) W	0.812	0.030	0.007	2.000	0.030	0.007	0.148	0.177	0.122	-075
7/8 (0.875) W	0.938	0.030	0.007	2.250	0.030	0.007	0.165	0.192	0.136	-088
1 (1.000) W	1.062	0.030	0.007	2.500	0.030	0.007	0.165	0.192	0.136	-100
1-1/8 (1.125) W	1.250	0.030	0.007	2.750	0.030	0.007	0.165	0.192	0.136	-112
1-1/4 (1.250) W	1.375	0.030	0.007	3.000	0.030	0.007	0.165	0.192	0.136	-125
1-3/8 (1.375) W	1.500	0.045	0.010	3.250	0.045	0.010	0.180	0.213	0.153	-138
1-1/2 (1.500) W	1.625	0.045	0.010	3.500	0.045	0.010	0.180	0.213	0.153	-150

ENGINEERING NOTES

1. *The 0.734 in. and 1.469 in. outside diameters avoid washers which could be used in coin operated devices. Where common sizes existed in the two series, the SAE size is designated "N" (narrow) and the Standard Plate "W" (wide) These sizes as well as all other sizes of Type A Plain Washers are to be ordered by ID, OD, and thickness dimensions.
2. Ref. (See also 23-600 Narrow (SAE) Series & 23-9426 Extra Wide Series)
3. Material: Cd. Plated Steel

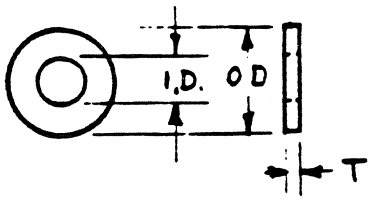
COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED	[illegible]	7-15-70		(3)	

Portland FREIGHTLINER CORPORATION Oregon 97208

General Use Part

PRINT ISSUED		TITLE	PART NO.
		WASHER, FLAT FIBER	23-9428
LAST CHG LTR	A		SHEET 1 OF 1

SKETCH



PART NUMBERS

I.D. NOM.	O.D.	T	MANUFACTURER'S NUMBER MRW	BNY		FREIGHTLINER PART NUMBER
½	½	1/16	2575			23-9428-000
½	3/4	1/16		2570		-002

ENGINEERING NOTES

1. Material: Fiber

COMPILED	H.J.R.	DATE DRAWN		MATERIAL	
APPROVED	Rollins	3-19-71		1	

Portland FREIGHTLINER CORPORATION Oregon 97208

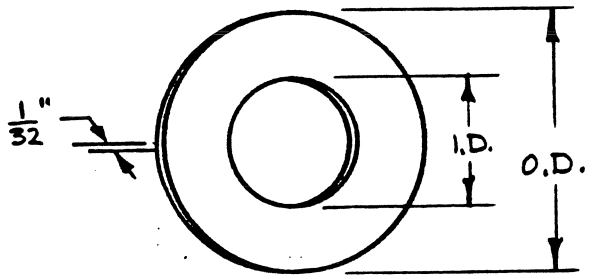
A Add -002: J#94120; 3-30-72 HJR

23-9860

General Use Part

PRINT ISSUED	TITLE	PART NO.
11/5/71	WASHER, SPACING STEEL (1/32")	23-9860
LAST CHG. LTR. A		SHEET 1 OF 1

SKETCH



PART NUMBERS

NOMINAL SIZE (3) I.D.	NOMINAL SIZE (3) O.D.		MANUFACTURER'S NUMBER DRM		FREIGHTLINER PART NUMBER
1/4	5/8		W1		23-9860-001
3/8	3/4		W2		-002
7/16	13/16		W3		-003
1/2	7/8		W4		-004
5/8	1		W5		-005
11/16	1- 1/16		W6		-006
3/4	1- 1/8		W7		-007
13/16	1- 3/16		W8		-008
7/8	1- 3/8		W9		-009
1	1- 1/2		W10		-010
1- 1/8	1- 5/8		W11		-011
1- 1/4	1- 7/8		W12		-012
1- 3/8	2- 1/8		W13		-013
1- 1/2	2- 3/8		W14		-014
					-015
1- 3/4	2- 3/4		W16		-016
2	3		W17		-017
					-018
2- 1/4	3- 1/2		W19		-019
9/16	1		W20		-020
5/16	11/16		W21		-021

ENGINEERING NOTES

(1) Material: Steel

2. Finish: Flat, smooth, and with only residual manufacturing lubricant.

(3) I.D. and O.D. tolerance NOM +.030 +.010

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED		10-21-71		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	Tolerance

CHG	BY	DATE	ID & OD Adc
A	JA	9/21/84	

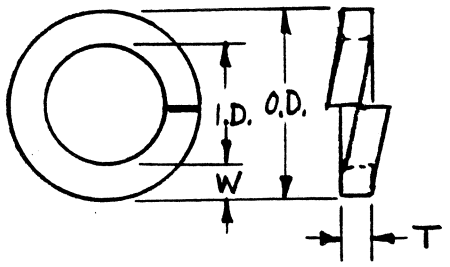
E-183

23-9983

General Use Part

PRINT ISSUED		TITLE	PART NO.
		LOCKWASHER, REGULAR HELICAL SPRING STAINLESS STEEL	23-9983
LAST CHG. LTR.	B		SHEET 1 OF 1

SKETCH



PART NUMBERS

NOMINAL SIZE	I.D.	O.D. (MAX.)	W WIDTH	T THICKNESS		FREIGHTLINER PART NUMBER
1/4	.255 / .263	.489	.109	.062		23-9983-025
5/16	.318 / .328	.586	.125	.078		-031
3/8	.382 / .393	.683	.141	.094		-038
1/2	.509 / .523	.873	.171	.125		-050

ENGINEERING NOTES

(1) Material: Stainless Steel, Type 302 or 304.

2. Shall meet pertinent provisions of ANSI B27.1 - 1965.

CHG	BY	DATE	WAS	JOB NO
—	—	—	Job #84740	84740
A	HJR	12-22-75	Add-031,-038,-050	A0795
B	DDM	8-15-84	Type 316	0280C

CHG	BY	DATE	WAS	JOB NO

ns

COMPILED	HJR	DATE DRAWN		MATERIAL	MASTER NUMBER	
APPROVED	Rollins	1-26-72		(1)	02020	00001

Portland FREIGHTLINER CORPORATION Oregon 97208

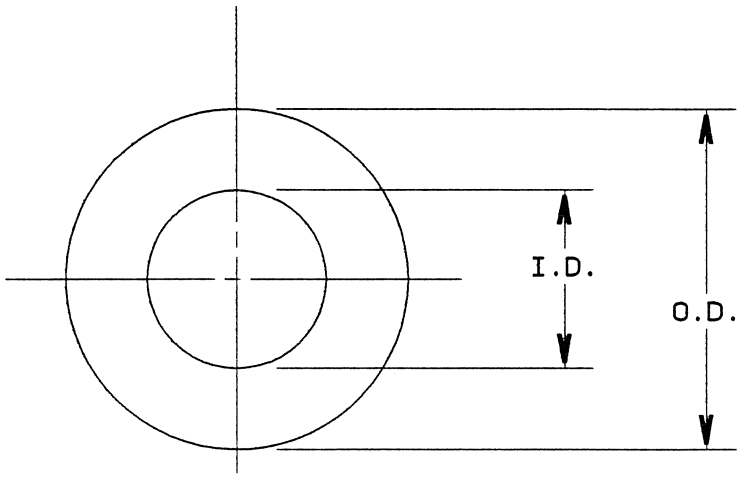
JA

M/F

GENERAL USE PART

ORIGINAL JOB NO.	TITLE	PART NO.
0159E	WASHER, PLAIN STEEL	23-11218
LAST CHG LTR: C		SHEET 1 OF 1

SKETCH:



PART NUMBERS:

NOMINAL SIZE		INSIDE DIAMETER BASIC	INSIDE DIAMETER TOLERANCE PLUS	INSIDE DIAMETER TOLERANCE MINUS	OUTSIDE DIAMETER BASIC	OUTSIDE DIAMETER TOLERANCE PLUS	OUTSIDE DIAMETER TOLERANCE MINUS	THICKNESS* MAX.	THICKNESS* MIN.	FREIGHTLINER PART NUMBER
NO. 2	.086	.094	.000	.005	.250	.000	.005	.025	.016	23-11218-002
NO. 4	.112	.125	.008	.005	.312	.008	.005	.040	.025	23-11218-004
NO. 6	.138	.156	.008	.005	.375	.015	.005	.065	.036	23-11218-006
NO. 8	.164	.188	.008	.005	.438	.015	.005	.065	.036	23-11218-008
NO. 10	.190	.219	.008	.005	.500	.015	.005	.065	.036	23-11218-010
NO. 12	.216	.250	.015	.005	.562	.015	.005	.080	.051	23-11218-012
1/4	.250	.281	.015	.005	.625	.015	.005	.080	.051	23-11218-025
5/16	.313	.344	.015	.005	.688	.015	.007	.080	.051	23-11218-031
3/8	.375	.406	.015	.005	.812	.015	.007	.080	.051	23-11218-038
7/16	.438	.469	.015	.005	.922	.015	.007	.080	.051	23-11218-044
1/2	.500	.531	.015	.005	1.062	.030	.007	.121	.074	23-11218-050
9/16	.563	.594	.015	.005	1.156	.030	.007	.121	.074	23-11218-056
5/8	.625	.656	.030	.007	1.312	.030	.007	.121	.074	23-11218-062
3/4	.750	.812	.030	.007	1.469	.030	.007	.160	.108	23-11218-075
3/4 WIDE	.750	.812	.030	.007	2.000	.030	.007	.177	.122	23-11218-078
7/8	.875	.938	.030	.007	1.750	.030	.007	.160	.108	23-11218-088
7/8 WIDE	.875	.938	.030	.007	2.250	.030	.007	.192	.136	23-11218-090
1	1.000	1.062	.030	.007	2.000	.030	.007	.160	.108	23-11218-100
1-1/8 WIDE (4)	1.125	1.250	.030	.007	2.250	.030	.007	.192	.136	23-11218-101

* NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. THE LIMITS REPRESENT A TOLERANCE OF ± ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

SPECIFICATIONS:

1. MATERIAL: STEEL SAE 1010-1020.
2. SPECS: MUST MEET ASA B 27.2 STANDARDS (REF. SAE J488).
3. FINISH: PLAIN

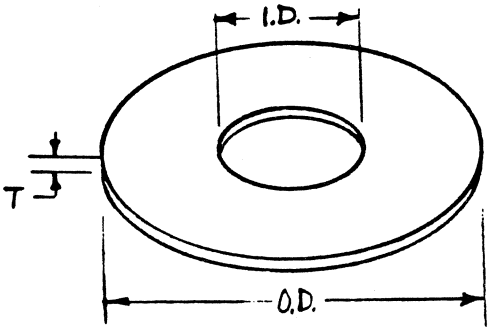
(4) NOT MILL STANDARD.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
REVISED-REDRAWN TO CADAM	11-04-86	JWL	0159E	B
23-00600-# TO 23-11218-#	02-01-88	BT	P9452E	C

COMPILED	JWL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	TJW	11-04-86		EA	02010	00001

PRINT ISSUED	TITLE	PART NO.
	WASHER, PLAIN ADDITIONAL TYPE "A" SIZES	23-10239
LAST CHG LTR: A		SHEET 1 OF 1

SKETCH



PART NUMBERS

I.D.			O.D.			T			FREIGHTLINER PART NUMBER
BASIC	TOLERANCE +	TOLERANCE -	BASIC	TOLERANCE +	TOLERANCE -	BASIC	MAX.	MIN.	
									23-10239
.812	.030	.007	2.875	.030	.007	.165	.192	.136	23-10239-082

* Order by I.D., O.D. and thickness dimensions.

ENGINEERING NOTES

1. Material: Steel, SAE 1025 or equal.
2. Finish: Cadmium or Zinc plate.
3. Preferred sizes of type A washers are shown on 23-09427.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J#C0519 C0202 X2 STAMP
A	VB	9-15-75	

COMPILED	H.J.R.	DATE DRAWN		MATERIAL	
APPROVED	Rollins	7-31-73		1	

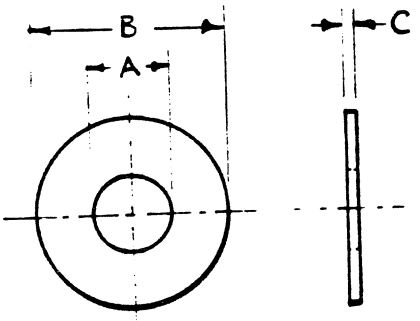
Portland FREIGHTLINER CORPORATION Oregon 97208

REPLACED By 18-15174-3 X2 A

General Use Part

PRINT ISSUED	TITLE	PART NO.
	WASHER, PLAIN, BRASS	23-10278
LAST CHG LTR		SHEET 1 OF 1

SKETCH



PART NUMBERS

NOM SIZE	A BASIC I.D.	B BASIC O.D.	C BASIC THICK.	FREIGHTLINER PART NUMBER
#6 0.138	0.156	.375	.049	23-10278-006
#8 .164	.188	.438		-008
#10 .190	.219	.500		-010
#12 .216	.250	.562	.065	-012
1/4 .250	.281	.625		-025
5/16 .312	.344	.688		-031
3/8 .375	.406	.812		-038

ENGINEERING NOTES

1. Material: Brass
2. Finish: Plain

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J#A0553

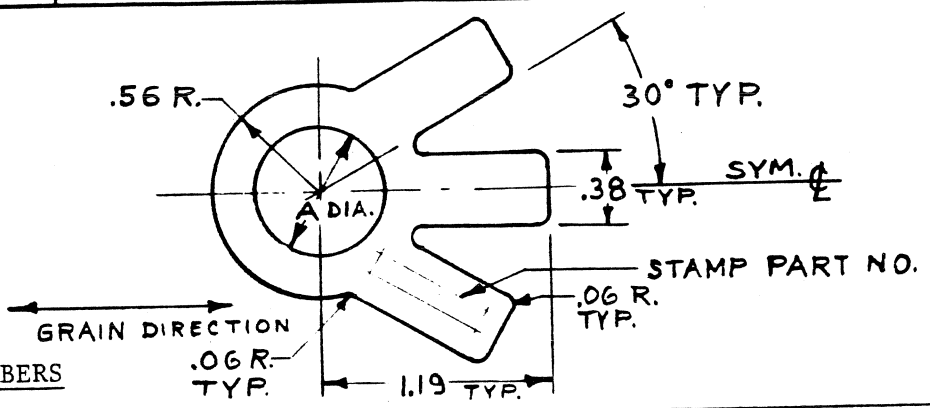
COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED	Jim S	12-21-73		1	

Portland FREIGHTLINER CORPORATION Oregon 97208

General Use Part

PRINT ISSUED		TITLE	PART NO
		LOCKWASHER, TAB	23-10361
LAST CHG LTR	A		SHEET 1 OF 1

SKETCH



PART NUMBERS

A DIA. (IN.)	T (REF.) THICKNESS (IN.)	FREIGHTLINER PART NUMBER
0.656	.0747 (14 ga.)	23-10361-062
0.781	.0747 (14 ga.)	-075

ENGINEERING NOTES

(A)

(1) Material: Mild steel per 48-00701-414.

