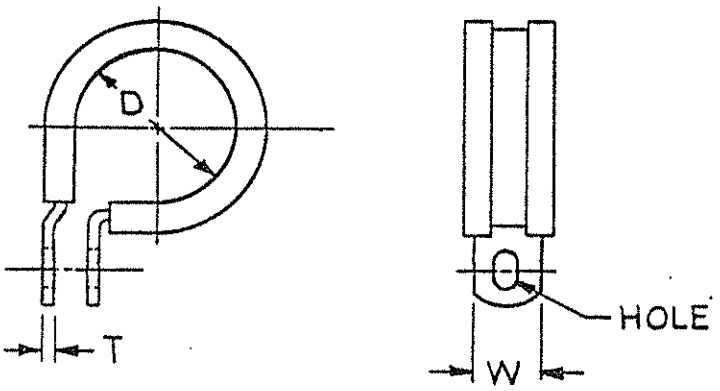
CLAMP, HOSE SINGLE CUSHIONED

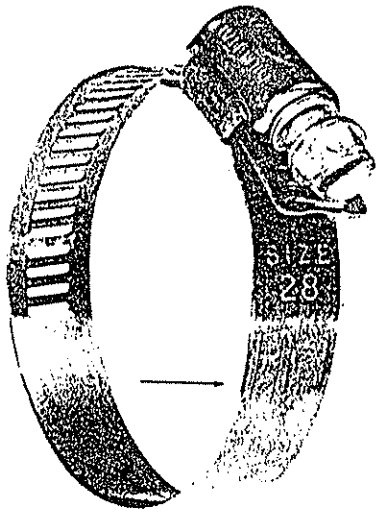


	W	HOLE
STD. SERIES	.625	.28X41 SLOT
THIN SERIES	.500	.265 DIA.

HOSE SIZE (REF)	DIA. (IN)	STD	THIN	MANUFACTURER'S NUMBER			PART NUMBER
				AQ	JMP	UMP	
–	.250	*		--	JM55LC6S- 4	S463-G4	23-09528-004
–	.250		*	--	--	S325-G4	23-09528-004
–	.313	*		--	JM55LC6S- 5	--	23-09528-005
–	.375	*		--	JM55LC6S- 6	S463-G6	23-09528-006
–	.375		*	--	--	S325-G6	23-09528-006
4	.500	*		900729- 1	JM55LC6S- 8	S463-G8	23-09528-010
4	.500		*	--	--	S325-G8	23-09528-010
5	.562	*		900729- 2	JM55LC6S- 9	--	23-09528-020
5	.625	*		900729-21	JM55LC6S-10	S463-G10	23-09528-030
6	.625		*	--	--	S325-G10	23-09528-030
8	.750	*		900729- 4	JM55LC6S-12	S463-G12	23-09528-040
8	.750		*	--	--	S325-G12	23-09528-040
–	.875	*		--	JM55LC6S-14	S463-G14	23-09528-047
–	.875		*	--	--	S325-G14	23-09528-047
10	.938	*		900729- 6	--	S463-G15	23-09528-050
10	.938		*	--	--	S325-G15	23-09528-050
–	1.000	*		--	JM55LC6S-16	S463-G16	23-09528-055
–	1.000		*	--	--	S325-G16	23-09528-055
12	1.062			900729- 8	--	--	23-09528-060
–	1.125			--	JM55LC6S-18	S463-G18	23-09528-062
16	1.188	*		900729-27	--	--	23-09528-070
–	1.250			--	--	S463-G20	23-09528-074
–	1.313			--	--	S463-G21	23-09528-075
–	1.375			--	--	S463-G22	23-09528-076
–	1.438	*		--	JM55LC6S-23	S463-G23	23-09528-077
20	1.500			900729-10	JM55LC6S-24	--	23-09528-080
–	1.625			--	JM55LC6S-26	S463-G26	23-09528-085
–	1.750			--	JM55LC6S-28	--	23-09528-086
–	1.875			--	JM55LC6S-30	S463-G30	23-09528-087
–	2.000			--	JM55LC6S-32	--	23-09528-090

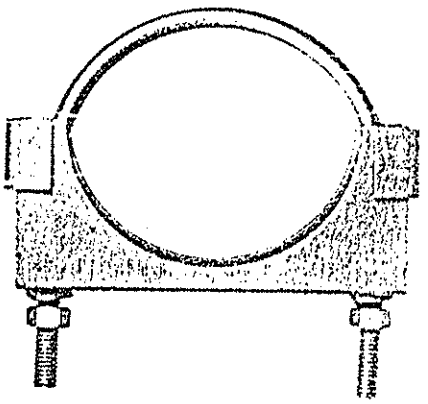
WORM DRIVE CLAMPS

FOR SECURING ALL TYPES OF PUSH ON HOSE USED IN FUEL LINE, AIR LINE, RADIATOR, VACUUM, AND HEATER APPLICATIONS.



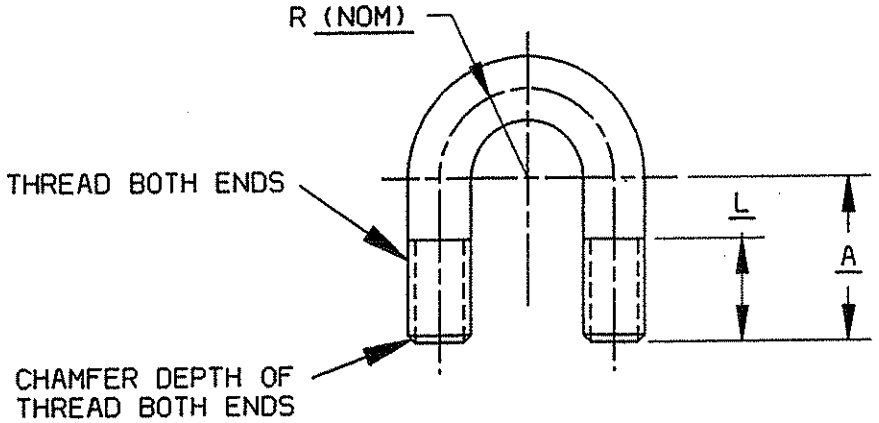
SIZE	CLAMP RANGE		MANUFACTURER'S NUMBER					PART NUMBER
	MIN.	MAX.	BRZ	DPM	IDL	WIT	MUY	
6	.44	.78	--	B6H	--	6H	HS6	23-09132-006
8	.50	.91	--	B8H	--	8H	HS8	23-09132-008
10	.56	1.06	QS500H-M10H	B10H	--	10H	H10A	23-09132-010
12	.69	1.25	QS500H-M12H	B12H	5612	12H	H12	23-09132-012
20	.81	1.75	QS500H-M20H	B20H	5620	20H	H20	23-09132-020
24	1.06	2.00	QS500H-M24H	B24H	--	24H	H24	23-09132-024
28	1.31	2.25	QS500H-M28H	B28H	5628	28H	H28	23-09132-028
36	1.81	2.75	QS500H-M36H	B36H	5636	36H	H36	23-09132-036
48	2.56	3.50	QS500H-M48	B48H	5648	48H	H48	23-09132-048
56	3.06	4.00	QS500H-M56	B56H	5656	56H	H56	23-09132-056
64	3.56	4.50	QS500H-M64	B64H	--	64H	H64	23-09132-064
80	4.62	5.50	--	--	--	80H	--	23-09132-080
88	5.12	6.00	--	--	--	88H	--	23-09132-088
104	6.12	7.00	--	--	--	104H	--	23-09132-104

HEAVY DUTY SADDLE CLAMPS
EXTRA HEAVY GAUGE STEEL



DIAMETER	U-BOLT SIZE	FLAT STYLE	ROUND STYLE	PART NUMBER
3- 5/16	3/8		*	23-09289-001
3-13/16	3/8		*	23-09289-002
4- 5/16	3/8		*	23-09289-003
4- 5/16	9/16	*		23-09288-001
5- 5/16	9/16	*		23-09288-002
5-13/16	9/16	*		23-09288-003
6- 5/16	9/16	*		23-09288-004

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	U-BOLT	23-09021	
DATE	03/26/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. M
CATIA ORIGINAL				



THREAD SIZE	DIMENSIONS			FREIGHTLINER PART NUMBER
	A	R	L	
1/4-28 UNF	2 9/16	1 13/16	1	23-09021-001
3/8-24 UNF	1 3/8	11/16	5/8	23-09021-002
1/4-20 UNC	1 1/2	1	3/4	23-09021-003
3/8-24 UNF	2 1/4	1 11/16	11/16	23-09021-004
1/4-20 UNC	1 3/4	1 1/8	3/4	23-09021-005
1/4-20 UNC	1	3/4	1	23-09021-006
1/4-20 UNC	1 3/32	17/32	3/4	23-09021-007
1/4-20 UNC	1 13/16	7/8	3/4	23-09021-008
1/4-20 UNC	1	11/16	5/8	23-09021-009
1/4-20 UNC	1 7/16	11/16	1	23-09021-010
5/16-18 UNC	1 1/2	23/32	1	23-09021-011
5/16-24 UNF	1.00	.406	.690	23-09021-012 (3)
5/16-24 UNF	1.25	.406	1.00	23-09021-013 (3)
1/4-20 UNC	1-1/4	3/8	3/4	23-09021-014

L
M

ENGINEERING NOTES:

1. MATERIAL: 48-00829-003 (FOR 1/4 INCH U-BOLTS)
   48-00829-004 (FOR 5/16 INCH U-BOLTS)
   48-00829-006 (FOR 3/8 INCH U-BOLTS)
   48-00831-025 (OPTIONAL)(FOR 1/4 INCH U-BOLTS)
   48-00831-031 (OPTIONAL)(FOR 5/16 INCH U-BOLTS)
   48-00831-038 (OPTIONAL)(FOR 3/8 INCH U-BOLTS)
2. FINISH: PLAIN

L

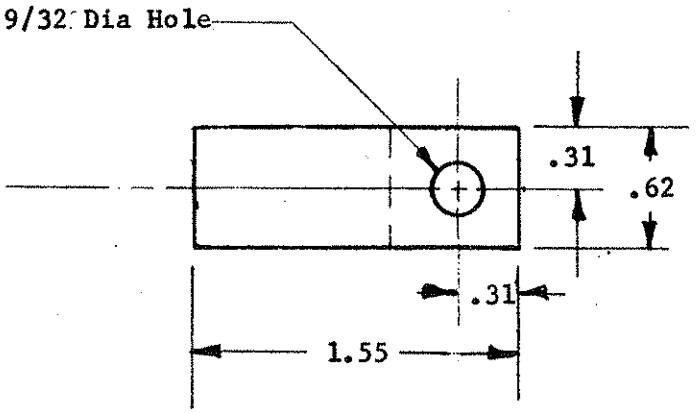
(3) FINISH: ZINC PLATED PER F/L 49-00005-403

CHG	JOB NO	DATE	BY	REVISION
L	P00085-07	03/26/98	DAJ	RVSD & REDRAWN IN CATIA. ADDED -012 & NOTES 2 AND 3.
M	P06258-02	08/24/98	DAJ	RVSD -012 A DIM. WAS .843. ADDED -013 AND -014.

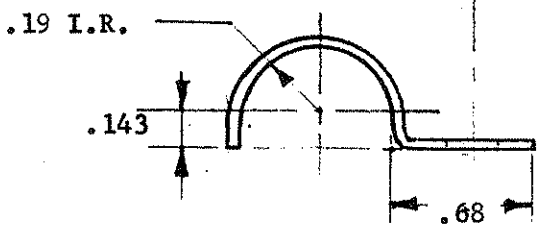
23-9056

PRINT ISSUED	TITLE	PART NO.
4/30/71	CLIP, TUBING	23-9056
LAST CHG. LTR. E		SHEET OF

SKETCH



Flat Pattern



Formed

PART NUMBERS

NOMINAL SIZE		FREIGHTLINER PART NUMBER
3/8		23-9046

ENGINEERING NOTES

1 Material: .0478 (18 ga.) SAE 1010-1020 Steel

2. Finish: Electrogalvanize or cadmium plate.

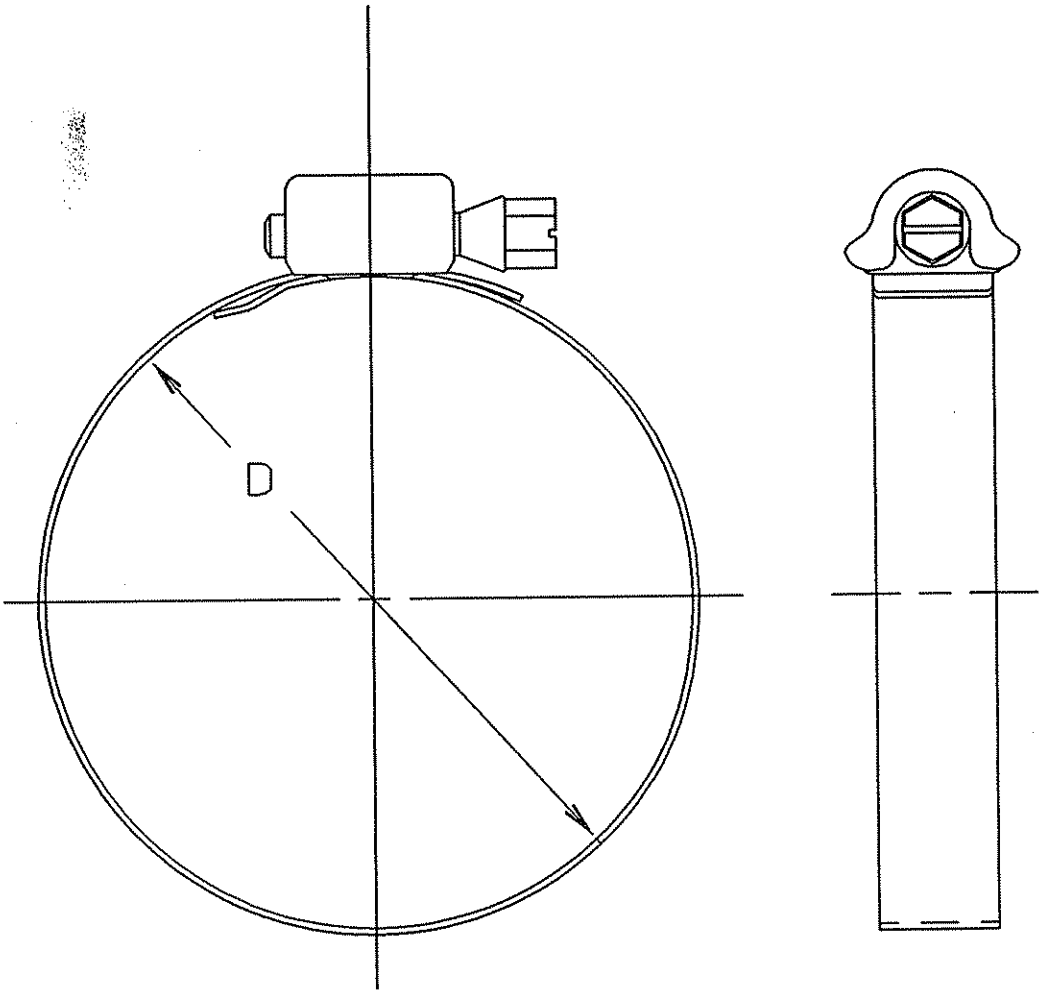
CHG	BY	DATE	WAS
D	PRJ	12-27-68	B Size Drawing
E	HJR	4-20-71	Unplated; Old Format

CHG	BY	DATE	WAS

COMPILED	PRJ	DATE DRAWN		MATERIAL	
APPROVED		12-27-68		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

DRAWN	CRS	TITLE CLAMP-WORM GEAR SAE J1508	ITEM NUMBER 23-09132
APPRV	PCK		
DATE	01/21/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2



WORM GEAR CLAMP

CHG	JOB/RLSE NO	DATE	BY	REVISION
M	PA2024-63	02/08/91	PCK	DOCUMENTED-REVISED AND REDRAWN
N	PA2042-18	05/15/92	JAC	23-09132-005 ADDED AND MIN/MAX DIMENSIONS REVERSED
P	P0315J-01	05/07/96	DAJ	ADDED -041, SEE PAGE 2.

DRAWN	PCK	TITLE	ITEM NUMBER
APPRV	ANF	CLAMP-WORM GEAR SAE J1508	23-09132
DATE	01/21/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2

SAE SIZE	D DIM.		MANUFACTURER'S NUMBER				FREIGHTLINER PART NUMBER
-	MIN	MAX	BRZ	IDL	WIT	MUY	
4	.25	.62	3504	6202	M5	MM4	23-09132-004
6	.44	.70	3506				-005
6	.44	.78	62006	5706	6H	H6	-006
8	.50	.91	62008	5708	8H	H8	008
10	.56	1.06	62010	5710	10H	H10	-010
12	.69	1.25	62012	5712	12H	H12	-012
20	.81	1.75	62020	5720	20H	H20	-020
24	1.06	2.00	62024	5724	24H	H24	-024
28	1.31	2.25	62028	5728	28H	H28	-028
28	1.31	2.25	62028 BKB	-	28-H BLACK	-	-029
36	1.81	2.75	62036	5736	36H	H36	-036
40	2.06	3.00	62040	5740	40H	H40	-040
40	2.06	3.00	62040 BKB	-	40-H BLACK	-	-041
48	2.56	3.50	62048	5748	48H	H48	-048
56	3.06	4.00	62056	5756	56H	H56	-056
64	3.56	4.50	62064	5764	64H	H64	-064
80	4.62	5.50	62080	5780	80H	H80	-080
88	5.12	6.00	62088	5788	88H	H88	-088
104	6.18	7.00	62104	57104	104H	H104	-104

ENGINEERING NOTES:

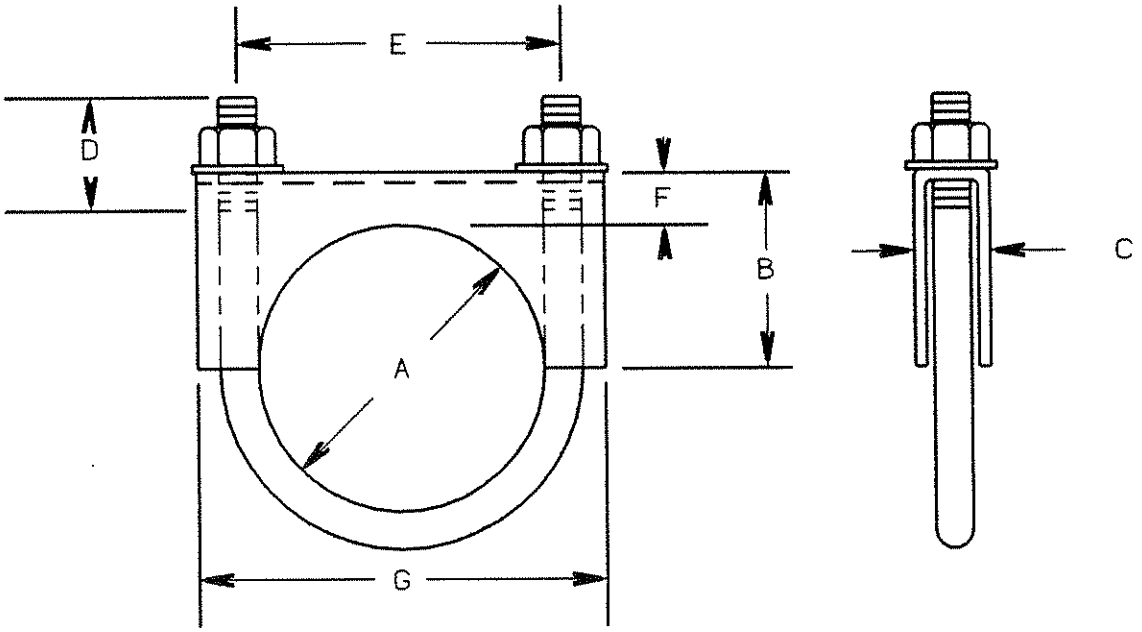
1 MATERIAL: BAND AND HOUSING: STAINLESS STEEL, AISI 201 OR AISI 301
SCREW, SLOTTED HEAD: STEEL, ZINC PLATED

2 INDUSTRY STANDARD: SAE J1508 TYPE F EXCEPT 23-09132-004 WHICH IS TYPE M

CHG	JOB/RLSE NO	DATE	BY	REVISION
M	PA2024-63	02/08/91	PCK	DOCUMENTED-REVISED AND REDRAWN
N	PA2042-18	05/15/92	JAC	23-09132-005 ADDED AND MIN/MAX DIMENSIONS REVERSED
P	P0315J-01	05/07/96	DAJ	ADDED -041, ALSO BRZ PNS ON -004 & -029.