2. Finish: Plain.

CHG	BY	DATE	WAS
			J#A0670: 01-10162
A	CDV 209	6-5-86	48-5-414 TO 48-701-414

CHG	BY	DATE	WAS

COMPILED	H.J.R.	DATE DRAWN		MATERIAL	
APPROVED		8-20-74		(1)	

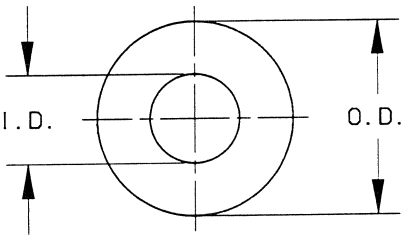
Portland FREIGHTLINER CORPORATION Oregon 97208

02020/000D1

A

M/F

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-FLAT STAINLESS STEEL	23-10900	
DATE	05/20/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. S
CATIA ORIGINAL				



	NOMINAL SIZE	INSIDE DIAMETER		OUTSIDE DIAMETER		THICKNESS*		FREIGHTLINER PART NUMBER
		MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
	NO. 8 .164	.208	.198	.478	.458	.065	.036	23-10900-018
	NO. 10 .190	.227	.214	.515	.495	.065	.036	23-10900-010
	NO. 10 .190	.227	.214	.635	.615	.065	.036	23-10900-011
	NO. 10 .190	.227	.214	.827	.805	.065	.036	23-10900-013
	NO. 12 .216	.255	.245	.572	.552	.065	.036	23-10900-012
	1/4 .250	.291	.271	.635	.615	.080	.051	23-10900-025
P	1/4 .250	.291	.271	.635	.615	.080	.051	(3) 23-10900-125
	5/16 .313	.353	.333	.697	.677	.080	.051	23-10900-031
	5/16 .313	.353	.339	.905	.868	.080	.051	23-10900-032
	3/8 .375	.421	.401	1.280	1.243	.112	.090	23-10900-039
	3/8 .375	.421	.401	1.015	.993	.071	.056	23-10900-037
	3/8 .375	.416	.396	.822	.802	.080	.051	23-10900-038
	7/16 .438	.478	.458	.931	.911	.080	.051	23-10900-044
	1/2 .500	.541	.521	1.072	1.052	.121	.074	23-10900-050
S	9/16 .563	.609	.589	1.186	1.149	.121	.074	23-10900-056
	5/8 .625	.666	.646	1.322	1.302	.121	.074	23-10900-062
	3/4 .750	.842	.805	1.499	1.462	.160	.108	23-10900-075

* NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. THE LIMITS REPRESENT A TOLERANCE OF +/- ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

ENGINEERING NOTES:

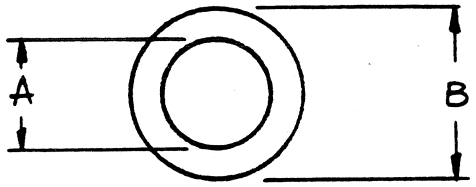
1. MATERIAL: STAINLESS STEEL TYPE 302 OR 304
2. INDUSTRY STD: SAE J488 (REF ASA B27.2) OR ANSI B18.22.1 WHERE APPLICABLE

(3) PASSIVATE AND BLACK OXIDE PER FL 49-00037-000

CHG	JOB NO	DATE	BY	REVISION
N	P01634-19	05/20/98	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -125.
P	PA2042-85	10/19/98	DAJ	MIN DIMENSION .615 WAS .677.
R	P06179-09	01-27-99	JLK	ADDED -075.
S	P09150-02	08-20-99	CGD	ADDED 23-10900-056.

ORIGINAL JOB NO.	TITLE	PART NO.
C1190B	WASHER, NEOPRENE	23-11058
LAST CHG LTR		SHEET 1 OF 1

SKETCH:



PART NUMBERS:

A	B	Thickness t	Manufacturer's Numb. SSO		Freightliner Specification Number
.328	.567	.031	5613-42-031		23-11058-000

ENGINEERING NOTES:

1. Material: Neoprene SAE J200 2BG 615 A14
2. Durometer: 60 ± 10
3. Color: Black

COMPILED	DANG	DATE DRAWN		Material	Unit of Measure
APPROVED	NK	6/22/78		1	ea.

M/F

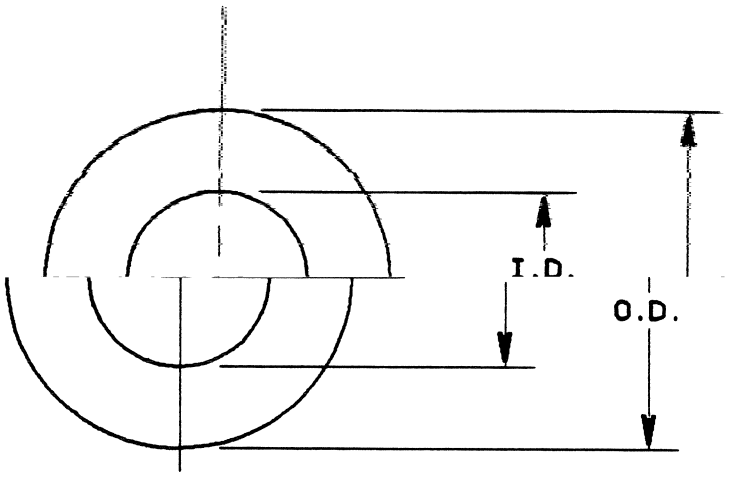
GENERAL USE PART

ORIGINAL JOB NO.	TITLE	PART NO.
0159E	WASHER, PLAIN STEEL	23-11218

LAST CHG LTR: B

SHEET 1 OF 1

SKETCH:



PART NUMBERS:

NOMINAL SIZE		INSIDE DIAMETER BASIC	INSIDE DIAMETER TOLERANCE PLUS	INSIDE DIAMETER TOLERANCE MINUS	OUTSIDE DIAMETER BASIC	OUTSIDE DIAMETER TOLERANCE PLUS	OUTSIDE DIAMETER TOLERANCE MINUS	THICKNESS* MAX.	THICKNESS* MIN.	FREIGHTLINER PART NUMBER
NO. 2	.086	.094	.000	.005	.250	.000	.005	.025	.016	23-00600-002
NO. 4	.112	.125	.008	.005	.312	.008	.005	.040	.025	23-00600-004
NO. 6	.138	.156	.008	.005	.375	.015	.005	.065	.036	23-00600-006
NO. 8	.164	.188	.008	.005	.438	.015	.005	.065	.036	23-00600-008
NO. 10	.190	.219	.008	.005	.500	.015	.005	.065	.036	23-00600-010
NO. 12	.216	.250	.015	.005	.562	.015	.005	.080	.051	23-00600-012
1/4	.250	.281	.015	.005	.625	.015	.005	.080	.051	23-00600-025
5/16	.313	.344	.015	.005	.688	.015	.007	.080	.051	23-00600-031
3/8	.375	.406	.015	.005	.812	.015	.007	.080	.051	23-00600-038
7/16	.438	.469	.015	.005	.922	.015	.007	.080	.051	23-00600-044
1/2	.500	.531	.015	.005	1.062	.030	.007	.121	.074	23-00600-050
9/16	.563	.594	.015	.005	1.156	.030	.007	.121	.074	23-00600-056
5/8	.625	.656	.030	.007	1.312	.030	.007	.121	.074	23-00600-062
3/4	.750	.812	.030	.007	1.469	.030	.007	.160	.108	23-00600-075
3/4 WIDE	.750	.812	.030	.007	2.000	.030	.007	.177	.122	23-00600-078
7/8	.875	.938	.030	.007	1.750	.030	.007	.160	.108	23-00600-088
7/8 WIDE	.875	.938	.030	.007	2.250	.030	.007	.192	.136	23-00600-090
1	1.000	1.062	.030	.007	2.000	.030	.007	.160	.108	23-00600-100
1-1/8 WIDE (4)	1.125	1.250	.030	.007	2.250	.030	.007	.192	.136	23-00600-101

* NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. THE LIMITS REPRESENT A TOLERANCE OF ± ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

SPECIFICATIONS:

1. MATERIAL: STEEL SAE 1010-1020.
2. SPECS: MUST MEET ASA B 27.2 STANDARDS (REF. SAE J488).
3. FINISH: PLAIN

(4) NOT MILL STANDARD.

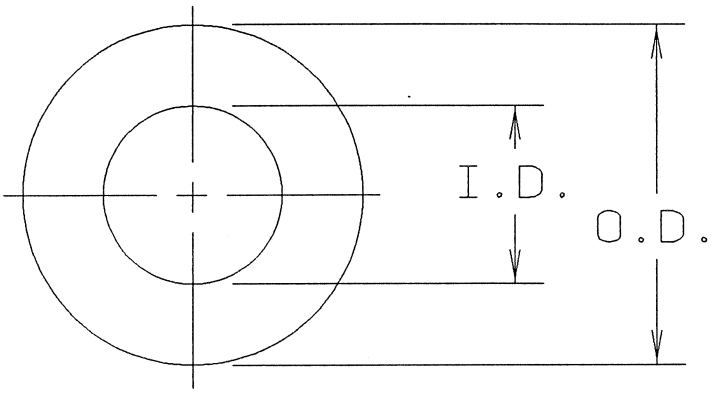
COMPILED	JWL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	TJW	11-04-86		EA	02010	000D1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B	0159E	JWL	11-04-86	REVISED-REDRAWN TO CADAM

LTR	JOB NO.	BY	DATE	CHG	NOE INFORMATION

11218 23

DRAWN	JWL	TITLE WASHER-PLAIN STEEL	ITEM NUMBER 23-11218
APPRV	TJW		
DATE	11/04/86	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



NOMINAL SIZE		INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS*		FREIGHTLINER PART NUMBER
		BASIC	TOLERANCE		BASIC	TOLERANCE				
			PLUS	MINUS		PLUS	MINUS	MAX.	MIN.	
NO. 2	.086	.094	.000	.005	.250	.000	.005	.025	.016	23-11218-002
NO. 4	.112	.125	.008	.005	.312	.008	.005	.040	.025	23-11218-004
NO. 6	.138	.156	.008	.005	.375	.015	.005	.065	.036	23-11218-006
NO. 8	.164	.188	.008	.005	.438	.015	.005	.065	.036	23-11218-008
NO. 10	.190	.219	.008	.005	.500	.015	.005	.065	.036	23-11218-010
NO. 12	.216	.250	.015	.005	.562	.015	.005	.080	.051	23-11218-012
1/4	.250	.281	.015	.005	.625	.015	.005	.080	.051	23-11218-025
5/16	.313	.344	.015	.005	.688	.015	.007	.080	.051	23-11218-031
3/8	.375	.406	.015	.005	.812	.015	.007	.080	.051	23-11218-038
D 3/8 WIDE	.375	.438	.015	.005	1.000	.030	.007	.104	.064	23-11218-040
7/16	.438	.469	.015	.005	.922	.015	.007	.080	.051	23-11218-044
1/2	.500	.531	.015	.005	1.062	.030	.007	.121	.074	23-11218-050
9/16	.563	.594	.015	.005	1.156	.030	.007	.121	.074	23-11218-056
5/8	.625	.656	.030	.007	1.312	.030	.007	.121	.074	23-11218-062
3/4	.750	.812	.030	.007	1.469	.030	.007	.160	.108	23-11218-075
3/4 WIDE	.750	.812	.030	.007	2.000	.030	.007	.177	.122	23-11218-078
7/8	.875	.938	.030	.007	1.750	.030	.007	.160	.108	23-11218-088
7/8 WIDE	.875	.938	.030	.007	2.250	.030	.007	.192	.136	23-11218-090
1	1.000	1.062	.030	.007	2.000	.030	.007	.160	.108	23-11218-100
1-1/8 WIDE (4)	1.125	1.250	.030	.007	2.250	.030	.007	.192	.136	23-11218-101

* NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. THE LIMITS REPRESENT A TOLERANCE OF ± ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

SPECIFICATIONS:

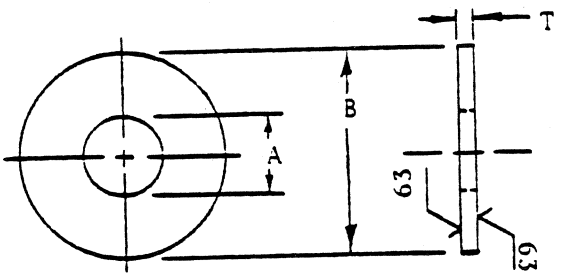
1. MATERIAL: STEEL SAE 1010-1020.
2. SPECS: MUST MEET ASA B 27.2 STANDARDS (REF. SAE J488).
3. FINISH: PLAIN

(4) NOT MILL STANDARD.

CHG	JOB/RLSE NO	DATE	BY	REVISION
D	P2A330-55	01/11/96	DAJ	REVISED AND REDRAWN, ADDED -040

ORIGINAL JOB NO.	TITLE	PART NO.
C1493	WASHER, PLASTIC THRUST	23-11269
LAST CHG LTR A		SHEET 1 OF 1

SKETCH:



PART NUMBERS:

A	B	T	MANUFACTURER'S NUMBER SSO		FREIGHTLINER * SPECIFICATION NO.
.500 ± .005	1.500 ± .010	.062 ± .010	A479-12-062		23-11269-062
.500 ± .005	1.500 ± .010	.125 ± .010	A479-12-125		23-11269-125 *

* Complete part number by adding a three-digit dash number indicating thickness in thousandths of an inch. Example: 23-11269-250 specifies a washer 1/4" thick.