DRAWN	B.T.	TITLE MUFFLER CLAMP ROUND	ITEM NUMBER 23-09289
APPRV	TAL		
DATE	07/06/83	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SKETCH:



SPECIFICATION NUMBERS:

CLAMP SIZE	THREAD SIZE	REFERENCE DIMENSIONS *							FREIGHTLINER SPECIFICATION NUMBER
		A	B	C	D	E	F	G	
3.00	5/16-18	3.2	2.0	.8	1.5	3.5	.3	4.5	23-09289-001
3.50	3/8-16	3.7	2.5	.8	1.5	4.0	.6	5.0	-002
4.00	3/8-16	4.2	2.6	.8	1.5	4.5	.6	5.6	-003

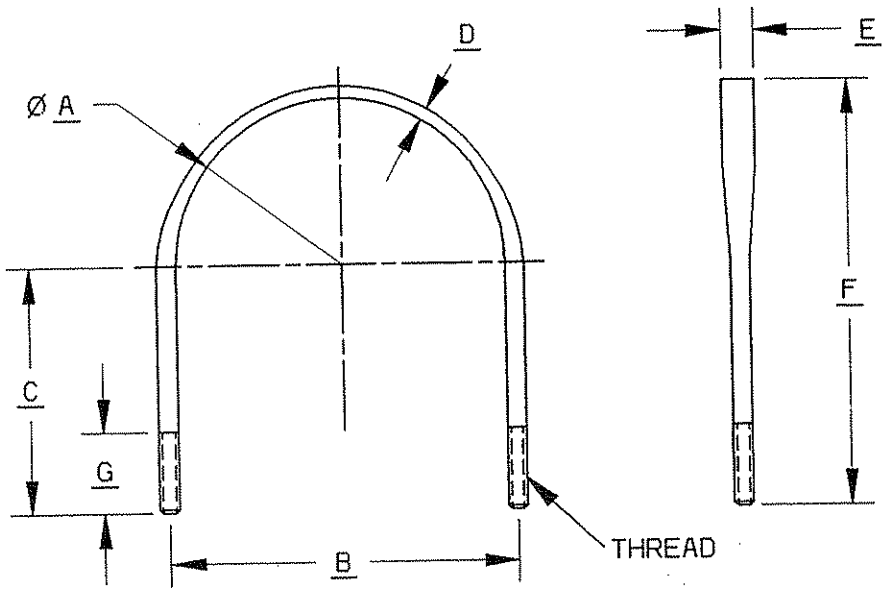
* ALL DIMENSIONS IN INCHES

SPECIFICATIONS:

1. FLANGE STYLE LOCKING NUT, 2 REQUIRED.
2. FINISH: ZINC PLATE PER 49-00005-403.
3. SADDLE AND "U" BOLT MATERIAL: AISI/SAE 1010/1020.

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	P0459G-01	03/10/92	ERK	REVISED AND REDRAWN; ADDED FINISH

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	U-BOLT TUBE CLAMP	23-09459	
DATE	06/19/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. C
CATIA ORIGINAL				



SIZE	A	B	C	D	E	F	G	THREAD	MFR'S NO.	FREIGHTLINER SPECIFICATION	
									WPE	ZINC PLATED (1)	CHROME PLATED (2)
4	4.31	-	3.56	.156	.56	-	1.50	3/8-16	4UBOFB	23-09459-001	23-09459-201
5	5.31	-	4.06	.156	.56	-	1.50	3/8-16	5UBOFB	23-09459-002	23-09459-202
5	5.17	5.50	-	.187	.53	6.31	1.50	3/8-16	-	23-09459-005	-
5	5.17	5.50	-	.187	.53	4.75	1.50	3/8-16	-	23-09459-006	-
5.5	5.81	-	4.31	.156	.56	-	1.50	3/8-16	55UBOFB	23-09459-003	-
6	6.31	-	4.56	.156	.56	-	1.50	3/8-16	6UBOFB	23-09459-004	-

SPECIFICATIONS:

(1) ZINC PLATE PER FREIGHTLINER SPECIFICATION 49-00005-403

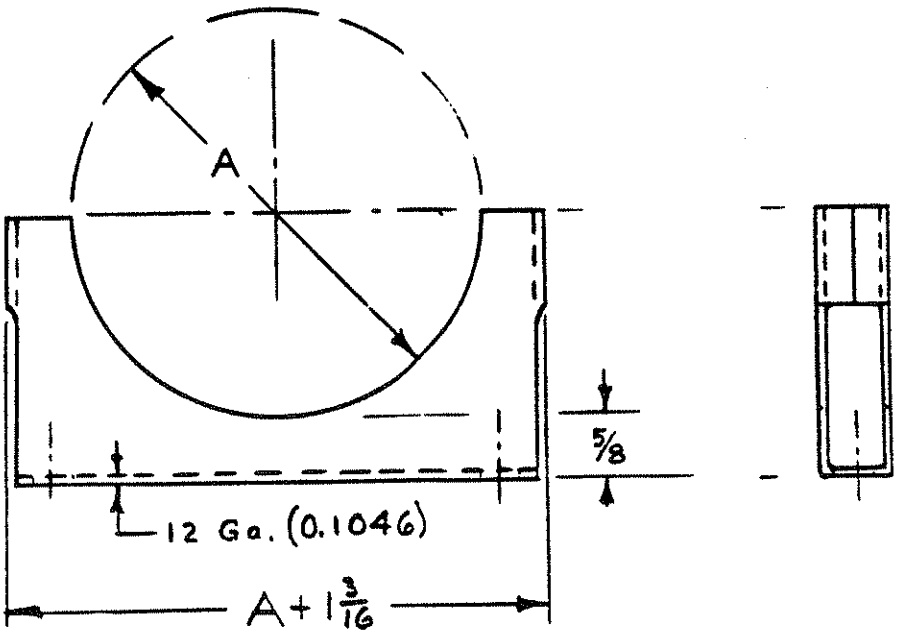
(2) CHROME PLATE PER FREIGHTLINER SPECIFICATION 49-00002-007

CHG	JOB NO	DATE	BY	REVISION
C	B32505-16	06/19/98	DAJ	REVISED AND REDRAWN IN CATIA. ADDED -006 AND DIM G.

General Use Part

PRINT ISSUED	TITLE	PART NO
1-4-71	SADDLE TUBE CLAMP ASSY	23-9460
LAST CHG LTR		SHEET OF

SKETCH



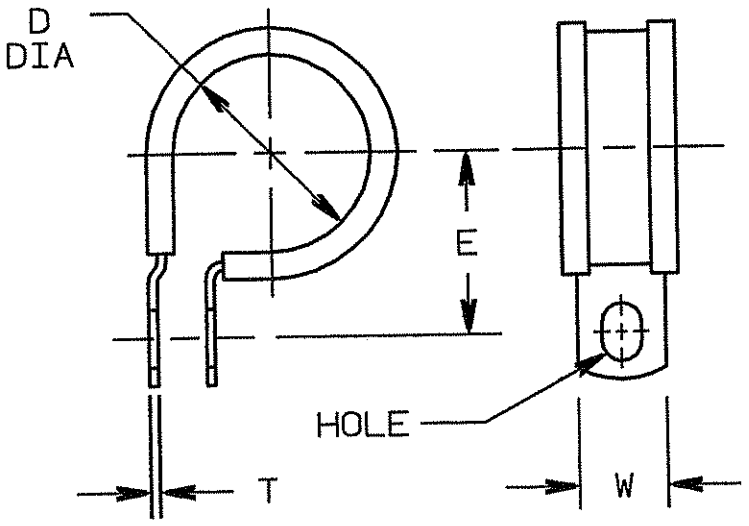
PART NUMBERS

NOMINAL SIZE	A ACTUAL I.D.	MANUFACTURERS' PART NUMBERS WPE PLAIN			FREIGHTLINER PART NUMBER PLAIN FINISH	CHROME PLATED PER 49-00002-007
4	4-5/16	4S0			23-9460-001	23-9460-201
5	5-5/16	5S0			-002	-202
5½	5-13/16	55S0			-003	-203
6	6-5/16	6S0			-004	-204

COMPILED	HJR	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	L. Dale	11-20-70		STEEL	A23-9288

Portland FREIGHTLINER CORPORATION Oregon 97208

DRAWN	FEF	TITLE	ITEM NUMBER
APPRV	DJL	CLAMP - HOSE SINGLE CUSHION	23-09528
DATE	01/23/84	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2



SERIES	W ±.015	HOLE
STD	.625	.281 X .375
THIN	.500	.265 DIA
SMALL	.375	.204 DIA

PART NUMBERS

HOSE SIZE (REF)	D DIA (IN)	E ±.015	T ±.005	SERIES		FREIGHTLINER PART NUMBER
-	.188	.498	.031	SMALL		23-09528-002
-	.188	.498		THIN		-003
-	.250	.639		STD		-004
-	.313	.671		STD		-005
-	.375	.702				-006
4	.500	.764		STD		-010
			.048			
5	.562	.795				-020
6	.625	.827				-030
8	.750	.889		STD		-040
-	.875	.952				-047
10	.938	.983				-050
-	1.000	1.014				-055
			.062			
12	1.062	1.065		STD		-060
-	1.125	1.096				-062
16	1.188	1.128				-070
-	1.250	1.159				-074

CHG	JOB/RLSE NO	DATE	BY	REVISION
N	P0717J-02	12/15/93	ERK	REDRAWN ON NEW FORMAT; ADDED -092 ON SHT #2

DRAWN	FEF	TITLE	ITEM NUMBER
APPRV	DJL	CLAMP - HOSE SINGLE CUSHION	23-09528
DATE	01/23/84	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2

PART NUMBERS (CONTINUED)

HOSE SIZE (REF)	D DIA (IN)	E ±.015	T ±.005	SERIES		FREIGHTLINER PART NUMBER
-	1.313	1.191	.062	STD		23-09528-075
-	1.375	1.222				-076
-	1.439	1.253				-077
20	1.500	1.284				-080
-	1.625	1.346				-085
-						
-	1.750	1.409				-086
-	1.875	1.472				-087
-	2.000	1.534				-090
32	2.250	1.659				-091
38	2.375	1.722	.050			-092

N

ENGINEERING NOTES:

1. MATERIAL:
   METAL: 1010 CARBON STEEL OR BETTER, ZINC PLATED(YELLOW)
   CUSHION: NEOPRENE, AMS 3209, SAE 1-BC715 (REF MIN TENSILE 1700 PSI, SDH A70 ±5, TEMPERATURE F° -40 TO +212 (C° -40 TO +100)).
   COLOR: BLACK

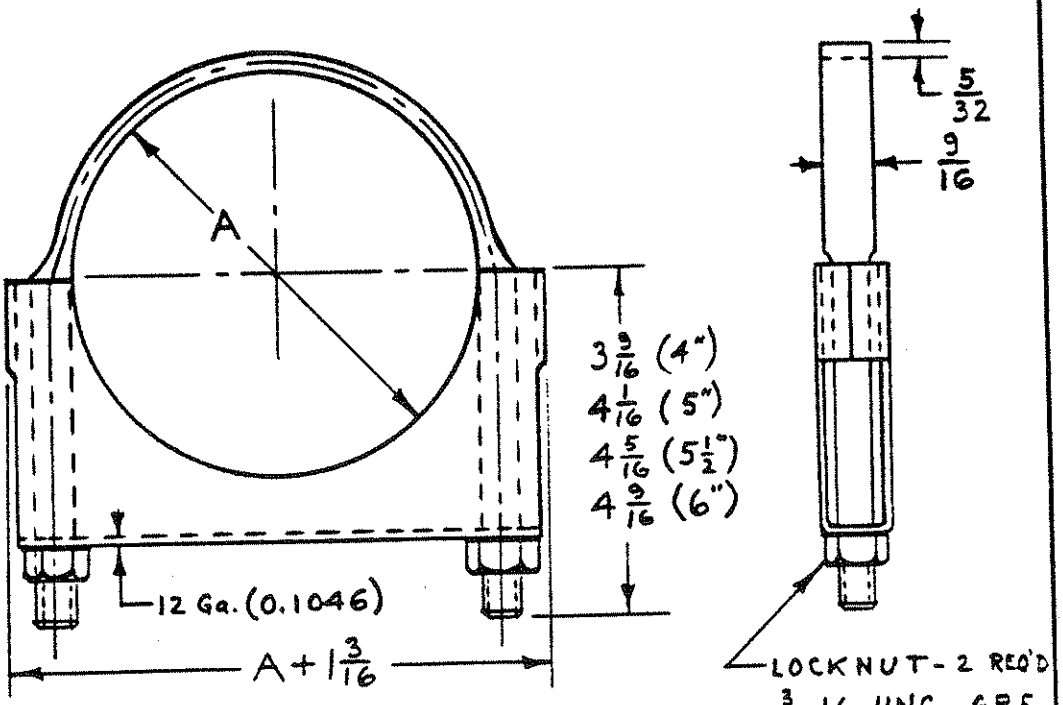
2. SUGGESTED VENDORS: UMPCO, J&M PRODUCTS, DRAKE.

CHG	JOB/RLSE NO	DATE	BY	REVISION
N	P0717J-02	12/15/93	ERK	REDRAWN ON NEW FORMAT; ADDED -092.

General Use Part

PRINT ISSUED	TITLE	PART NO.
12-29-70	CLAMP ASSY, TUBE . FLAT BAND	A23-9288
LAST CHG LTR: A		SHEET OF

SKETCH



PART NUMBERS

A. PLAIN FINISH

NOMINAL SIZE	A ACTUAL I.D.	MFR SYM-BOL	MANUFACTURERS' NUMBERS U-BOLT	SADDLE	CLAMP ASSY	FREIGHTLINER NUMBERS U-BOLT	SADDLE	CLAMP ASSY
4	4-5/16	WPE	4UB0FB	4S0	FBCL 400	23-9459-001	23-9460-001	A23-9288-001
5	5-5/16	WPE	5UB0FB	5S0	FBCL 500	-002	-002	-002
5½	5-13/16	WPE	55UB0FB	55S0	FBCL 550	-003	-003	-003
6	6-5/16	WPE	6UB0FB	6S0	FBCL600	-004	-004	-004

B. CHROME FINISH PER 49-00002-007

NOM SIZE	A ACTUAL I.D.	FREIGHTLINER NUMBERS U-BOLT	SADDLE	CLAMP ASSY
4	4-5/16	23-9459-201	23-9460-201	A23-9288-201
5	5-5/16	-202	-202	-202
5½	5-13/16	-203	-203	-203
6	6-5/16	-204	-204	-204

ENGINEERING NOTES

(1) Material: Steel
2 Finish: Plain or Chrome Plated as Indicated

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED	L.Dekker	11-30-70		(1)	

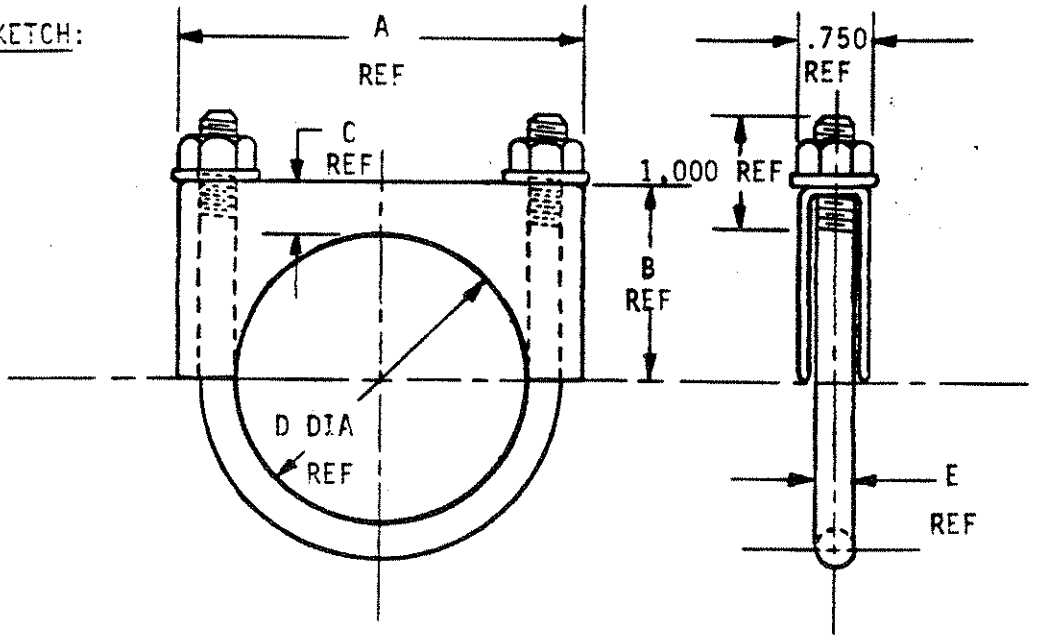
Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	11-30-70	Revised & Redrawn

ORIGINAL JOB NO.	TITLE	PART NO.
3792B	MUFFLER CLAMP	23-09289
LAST CHG LTR A	ROUND	SHEET 1 OF 1

SKETCH:



PART NUMBERS:

A	B	C	D	E	MANUFACTURE'S JH	FREIGHTLINER PART NUMBERS
4.500	2.250	.500	3.125	.250	6 - 330	23-09289-001
5.000	2.500	.688	3.625	.312	6 - 335	23-09289-002
5.375	2.750	.688	4.125	.375	6 - 340	23-09289-003

ENGINEERING NOTES:

(1) Material: Steel

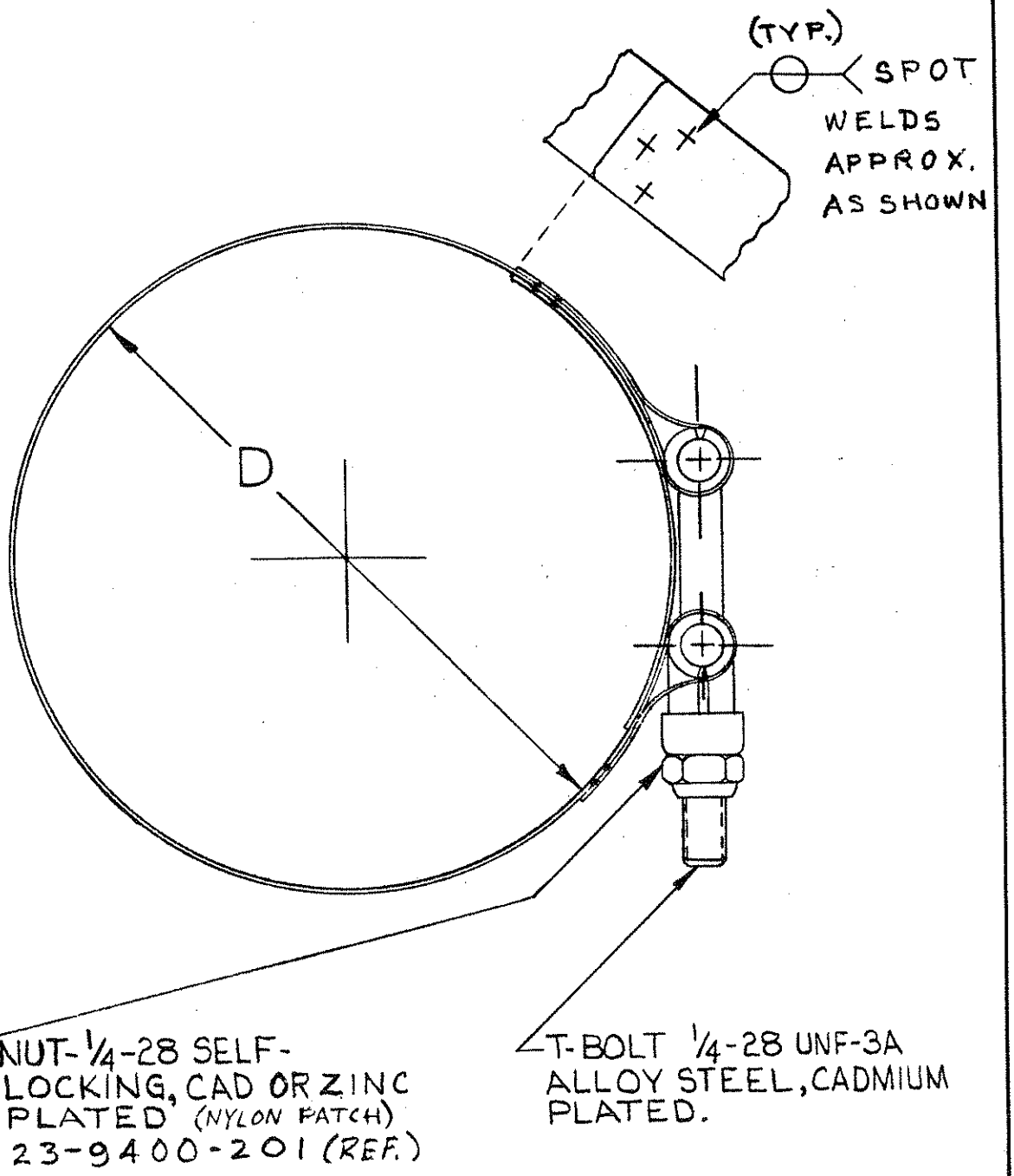
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	3792B	BT	07-06-83	REVISED & REDRAWN

COMPILED	B.T.	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	TAL	07-06-83		(1)	VEHICLE

General Use Part

PRINT ISSUED	TITLE	NO.
10/15/71	CLAMP, BAND STAINLESS STEEL	23-9322
LAST CHG. LTR. M		SHEET 1 OF 3

SKETCH



CHG	BY	DATE	WAS
E	HJR	12-19-72	See P. 2; J #60610
F	HJR	8-12-76	Add B dim. 61601
G	SB	1-3-77	13523 -250 #63334
H	JK	4-29-77	275 to 350 #64086
J	TDT	9-25-79	See Sheet 2
K	TDT	11-14-79	SEE SHT. 2
L	JKH	4-23-81	SEE SHT. 2
M	HSB	5/12/82	See Sht. 2 & 3 of 3

CHG	BY	DATE	WAS
A	TJB	4-16-70	SEE SHT 2
B	HJR	2-22-71	ALL METAL LOCK NUT
C	HJR	9-2-71	(See Sheet 2)
D	HJR	10-8-71	(See Sheet 2)

PART NUMBERS

(See Sheet 3)

T-BOLT CLAMP

COMPILED	TJB	DATE DRAWN		MATERIAL	
APPROVED		2-20-70		(See Sht. 3)	

Portland FREIGHTLINER CORPORATION Oregon 97208

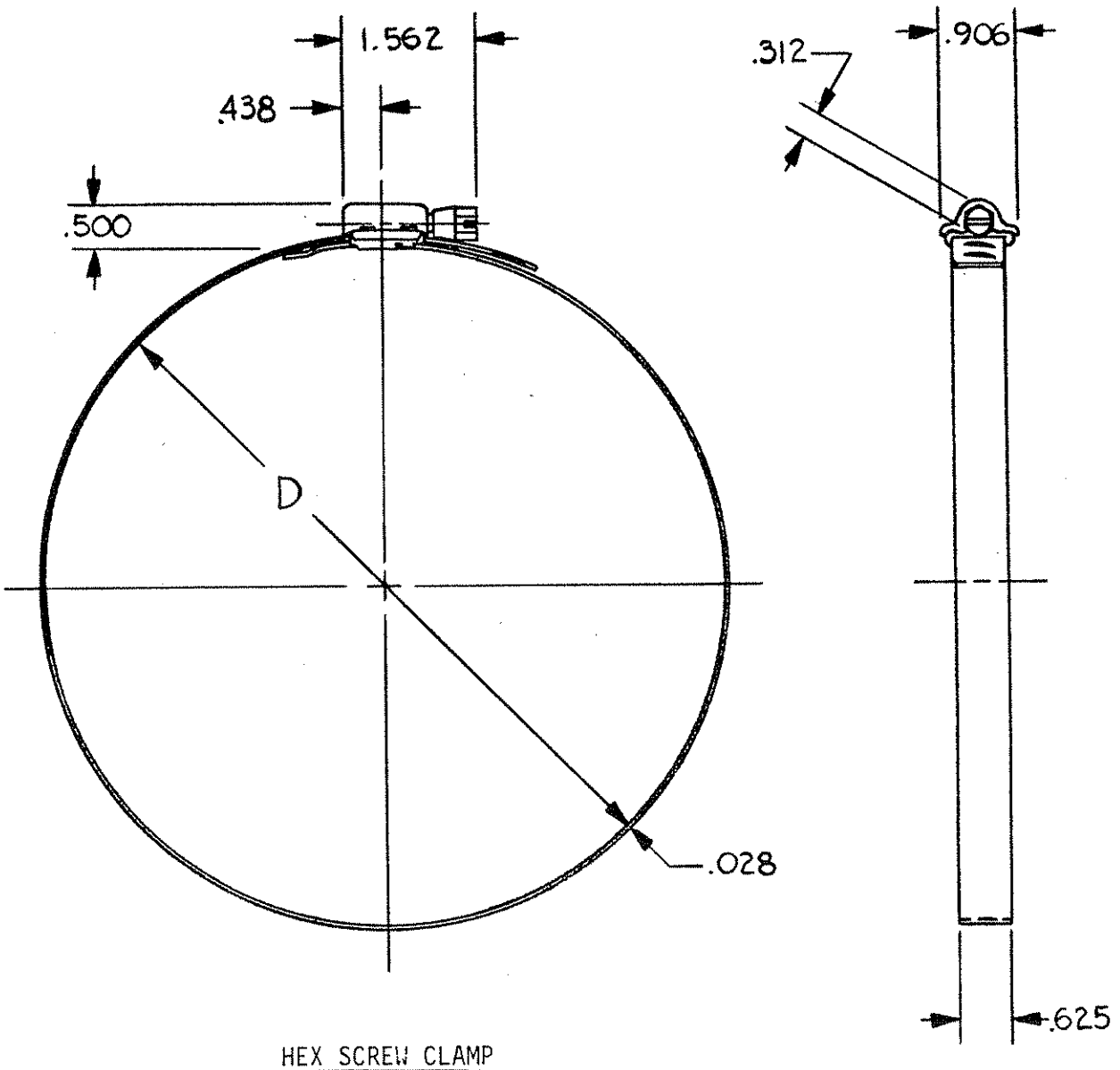
J H M L K F G

23-9322

ORIGINAL JOB NO.	TITLE	PART NO.
D2746	CLAMP, BAND STAINLESS STEEL	23-9322
LAST CHG LTR M		SHEET 2 OF 3

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
1	D2746	HSB	5/13/82	Added Sht. 2; See Sht. 3; Retyped Sht. 2 & 3



HEX SCREW CLAMP

COMPILED	HSB	DATE DRAWN		MATERIAL	
APPROVED		5/13/82		(See Sheet 3)	

General Use Part

ORIGINAL JOB NO.	TITLE	PART NO.
D2746	CLAMP, BAND STAINLESS STEEL	23-9322
LAST CHG LTR: M		SHEET 3 OF 3

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

PART NUMBERS

D DIM.	MANUFACTURER'S NUMBER				FREIGHTLINER PART NUMBER
	HEX SCREW	TEE BOLT			
	BRZ	GLP	SPL	AQ	
3.00		C410C-75-400-S	13528-275-300	55083-306-2L	23-9322-250
4.00		C410C-75-400-S	-275-400	-400-2	-350
4.50		C410C-75-450-S	-275-450	-450-2	-400
5.00		C410C-75-500-S	-275-500	-500-2	-450
5.50	HTM-600	C41224C-75-550-S	-350-550		-500
5.75		C410C-75-575-S	-275-575	-575-2	-525
6.00	HTM-650	C41224C-75-600-S	-350-600		-550
6.50	HTM-700	C41224C-75-650-S	-350-650		-600
6.75		C410C-75-675-S	-275-675	-675-2	-625
7.00	HTM-750	C410C-75-700-S	-275-700	-700-2	-650
7.50	HTM-800	C41224C-75-750-S	-350-750		-700
8.25		C410C-75-825-S	-275-825	-825-2	-750
8.50	HTM-900	C41224C-75-850-S	-350-850		-800
9.00		C41224C-75-900-S	-350-900		-850

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
M	D2746	HSB	5/13/82	Added BRZ. Col., See Sht 1 & 2; Retyped Sht. 3

ENGINEERING NOTES

① MATERIAL: Type 301 stainless steel.

2. Part purchased as an assembly only.

3. Dash number equals tube size in decimal inches. Clamp diameter is sufficient to accept tube and rubber connectors.

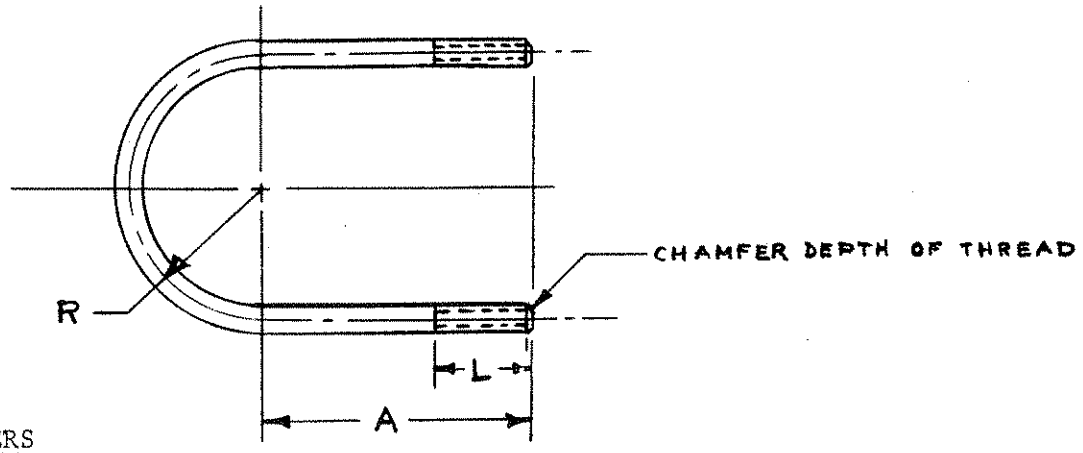
COMPILED	HSB	DATE DRAWN		MATERIAL	
APPROVED		5/13/82		①	

23-9021

General Use Part

PRINT ISSUED	TITLE	PART NO.
	U-BOLTS	23-9021
LAST CHG. LTR. D		SHEET 1 OF 1

SKETCH



PART NUMBERS

A	R	THREAD	L	STOCK LENGTH		FREIGHTLINER PART NUMBER
2-9/16	1-13/16	1/4-28 UNF	1	10-13/16		23-9021-001
1-3/8	11/16	3/8-24 UNF	5/8	4-29/32		-002
1-1/2	1	1/4-20 UNC	3/4	6- 9/64		-003
2-1/4	1-11/16	3/8-24 UNF	11/16	9- 3/4		-004
1-3/4	1- 1/8	1/4-20 UNC	3/4	7- 1/32		-005

ENGINEERING NOTES

(1) Material: Steel - SAE 1010 - 1020 or 1110 - 1118

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
C	HJR	1-26-72	Add -004; Redraw; J#84590
D	SF	3-25-85	Add -005 - JN 79176

ns

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED	Rollins	1-26-72		(1)	

Portland FREIGHTLINER CORPORATION Oregon 97208

DC

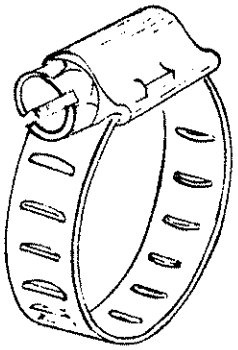
23-9132

CHG	BY	DATE	WAS	JOB NO
J	MS	1-25-83	FROM SINGLE SERIES TO SI SERIES	2010B
K	TNN	5-24-85	Added -029	1851D

CHG	BY	DATE	WAS	JOB NO
E	HJR	5-9-74	Revised, Redrawn	A0618
F	HJR	12-19-74	Add -056	A0726
G	OWJ	6-28-77	-88 was -80	64490
H	DAW	7-30-82	Add -40	4666B

PRINT ISSUED		TITLE	PART NO.
		CLAMP, HOSE WORM GEAR TYPE SAE J536	23-9132
LAST CHG LTR	K		SHEET 1 OF 1

SKETCH



(Typical)

PART NUMBERS

(J)

SAE SIZE	CLAMP ID MIN.	CLAMP ID MAX.	MANUFACTURERS' NUMBER BRZ (JET) a	DPM	IDL	WIT	MUY	FREIGHTLINER PART NUMBER
6	.44	.78		B6H		6H	HS-6	23-9132-006
8	.50	.91		B8H	5708	8H	HS-8	-008
10	.56	1.06	QS500H-M10H	B10H	5710	10H	H-10A	-010
12	.69	1.25	QS500H-M12H	B12H	5712	12H	H-12	-012
20	.81	1.75	QS500H-M20H	B20H	5720	20H	H-20	-020
24	1.06	2.00	QS500H-M24H	B24H		24H	H-24	-024
28	1.31	2.25	QS500H-M28H	B28H	5728	28H	H-28	-028
28	1.31	2.25				28H-BLACK		-029 (K)
36	1.81	2.75	QS500H-M36H	B36H	5736	36H	H-36	-036
40	2.06	3.00			5740			-040
48	2.56	3.50	QS500H-M48	B48H	5748	48H	H-48	-048
56	3.06	4.00	QS500H-M56	B56H	5756	56H	H-56	-056
64	3.56	4.50	QS500H-M64	B64H	5764	64H	H-64	-064
80	4.62	5.50			5780	80H		-80
88	5.12	6.00			5788	88H		-88
104	6.12	7.00			57104	104H		-104

a. Designates quick opening capability when not under load.
b. Additional sizes available from manufacturers.

ENGINEERING NOTES

(1) MATERIAL: BAND & HOUSING: stainless steel
SCREW, SLOTTED HEX HEAD: Cadmium plated steel

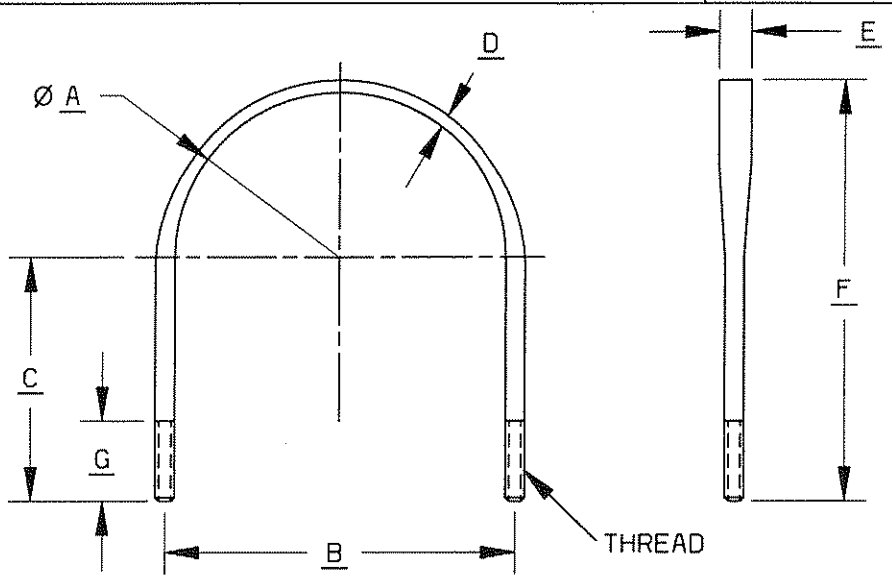
2. Quality of material, manufacture, finish and workmanship must be not less than the current applicable specifications of SAE J536, Type F Hose Clamps

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED		5-9-74		1	03030/000D1

Portland FREIGHTLINER CORPORATION Oregon 97208

K J H G F E

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	U-BOLT TUBE CLAMP	23-09459	
DATE	06/19/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. E
CATIA ORIGINAL				



SIZE	A	B	C	D	E	F	G	THREAD	MFR'S NO. WPE	FREIGHTLINER PART NUMBER
4	4.31	-	3.56	.156	.56	-	1.50	3/8-16	4UBOFB	23-09459-001 (1)
										23-09459-201 (2)
5	5.31	-	4.06	.156	.56	-	1.50	3/8-16	5UBOFB	23-09459-002 (1)
										23-09459-202 (2)
5	5.17	5.50	-	.187	.53	6.31	1.50	3/8-16	-	23-09459-005 (1)
E 5	5.17	5.50	3.0	.187	-	5.53	1.50	3/8-16	-	23-09459-006 (3)
			-		.53	6.71	1.50		-	23-09459-007 (1)
D 5.5	5.81	-	4.31	.156	.56	-	1.50	3/8-16	55UBOFB	23-09459-003 (1)
6	6.31	-	4.56	.156	.56	-	1.50	3/8-16	6UBOFB	23-09459-004 (1)

SPECIFICATIONS:

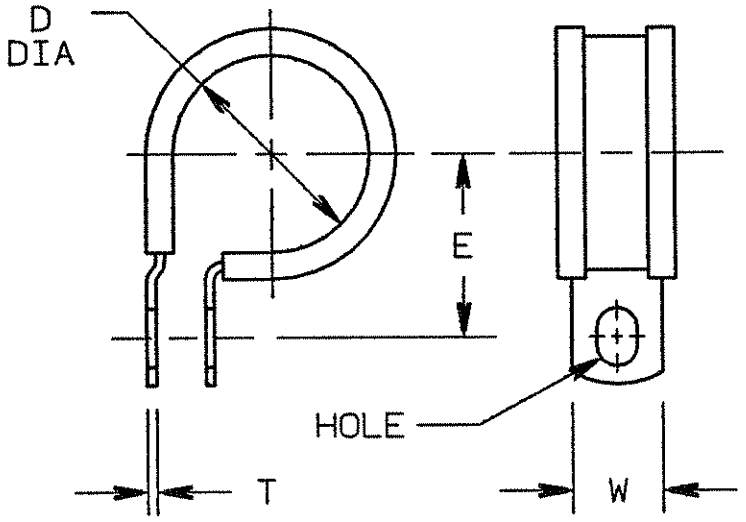
(1) ZINC PLATE PER FREIGHTLINER SPECIFICATION 49-00005-403

(2) CHROME PLATE PER FREIGHTLINER SPECIFICATION 49-00002-007

E (3) STAINLESS STEEL PER ASTM F593 TYPE 304.