(1) Material: Acetal
Approved engineering material: Delrin 150
Delrin 550
Celcon M25-01
Celcon M90-01

2. Finish: See sketch above.

3. Color: Black.

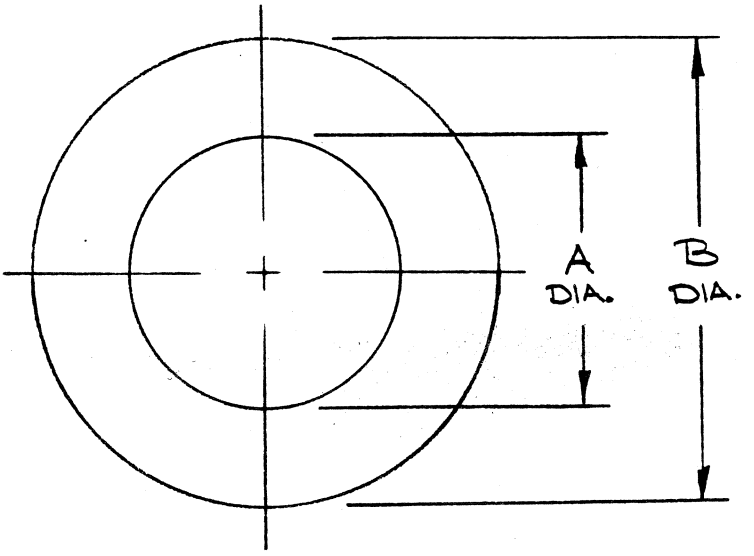
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
ADD SSO A479-12-062	1-18-80	MGP	C1490	A

COMPILED	MGP	DATE DRAWN		MATERIAL	
APPROVED	JEL	12/4/79		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
B1549	WASHER BEARING	23-11350
LAST CHG LTR		SHEET 1 OF 1



PART NUMBER

Nominal I.D.	Nominal O.D.	Thickness	Freightliner Part Number
1 3/8	2 1/2	.136/.177	23-11350-000

Engineering Notes

Material ASTM F436
Hardness 36-45 C' Scale

COMPILED	MDE	DATE DRAWN			
APPROVED	HADDOCK	8-24-81			

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

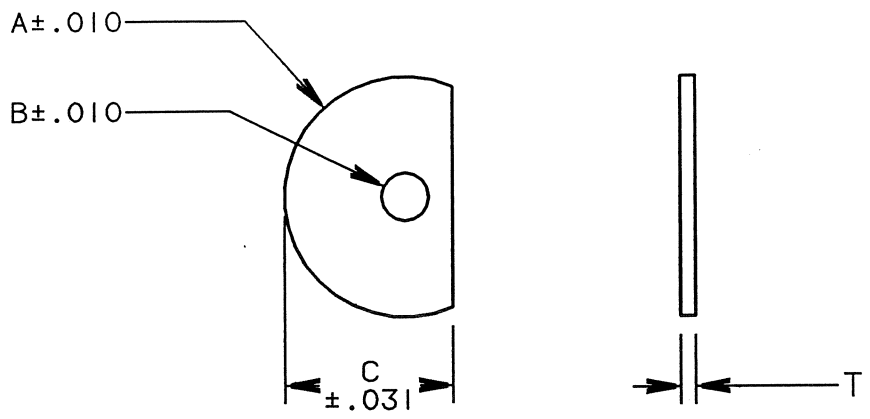
CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

Portland **FREIGHTLINER CORPORATION** Oregon 97208

M/F

DRAWN	TTR	TITLE WASHER TRIMMED	ITEM NUMBER 23-11434
APPRV	F.FREER		
DATE	06/10/83	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



A NOMINAL O.D.	B NOMINAL I.D.	C WIDTH	T THICKNESS	FREIGHTLINER PART NUMBER
1.250	.250	.875	.075	23-11434-000

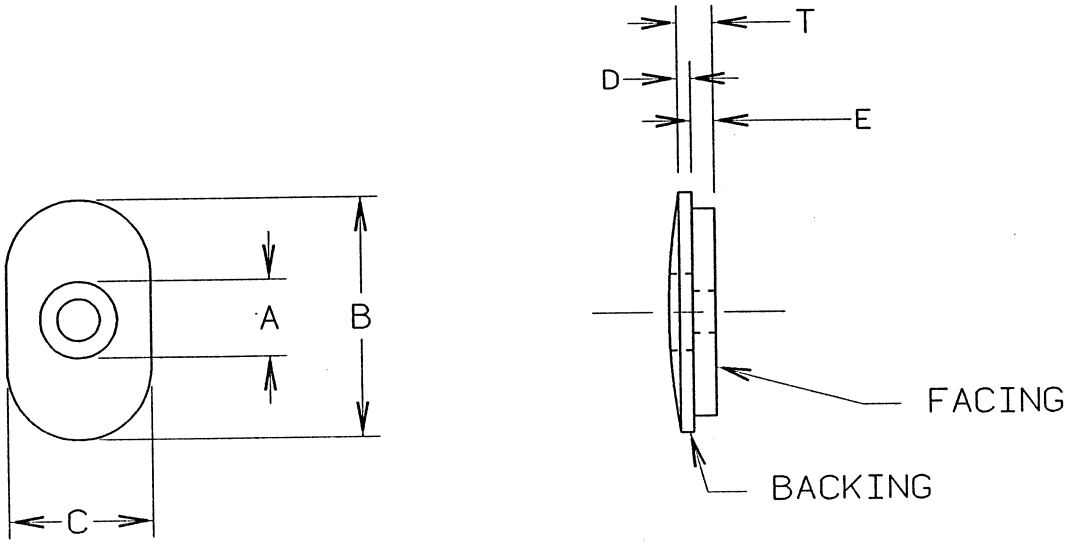
B

ENGINEERING NOTES:

1. MATERIAL: LOW CARBON COLD ROLLED STEEL.
2. FINISH: CADMIUM PLATE PER FREIGHTLINER SPECIFICATION 49-00012-120.
   ALTERNATE: ZINC PLATE PER FREIGHTLINER SPECIFICATION 49-00005-202.

CHG	JOB/RLSE NO	DATE	BY	REVISION
A	P0990J-01	10/11/93	ERK	REDRAWN; -001 ADDED
B	P0990J-02	10/22/93	ERK	23-11434-001 REMOVED

DRAWN	SJT	TITLE WASHER, BONDED, ALUMINUM SEALING OR CUSHIONING	ITEM NUMBER 23-11465
APPRV	RDF		
DATE	06/04/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



	A ±.005	B ±.010	C ±.010	T REF	D ±.005	E ±.010	SUPPLIER'S NUM. AZT		FREIGHTLINER NUMBER
	.200	.625	.375	.100	.040	.060	XN06250AF		23-11465-010
B	.200	1.000	.375	.100	.040	.060			23-11465-020
C	.200	1.000	.562	.152	.062	.090			23-11465-030

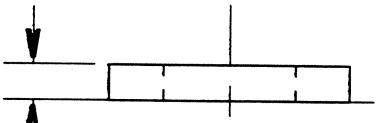
NOTES

1. MATERIAL: FACING - NEOPRENE
   BACKING - ALUMINUM
2. BACKING TO BE PERMANENTLY BONDED TO THE FACING.

CHG	JOB/RLSE NO	DATE	BY	REVISION
A	P6517G-03	06/04/91	SJT	REDRAWN, MATRL FROM STEEL TO AL, REV VENDOR NUM
B	P3392J-01	03/22/94	ERK	ADDED -020.
C	P3392J-02	05/18/95	DAJ	ADDED -030 AND DIMENSIONS D AND E.

DRAWN	ERK	TITLE SHER-SPACER	ITEM NUMBER 23-11487
APPRV	PCK		
DATE	04/17/89	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

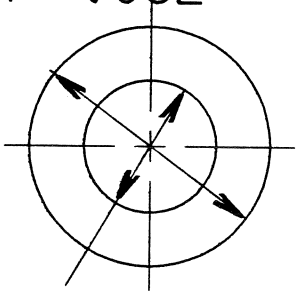
SPECIFICATIONS:



$.188^{+.007}_{-.015}$

1.250 DIA ±.062

-A-



$.688\ \text{DIA}^{+.009}_{-.002}$

⌖	A Ⓢ	⌀ .029 Ⓢ

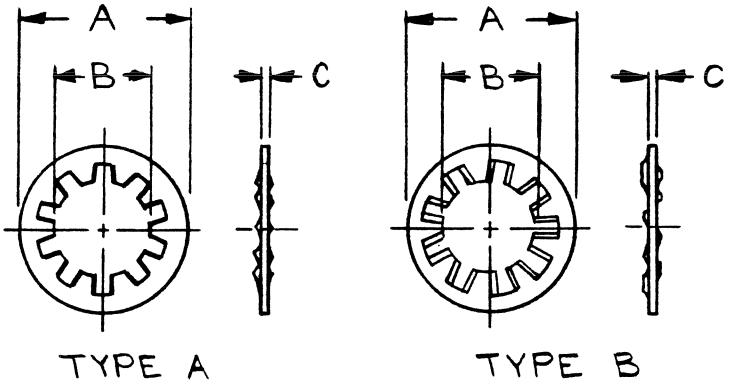
MATERIAL	FREIGHTLINER SPECIFICATION NUMBER
48-00004-103	23-11487-000

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	PA2006-31	04/17/89	ERK	REVISED AND REDRAWN

23-11489

ORIGINAL JOB NO.	TITLE	PART NO.
0312C	LOCKWASHER INTERNAL TOOTH SAE STANDARD J489 STAINLESS STEEL	23-11489
LAST CHG LTR: A		SHEET 1 OF 1

SKETCH



TYPE A TYPE B

PART NUMBERS

NOM. SIZE	A		B		C		FREIGHTLINER PART NUMBER
	MAX	MIN	MAX	MIN	MAX	MIN	
No. 2	0.200	0.175	0.095	0.089	0.015	0.010	23-11489-
No. 3	0.232	0.215	0.109	0.102	0.019	0.012	
No. 4	0.270	0.245	0.123	0.115	0.019	0.015	
No. 5	0.280	0.255	0.136	0.129	0.021	0.017	
No. 6	0.295	0.275	0.150	0.141	0.021	0.017	
No. 8	0.340	0.325	0.175	0.168	0.023	0.018	
No.10	0.381	0.365	0.204	0.195	0.025	0.020	
No.12	0.410	0.394	0.231	0.221	0.025	0.020	
1/4	0.478	0.460	0.267	0.256	0.028	0.023	-025
5/16	0.610	0.594	0.332	0.320	0.034	0.028	-031
3/8	0.692	0.670	0.398	0.384	0.040	0.032	-038
7/16	0.789	0.740	0.464	0.448	0.040	0.032	
1/2	0.900	0.867	0.530	0.512	0.045	0.037	
9/16	0.985	0.957	0.596	0.576	0.045	0.037	
5/8	1.071	1.045	0.663	0.640	0.050	0.042	
11/16	1.166	1.130	0.728	0.704	0.050	0.042	
3/4	1.245	1.220	0.795	0.769	0.055	0.047	
13/16	1.315	1.290	0.861	0.832	0.055	0.047	
7/8	1.410	1.364	0.927	0.894	0.060	0.052	
1	1.637	1.590	1.060	1.019	0.067	0.059	
1-1/8	1.830	1.799	1.192	1.144	0.067	0.059	
1-1/4	1.975	1.921	1.325	1.275	0.067	0.059	

ENGINEERING NOTES:

1. Material: Stainless Steel, type 316
2. Internal tooth lockwashers herein specified shall conform in all pertinent respects with SAE standards J489.

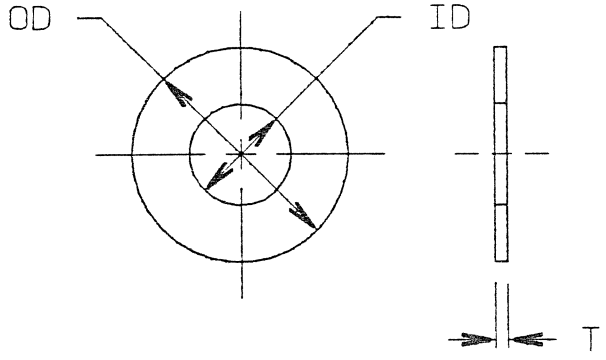
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
-	348272-90	PCK	04/20/89	Documented
A	PA2006-35	PCK	05/01/89	ADDED -025

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	FEF	DATE DRAWN		Material	Master Number	
APPROVED	DL	10-13-83		1	02030	00001

DRAWN	FEF	TITLE	ITEM NUMBER
APPRV	DJL	WASHER, PLAIN, STAINLESS STEEL SPECIAL SIZES	23-11599
DATE	11/23/83	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SKETCH



PART NUMBERS

ID ±.005	OD ±.005	T THICKNESS		FREIGHTLINER PART NUMBER
.265	.562	18 GA (.048)		23-11599-001
.265	.500	16 GA (.065)		-002
.531	.938	15 GA (.072)		-003

ENGINEERING NOTES:

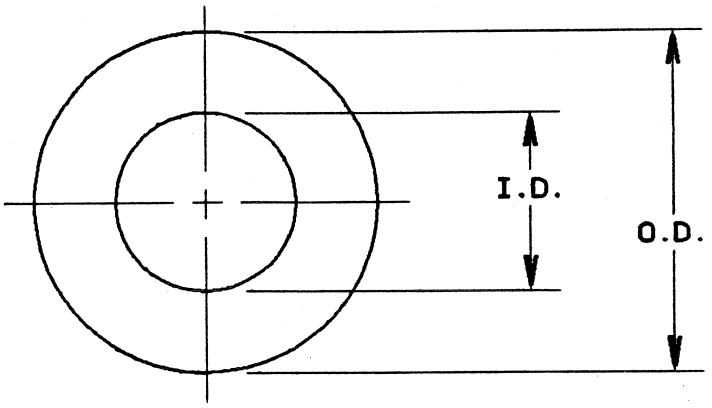
1. MATERIAL: STAINLESS STEEL, TYPE 302 OR 304.

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	P*C162-13	02/21/89	PCK	REDRAWN. ADDED -003
C	P4391F-01	09/17/90	SJT	REVISED NOTE 1.

GENERAL USE PART

ORIGINAL JOB NO.	TITLE	PART NO.
2668C	WASHER, HARDENED STEEL	23-11656
LAST CHG LTR: A		SHEET 1 OF 1

SKETCH:



PART NUMBERS:

NOMINAL SIZE	I.D		O.D.		THICKNESS		FREIGHTLINER PART NUMBER
	MIN.	MAX.	MAX.	MIN.	MAX.	MIN.	
1/4	.276	.296	.640	.620	.080	.051	23-11656-004
5/16	.339	.359	.703	.681	.080	.051	23-11656-005
3/8	.401	.421	.827	.805	.080	.051	23-11656-006
7/16	.464	.484	.937	.915	.080	.051	23-11656-007
1/2	.526	.546	1.092	1.055	.177	.097	23-11656-008
9/16	.589	.609	1.186	1.149	.177	.097	23-11656-009
5/8	.649	.686	1.342	1.305	.177	.122	23-11656-010
3/4	.805	.842	1.499	1.462	.177	.122	23-11656-012
7/8	.931	.968	1.780	1.743	.177	.136	23-11656-014
1					.177	.136	23-11656-016
1-1/8	1.260	1.292	2.280	2.243	.177	.136	23-11656-018
1-1/4	1.368	1.405	2.530	2.493	.192	.136	23-11656-020
1-1/2	1.618	1.655	3.030	2.993	.192	.136	23-11656-024

SPECIFICATIONS:

MATERIAL: STEEL PER ASTM A325

HEAT TREAT: QUENCH AND TEMPER TO RC 35-45 OR CARBURIZE, QUENCH AND TEMPER TO RA 69-73 WITH .015 MIN. CASE DEPTH.

FINISH: PLAIN

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
REVISED-REDRWN TO CADAM	04-17-85	SJF	4673C	A1
REV -018 MIN/MAX ID	04-17-85	SJF	4673C	A2

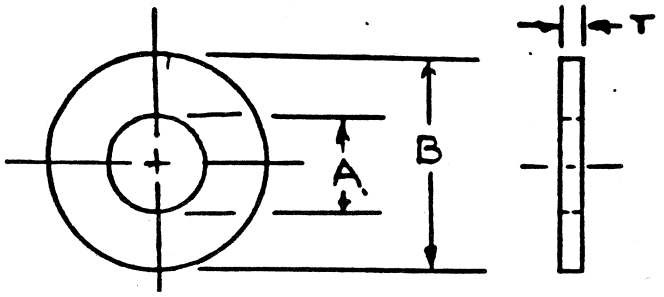
COMPILED	OWEN	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DCR	04-17-85		EA	02060	000D1

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
2859C	WASHER, FLAT STEEL PHOSPHATE FINISH	23-11670
LAST REV LTR		SHEET 1 OF 1

REVISION DESCRIPTION	DATE	BY	RLSE NO.

REVISION DESCRIPTION	DATE	BY	RLSE NO.

SKETCH:



PART NUMBERS:

NOMINAL SIZE	A I.D.		B O.D.		T THICKNESS *		FREIGHT-LINER PART NO.
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
No. 8	0.183	0.196	0.428	0.453	0.036	0.065	23-11670-08
No. 10	0.214	0.227	0.490	0.515	0.036	0.065	23-11670-10
1/4	0.271	0.296	0.615	0.640	0.051	0.080	23-11670-25
5/16	0.334	0.359	0.678	0.703	0.051	0.080	23-11670-31
3/8	0.396	0.421	0.803	0.827	0.051	0.080	23-11670-38
7/16	0.459	0.484	0.912	0.937	0.051	0.080	23-11670-44
1/2	0.521	0.546	1.053	1.092	0.074	0.121	23-11670-50
5/8	0.646	0.686	1.303	1.342	0.074	0.121	23-11670-62
3/4	0.803	0.842	1.462	1.510	0.108	0.160	23-11670-75

* Nominal thicknesses of washers are Birmingham gauge sizes. The limits represent a tolerance of one gauge, or the spread from the minimum of one gauge minus, to the maximum of one gauge plus.