CHG	JOB NO	DATE	BY	REVISION
C	B32505-16	06/19/98	DAJ	REVISED AND REDRAWN IN CATIA. ADDED -006 AND DIM G.
D	P07258-01	12/15/98	DAJ	ADD -007. DIM F AND G ON -006 WAS 4.75 AND 1.50
E	P03609-05	03/03/00	LFB	ADDED NOTE 3. REVISED DIM C, E, F, & G ON -006.

DRAWN	FEF	TITLE	DRAWING NUMBER
APPRV	DJL	CLAMP, HOSE SINGLE CUSHIONED	23-09528
DATE	01-23-84	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2 / CHG. LTR. M
CADAM ORIGINAL			
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES		UNIT OF MEASURE: -	



SERIES	W ±.015	HOLE
STD	.625	.281 X .375
THIN	.500	.265 DIA
SMALL	.375	.204 DIA

PART NUMBERS

HOSE SIZE (REF)	D DIA (IN)	E ±.015	T ±.005	SERIES		FREIGHTLINER PART NUMBER
-	.188	.498	.031	SMALL		23-09528-002
-	.188	.498		THIN		-003
-	.250	.639		STD		-004
-	.313	.671		STD		-005
-	.375	.702				-006
4	.500	.764		STD		-010
5	.562	.795	.048	STD		-020
6	.625	.827				-030
8	.750	.889				-040
-	.875	.952				-047
10	.938	.983				-050
-	1.000	1.014				-055
12	1.062	1.065	.062	STD		-060
-	1.125	1.096				-062
16	1.188	1.128				-070
-	1.250	1.159				-074

CHG	JOB NO	DATE	BY	REVISION
H	1966B	01-23-84	FEF	REVISED AND REDRAWN
J	N0301	05-22-87	DJL	REVISED 'T' DIMS OF -010 THROUGH -090
K	PN0301	11-02-87	DWP	REVISED 'T' DIMS OF -010, -047, -050 & -055
L	406409	12-18-87	BT	ADDED -091
M	PA2042-01	12-12-91	K R	REVISED PER VENDOR INFO

DRAWN	FEF	TITLE	DRAWING NUMBER
APPRV	DJL	CLAMP, HOSE SINGLE CUSHIONED	23-09528
DATE	01-23-84		
CADAM ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2 / CHG. LTR. M

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: -

PART NUMBERS (CONTINUED)

HOSE SIZE (REF)	D DIA (IN)	E ±.015	T ±.005	SERIES		FREIGHTLINER PART NUMBER
-	1.313	1.191	.062	STD		23-09528-075
-	1.375	1.222				-076
-	1.439	1.253				-077
20	1.500	1.284				-080
-	1.625	1.346				-085
-						
-	1.750	1.409				-086
-	1.875	1.472				-087
-	2.000	1.534				-090
32	2.250	1.659		STD		-091

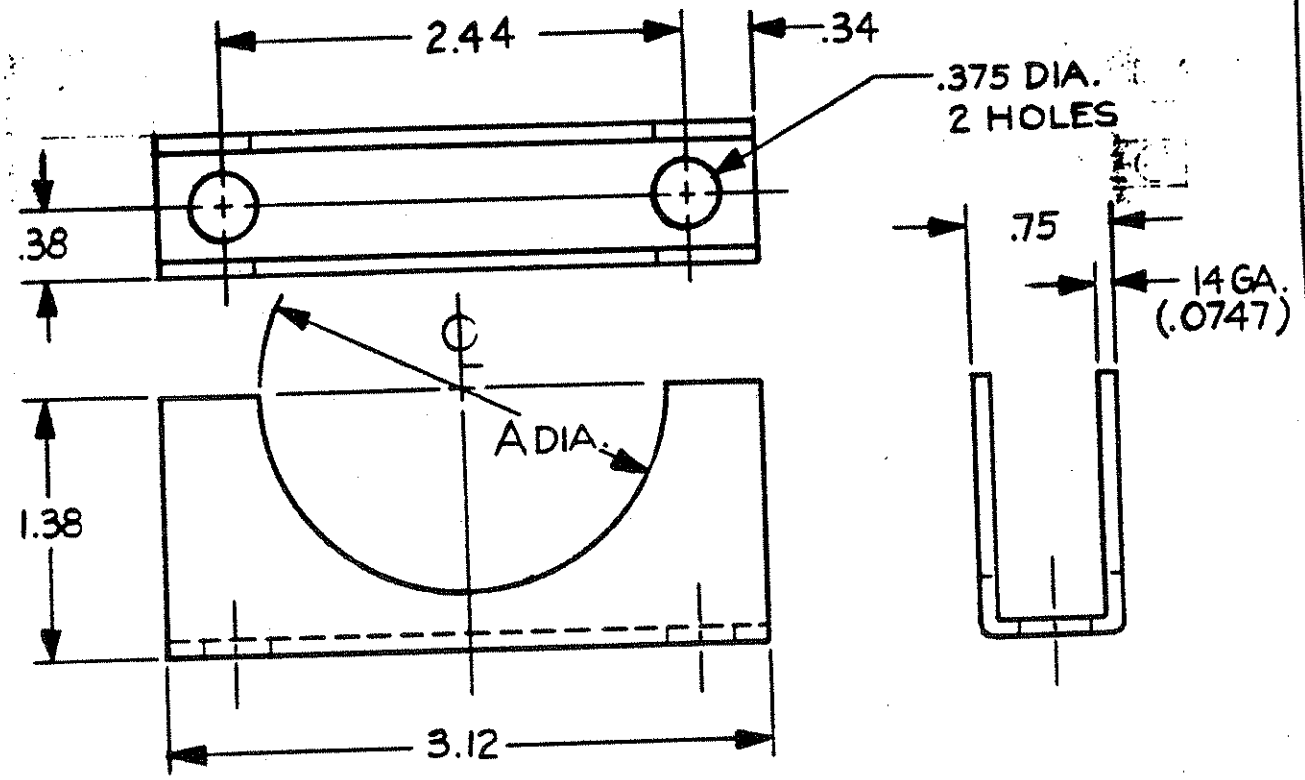
ENGINEERING NOTES:

1. MATERIAL:
   METAL: 1010 CARBON STEEL OR BETTER, ZINC PLATED(YELLOW)
   CUSHION: NEOPRENE, AMS 3209, SAE 1-BC715 (REF MIN TENSILE 1700 PSI, SDH A70 ±5, TEMPERATURE F° -40 TO +212 (C° -40 TO +100)).
   COLOR: BLACK

2. SUGGESTED VENDORS: UMPCO, J&M PRODUCTS, DRAKE

CHG	JOB NO	DATE	BY	REVISION
H	1966B	01-23-84	FEF	REVISED AND REDRAWN
J	N0301	05-22-87	DJL	ADDED CUSHION COLORS, REVISED 'T' DIM
K	PN0301	11-02-87	DWP	REVISED NOTE 2
L	406409	12-18-87	BT	ADDED -091
M	PA2042-01	12-12-91	K R	REVISED PER VENDOR INFO

ORIGINAL JOB NO.	TITLE	PART NO.
D2306	SADDLE	23-11270
LAST CHG LTR	TUBE CLAMP	SHEET 1 OF 1



CHANGE INFORMATION | DATE | BY | JOB NO.

CHANGE INFORMATION | DATE | BY | JOB NO.

PART NUMBERS

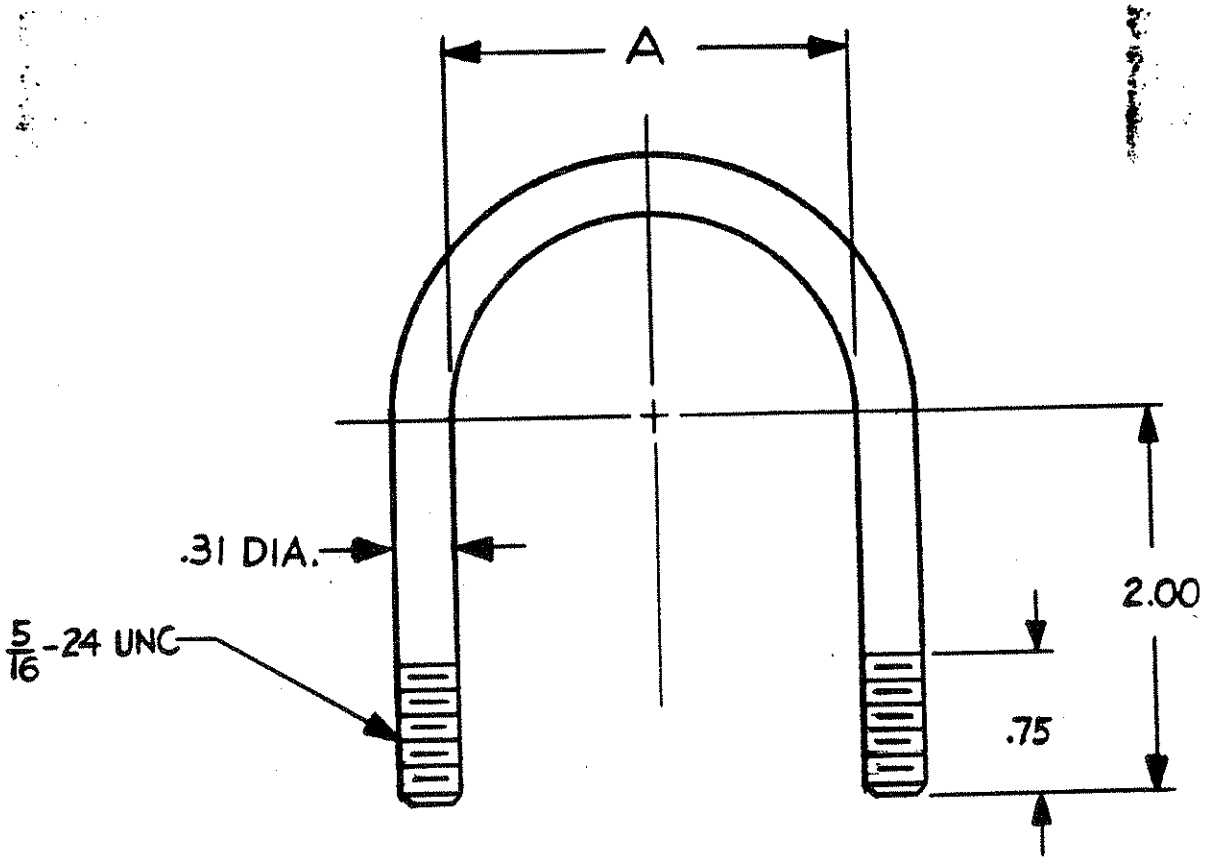
NOMINAL SIZE	A ACTUAL I.D.	MANUFACTURER'S PART NUMBER			FREIGHTLINER PART NUMBER
			LOM		
2	2 1/8		S-2000		23-11270-000

COMPILED	TTR	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	BARONDI	12-7-79		STEEL	A23-11272

FREIGHTLINER CORPORATION

M/F Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
D2306	U-BOLT	23-11271
LAST CHG LTR	TUBE CLAMP	SHEET 1 OF 1



PART NUMBERS

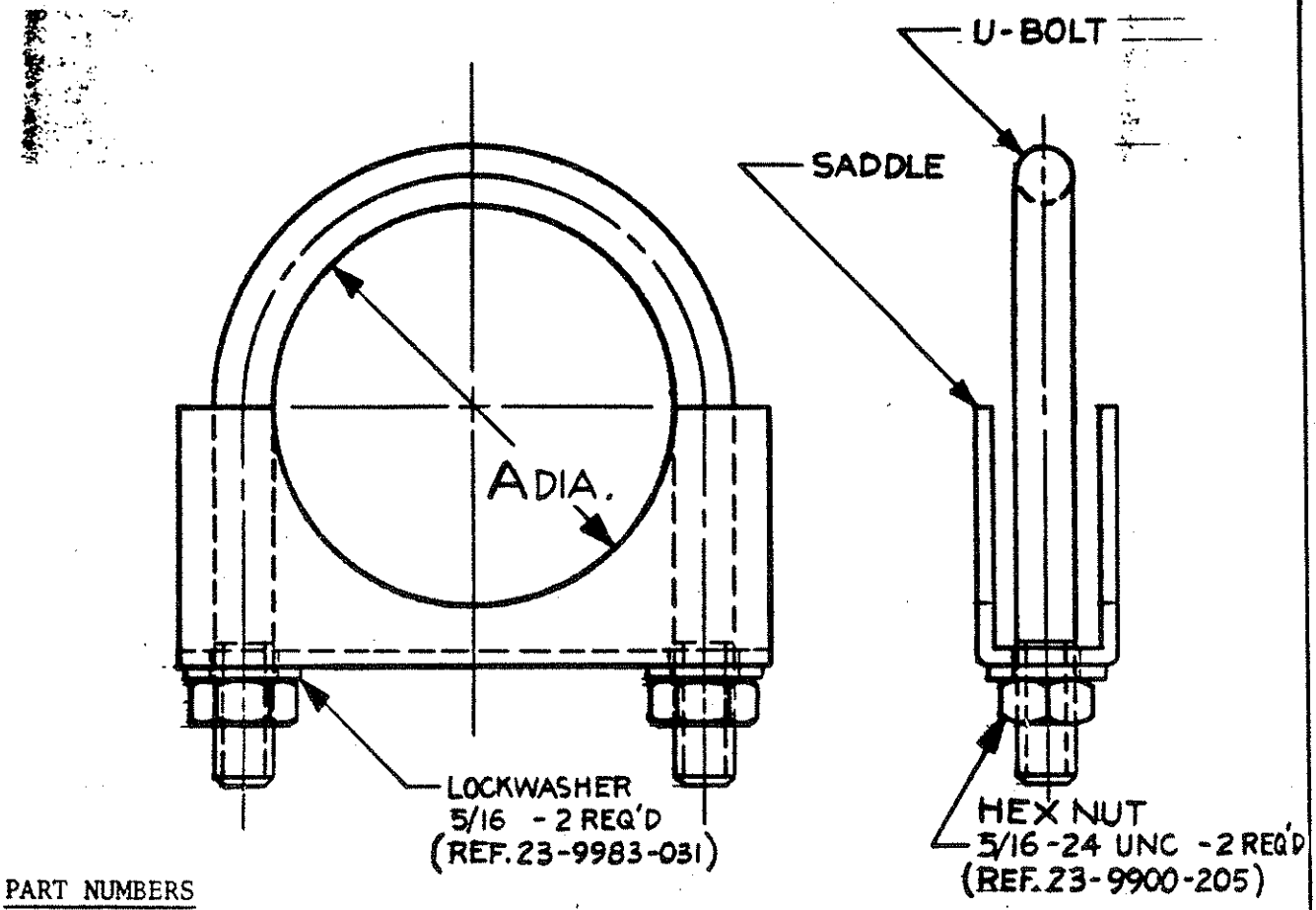
NOMINAL SIZE	A ACTUAL I.D.	MANUFACTURER'S PART NUMBER			FREIGHTLINER PART NUMBER
			LOM		
2	2 1/8		U-2000		23-11271-000

COMPILED	TTR	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	BARQUDI	12/7/79		STEEL	A23-11272

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

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

ORIGINAL JOB NO.	TITLE	PART NO.
D2306	CLAMP ASSY, TUBE	A23-11272
LAST CHG LTR	FLAT BAND	SHEET 1 OF 1



PART NUMBERS

NOMINAL SIZE	A ACTUAL I.D.	MFR SYM-BOL	MANUFACTURER'S NUMBERS			FREIGHTLINER NUMBERS		
			U-BOLT	SADDLE	CLAMP ASSY	U-BOLT	SADDLE	CLAMP ASSY
2	2 1/8	LOM	U-2000	S-2000	BC-2000	23-11271-000	23-11270-000	A23-11272-000

COMPILED	TTR	DATE DRAWN		MATERIAL	
APPROVED	BAROUDI	12-7-79		STEEL	

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

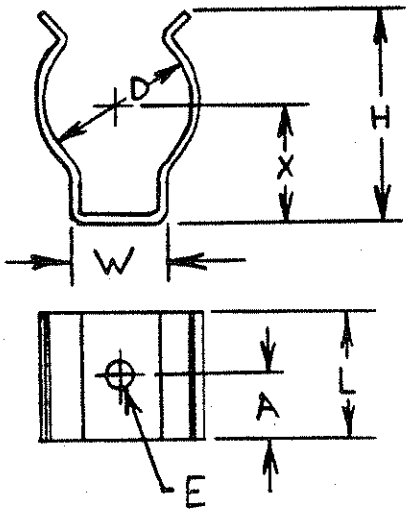
CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

ORIGINAL JOB NO.	TITLE	PART NO.
C1500	SPRING CLIP	23-11325
LAST CHG LTR		SHEET 1 OF 1

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

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

SKETCH:



PART NUMBER:

COMPONENT DIAMETER	L ±.03	H MAX.	W MAX.	X ±.02	A ±.03	E DIA. ±.003	FREIGHTLINER PART NUMBER
.81 to .88	.69	1.133	.510	.625	.34	.170	23-11325-0

ENGINEERING NOTES:

1. MATERIAL: .032 Thick Spring Steel
2. FINISH: Cadmium Plate
3. Vendor Part No.: Similar to Seastrom 4511-87-68-20 But With Only 1 Hole, .170 Dia. Centered at Bottom of Clip

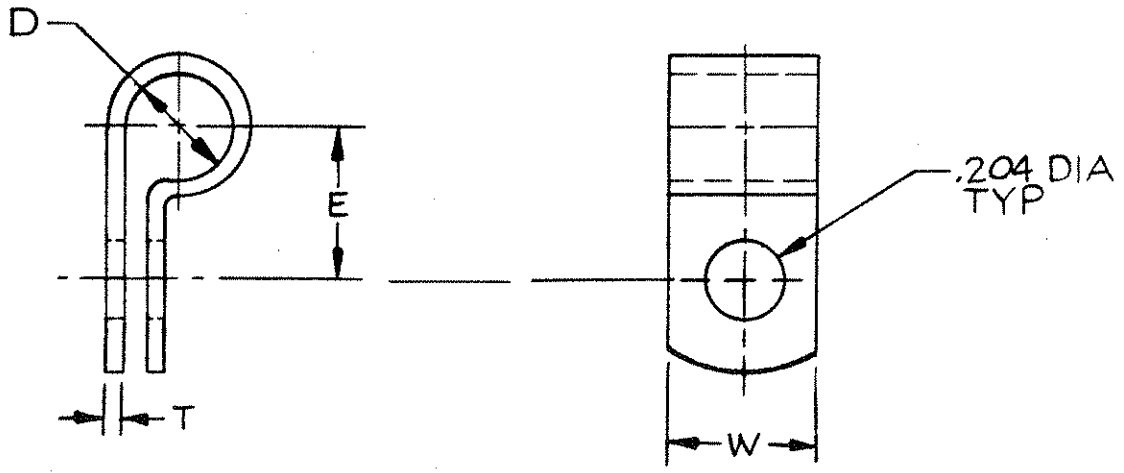
		DATE DRAWN			
COMPILED	JS				
APPROVED		2/6/81			

Portland

FREIGHTLINER CORPORATION

Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
E0673	CLAMP, LOOP TYPE - BARE	23-11356
LAST CHG LTR: A		SHEET 1 OF 1



D DIA. (IN)	E ±.015	T ±.0025	W	MANUFACTURER'S NUMBER				FREIGHTLINER PART NUMBER
				AQ	JMP	TAD	UMP	
.188	.376	.032	.375		JM43LB1S3		AN742-3	23-11356-003
.250	.407	.032	.375		JM43LB1S4			23-11356-004

(1) MATERIAL: 1010 Carbon Steel or better, Cadmium plated.

COMPILED	CN	DATE DRAWN		Material	
APPROVED		10-23-81		(1)	

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	91708	MS	8-18-83	ADDED 23-11356-004

EAC-826

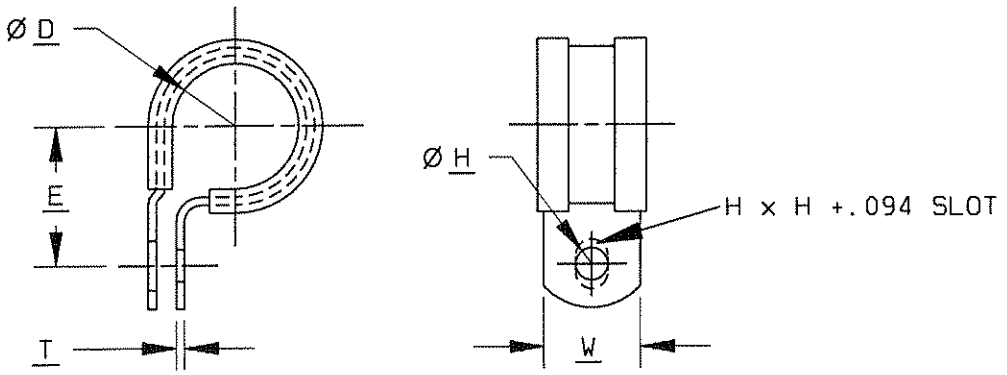
Portland

FREIGHTLINER CORPORATION

Oregon 97208

A

DRAWN	DAJ	TITLE	DRAWING NUMBER
APPRV	DAJ	CLAMP-HOSE, SINGLE CUSHIONED, SLOTTED LOWER LEG	23-11357
DATE	10/02/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. K
CATIA ORIGINAL			



D	E ±.02	W	H	T	FREIGHTLINER PART NUMBER
.125	.577	.625	.406	.030	23-11357-002
.250	.639	.625	.406	.030	23-11357-004
.375	.702	.625	.406	.030	23-11357-006
.500	.764	.625	.406	.030	23-11357-008
.625	.827	.625	.406	.030	23-11357-010
.750	.889	.625	.406	.030	23-11357-012
.750	1.300	.750	.281 (3)	.112	23-11357-912
.938	.983	.625	.406	.030	23-11357-015
1.000	1.014	.625	.406	.030	23-11357-016
1.125	1.097	.750	.281	.050	23-11357-118
1.250	1.159	.625	.406	.050	23-11357-020
1.375	1.222	.750	.281	.050	23-11357-122
1.500	1.284	.750	.281	.050	23-11357-124
2.500	1.784	.750	.281	.050	23-11357-140
3.000	2.034	.750	.281	.050	23-11357-148
3.500	2.264	.750	.281	.050	23-11357-156
4.000	2.534	.625	.281	.050	23-11357-400
5.000	3.034	.750	.281	.050	23-11357-500
5.375	3.222	.750	.406	.050	23-11357-538

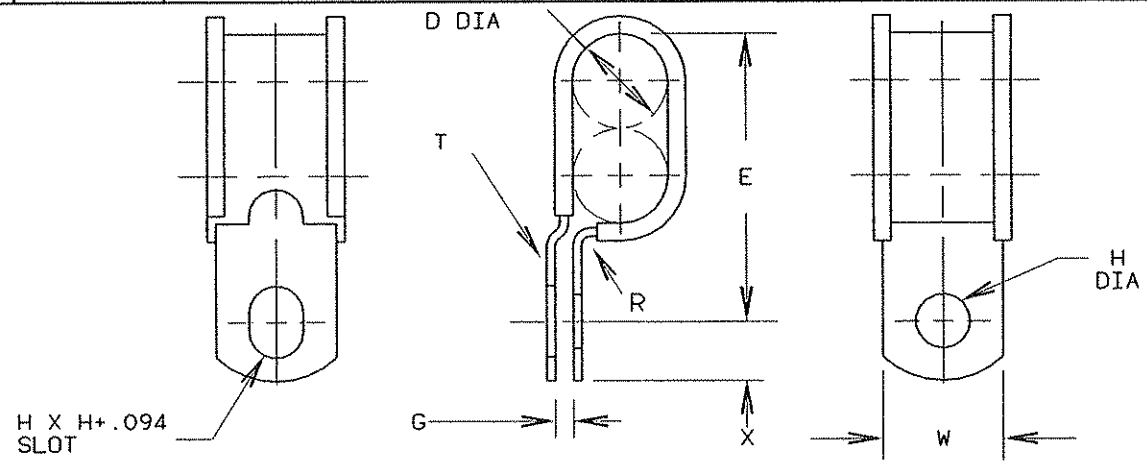
ENGINEERING NOTES:

1. MATERIAL: CLAMP = CARBON STEEL, ZINC PLATED
   CUSHION = NEOPRENE RUBBER PER SAE 1-BC715 OR AMS 3209
   MINIMUM TENSILE = 1700 PSI
   SDH = A70 ±5
   TEMP RANGE = -40 TO 212 °F (-40 TO 100 °C)
2. SUGGESTED VENDORS: UMPCO, J&M PRODUCTS, DRAKE

(3) PART INCORPORATED SLOTS ON BOTH ENDS.

CHG	JOB NO	DATE	BY	REVISION
F	P03618-04	10/02/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -156.
G	P03175-92	09/10/98	DAJ	ADDED -148, -140 WAS -124.
H	P06510-02	10/09/98	DAJ	ADDED -538.
J	P05049-40	11/16/99	LFB	ADDED -400 AND -500.
K	P09846-02	03/20/00	LFB	ADDED -912. ADDED NOTE 3.

DRAWN	PCK	TITLE	ITEM NUMBER
APPRV	ANF	CLAMP, LOOP-CUSHIONED MULTIPLE	23-11358
DATE	11/14/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



D TUBE DIA	NO OF TUBES	E ±.015	W	H	R	T THICKNESS	G	X	FREIGHTLINER PART NUMBER
.500	2	1.514	.625	.281	.06	.03	.06	.312	23-11358-005
.500	2	1.623	.750	.531					-006
.750	2	2.014	.625	.281			.12		-010
.750	2	2.014	.625	.406					-011
.750	3	2.764	.625	.281					-015
.750	4	3.623	.750	.531					-020
.750	4	3.514	.625	.281					-066
.875	2	2.264	.625	.281					-024
.875	4	4.123	.750	.531					-025
.875	4	4.014	.625	.281					-067
1.000	2	2.514	.625	.406					-029
1.000	2	2.625	.750	.531					-030
1.000	4	4.514	.750	.281	.12	.05			-034
1.188	2	3.019	.750	.531					-035
1.188	2	2.910	.625	.281					-069
1.125	2	2.784	.625	.281					-068
1.250	2	3.143	.625	.281					-039
1.250	2	3.143	.750	.531					-040
1.438	2	3.409	.625	.281					-045
1.438	2	3.519	.750	.531					-050
1.625	2	3.893	.750	.531					-055
1.625	2	3.784	.625	.281					-060
2.125	2	4.784	.625	.281					-065

MATERIAL: 1010 CARBON STEEL. FINISH; CADMIUM PLATE PER FREIGHTLINER SPEC 49-00012-130

CUSHION: NEOPRENE 1BC715 (MIN. TENSILE 1700PSI) PER SAE J200 SDH A70±5 TEMP, °F -40 TO +212 (°C -40 TO +100)

SUGGESTED VENDORS: 1) UMPCO 2) J&M PRODUCTS 3) ADEL (IMO DE-LAVAL)

CHG	JOB/RLSE NO	DATE	BY	REVISION
E	PA2006-07	01/19/89	PCK	DOCUMENTED-REMOVED VENDOR NOS, ADDED-066, 067, 068, 069
F	P1584H-02	02/28/91	K R	ADDED -039
G	PM0514-18	05/06/93	ERK	ADDED -034
H	P7556H-02	12/15/94	ERK	ADDED -011

03030 0000

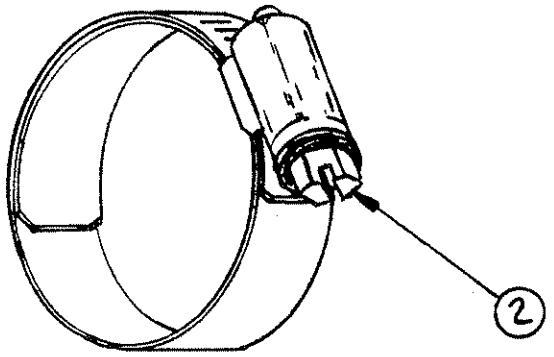
ORIGINAL JOB NO.	TITLE	PART NO.
M0238	CLAMP, SILICON HOSE WORM GEAR	23-11382
LAST CHG LTR A		SHEET 1 OF 1

(A)

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	M0238	DL	9-30-83	ORIG. JOB NO. WAS C1927

SKETCH



PART NUMBERS

SAE SIZE	CLAMP I.D. MIN.	CLAMP I.D. MAX.	MANUFACTURER'S NUMBER MUY	FREIGHTLINER PART NUMBER
12	.688	1.250	4812	23-11382-012
20	.938	1.750	4820	-020
24	1.063	2.000	4824	-024
28	1.313	2.250	4828	-028
36	1.813	2.750	4836	-036
48	2.563	3.500	3848	-048
56	3.063	4.000	4856	-056
64	3.563	4.500	4864	-064

ENGINEERING NOTES

(1) Material: Carbon steel, plated

(2) 5/16" hexagon head

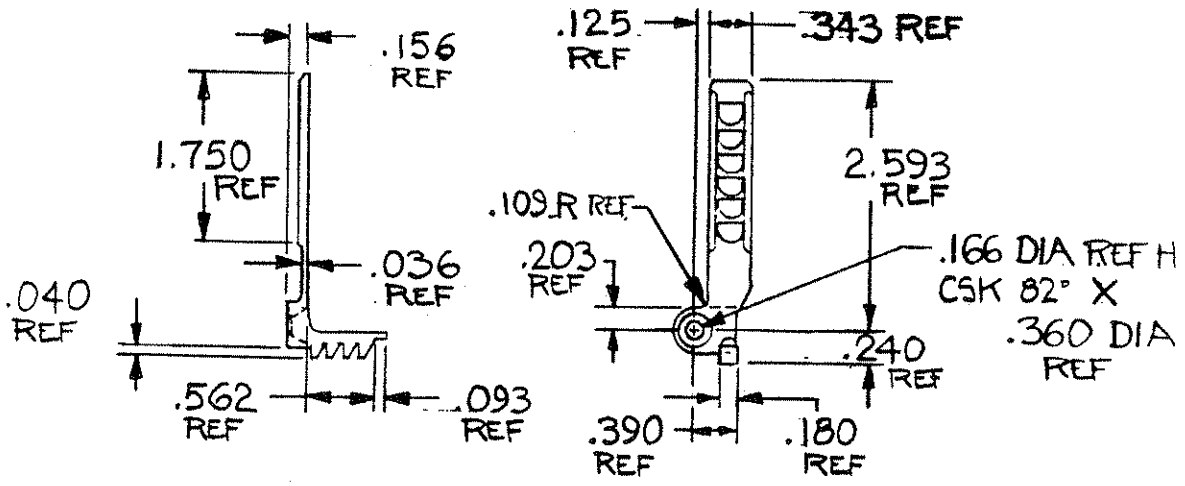
COMPILED	D. LeL.	DATE DRAWN		Material	
APPROVED	BBK	2-18-82		(1)	

EAC-830

ORIGINAL JOB NO.	TITLE	PART NO.
M0189	CABLE CLAMP	23-11435
LAST CHG LTR		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

SKETCH:



PART NUMBERS

ADJUSTABLE DIA	MFG		FREIGHTLINER PART NUMBER
.375 to .750	BRADY TBNY - 750NA		23-11435-000

ENGINEERING NOTES:

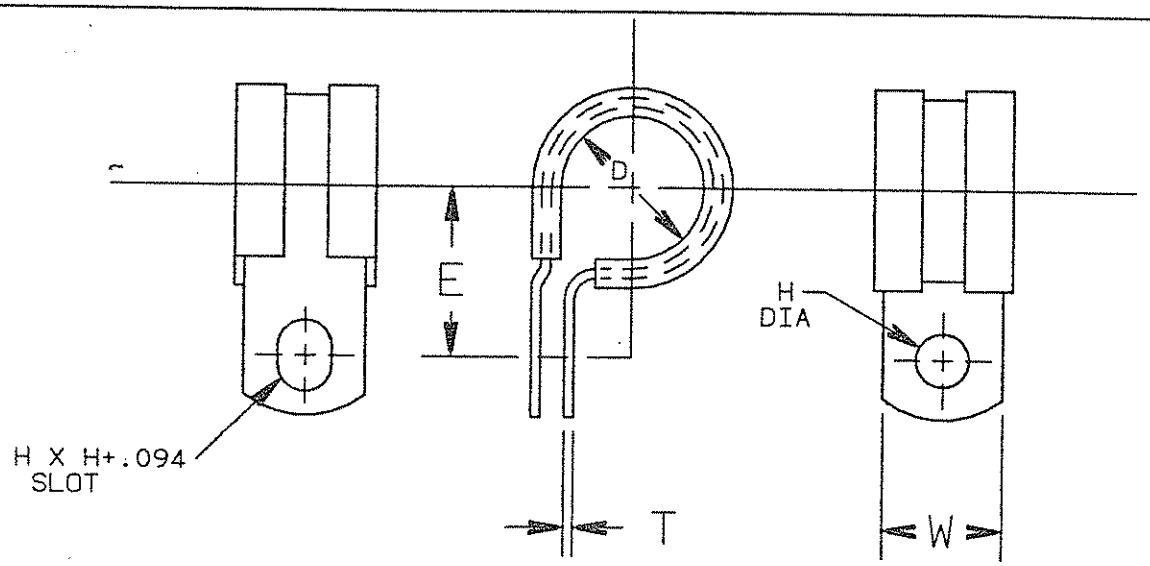
1 Material: Nylon

PRE-RELEASE PRINT

COMPILED	NR	DATE DRAWN		MATERIAL	
APPROVED	CCK	3-15-83		1	

DRAWN	DJL	TITLE	ITEM NUMBER
APPRV	DJL	CLAMP, HOSE, SINGLE, CUSHIONED SLOTTED LOWER LEG	23-11357
DATE	02/08/85	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

UNLESS OTHERWISE NOTED, ALL DIMENSIONS IN INCHES.



PART NUMBERS:

D DIA (IN)	E ±.020	W (IN)	H (IN)	T (IN)	MANUFACTURER'S NUMBER			FREIGHTLINER PART NUMBER
					JMP	TAD	UMP	
.125	.577	.625	.406	.030	JM75LC6S2			23-11357-002
.375	.702	.625	.406	.030	JM75LC6S6	686CS6	S464-G6	23-11357-006
.500	.764	.625	.406	.030	JM75LC6S8	686CS8	S464-G8	23-11357-008
.625	.827	.625	.406	.030	JM75LC6S10	686CS10	S464-G10	23-11357-010
.750	.889	.625	.406	.030	JM75LC6S12	686CS12	S464-G12	23-11357-012
.938	.983	.625	.406	.030	JM75LC6S15		S464-G15	23-11357-015
1.000	1.014	.625	.406	.030	JM75LC6S16	686CS16	S464-G16	23-11357-016
1.125	1.097	.750	.281	.050	JM56LC6S18		S219-G18	23-11357-118
1.250	1.159	.625	.406	.050	JM75LC6S20	686CS20	S464-G20	23-11357-020
1.375	1.222	.750	.281	.050	JM56LC6S22		S219-G22	23-11357-122
1.500	1.284	.750	.281	.050	JM56LC6S24		S219-G24	23-11357-124
2.500	1.784	.750	.281	.050	JM56LC6S40		S219-G40	23-11357-140

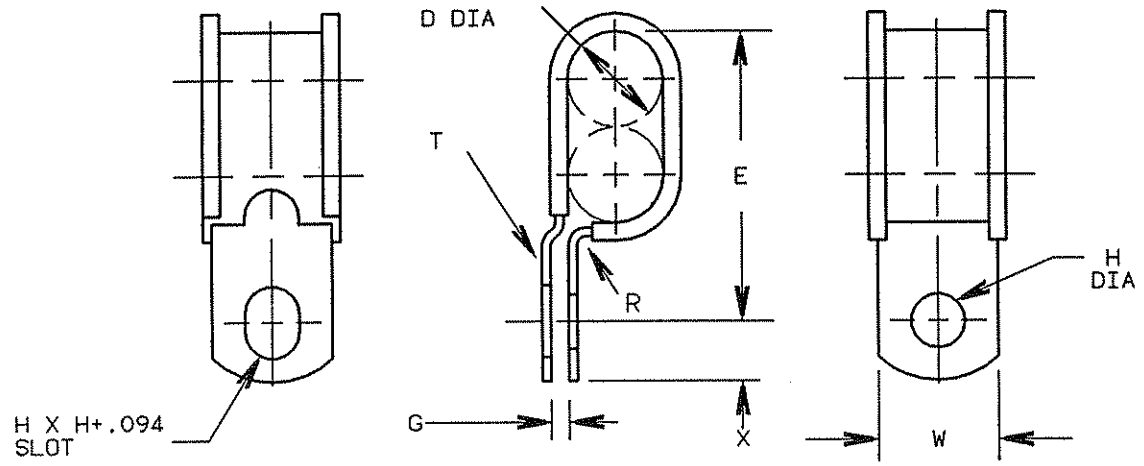
ENGINEERING NOTES:

(1) MATERIAL: CLAMP = CARBON STEEL, CADMIUM PLATED

CUSHION = NEOPRENE RUBBER PER SAE 1-BC715 OR AMS 3209
MINIMUM TENSILE = 1700 PSI
SDH = A70±5
TEMP RANGE = -40 TO +212°F (-40 TO +100°C)

CHG	JOB/RLSE NO	DATE	BY	REVISION
C	PB1005-10	08/14/90	RDF	REDRAWN, ADDED -140

DRAWN	PCK	TITLE	ITEM NUMBER
APPRV	ANF	CLAMP, LOOP-CUSHIONED MULTIPLE	23-11358
DATE	11/14/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



D TUBE DIA	NO OF TUBES	E ±.015	W	H	R	T THICKNESS	G	X	FREIGHTLINER PART NUMBER
.500	2	1.514	.625	.281	.06	.03	.06	.312	23-11358-005
.500	2	1.623	.750	.531					-006
.750	2	2.014	.625	.281			.12		-010
.750	3	2.764	.625	.281					-015
.750	4	3.623	.750	.531					-020
.750	4	3.514	.625	.281					-066
.875	2	2.264	.625	.281					-024
.875	4	4.123	.750	.531					-025
.875	4	4.014	.625	.281					-067
1.000	2	2.514	.625	.406					-029
1.000	2	2.625	.750	.531					-030
G 1.000	4	4.514	.750	.281	.12	.05			-034
1.188	2	3.019	.750	.531					-035
1.188	2	2.910	.625	.281					-069
1.125	2	2.784	.625	.281					-068
1.250	2	3.143	.625	.281					-039
1.250	2	3.143	.750	.531					-040
1.438	2	3.409	.625	.281					-045
1.438	2	3.519	.750	.531					-050
1.625	2	3.893	.750	.531					-055
1.625	2	3.784	.625	.281					-060
2.125	2	4.784	.625	.281					-065