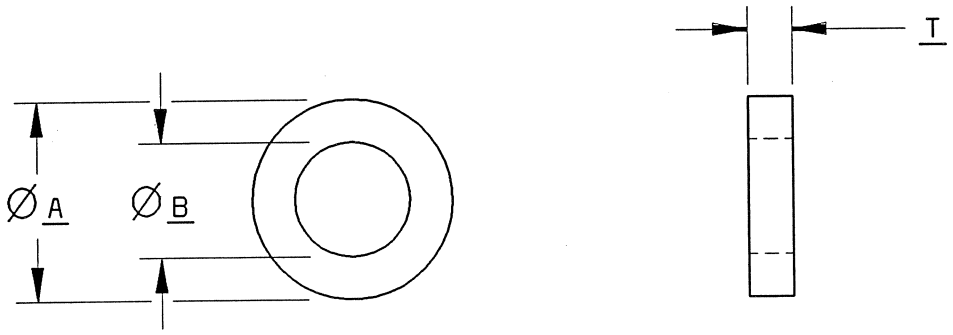
ENGINEERING NOTES:

1. Material: Steel SAE 1010-1020
2. Finish: Phosphate Finish
3. Meets SAE J 488 or ASA B27.2 Standards

DRAWN BY	KCB	DATE DRAWN			MASTER NO.	
APVD BY	DJL	6/11/84			02010	000D1

FREIGHTLINER CORPORATION M/F

DRAWN	SJF	TITLE WASHER-NYLON 6/6	DRAWING NUMBER 23-11721
APPRV	DJL		
DATE	04/18/85	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CATIA ORIGINAL			



A	B	T	MANUFACTURER NO. SSO	FREIGHTLINER PART NUMBER
.495/.515	.214/.227	.036/.065		23-11721-010

ENGINEERING NOTES:

1. MATERIAL: NYLON 6-6.
2. SUPPLIER: SEASTROM MANUFACTURING CO., INC OR APPROVED EQUIVALENT.

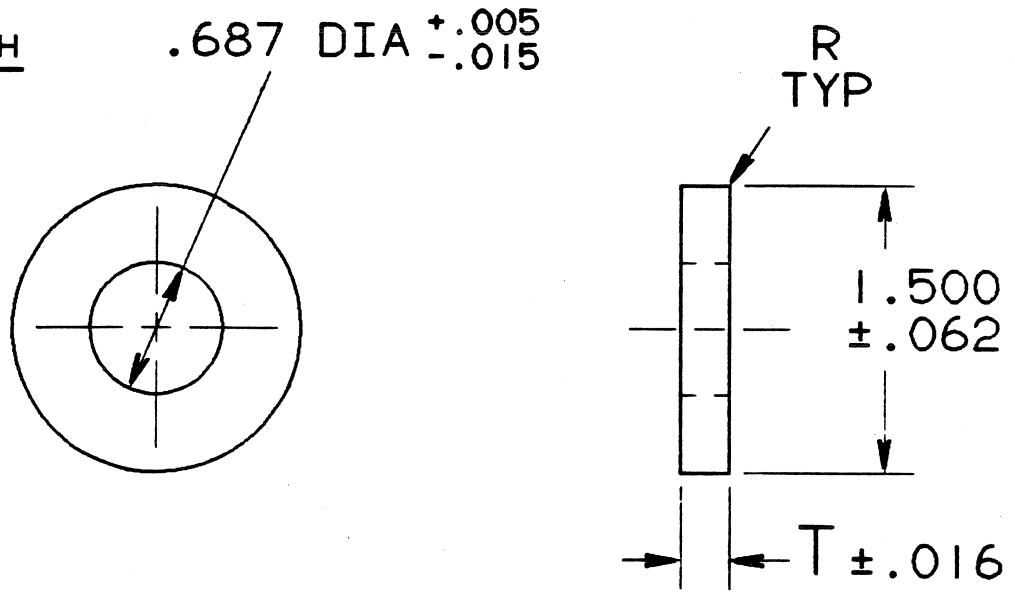
CHG	JOB NO	DATE	BY	REVISION
A	PB4501-60	9/26/96	FHC	REVISED AND REDRAWN .RMVD. -250 , ADDED -010

23-11812

ORIGINAL JOB NO.	TITLE	PART NO.
F0421	WASHER, ZINC PLTD, STEEL	23-11812
LAST CHG LTR: -		SHEET 1 OF 1

CHANGE INFORMATION | DATE | BY | JOB NO. | TR

SKETCH



PART NUMBERS

ID REF	OD REF	R		FREIGHTLINER PART NUMBER
.687	1.500	.000/ .020		23-11812-006 23-11812-012 23-11812-019 23-11812-025 23-11812-031 23-11812-038

CHANGE INFORMATION | DATE | BY | JOB NO. | TR

- DASH NUMBER T = LENGTH IN 1/100 INCHES

EXAMPLES: SPACER .060 THICK = 23-11812-006
SPACER .250 THICK = 23-11812-025

ENGINEERING NOTES

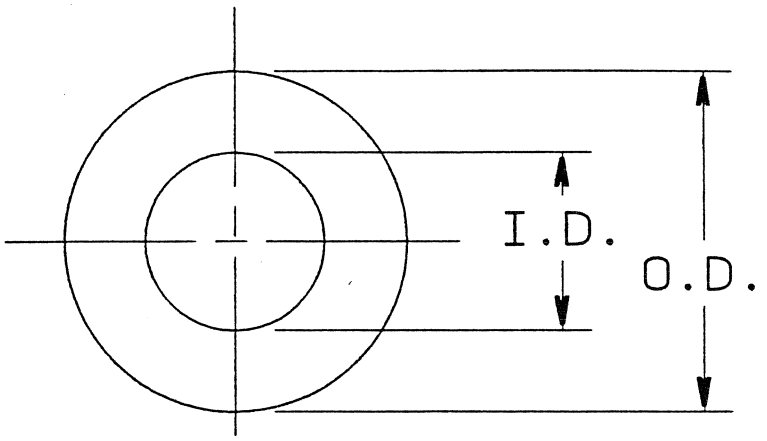
1. MATERIAL : LOW CARBON STEEL: SAE 1010/1020 AISI 1010/1020
2. FINISH: SMOOTH, FLAT, PARALLEL & ZINC PLATE PER FREIGHTLINER PROCESS 49-00005-403.
3. TAG PN & CHANGE LTR IN BATCH LOTS.

COMPILED	DWR	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER	
APPROVED	CUO	01-07-86		1	03330	00001

DRAWN	RDF	TITLE WASHER, ALIGNMENT	ITEM NUMBER 23-11856
APPRV	PCK		
DATE	09/28/89	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

UNLESS OTHERWISE NOTED, ALL DIMENSIONS IN INCHES.

SKETCH:



PART NUMBERS:

INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS			FREIGHTLINER PART NUMBER
BASIC	TOLERANCE		BASIC	TOLERANCE		BASIC	TOLERANCE		
	PLUS	MINUS		PLUS	MINUS		PLUS	MINUS	
.688	.009	.002	1.330	.005	.005	.0418	.0035	.0015	23-11856-042
.8128	.009	.002	1.469	.005	.005	.0418	.0035	.0015	23-11856-001

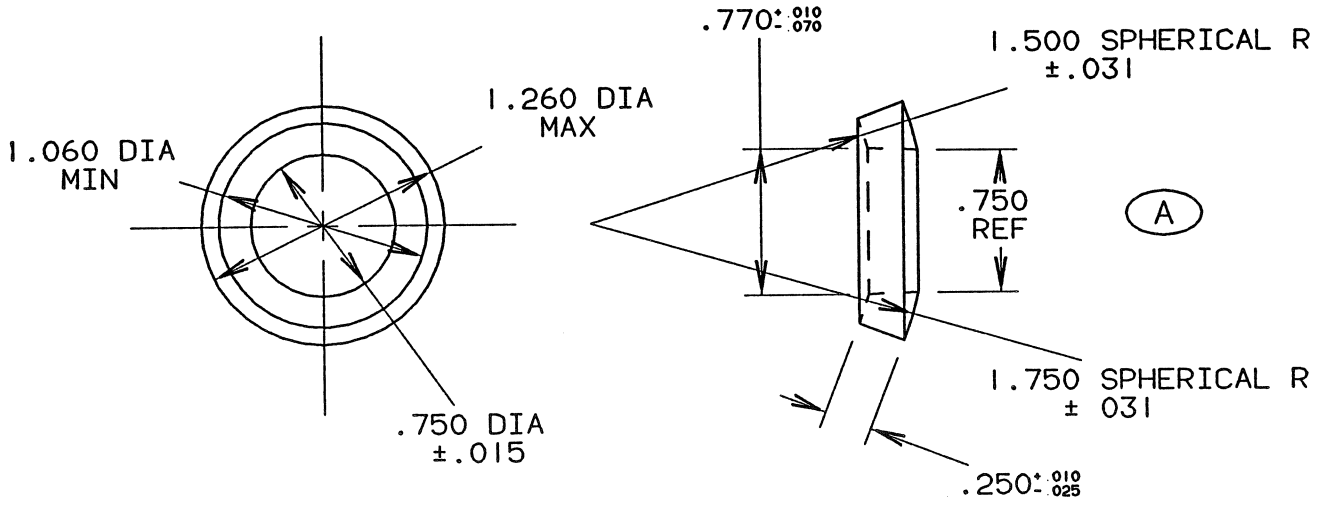
SPECIFICATIONS:

1. MATERIAL: 48-00744-000
   REF: 19 GA 6.5 WIDE STRIP PRE-TEMP AISI 1050.
   ALTERNATE MATERIAL: STEEL PER ASTM F436.
2. FINISH: ZINC PLATE PER F/L SPEC. 49-00005-202.
3. GENERAL: WASHER TO CONFORM TO ASTM F436 EXCEPT AS NOTED.
4. HARDNESS: HARDNESS TO BE 33-45 RC.

CHG	JOB/RLSE NO	DATE	BY	REVISION
E	PH0347-03	09/28/89	RDF	REVISED & REDRAWN, ADDED -001.

DRAWN	RDF	TITLE	ITEM NUMBER
APPRV	PCK	WASHER, SPHERICAL 5/8 ID, HARDENED, PLATED	23-12062
DATE	01/16/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SKETCH



23-12062-000

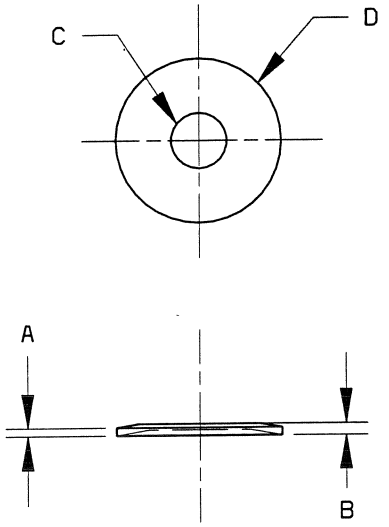
SPECIFICATIONS:

C

1. MATERIAL: 1010-1020 STEEL. CARBURIZE DEPTH AT .015 MIN. Rc 30 EFFECTIVE CASE.
2. SURFACE HARDNESS: 15N 79-83.
3. FINISH: ZINC PLATE PER 49-00005-403
4. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT
5. DEBURR EDGES.

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P6817F-02	01/16/90	RDF	DOCUMENTED
A	P6817F-03	02/02/90	RDF	REVISED MATERIAL SPECS, HOLE DIA WAS .689
B	P6514G-01	07/18/91	SJT	REVISED THK TOL FROM ±.010 TO +.010 AND -.025.
C	PA2042-47	08/03/94	DAJ	REVISED NOTE 1; RESTATED HARDNESS REQUIREMENT.

DRAWN	LFB	TITLE WASHER-BELLEVILLE STAINLESS STEEL	DRAWING NUMBER 23-12105	
APPRV	DAJ			
DATE	11/12/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				



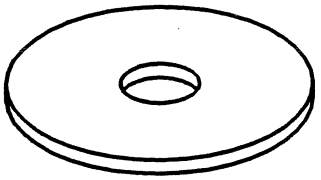
A	B	C	D	REFERENCE	FREIGHTLINER PART NUMBER
.045	.067	.317	.937	BELLEVILLES K0937-B-045-S	23-12105-000
.070	.092	.317	.937	SOLON MFG.	23-12105-001 (3)

ENGINEERING NOTES:

1. MATERIAL: STAINLESS, TYPE 301.
2. FLAT LOAD: 395 POUND.
(3) A RED INK STRIP WILL BE PLACED ON CONVEX SIDE.

CHG	JOB NO	DATE	BY	REVISION
B	P07437-30	11/12/99	LFB	REVISED AND REDRAWN IN CATIA. ADDED NOTE 3.

DRAWN	ERK	TITLE WASHER-SST FLAT, SPECIAL	ITEM NUMBER 23-12120
APPRV	HPB		
DATE	09/29/92	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



PART NUMBERS:

NOMINAL SIZE	I.D.	O.D.	THICKNESS	FINISH	FREIGHTLINER PART NUMBER
5/16	$.344^{+.015}_{-.005}$	1.500±.015	.050-.080	PLAIN	23-12120-001

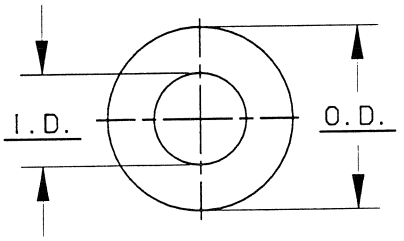
A

ENGINEERING NOTE:

1. MATERIAL: STAINLESS STEEL, TYPE 302 OR 304.

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	PK0426-06	09/29/92	ERK	DOCUMENTED
A	PA2042-31	11/23/92	ERK	-001 ID CHANGED TO .344 FROM .375

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-FLAT NYLON 6/6	23-12124	
DATE	03/19/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
CATIA ORIGINAL				



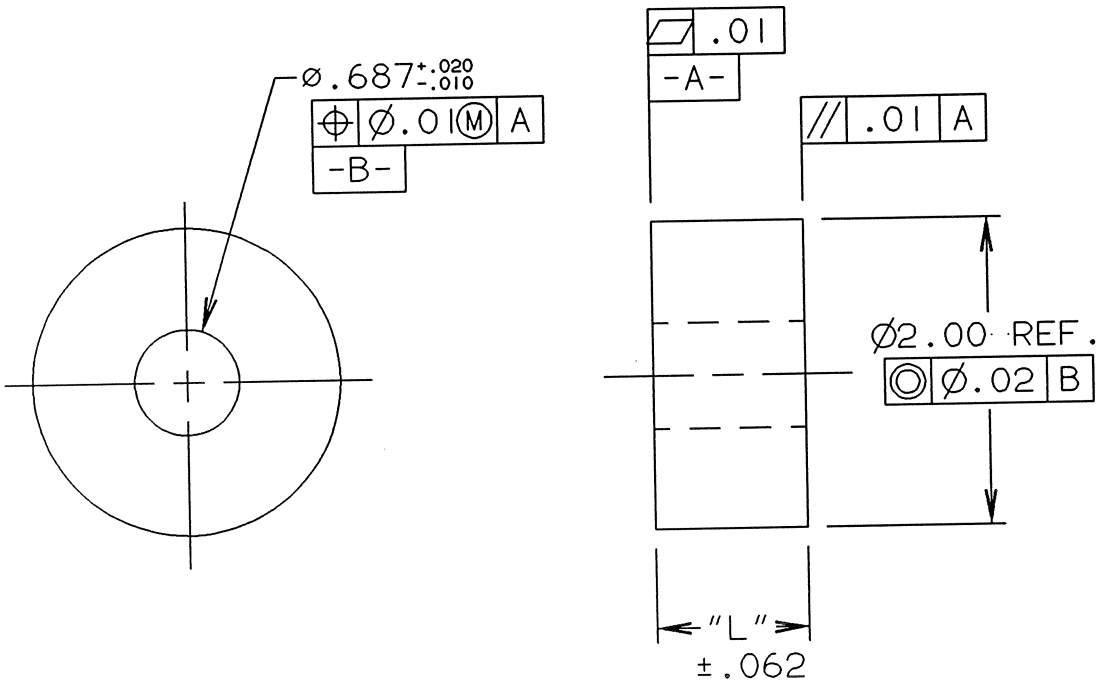
INSIDE DIAMETER (±.005)	OUTSIDE DIAMETER (±.005)	THICKNESS (±.005)	SOURCE		FREIGHTLINER PART NUMBER
			MFG	PART NUM	
.226 [5.7]	1.250 [31.9]	.065 [1.7]			23-12124-002
.248 [6.3]	1.125 [28.6]	.031 [0.8]	ARDEN	08-85773	23-12124-001
.260 [6.6]	.750 [19.1]	.031 [0.8]			23-12124-003
.260 [6.7]	.625 [15.9]	.062 [1.6]			23-12124-004
.343 [8.7]	.687 [17.4]	.031 [0.8]			23-12124-005
.375 [9.5]	.750 [19.1]	.031 [0.8]			680 990 00 74
.406 [10.3]	.920 [23.4]	.031 [0.8]			23-12124-006
.505 [12.8]	.750 [19.1]	.031 [0.8]			23-12124-007
.570 [14.5]	.745 [18.9]	.060 [1.5]			680 990 08 40

SPECIFICATIONS:

1. MATERIAL: NYLON 6/6
2. COLOR: NATURAL OR BLACK
3. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.
4. EQUIVALENT ACCEPTABLE WITH ENGINEERING APPROVAL.