MATERIAL: 1010 CARBON STEEL. FINISH; CADMIUM PLATE PER FREIGHTLINER SPEC 49-00012-130

CUSHION: NEOPRENE 1BC715 (MIN. TENSILE 1700PSI) PER SAE J200
SDH A70±5 TEMP, °F -40 TO +212 (°C -40 TO +100)

SUGGESTED VENDORS: 1) UMPCO 2) J&M PRODUCTS 3) ADEL (IMO DE-LAVAL)

CHG	JOB/RLSE NO	DATE	BY	REVISION
E	PA2006-07	01/19/89	PCK	DOCUMENTED-REMOVED VENDOR NOS, ADDED-066,067,068,069
F	P1584H-02	02/28/91	K R	ADDED -039
G	PM0514-18	05/06/93	ERK	ADDED -034

GENERAL USE PART

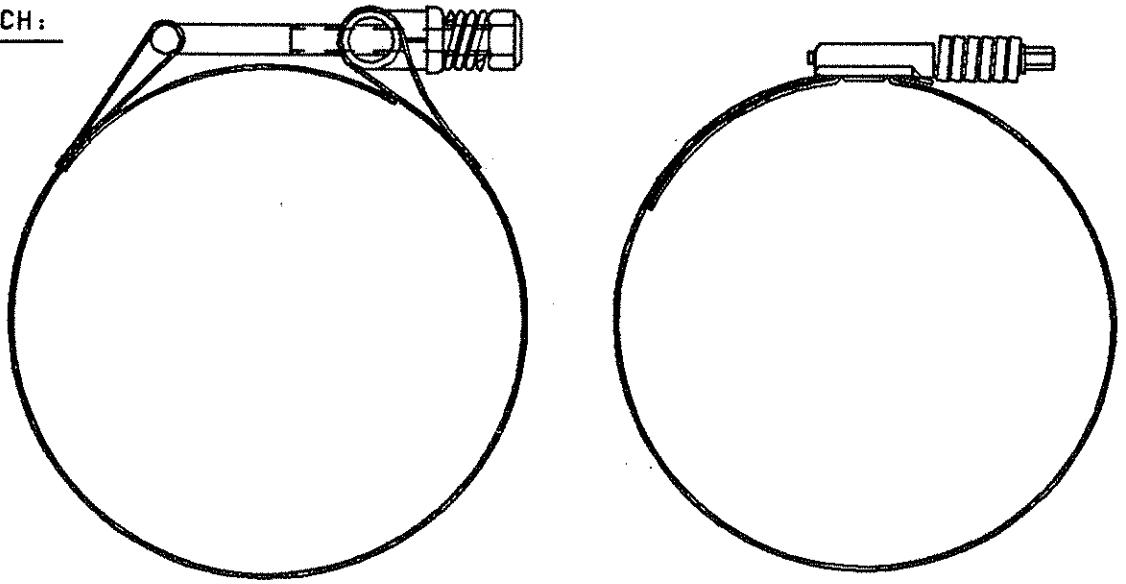
23-11680

ORIGINAL JOB NO.	TITLE	PART NO.
F0376	CLAMP, CONSTANT TORQUE	23-11680
LAST CHG LTR —		SHEET 1 OF 1

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

SKETCH:



PART NUMBERS:

DIAMETER	MANUFACTURER'S NUMBERS		FREIGHTLINER PART NUMBER
	CLP	BRZ	
4.250 - 4.500	C41214C-75-425-S	CT-450L	23-11680-400

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

NOTES

(1) MATERIAL: STAINLESS STEEL BANDS
OTHER PARTS TO BE STAINLESS STEEL, OR CAD OR ZINC PLATED.

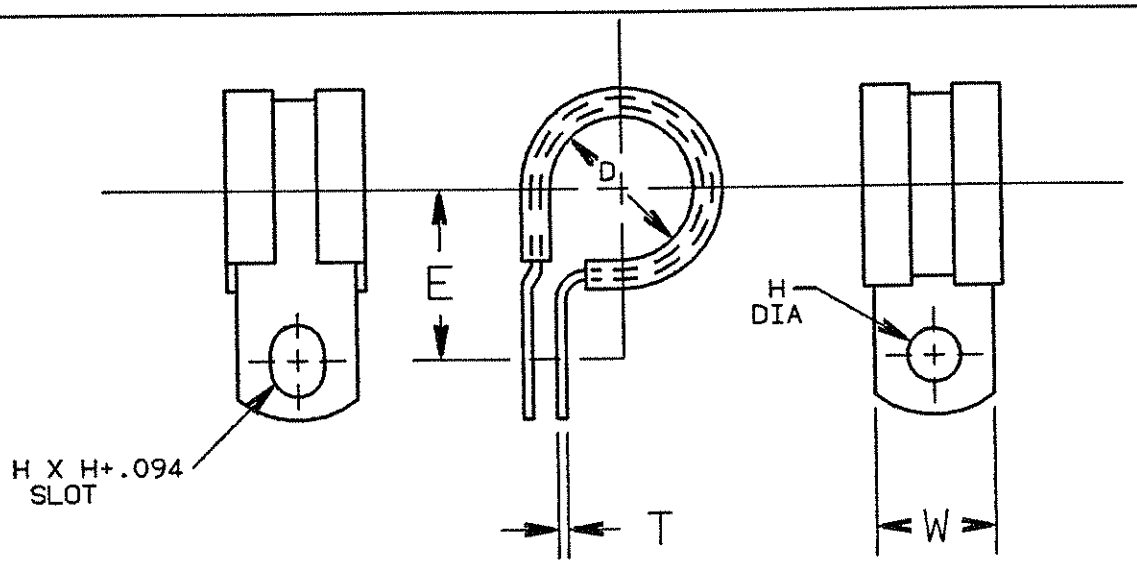
COMPILED	MDJS	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER	
APPROVED	RAP	07-27-84		(1)	03030	000D1

EAC-826

PORTLAND FREIGHTLINER CORPORATION M/F OREGON 97208

DRAWN	K R	TITLE	ITEM NUMBER
APPRV	ANF	CLAMP, HOSE, SINGLE, CUSHIONED EXTRA HEAVY DUTY	23-11805
DATE	12/12/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

UNLESS OTHERWISE NOTED, ALL DIMENSIONS IN INCHES.



PART NUMBERS:

D DIA (IN)	E ±.020	W (IN)	H (IN)	T (IN)		FREIGHTLINER PART NUMBER
.750	.889	.750	.281	.062		23-11805-010
.750	.889	.750	.281	.062		23-11805-012
.875	.952	.750	.281	.062		23-11805-014
.938	.983	.750	.281	.062		23-11805-015
1.000	1.014	.750	.281	.062		23-11805-016
1.250	1.159	.750	.281	.062		23-11805-020

ENGINEERING NOTES:

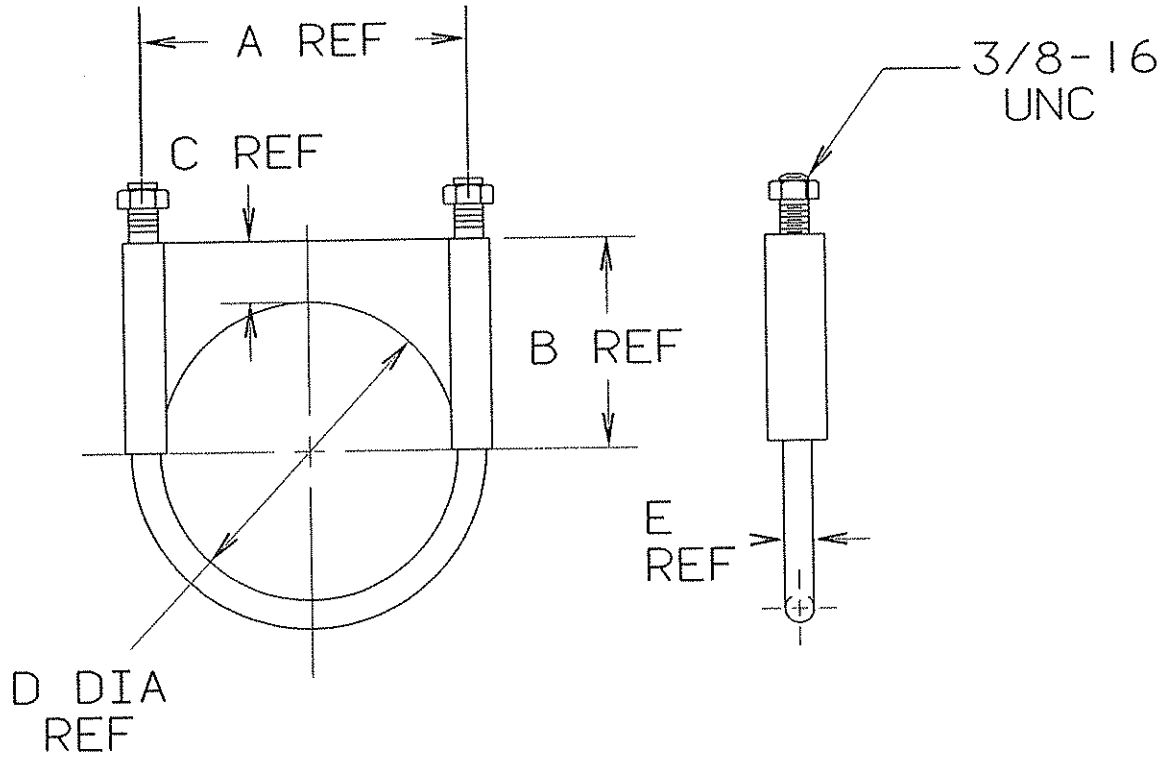
(1) MATERIAL: CLAMP = CARBON STEEL, ZINC PLATED

CUSHION = NEOPRENE RUBBER PER SAE 1-BC715 OR AMS 3209
MINIMUM TENSILE = 1700 PSI
SDH = A70±5
TEMP RANGE = -40 TO +212°F (-40 TO +100°C)

2 SUGGESTED VENDORS: UMPCO, J&M PRODUCTS, DRAKE

CHG	JOB/RLSE NO	DATE	BY	REVISION
A	PA2042-01	12/12/91	K R	REDRAWN, DELETED UNUSED NUMBERS, REVISED VENDOR INFO

DRAWN	PCK	TITLE	ITEM NUMBER
APPRV	ANF	CLAMP-SADDLE	23-12013
DATE	07/08/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



A	B	C	D	E	VENDOR PART NO.	FREIGHTLINER PART NO.
4.25	2.75	0.68	3.87	0.33	RKRU378Z	23-12013-388
A 3.00	2.14	0.68	2.67	0.33	RKRU250Z	-250

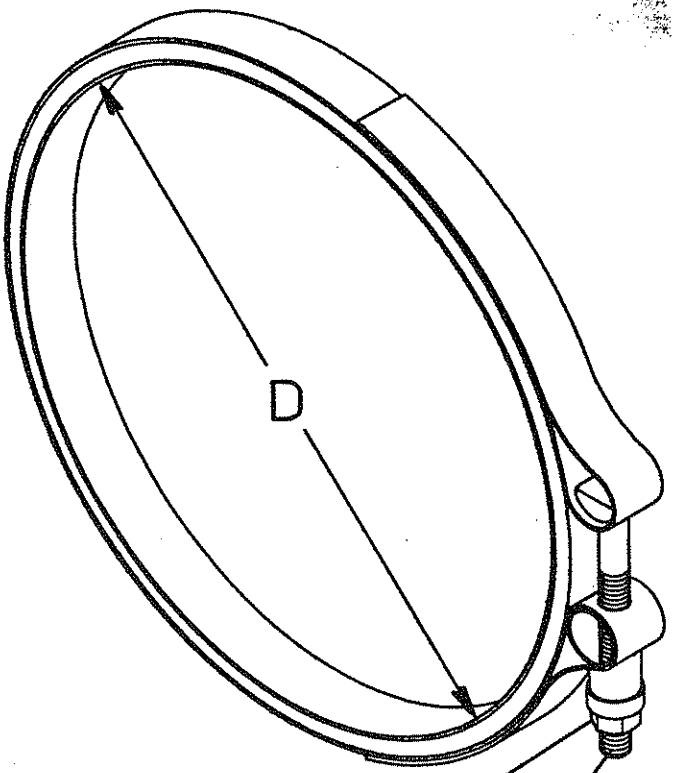
ENGINEERING NOTES:

MATERIAL: SADDLE-11 GA STEEL
U-BOLT-AISI 1008/1010

FINISH: ZINC PLATE PER FREIGHTLINER SPEC
49-00005-403

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	408166-07	07/08/88	PCK	DOCUMENTED
A	581856-21	11/01/94	DAJ	ADDED -250.

DRAWN	CRS	TITLE	ITEM NUMBER
APPRV	PCK	CLAMP, T-BOLT STAINLESS STEEL	23-12024
DATE	12/19/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2



NUT-1/4 SELF-LOCKING
CAD OR ZINC PLATED
(NYLON PATCH)

T-BOLT 1/4
ALLOY STEEL, CADMIUM
PLATED

T-BOLT CLAMP

CHG	JOB/RLSE NO	DATE	BY	REVISION
N	PA2003-30	12/19/88	PCK	DOCUMENTED-REVISED AND REDRAWN

DRAWN	CRS	TITLE	ITEM NUMBER
APPRV	PCK	CLAMP, T-BOLT STAINLESS STEEL	23-12024
DATE	12/19/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2

D DIM.		MANUFACTURER'S NUMBER	FREIGHTLINER PART NUMBER
		TEE BOLT	
MAX	MIN	GLP	
3.09	2.78	C410C-75-300-S	23-12024-250
4.09	3.78	C410C-75-400-S	-350
4.59	4.28	C410C-75-450-S	-400
5.09	4.78	C410C-75-500-S	-450
5.59	5.28	C41224C-75-550-S	-500
5.84	5.53	C410C-75-575-S	-525
6.09	5.78	C41224S-75-600-S	-550
6.59	6.28	C41224C-75-650-S	-600
6.84	6.53	C410C-75-675-S	-625
7.09	6.78	C410C-75-700-S	-650
7.59	7.28	C41224C-75-750-S	-700
7.75	7.44	C410C-75-766-S	-766
8.34	8.03	C410C-75-825-S	-750
8.59	8.28	C410C-75-850-S	-800
9.09	8.78	C41224C-75-900-S	-850

ENGINEERING NOTES

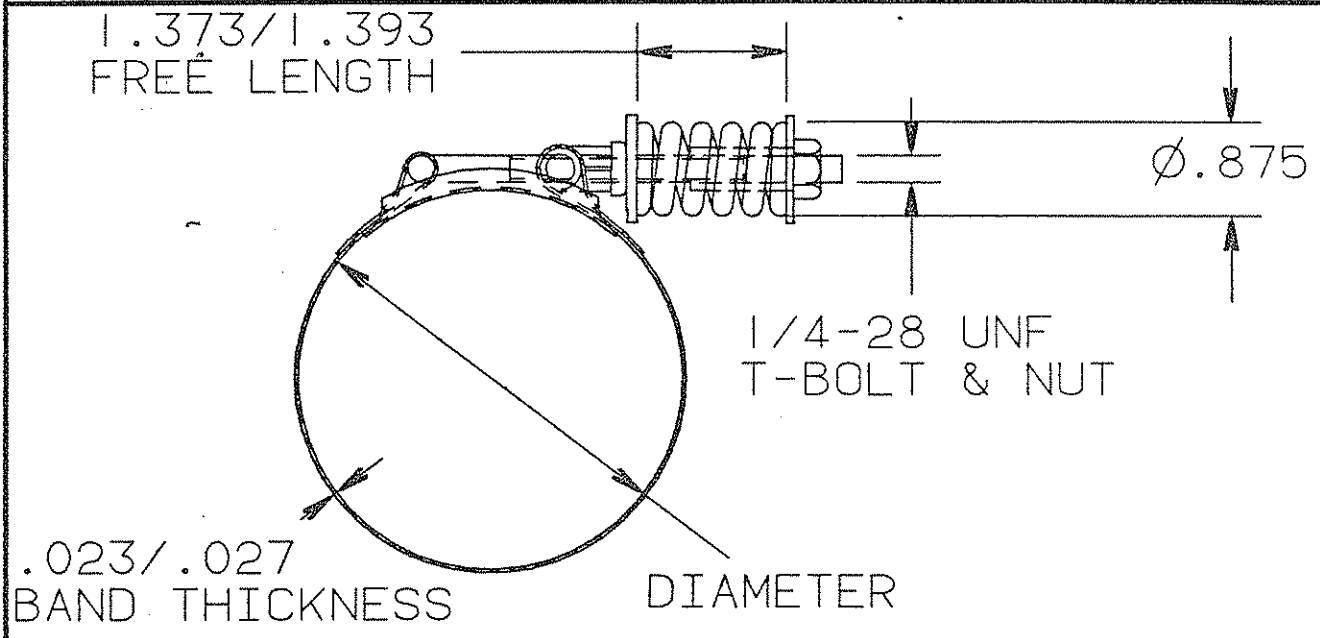
(1) MATERIAL: TYPE 301 STAINLESS STEEL

2 PART PURCHASED AS AN ASSEMBLY ONLY.

3 SUGGESTED VENDOR: CLAMPCO PRODUCTS OR ENG. APPROVED EQVIVALENT

CHG	JOB/RLSE NO	DATE	BY	REVISION
N	PA2003-30	12/19/88	PCK	DOCUMENTED-REVISED AND REDRAWN

DRAWN	LKG	TITLE	ITEM NUMBER
APPRV	PCK	CLAMP, CONSTANT TORQUE	23-12048
DATE	08/07/89	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



PART NUMBERS:

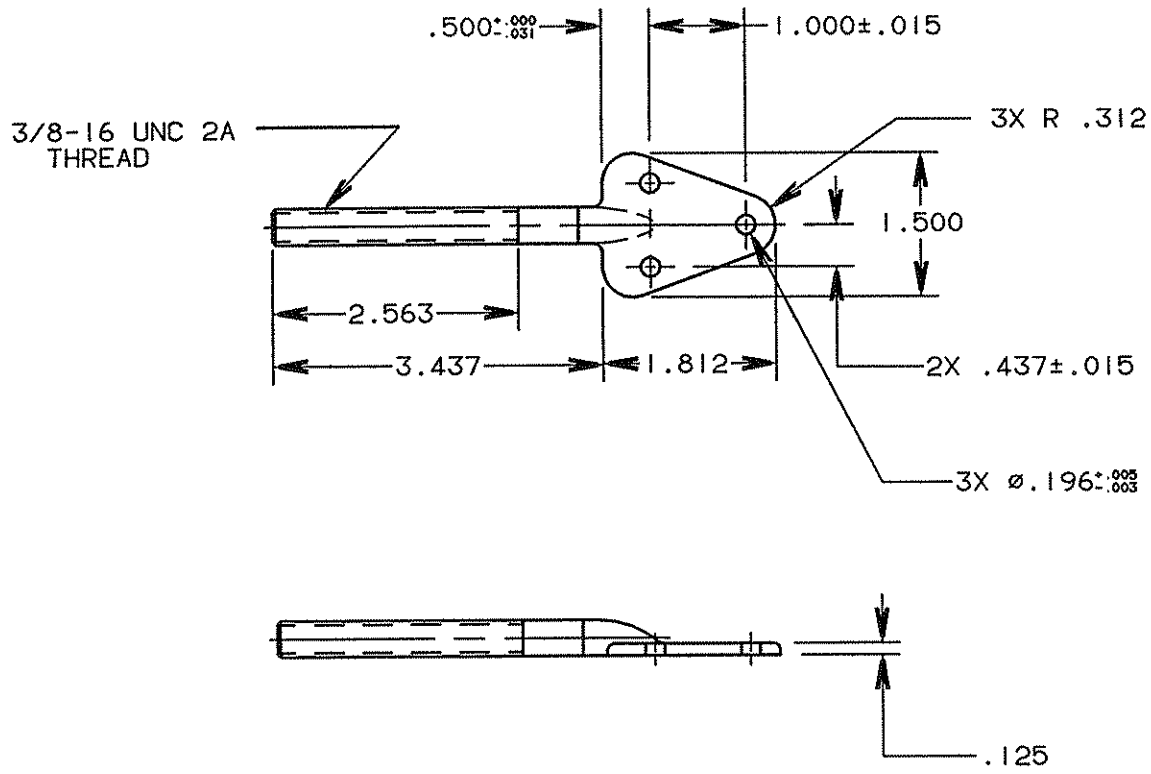
DIAMETER	MANUFACTURER'S NUMBERS		FREIGHTLINER PART NUMBER
	R.G.RAY CORPORATION		
3.190 - 3.500	848-51		23-12048-300
3.250 - 3.560	848-52		-325
3.500 - 3.810	848-56		-349
3.690 - 4.000	848-59		-350
4.000 - 4.310	848-64		-375

NOTES

(1) MATERIAL: BAND: AISI 201, 301, 302 OR 304 STAINLESS STEEL, HALF HARD TEMPER
BRIDGE: AISI 301, 302 OR 304 STAINLESS STEEL, ANNEALED TEMPER
T-BOLT: 1/4-28UNF AISI 1022 (TENSILE STRENGTH: 120,000/150,000 PSI) CADMIUM PLATED
NUT: 1/4-28UNF AISI 1008, CADMIUM PLATED ZINC PLATED

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	PX0222-03	08/07/89	PCK	DOCUMENTED
A	PX0220-05	09/05/89	PCK	ADDED -349, -375
B	PX0216-37	08/19/90	PCK	ADDED -325

DRAWN	BT	TITLE	ITEM NUMBER
APPRV	RDF	END, STRAP 3/8-16	23-12106
DATE	02/05/92	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



FREIGHTLINER PART NUMBER

23-12106-000

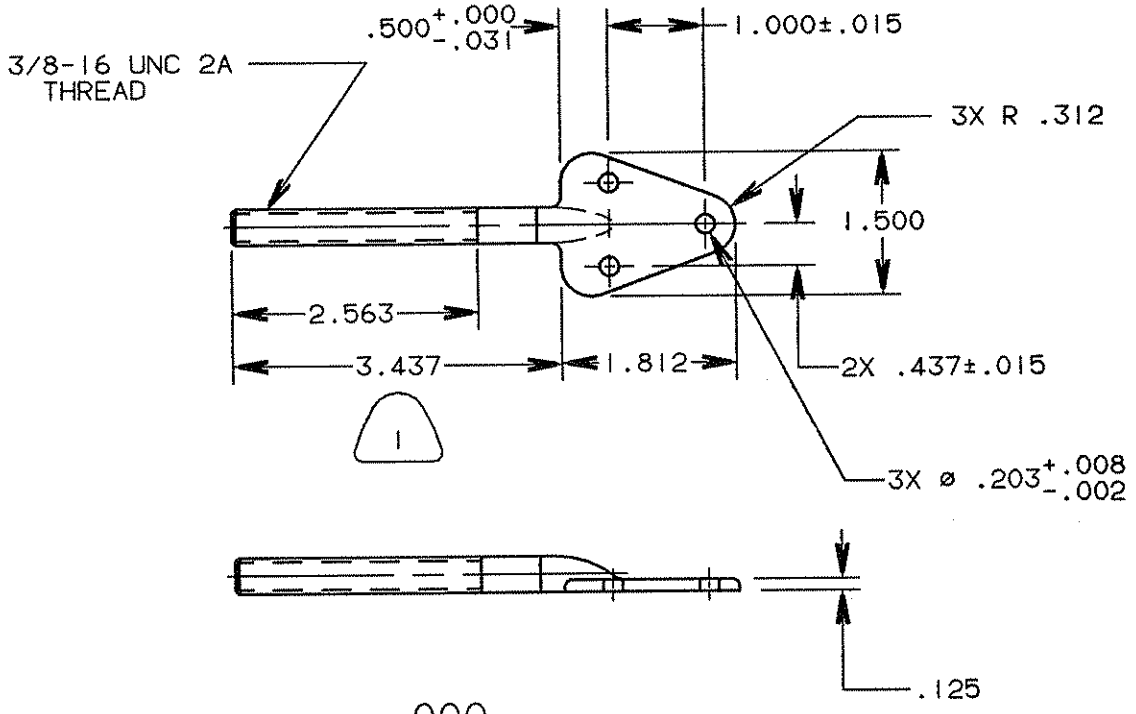
SPECIFICATIONS:

1. MATERIAL: CLEVELAND FORGE #2784 1/2-A WITH ADDITIONAL .375 INCH LENGTH. GRADE 2 EQUIVALENT. PART MUST BE FREE FROM HYDORGEN EMBRITTLEMENT.
2. FINISH: ZINC PLATED PER FREIGHTLINER SPECIFICATION 49-00005-103.
3. ALL UNTOLERANCED DIMENSIONS ARE FOR REFERENCE ONLY.

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	P7015H-04	07/23/93	ERK	REDRAWN: HOLE SIZE CHANGED FROM .203 TO .196

DRAWN	BT	TITLE	DRAWING NUMBER
APPRV	RDF	END, STRAP 3/8-16	23-12106
DATE	02/05/92	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES



-000

SPECIFICATIONS:

1 MATERIAL: CLEVELAND FORGE #2784 1/2-A WITH ADDITIONAL .375 LENGTH GRADE 2 EQUIVALENT

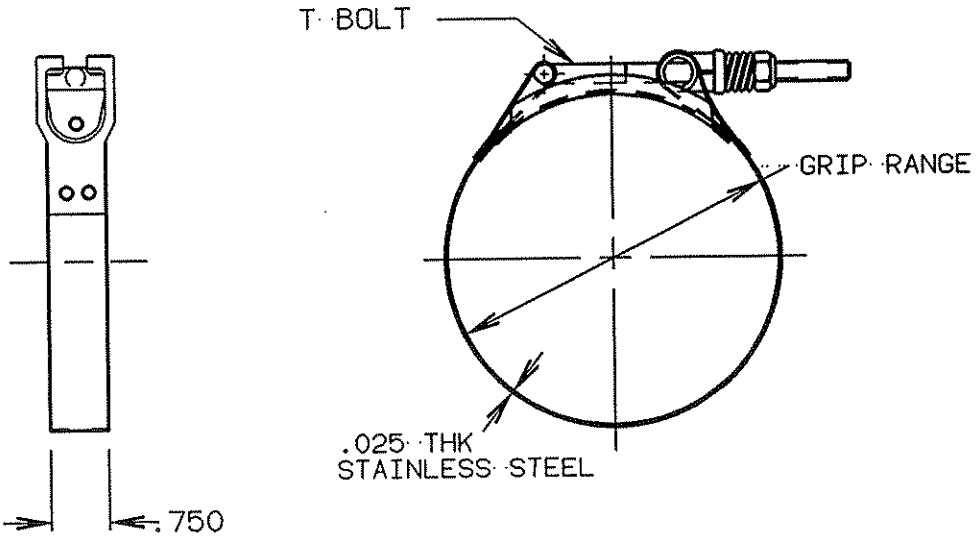
FINISH: ZINC PLATED PER F/L SPEC 49-00005-103.

NOTE : PART MUST BE FREE FROM HYDROGEN EMBRITTLEMENT.

2. ALL UNTOLERANCED DIMENSIONS ARE FOR REFERENCE ONLY

CHG	JOB NO	DATE	BY	REVISION
-	PH0335-11	02/20/92	RDF	ORIGINAL RELEASE
A	PH0335-15	05/11/92	BT	ADDED 3 .203ø HOLES, REVISED NOTES 1 AND 2

DRAWN	ERK	TITLE CLAMP - SPRING T-BOLT	ITEM NUMBER 23-12201
APPRV	ERK		
DATE	11/30/94	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



HOSE ID	CLAMP DIA.		MFG		FREIGHTLINER PART NUMBER
	MIN	MAX	BRZ		
1.00	1.25	1.50	B9241-0125B		23-12201-100
1.25	1.50	1.75	B9241-0150B		23-12201-125
1.50	1.75	2.00	B9226-0175B		23-12201-150
1.75	2.00	2.31	B9226-0200B		23-12201-175
2.00	2.25	2.56	B9226-0225B		23-12201-200
2.25	2.50	2.81	B9226-0250B		23-12201-225
2.50	2.69	3.00	B9226-0269B		23-12201-250
2.75	3.06	3.39	B9226-0306B		23-12201-275
3.00	3.25	3.56	B9226-0325B		23-12201-300

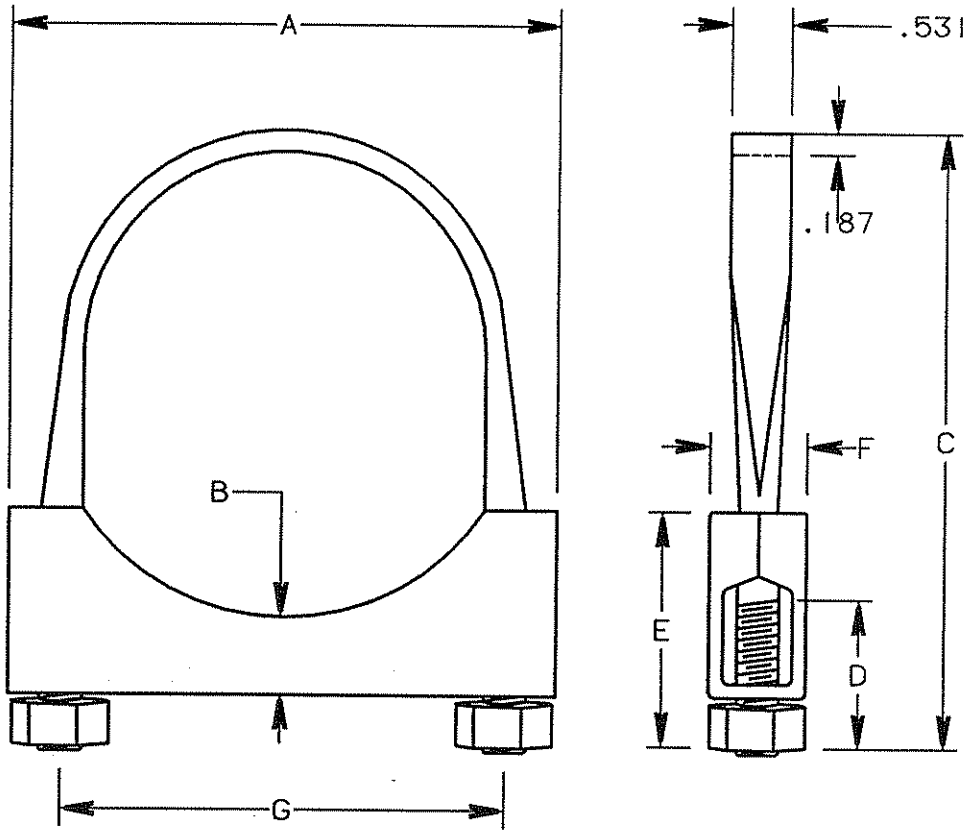
B

ENGINEERING NOTES:

1. APPROVED VENDOR BREEZE CLAMP PRODUCTS. DIMENSIONS SHOWN ARE REFERENCE ONLY.
2. MATERIAL: STAINLESS STEEL BAND, PLATED FASTENER.
3. BOLTS BENT ON SMALLER DIAMETERS

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	PF0924-02	11/30/94	ERK	INITIAL RELEASE
A	PA2042-63	02/13/96	ERK	-250 MFG NUMBER CHANGE
B	PA2042-70	06/25/96	DAJ	ADD FLANGE, REVISED MFG NOS. & -250 CLAMP DIA.

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	EJA	SADDLE CLAMP FLAT "U" BOLT	23-12162
DATE	10/27/93	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



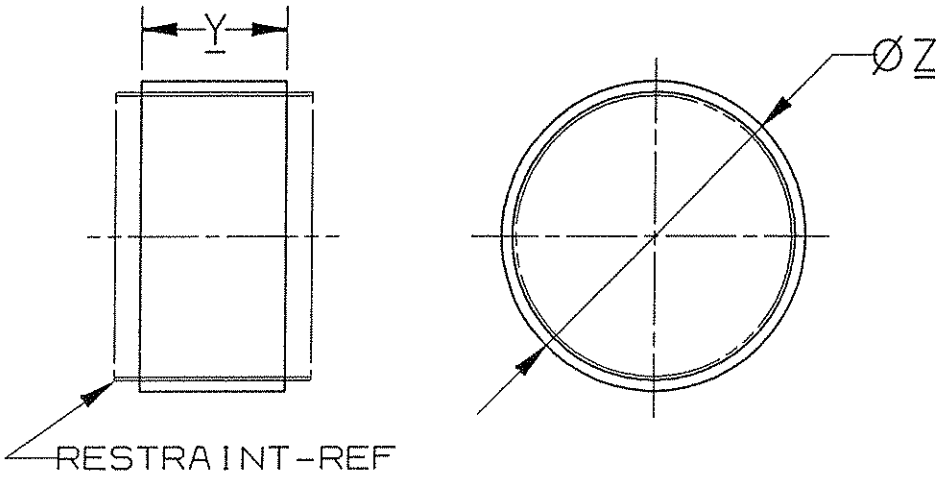
SIZE	A	B	C	D	E	F	G	MFR NUMBER CLAMPS INC	FREIGHTLINER PART NUMBER
3 1/2"	4.810	.675	5.390	1.500	2.470	.855	4.000	UFD-350B1	23-12162-001

GENERAL INFORMATION:

1. MATERIAL: SADDLE: 11GA AISI 1008 HR, P & O
   "U" BOLT: 3/8" WIRE, AISI 1008-1010
2. FINISH: ZINC PLATED
3. PARTS FURNISHED BULK UNASSEMBLED.
4. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	779156-04	10/27/93	ERK	INITIAL RELEASE

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	CLAMP-HOSE SHRINK BAND	23-12219	
DATE	02/07/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				



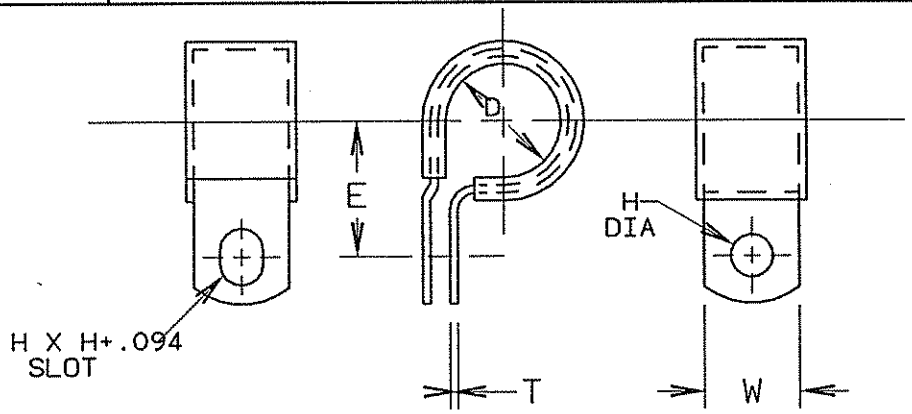
	HOSE SIZE	DIMENSIONS Y	DIMENSIONS Z	GATES NO.	F/L SPEC NO.
B	0.375	0.556	0.983	7405-4002	23-12219-038
	0.625	0.810	1.268	7405-4004	23-12219-063
	0.750	0.810	1.382	7405-4005	23-12219-075
	1.000	0.810	1.711	7405-4006	23-12219-100
	1.250	1.157	2.024	7405-4007	23-12219-125
	1.750	1.157	2.633	7405-4009	23-12219-175
	2.000	1.157	2.951	7405-4010	23-12219-200
	2.250	1.157	3.238	7405-4011	23-12219-225
	2.500	1.157	3.562	7405-4012	23-12219-250
	2.750	1.157	3.843	7405-4013	23-12219-275
	3.000	1.157	4.142	7405-4014	23-12219-300

SPECIFICATIONS:

1. MATERIAL: GATES FORMULATION 8600-100
2. DIMENSIONS ABOVE FOR REFERENCE ONLY.
3. APPROVE SOURCE: GATES RUBBER CO. (POWER GRIP SB CLAMPS)
4. REQUIRES A HEAT GUN FOR INSTALLATION.

CHG	JOB NO	DATE	BY	REVISION
-	P01794-03	02/07/97	DAJ	INITIAL RELEASE
A	P01794-05	02/18/97	JCT	ADDED HOSE SIZES 1.25, 1.75, 2.75. REV. Z DIMENSIONS.
B	P03968-02	08/15/97	DAJ	PART NUMBER -038 WAS -037 AND -063 WAS -062.