CHG	JOB NO	DATE	BY	REVISION
A	P07971-01	03/19/99	DAJ	REVISED & REDRAWN IN CATIA. CHARTED ADDITIONAL SIZES

DRAWN	ERK	TITLE SPACER -- STEEL .687 ID X 2.000 OD	ITEM NUMBER 23-12150
APPRV	ROPPEL		
DATE	05/11/93	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



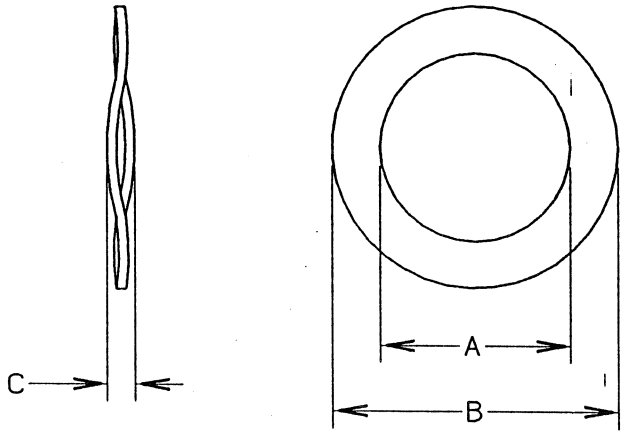
I.D. REF	O.D. REF	LENGTH (INCHES)		FREIGHTLINER PART NUMBER
.687	2.000	.250		23-12150-025
		.625		23-12150-062
		1.000		23-12150-100
		1.250		23-12150-125
		1.375		23-12150-138
		1.625		23-12150-162
		1.750		23-12150-175
		2.250		23-12150-225
		3.000		23-12150-300

ENGINEERING NOTES

1. MATERIAL: 48-00833-200, BAR, STL, RND, HRLC, 2.000 INCH DIA.
   ALT MATERIAL : LOW CARBON STEEL: SAE 1010/1020, AISI 1010/1020.
2. FINISH: PRIME PAINT PER FREIGHTLINER SPECIFICATION 49-00023-102.
3. IDENTIFY PER FREIGHTLINER SPECIFICATION 49-00051.

CHG	JOB/RLSE NO	DATE	BY	REVISION
C	656320-03	01/17/95	ERK	ADDED 23-12150-225
D	641175-02	01/31/95	ERK	ADDED 23-12150-162
E	732038-03	10/26/95	ERK	ADDED 23-12150-125
F	748216-01	03/28/96	DAJ	ADDED 23-12150-300
G	PA2042-73	09/03/96	DAJ	O.D. REF DIMENSION WAS 1.500

DRAWN	ERK	TITLE WASHER-WAVE SPRING STEEL	ITEM NUMBER 23-12174
APPRV	N Z		
DATE	03/04/94	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



A ±.015	B ±.015	C ±.020	THICKNESS	MATERIAL (2)	VENDOR SSO	FREIGHTLINER PART NUMBER
1.016	1.500	.085	.015	2	5806-160-2	23-12174-001
0.382	0.625	.080	.007	2	5806-123-2	23-12174-002
0.530	0.780	.125	.012	3	5806-60-3	23-12174-003

B

ENGINEERING NOTES:

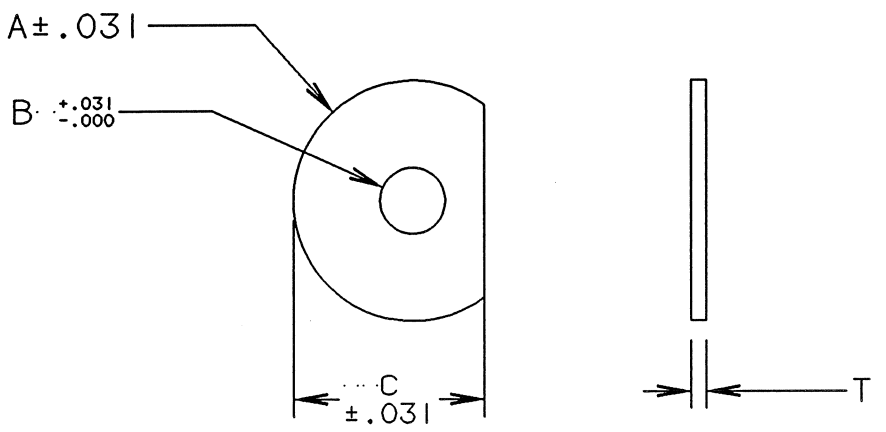
1. VENDOR SEASTROM MFG. CO.

(2.) MATERIAL: SPRING STEEL - 2
BERYLLIUM COOPER - 1
STAINLESS STEEL - 3

B

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	PM0588-03	03/04/94	ERK	INITIAL RELEASE
A	P2A182-05	08/26/94	DAJ	ADDED -002
B	PB3501-02	02/20/97	JCT	ADDED -003 AND MATERIAL NOTE

DRAWN	ERK	TITLE WASHER-CLIPPED HARDENED STEEL	ITEM NUMBER 23-12230
APPRV	CHB		
DATE	02/21/96	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



A NOMINAL O.D.	B NOMINAL I.D.	C WIDTH	T THICKNESS	FREIGHTLINER PART NUMBER
1.250	.344	1.000	.122-.177	23-12230-001

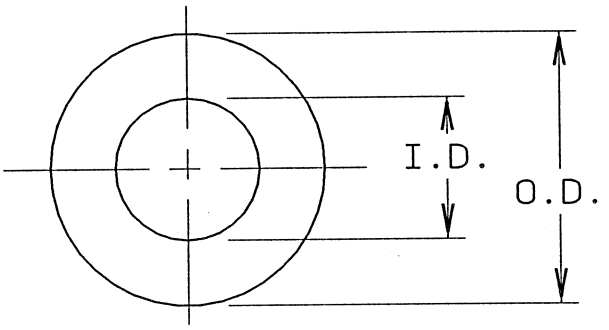
ENGINEERING NOTES:

1. MATERIAL: STEEL PER ASTM A325 (F436)
2. HARDNESS: 38-45 HRC
3. FINISH: ZINC PLATE PER 48-00005-403

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P2A230-72	02/21/96	ERK	INITIAL RELEASE

DRAWN	ERK	TITLE WASHER STEEL, SLATE GRAY	ITEM NUMBER 23-12275
APPRV	LT		
DATE	08/28/95	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SKETCH:



PART NUMBERS:

NOMINAL SIZE		INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS*		FREIGHTLINER PART NUMBER
		BASIC	TOLERANCE		BASIC	TOLERANCE		MAX.	MIN.	
			PLUS	MINUS		PLUS	MINUS			
NO. 10	.190	.219	.008	.005	.500	.015	.005	.065	.036	23-12275-010

* NOMINAL THICKNESS OF WASHERS ARE BIRMINGHAM GAUGE SIZES. THE LIMITS REPRESENT A TOLERANCE OF ± ONE GAGE, OR THE SPREAD FROM THE MINIMUM OF ONE GAGE MINUS TO THE MAXIMUM OF ONE GAGE PLUS.

SPECIFICATIONS:

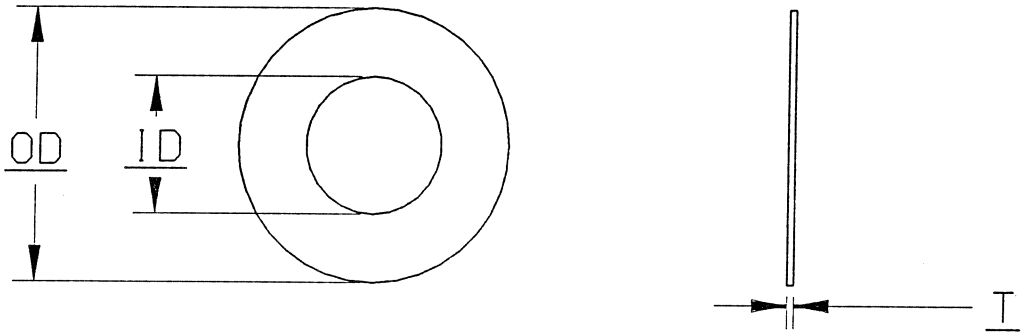
MATERIAL: STEEL SAE 1010-1020.

SPECS: MUST MEET ASA B 27.2 STANDARDS (REF. SAE J488).

FINISH: ZINC PLATE PER F/L SPEC. 49-00005-403
PAINT SLATE GRAY PER FTL STD 49-00091-001

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P2A230-51	08/28/95	ERK	INITIAL RELEASE

DRAWN	ERK	TITLE	DRAWING NUMBER	
APPRV	ANF	WASHER NEOPRENE	23-12290	
DATE	10/31/95			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. C



	OD	ID	THICK (T)	SUPPLIER SSO	FREIGHTLINER PART NUMBER
	.465	.203	.062	5613-34-62	23-12290-001
	.505	.265	.062	5613-37-062	SSO5613 37 062
A	.505	.265	.093	5613-37-93	23-12290-002
	.865	.390	.120	5613-48-120	SSO5613 48 120
B	.500	.250	.125		(3) 23-12290-003

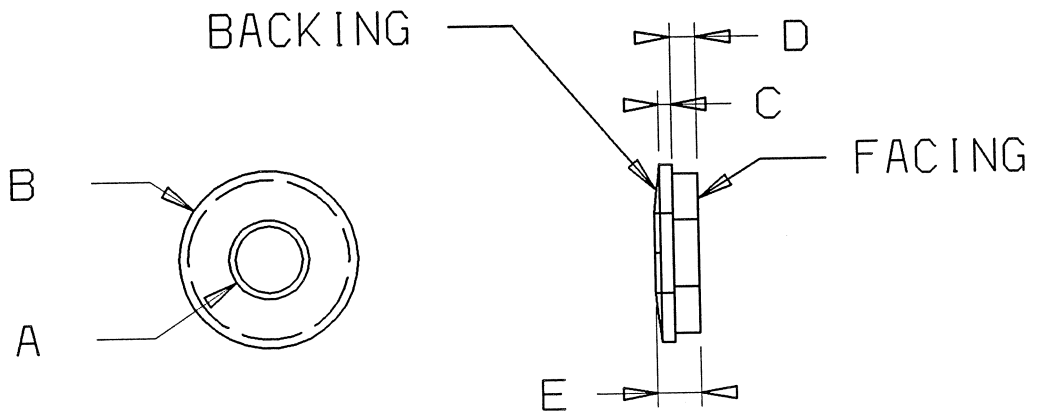
ENGINEERING NOTES:

1. MATERIAL: NEOPRENE, 50-70 SDH
2. SUPPLIER: SEASTROM MANUFACTURING CO., INC OR APPROVE EQUIVALENT.

C (3) 50D NEOPRENE

CHG	JOB NO	DATE	BY	REVISION
-	P2A210-82	10/31/95	ERK	INTL RLS 23-12290;SSO5613 37 062 & 48 120 CHARTED
A	P2A210-89	11/20/95	ERK	ADDED 23-12290-002
B	P01142-03	09/24/96	FHC	REVISED AND REDRAWN IN CATIA. ADDED -003
C	P03443-01	08/15/97	DAJ	REVISED NOTE 3.

DRAWN	GAC	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-BONDED, ALUMINUM SEALING OR CUSHIONING	23-12321	
DATE	02/09/96	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				



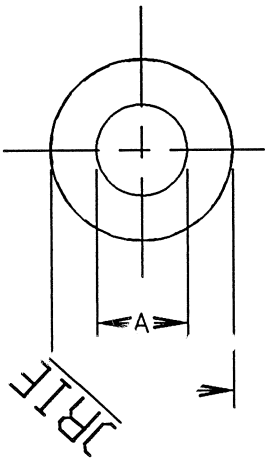
A ±.005	B ±.010	C ±.005	D ±.010	E REF	MFG'S NUM. AZTEC	F/L SPEC NO.
.229	.497	.040	.068	.125	NO 500 23A	23-12321-012

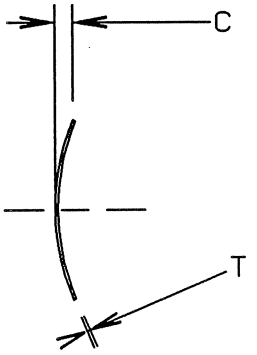
SPECIFICATIONS:

1. MATERIAL: FACING - NEOPRENE OR EPDM
   BACKING - ALUMINUM 5052 H36(BLACK OR GREY)
2. BACKING TO BE PERMANENTLY BONDED TO THE FACING
3. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P2A223-78	02/09/96	GAC	INITIAL RELEASE

DRAWN	ERK	TITLE WASHER CRESCENT	ITEM NUMBER 23-12330
APPRV	ERK		
DATE	03/12/96	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1





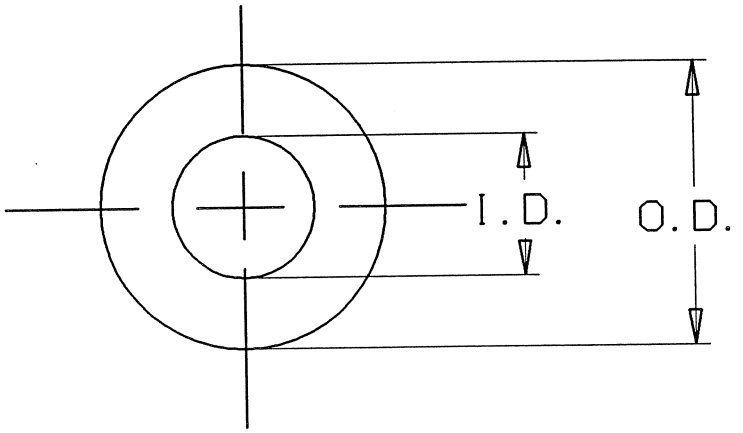
A	B	C	T	MAT'L	MANUFACTURER SSO	FREIGHTLINER PART NUMBER
.315	.625	.062	.010	SPRING STEEL	5804-83-2	681 990 01 48
.390	.740	.140	.010	SST	5804-311-3	23-12330-001

VENDOR; SEASTROM MFG. CO. OR ENGINEERING APPROVED EQUIVALENT.

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	PM0639-14	03/12/96	ERK	INITIAL RELEAE; CHARTED 681 990 01 48

ORIENNE CHILBERG

DRAWN	FHC	TITLE WASHER-FLAT BLACK FINISH	DRAWING NUMBER 23-12375
APPRV	DAJ		
DATE	05/30/96	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



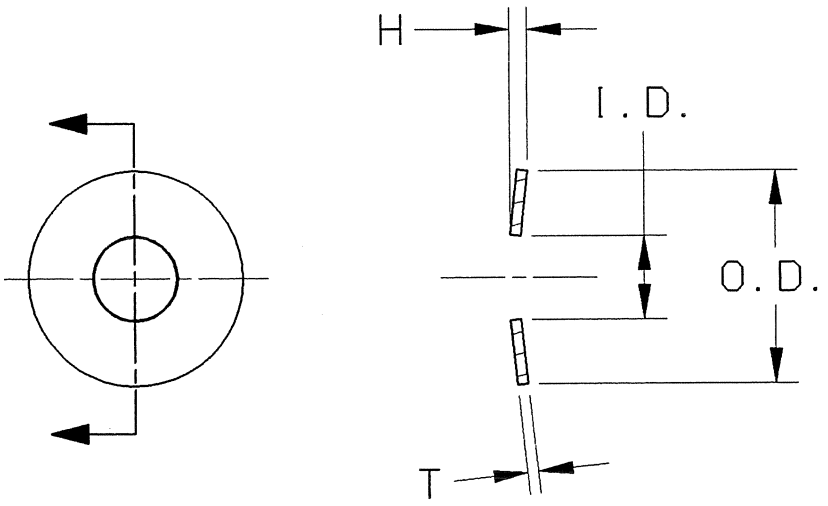
NOMINAL SIZE	INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS		FREIGHTLINER PART NUMBER
	BASIC	TOLERANCE		BASIC	TOLERANCE				
		PLUS	MINUS		PLUS	MINUS	MAX.	MIN.	
5/8 .625	.688	.031	.000	1.312	.031	.031	.177	.122	23-12375-062

SPECIFICATIONS:

1. MATERIAL: STEEL PER ASTM A325 (F436)
2. HARDNESS: 38-45 HRC
3. FINISHED: ZINC AND BLACK EMPIGARD.COATED PARTS SHALL WITHSTAND A MINIMUM OF 240 HOURS SALT SPRAY PER ASTM B117.
4. NOT INTENDED FOR USE AS SHIM STOCK
5. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT

CHG	JOB NO	DATE	BY	REVISION
-	P6293P-02	05/30/96	FHC	INITIAL LOAD

DRAWN	JGK	TITLE WASHER-CONICAL (BELLVILLE) ZINC FINISH	DRAWING NUMBER 23-12414
APPRV	DAJ		
DATE	01/03/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. C
CATIA ORIGINAL			



NOMINAL SIZE		INSIDE DIAMETER		OUTSIDE DIAMETER		T THICKNESS		H HEIGHT		FREIGHTLINER PART NUMBER
		MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
7/16	.438	.458	.442	1.23	1.20	.138	.130	.182	.174	23-12414-000
7/16	.438	.458	.442	1.23	1.20	.066	.058	.110	.102	23-12414-001
7/16	.438	.450	.440	1.42	1.40	.066	.058	.110	.102	23-12414-002

C

SPECIFICATIONS:

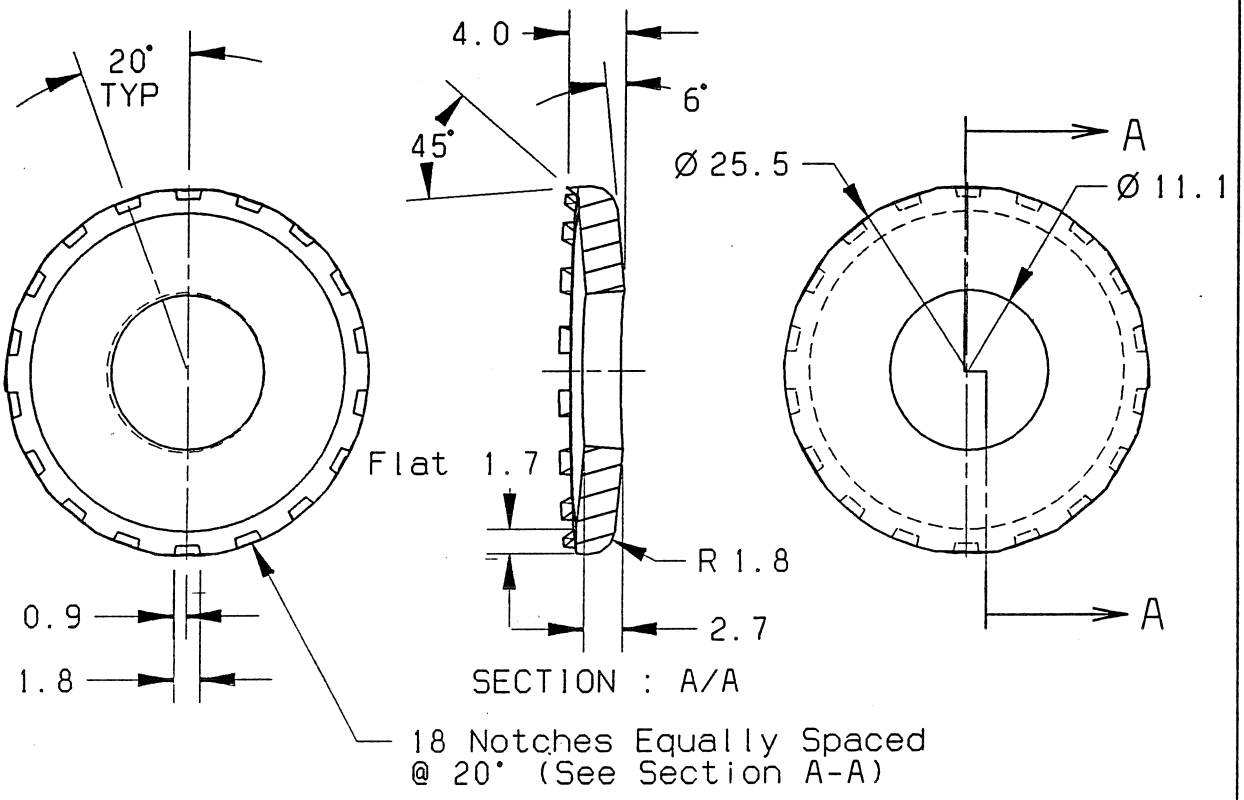
A

1. MATERIAL: CARBON STEEL PER SAE 1095.
2. HARDNESS: 38-42 HRC.
3. FINISH: ZINC PLATE PER FREIGHTLINER SPECIFICATION 49-00005-201.
4. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT.

CHG	JOB NO	DATE	BY	REVISION
-	P01069-01	01/03/97	JGK	INITIAL LOAD
A	P01069-11	10/01/97	DAJ	NOTE 3 WAS PLAIN.
B	P04363-01	02/07/98	JGK	ADDED 23-12414-002.
C	PA2042-85	08/31/98	DAJ	.450 WAS .446 AND .440 WAS .436

ADRIENNE CHILBERG

DRAWN	KLS	TITLE	DRAWING NUMBER	
APPRV	DEK	WASHER-LOCKING PLAIN FINISH	23-12468	
DATE	12/04/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				



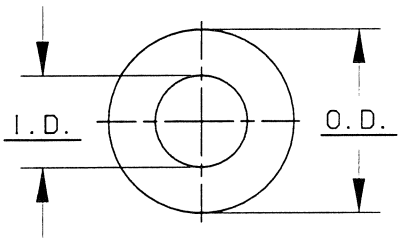
VENDOR PN	FREIGHTLINER PART NUMBER
ITW	
3531-22-02-0551	23-12468-000

SPECIFICATIONS:

1. MATERIAL: CARBON STEEL PER SAE 1050-04 HRS
2. HARDNESS: 42-47 HRC.
3. FINISH: ZINC PLATE PER FEIGHTLINER SPEC. 49-00005-201.
4. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT.

CHG	JOB NO	DATE	BY	REVISION
-	P02211-17	12/04/97	KLS	INITIAL RELEASE

DRAWN	DAJ	TITLE WASHER-FLAT HARDENED STEEL, SERMAGARD	DRAWING NUMBER 23-12597
APPRV	DAJ		
DATE	03/23/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



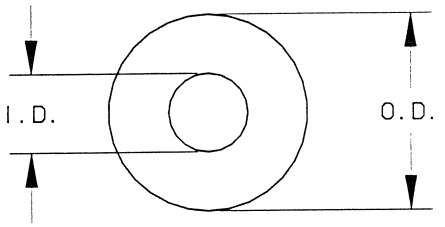
NOMINAL SIZE	INSIDE DIAMETER			OUTSIDE DIAMETER			THICKNESS		FREIGHTLINER PART NUMBER
	BASIC	TOLERANCE		BASIC	TOLERANCE				
		PLUS	MINUS		PLUS	MINUS	MAX.	MIN.	
3/8 .375	.406	.031	.000	.750	.010	.010	.103	.093	23-12597-038
1/2 .500	.531	.031	.000	1.000	.010	.010	.136	.126	23-12597-050
9/16 .563	.594	.010	.010	1.125	.010	.010	.136	.126	23-12597-056
5/8 .625	.688	.031	.000	1.312	.031	.031	.177	.122	23-12597-062
3/4 .750	.812	.031	.000	1.469	.031	.031	.177	.122	23-12597-075

ENGINEERING NOTES:

1. MATERIAL: STEEL PER ASTM A325 (F436)
2. HARDNESS: 38-45 HRC
3. FINISHED: SERMAGARD OR EMPIGARD PER F/L 49-00081-000
4. NOT INTENDED FOR USE AS SHIM STOCK
5. PARTS MUST BE FREE FROM HYDROGEN EMBRITTLEMENT

CHG	JOB NO	DATE	BY	REVISION
-	P09150-01	03/23/99	DAJ	INITIAL LOAD

DRAWN	CGD	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-FLAT METRIC, SPECIAL SIZES	23-12615	
DATE	04/27/99			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B



MAT'L	I.D.		O.D.		THICKNESS		FINISH	FREIGHTLINER PART NUMBER
	MIN	MAX	MIN	MAX	MIN	MAX		
B △5	10.065	10.335	17.885	18.315	2.500	3.500	△2	23-12615-000
△5	19.050	19.450	49.800	52.800	3.500	4.000	△4	23-12615-001
△5	10.546	11.054	27.746	28.254	2.546	3.054	△4	23-12615-002 A

ENGINEERING NOTES:

△1 UNLESS OTHERWISE SPECIFIED MTL TO BE SAE 1010-1020 STL OR EQUIVALENT.

△2 ZINC YELLOW PLATE PER 49-00005-203.

3. DIMENSIONS PROVIDED ARE FOR REFERENCE ONLY.

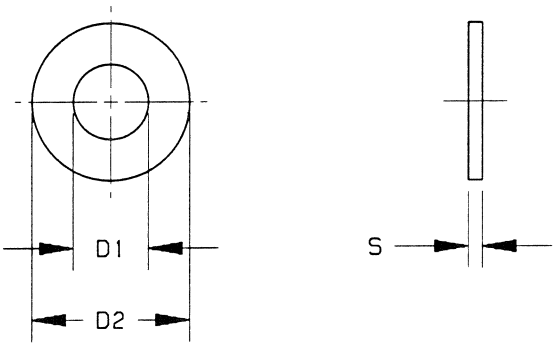
△4 ZINC PLATE PER 49-00005-403.

△5 MATERIAL: STEEL, SAE 1040 TO 1065 QUENCHED & TEMPERED TO ROCKWELL C38-45.

CHG	JOB NO	DATE	BY	REVISION
-	P07743-01	04/27/99	CGD	INITIAL RELEASE
A	P09276-02	08/18/99	CGD	ADDED 23-12615-002
B	PA2161-K9	11/04/99	DAJ	MATERIAL NOTE 5 WAS 1 FOR -000.

23-12627 - WASHER-FLAT

DRAWN	CGD	TITLE	DRAWING NUMBER	
APPRV	DAJ	WASHER-FLAT METRIC, P&O	23-12627	
DATE	05/27/99			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -



BOLT DIA.	D1 INSIDE DIAMETER	D2 OUTSIDE DIAMETER	S THICKNESS	FREIGHTLINER PART NUMBER
6	6.4	18	1.6	23-12627-000

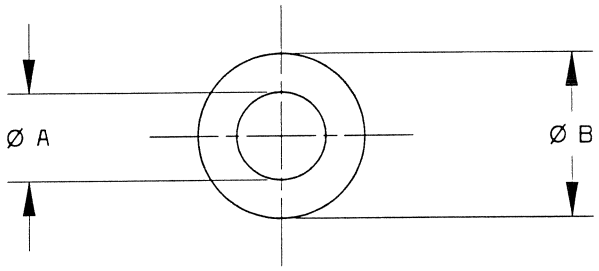
ENGINEERING NOTES:

1. WASHERS SHALL CONFORM TO DIN 9021 FORM B.
2. MATERIAL: STEEL (SOFT-AS-FABRICATED)
3. FINISH: PHOSPHATE AND OIL PER FL 49-00006-041.
4. DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P07440-11	05/27/99	CGD	INITIAL RELEASE

DRAWN	LFB	TITLE WASHER-FLAT METRIC, STAINLESS STEEL	DRAWING NUMBER 23-12707
APPRV	DAJ		
DATE	11/08/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM



METRIC BOLT DIA.	A DIA	B DIA	THICKNESS	FREIGHTLINER PART NUMBER
M6	6.4	12	1.6	23-12707-006
M8	8.4	16	1.6	23-12707-008
M10	10.5	20	2.0	23-12707-010
M12	13	24	2.5	23-12707-012
M16	17	30	3.0	23-12707-016
M20	21	37	3.0	23-12707-020

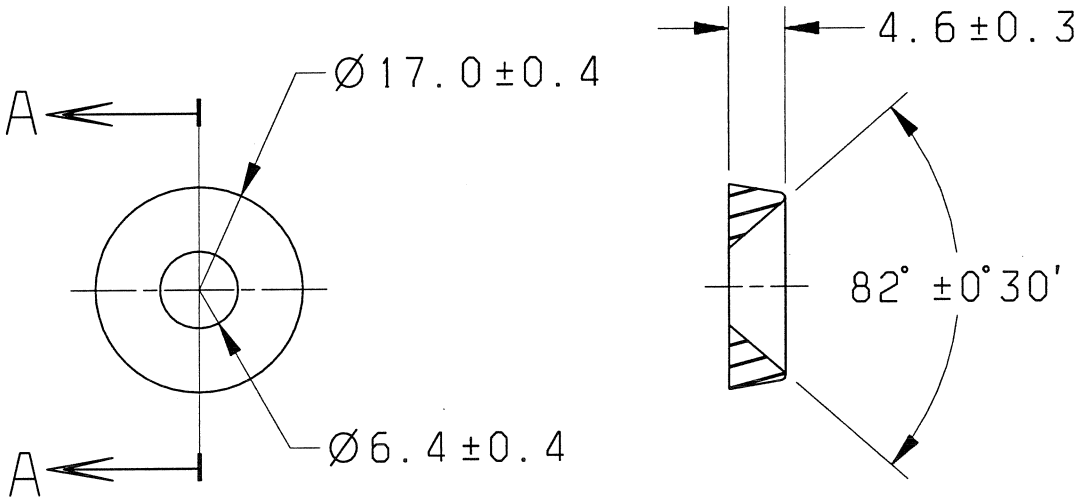
ENGINEERING NOTES:

1. MATERIAL: STAINLESS STEEL TYPE ASTM F593 302/304.
2. WASHERS SHALL CONFORM TO DIN 125 FORM A.
3. DIMENSIONS PROVIDED ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P10252-11	11/08/99	LFB	INITIAL RELEASE

DEBBIE

DRAWN	R2N	TITLE WASHER-FINISH, CSK, NYLON	DRAWING NUMBER 23-12740
APPRV	AJF		
DATE	12/20/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



SECTION CUT : A/A

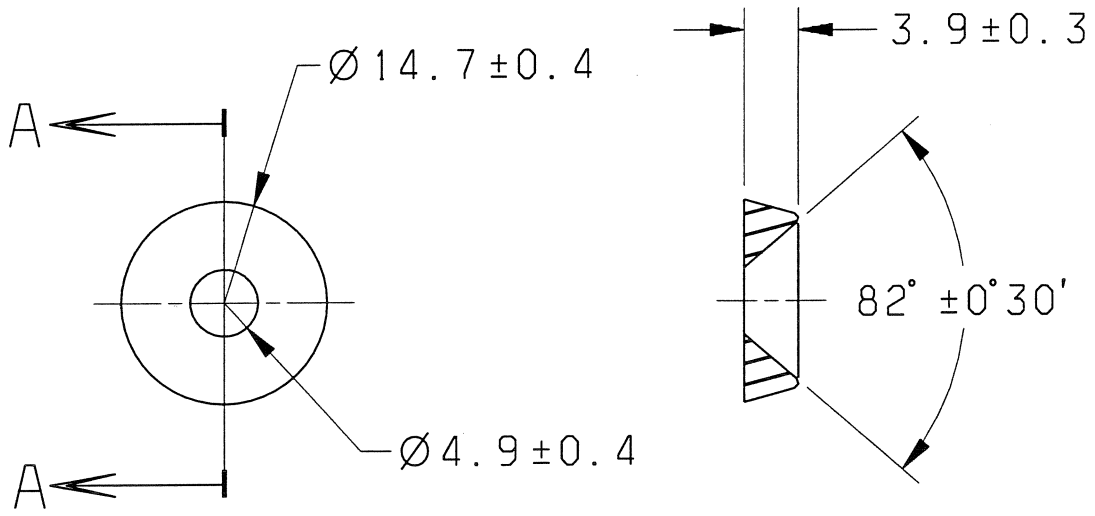
SPECIFICATIONS:

1. FINISH: BLACK
2. MATERIAL: NYLON 6/6
3. APPROVED VENDOR ENGINEERED FASTENER COMPANY P/N FWNY-191-0

CHG	JOB NO	DATE	BY	REVISION
-	P10778-02	12/20/99	R2N	INITIAL RELEASE

DEBBIE

DRAWN	R2N	TITLE WASHER-FINISH, CSK, NYLON	DRAWING NUMBER 23-12741	
APPRV	AJF			
DATE	12/20/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				



SECTION : A/A

SPECIFICATIONS:

1. FINISH: BLACK
2. MATERIAL: NYLON 6/6
3. APPROVED VENDOR ENGINEERED FASTENER COMPANY P/N FWNY-251-0

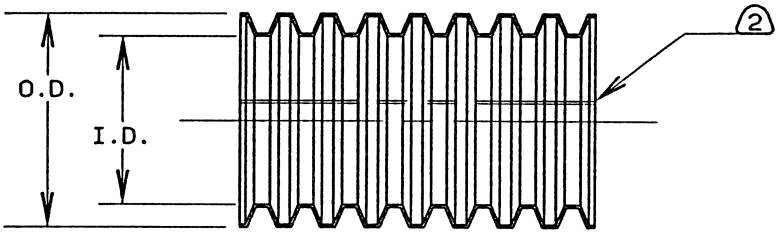
CHG	JOB NO	DATE	BY	REVISION
-	P10778-02	12/20/99	R2N	INITIAL RELEASE

DRAWN	ERK	TITLE CONDUIT-NYLON, BLACK CONVOLUTED TUBING	ITEM NUMBER 48-02217
APPRV	KCB		
DATE	11/20/89	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A CONVOLUTED NYLON TUBING.

APPLICATION: FLEXIBLE PROTECTIVE COVERING CAPABLE OF WITHSTANDING HIGH TEMPERATURE FOR ELECTRICAL WIRING OUTSIDE THE OCCUPANT COMPARTMENT.

SKETCH:



SPECIFICATION NUMBERS:

SIZE (MM)	REPLACES (INCHES)	O.D. (MM)	I.D. (MM)		FREIGHTLINER SPECIFICATION NUMBER
6	.250	10.16/9.55	6.99/6.10		48-02217-025
10	.413	15.09/14.45	10.72/10.08		48-02217-038
13	.500	17.65/17.02	12.93/12.29		48-02217-050
16	.625	21.23/20.60	16.00/15.37		48-02217-062
19	.750	25.02/24.38	19.18/18.54		48-02217-075
22	.875	29.00/28.36	22.52/21.88		48-02217-088
25	1.000	33.10/32.46	26.04/25.40		48-02217-100
30	1.181	38.10/37.10	30.50/29.50		48-02217-125
40	1.570	49.70/47.70	41.00/39.00		48-02217-150

SPECIFICATIONS:

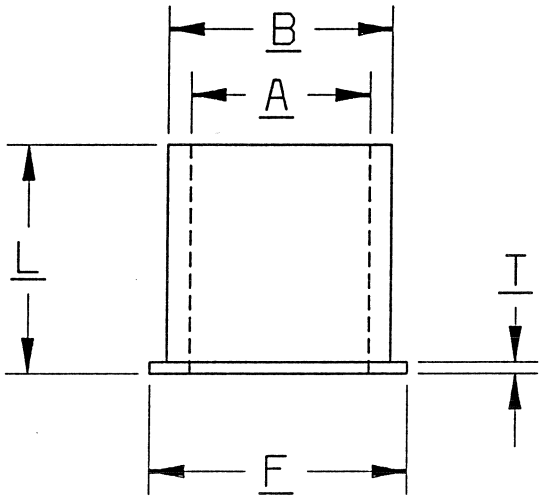
1. MATERIAL: BLACK NYLON PER ASTM D-789-72 TYPE II GRADE 3. EQUIVALENT TO PAC R-69246

(2) SLIT FULL LENGTH.

CHG	JOB/RLSE NO	DATE	BY	REVISION
D	P8102F-01	11/20/89	ERK	REVISED AND REDRAWN; ADDED -088
E	PA2042-47	08/03/94	DAJ	MODIFIED 48-02217-025 OD & ID.

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	ERK	BEARING-NYLON FLANGED	23-12241	
DATE	04/28/95	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. C
CATIA ORIGINAL				



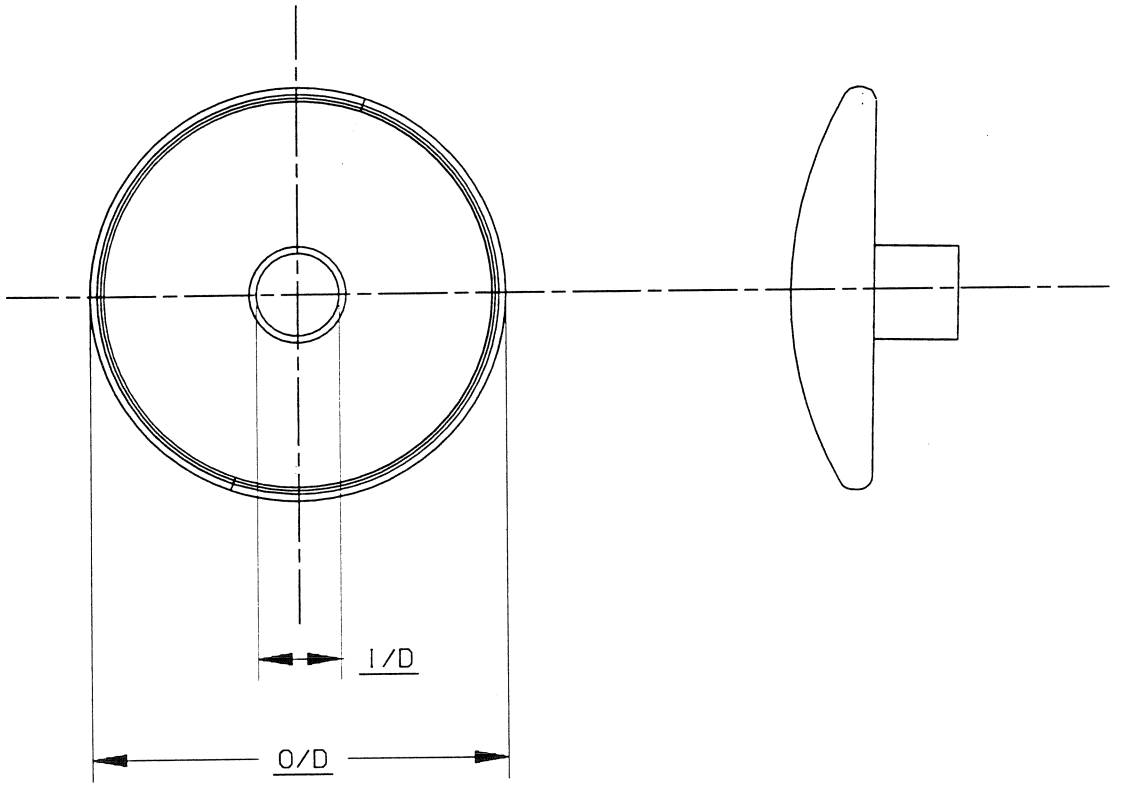
DIMENSIONS					MANUFACTURER'S P/N		FREIGHTLINER PART NUMBERS
A	B	F	T	L		NYLOMATIC	
3/16	9/32	1/2	1/32	1/16		N5919	23-12241-000
1	1 1/4	1 7/16	1/16	1 1/4		NF16-2	23-12241-001

ENGINEERING NOTES:

1. MATERIAL: DELRIN
2. DIMENSIONS PROVIDED FOR REFERENCE.

CHG	JOB NO	DATE	BY	REVISION
-	P2A412-57	04/28/95	DAJ	INITIAL LOAD
A	P2A412-73	06/21/95	DAJ	VENDOR NUMBER WAS REVISED TO N5919 FROM N5916.
B	P02938-03	08/18/97	DRP	ADDED -001. REDRAWN ON CATIA.
C	PA2042-82	12/10/97	DAJ	DIM "L" WAS "F"

DRAWN	JFR	TITLE SNAP-BUTTON CAP	DRAWING NUMBER 23-12573
APPRV	DAJ		
DATE	1/14/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CATIA ORIGINAL			



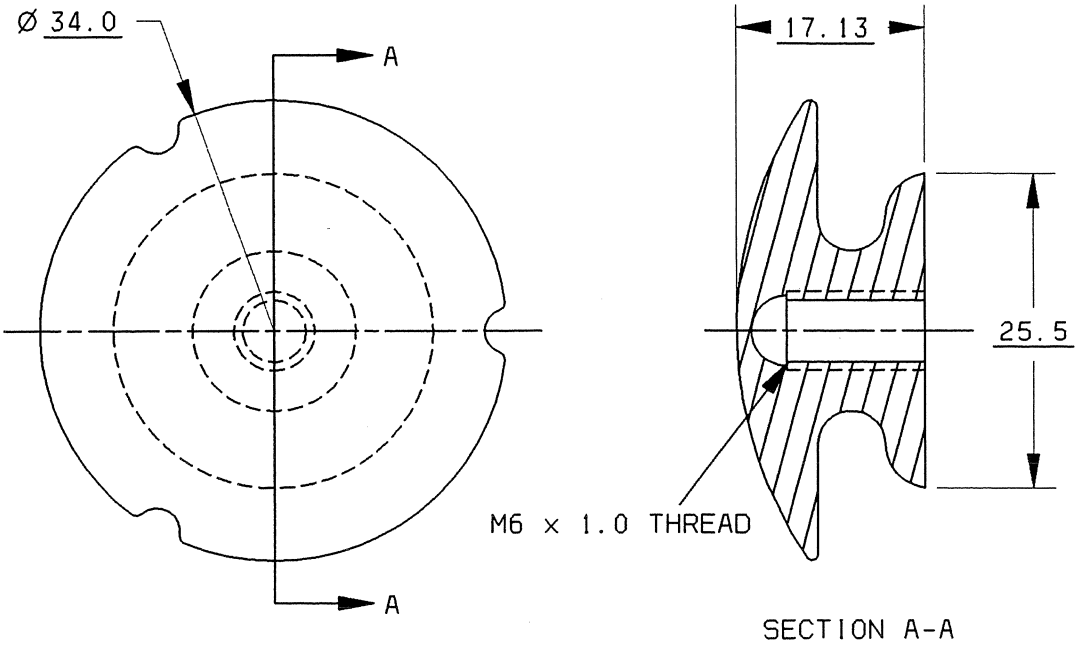
I/D	O/D	FINISH/COLOR	SUPPLIER/NO.		FREIGHTLINER PART NUMBER
			SCOVILLE	FASNAD	
3.0 MM	15.0 MM	BLACK	93-X2-10128B	-	23-12573-000
4.0 MM	15.0 MM	DOVE GREY	-	BNS4647DOV	23-12573-001
4.0 MM	15.0 MM	TAUPE	-	BNS4647TAU	23-12573-002

ENGINEERING NOTES:

1. MATERIAL: BRASS
2. FOR MATING PART REFERENCE FTL 23-12574 SPEC.

CHG	JOB NO	DATE	BY	REVISION
-	P06947-04	1/14/99	DAJ	INITIAL RELEASE
A	P04977-13	9/7/99	GJB	ADDED -002

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	KNOB-MUSHROOM ANCHOR	23-12551	
DATE	10/21/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -



SECTION A-A

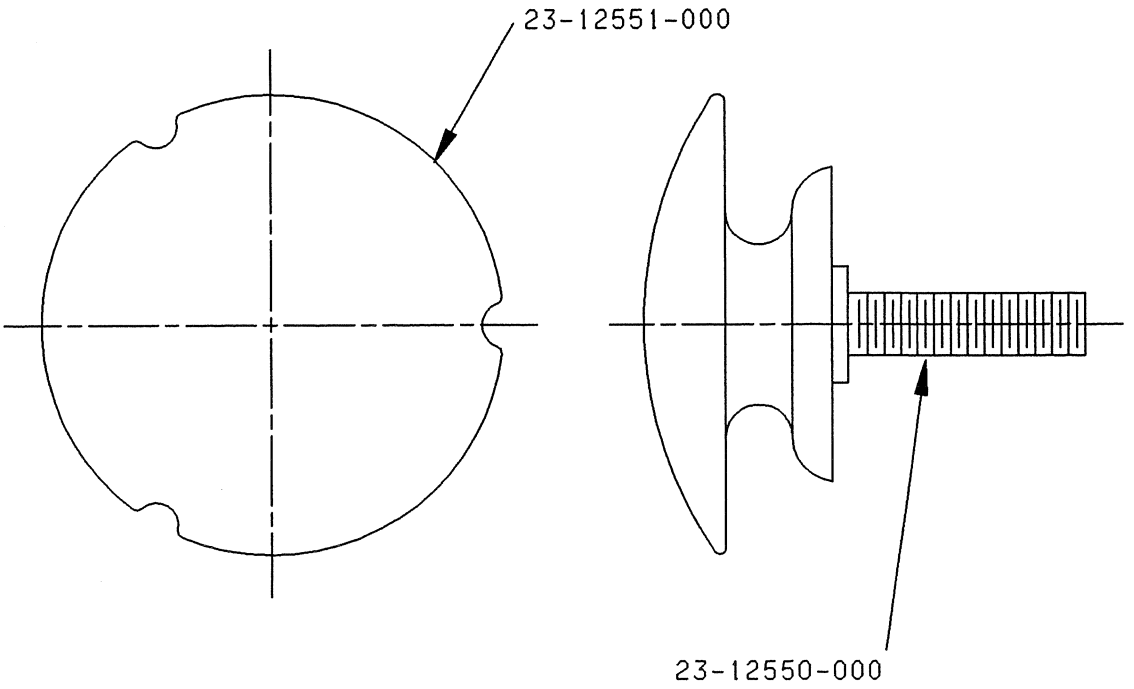
-000 SHOWN

ENGINEERING NOTES:

1. APPROVED SUPPLIER: POLYTECH NETTING, PART NUMBER PN87998
2. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P2D220-S6	10/21/98	DAJ	INITIAL RELEASE

DRAWN	DAJ	TITLE ASSY-MUSHROOM ANCHOR	DRAWING NUMBER A23-12552
APPRV	DAJ		
DATE	10/21/98		
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -



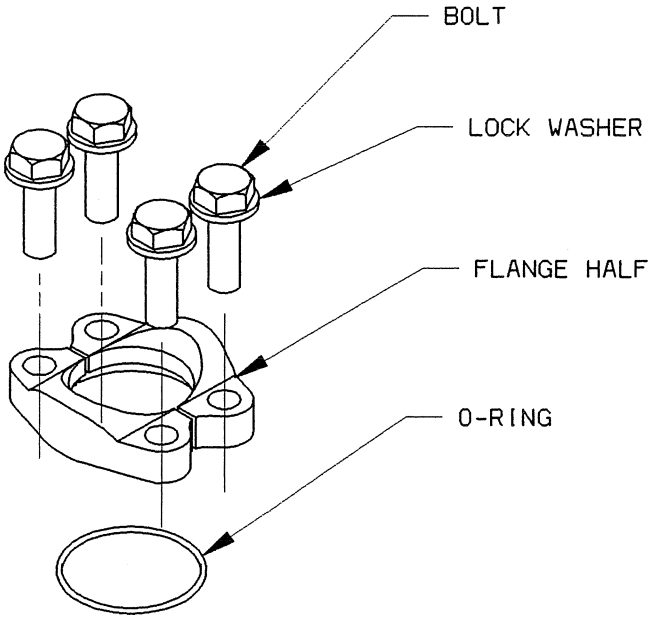
-000 SHOWN

ENGINEERING NOTES:

1. APPROVED SUPPLIER: POLYTECH NETTING

CHG	JOB NO	DATE	BY	REVISION
-	P2D220-S6	10/21/98	DAJ	INITIAL RELEASE

DRAWN	IP	TITLE	DRAWING NUMBER	
APPRV	LKG	KIT-FLANGE 2 PC., CODE 61	A23-12555	
DATE	09/18/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -



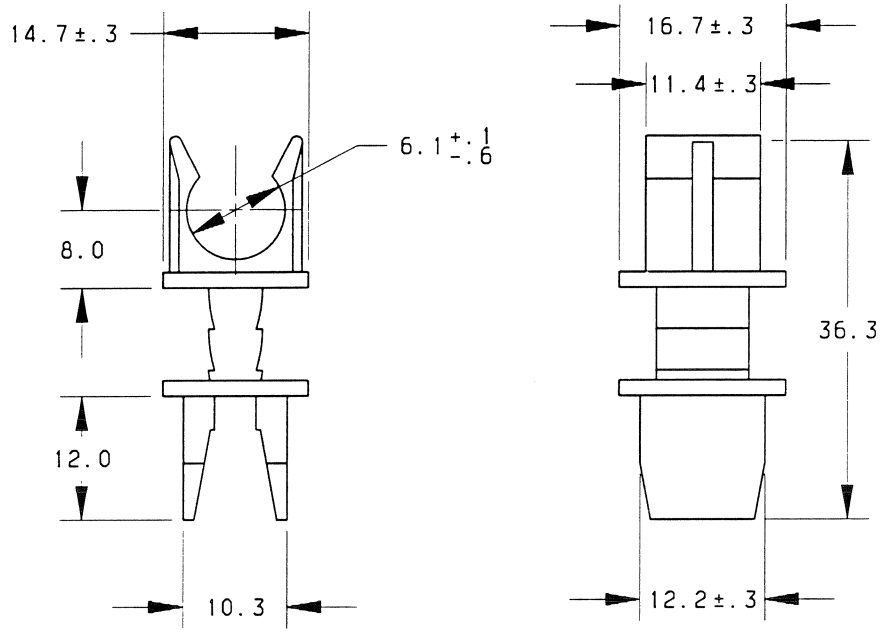
FLANGE SIZE	PSI (MAX)	FLANGE HALF(2)	O-RING	4 BOLTS (GRADE 5)	4 LOCK WASHERS	PH NO. KIT	FREIGHTLINER PART NUMBER
1-1/4	4000	51H-20	711510-3	7/16-14X1-1/2	7/16	5151HK-20	A23-12555-020
1-1/2	3000	51H-24	711510-2	1/2-13X1-1/2	1/2	5151HK-24	A23-12555-024

ENGINEERING NOTES:

1. MATERIAL : FLANGE: STEEL
   O-RING: NITRILE (BUNA-N)
2. INDUSTRY STANDARD: REF SAE J518
3. DIMENSIONS SHOWN ABOVE ARE FOR REFERENCE ONLY
4. VENDOR : PARKER HANNIFAN CORP.

CHG	JOB NO	DATE	BY	REVISION
-	P03175-93	09/18/98	IP	INITIAL LOAD

DRAWN	CGD	TITLE	DRAWING NUMBER	
APPRV	DAJ	CLIP-PANEL, NYLON, HOOD PROP ROD	23-12661	
DATE	06/18/99			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -



RECTANGULAR HOLE	PANEL THICKNESS MIN/MAX	VENDOR ITW DELTAR	FREIGHTLINER PART NUMBER
9.7 X 12.7	2.03/7.16	15-702926	23-12661-000

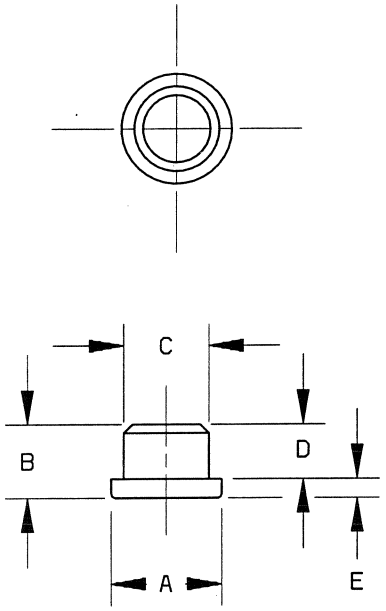
ENGINEERING NOTES:

1. MATERIAL: NYLON 6/6
2. FINISH: NATURAL
3. DIMENSIONS: ABOVE DIMENSIONS ARE SHOWN FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P05051-49	06/18/99	CGD	INITIAL RELEASE

DEBBIE

DRAWN	LFB	TITLE	DRAWING NUMBER	
APPRV	DAJ	BUMPER-STEM	23-12745	
DATE	01/04/00	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				



A	B	C	D	E	SUGGESTED VENDOR PART NUMBER	FREIGHTLINER PART NUMBER
5/8	27/64	.483	5/16	7/64	ESTCO 6092-327	23-12745-000

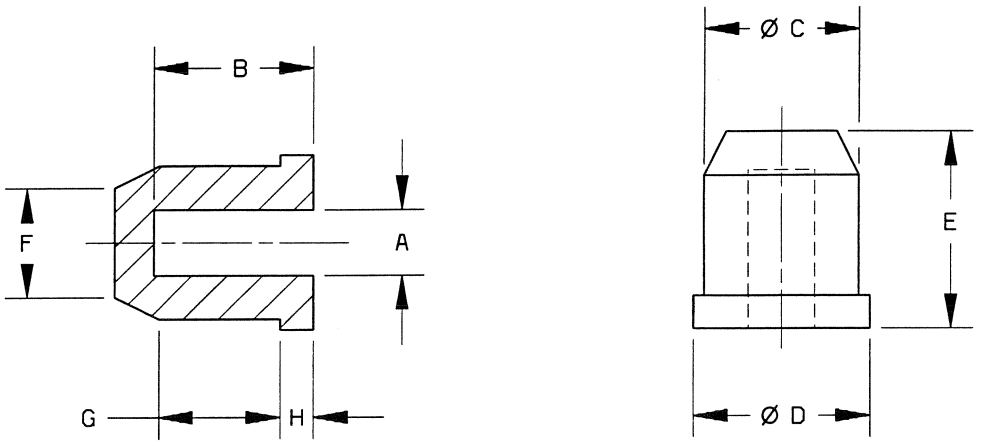
ENGINEERING NOTES:

1. MATERIAL: NEOPRENE 60 DUROMETER +5/-10.
2. ALL DIMENSIONS ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P11015-02	01/04/00	LFB	INITIAL RELEASE

DEBBIE

DRAWN	LFB	TITLE PLUG-RUBBER	DRAWING NUMBER 23-12748
APPRV	DAJ		
DATE	01/06/00	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



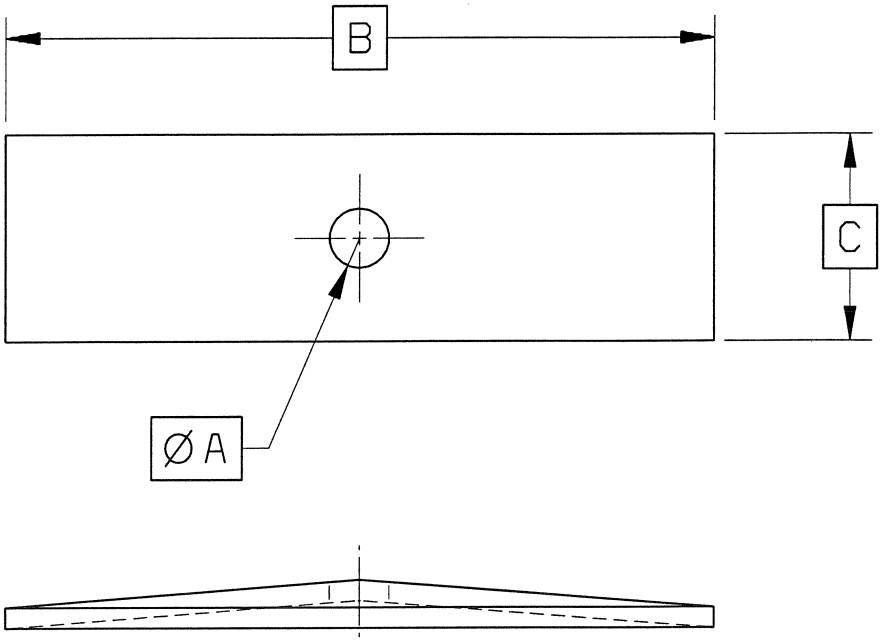
A	B	C	D	E	F	G	H	MANUFACTURERS PART NUMBER ESTCO	FREIGHTLINER PART NUMBER
.313	.906	.627	.750	1.125	.313	.688	.188	9693-45009	23-12748-000
.375	.906	.875	1.000	1.125	.625	.688	.188	9694-45009	23-12748-001

ENGINEERING NOTES:

1. MATERIAL: NITRILE (BUNA-N), 50 DUROMETER, PER ASTM D-2000 CLASSIFICATION.
2. ALL DIMENSIONS ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	P09989-03	01/06/00	LFB	INITIAL RELEASE

DRAWN	AJD	TITLE PLATE-COVER	DRAWING NUMBER 23-12763
APPRV	DAJ		
DATE	02/08/00	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			

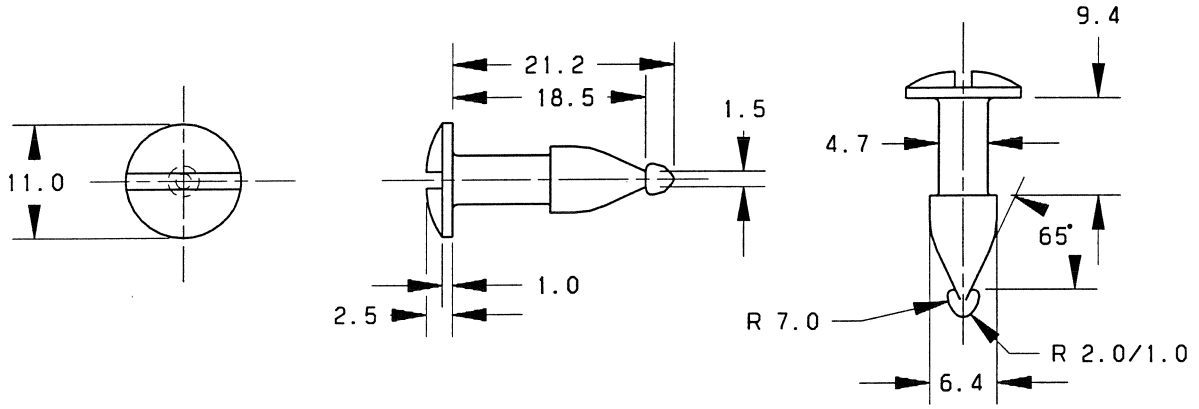


A	B	C	D	PARKER PART NUMBER	FREIGHTLINER PART NUMBER
8.6	102.0	30.0	8.0	CPT-5	23-12763-000

1. INTENDED TO BE USED WITH FREIGHTLINER PART NUMBER 23-12764.

CHG	JOB NO	DATE	BY	REVISION
-	P10481-07	02/08/00	AJD	INITIAL RELEASE

DRAWN	LFB	TITLE FASTENER QTR TURN	DRAWING NUMBER 23-12773
APPRV	DAJ		
DATE	03/07/00	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM			



-000 SHOWN

ENGINEERING NOTES:

1. MATERIAL: MILD STEEL
2. COLOR: BLACK
3. DIMENSIONS LISTED ARE NOMINAL AND PROVIDED FOR REFERENCE ONLY.
4. SUGGESTED SUPPLIER: PANELOC CORP.
5. COATING: XYLAN 5230.
6. REFERENCE FORD E866064.

CHG	JOB NO	DATE	BY	REVISION
-	P11761-01	03/07/00	LFB	INITIAL RELEASE