DRAWN	DAJ	TITLE	ITEM NUMBER
APPRV	ERK	CLAMP-HOSE CUSHIONED, SNGL, SLOTTED LOWER LEG	23-12231
DATE	04/25/95	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



	D DIA (IN)	E ±.020	W (IN)	T (IN)	H (IN)		FREIGHTLINER PART NUMBER
A	.250	.625	.500	.031	.281		23-12231-000
					.344		23-12231-100
	.375	.702	.625	.031	.281		23-12231-001
					.344		23-12231-101
	.500	.764	.625	.031	.281		23-12231-002
					.344		23-12231-102
	.625	.827	.625	.031	.281		23-12231-003
					.344		23-12231-103
	.875	.952	.625	.031	.281		23-12231-004
					.344		23-12231-104
	1.000	1.014	.625	.031	.281		23-12231-005
					.344		23-12231-105
C	1.500	1.284	.625	.050	.281		23-12231-006
					.344		23-12231-106
	1.750	1.409	.625	.050	.281		23-12231-007
					.344		23-12231-107
	2.000	1.534	.625	.050	.281		23-12231-008
					.344		23-12231-108

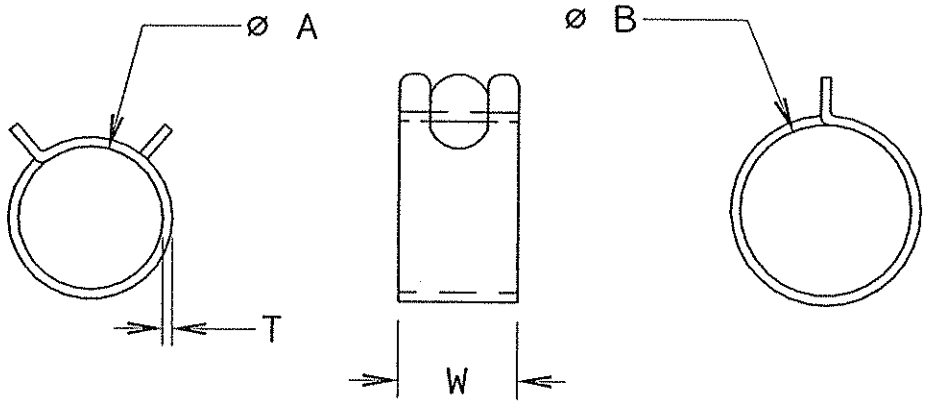
ENGINEERING NOTES:

1 MATERIAL: CLAMP = CARBON STEEL, ZINC PLATED
CUSHION = NEOPRENE RUBBER PER SAE 1-BC715 OR AMS 3209
MINIMUM TENSILE = 1700 PSI
SDH = A70±5
TEMP RANGE = -40 TO +212°F (-40 TO +100°C)

2 SUGGESTED VENDOR: UMPCO

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P2A310-67	04/25/95	DAJ	INITIAL LOAD
A	P2A310-80	05/26/95	DAJ	REVISED "E" AND "W" DIMENSIONS.
B	P2A310-23	08/21/95	ERK	ADDED -10X SERIES FOR .344 "H" DIMENSION
C	PA2042-59	09/25/95	ERK	23-12231-006/106, "E" 1.284 FROM 1.264

DRAWN	ERK	TITLE CLAMP SPRING STEEL	ITEM NUMBER 23-12234
APPRV	RAR		
DATE	04/26/95	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

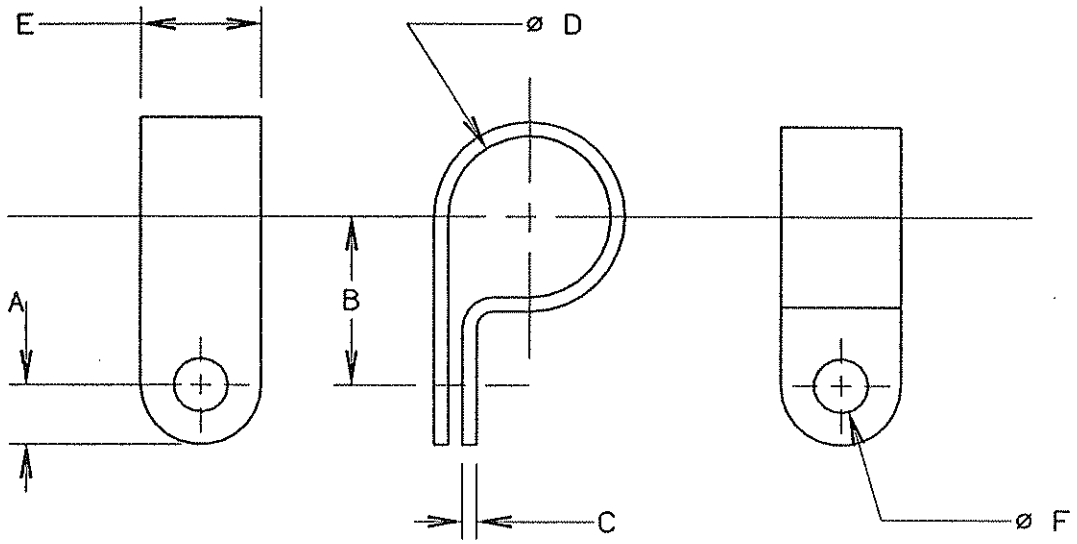


HOSE O.D. INSTALLED	MAX DIA IN FREE POSITION (A)	FULLY EXPANDED DIA (B)	MATERIAL WIDTH (W)	MATERIAL THICKNESS (T)	SUPPLIER NUMBER	FREIGHTLINER PART NUMBER
INCH (MM)	INCH (MM)	INCH (MM)	INCH (MM)	INCH (MM)	AFJ	
.41 (10.3)	.375 (9.53)	.45 (11.4)	.31 (7.9)	.025 (.64)	09-44293	23-12234-038

MATERIAL: SPRING STEEL HEAT TREATED
FINISH: PHOSPHATE AND PAINT

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P2A242-31	04/26/95	ERK	INITIAL RELEASE

DRAWN	DAJ	TITLE CLAMP-CABLE NYLON	ITEM NUMBER 23-12261
APPRV	ERK		
DATE	07/05/95	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1



DIMENSION						FREIGTHLINER PART NUMBER
A	B	C	D	E	F	
.218	.457	.060	.247	.500	.203	23-12261-000

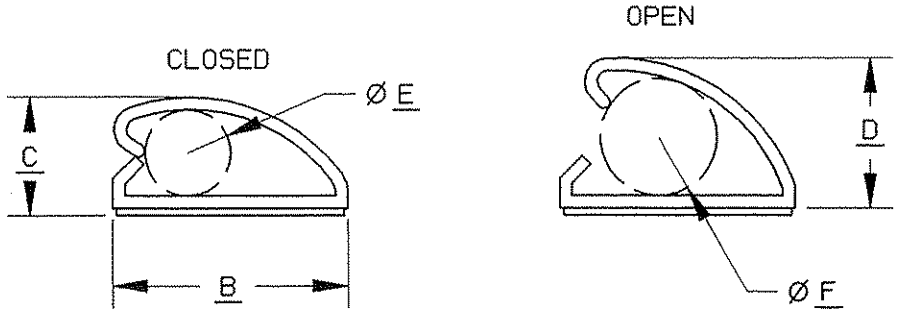
ENGINEERING NOTES:

1 MATERIAL: NYLON, NATURAL

2 SUGGESTED VENDOR: ALL-STATES 4HN, OR ENGINEERING STANDARDS APPROVED EQUIVALENT.

CHG	JOB/RLSE NO	DATE	BY	REVISION
-	P2A223-50	07/05/95	DAJ	INITIAL LOAD

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	CLAMP - CABLE ADHESIVE	23-12301	
DATE	03/26/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				



LENGTH	DIMENSIONS			MAX. WIRE BUNDLE		VENDOR/PN	FREIGHTLINER PART NUMBER
	B	C	D	E (MIN)	F (MAX)	TYTON	
1.25	1.50	.75	1.35	.500	1.00	52-1000C2	23-12301-000
.750	.750	.40	.66	.250	.500	52-0500C	23-12301-001

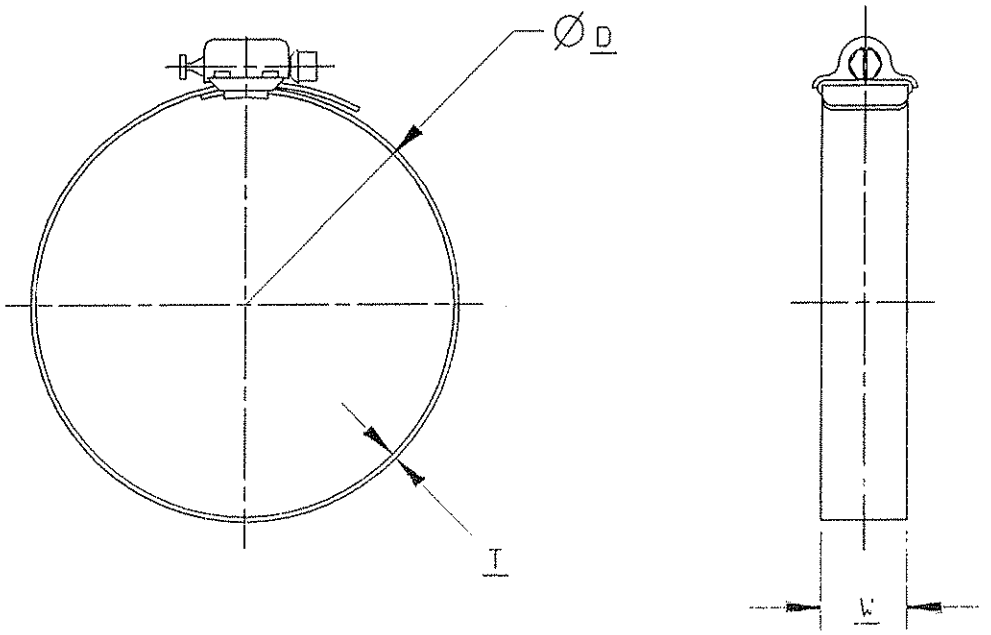
ENGINEERING NOTES:

1. MATERIAL: BACKING-CLOSED CELL CROSSLINKED POLYETHYLENE FOAM .032 THK
   ADHESIVE-RUBBER BASE
   DENSITY (PCF) 6
2. 180 DEGREE PEEL ADHESION: ROLL SIDE-FOAM TEAR
   LINER SIDE-FOAM TEAR
3. SHEAR, PSTC 7 (HOURS): 200+
4. TENSILE STRENGTH (FOAM (PSI) ASTM-D1564): MINIMUM 150
5. ELONGATION TO BREAK (ASTM-D1564): MINIMUM 300
6. DWELL (HOURS PRIOR TO FULL LOADING): 2
7. SERVICE TEMP RANE (°F): -20 TO 150
8. DIMENSION PROVIDED FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
A	P2D360-48	03/26/98	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -001.
B	PA2042-85	10/21/98	DAJ	ADDED VARIABLE DIM.S, REVISED WIRE BUNDLE VALUES.

DRIENNE CHILBERG

DRAWN	DAJ	TITLE CLAMP - WORM GEAR QUICK CONNECT	DRAWING NUMBER 23-12367
APPRV	DAJ		
DATE	07/24/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



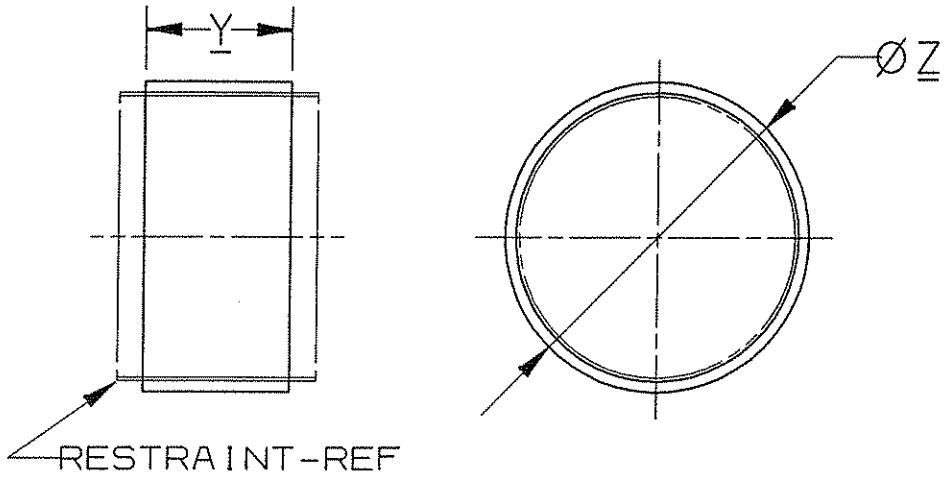
HOSE I.D.	DIMENSIONS				MFG/PART NO.	FREIGHTLINER PART NUMBERS
	D (MIN)	D (MAX)	T (NOM)	W (NOM)	BRZ	
2.75	1-9/16	3-1/2	.028	5/8	50048	23-12367-275

ENGINEERING NOTES:

1. MATERIAL: BAND AND HOUSING - STAINLESS STEEL, TYPE 302 OR 304.
SCREW, SLOTTED HEAD - ZINC PLATED, 5/16 HEX

CHG	JOB NO	DATE	BY	REVISION
-	P02814-01	07/24/97	DAJ	INITIAL LOAD

DRAWN	DAJ	TITLE CLAMP-HOSE SHRINK BAND	DRAWING NUMBER 23-12413
APPRV	DAJ		
DATE	01/08/97		
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. B



HOSE SIZE	DIMENSIONS Y	DIMENSIONS Z	GATES NO.	F/L- SPEC NO.
0.375	0.556	0.983	7407-3202	23-12413-038
0.625	0.810	1.268	7407-3204	23-12413-063
0.750	0.810	1.382	7407-3205	23-12413-075
1.000	0.810	1.711	7407-3207	23-12413-100
1.250	1.157	2.024	7407-3208	23-12413-125
1.750	1.157	2.633	7407-3213	23-12413-175
2.000	1.157	2.951	7407-3215	23-12413-200
2.250	1.157	3.238	7407-3217	23-12413-225
2.500	1.157	3.562	7407-3219	23-12413-250
2.750	1.157	3.843	7407-3221	23-12413-275
3.000	1.157	4.142	7407-3223	23-12413-300

B

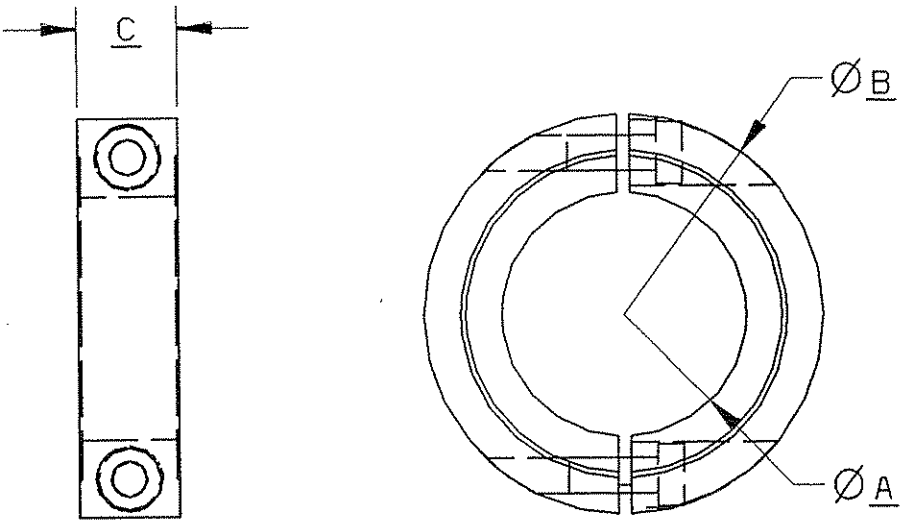
SPECIFICATIONS:

1. MATERIAL: GATES FORMULATION 8600-100
2. DIMENSIONS ABOVE FOR REFERENCE ONLY.
3. APPROVE SOURCE: GATES RUBBER CO. (POWER GRIP RT CLAMPS)

CHG	JOB NO	DATE	BY	REVISION
-	P01794-02	01/08/97	DAJ	INITIAL RELEASE
A	P01794-05	02/18/97	JCT	ADDED HOSE SIZES 1.25,1.75,2.75. REV. Z DIMENSIONS.
B	P03968-02	08/12/97	DAJ	23-12413-038 WAS -037 & 23-12413-063 WAS -062.

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE COLLAR-CLAMP	DRAWING NUMBER 23-12415	
APPRV	DAJ			
DATE	02/10/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				



BORE "A"	OUTSIDE "B"	WIDTH "C"	F/L SPEC NO.
1 3/8	2 1/4	9/16	23-12415-000

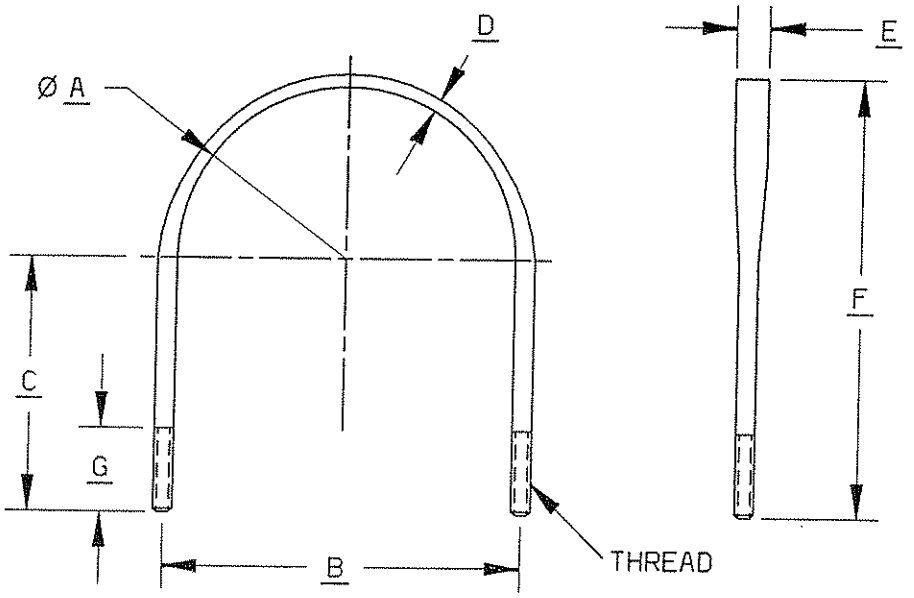
SPECIFICATIONS:

1. MATERIAL: STEEL
2. FINISH: PLAIN
3. DIMENSIONS ARE FOR REFERENCE ONLY.

CHG	JOB NO	DATE	BY	REVISION
-	PC3201-03	02/10/97	DAJ	INITIAL RELEASE

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE U-BOLT TUBE CLAMP	DRAWING NUMBER 23-12452
APPRV	DAJ		
DATE	10/09/97		
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -



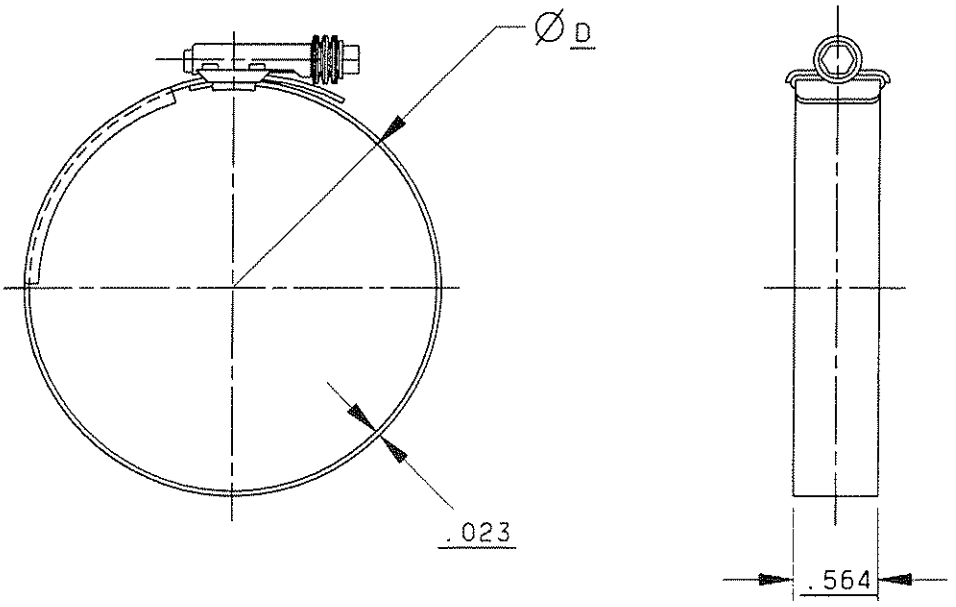
A	B	C	D	E	F	G	THREAD	MFR'S NO.	FREIGHTLINER SPECIFICATION NUMBER
2.67	3.00	-	.100	-	3.83	1.00	5/16-18		23-12452-000

SPECIFICATIONS:

1. MATERIAL: GRADE-C1018-10 COLD DRW
2. FINISH: PLAIN

CHG	JOB NO	DATE	BY	REVISION
-	947961-02	10/09/97	DAJ	INITIAL LOAD

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	CLAMP-WORM GEAR CONSTANT TORQUE, WITH LINER	23-12485	
DATE	01/17/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				



HOSE I.D.	DIMENSIONS		MFG/PART NO.	FREIGHTLINER PART NUMBERS
	D (MIN)	D (MAX)	BRZ	
1/2-5/8	9/16	1 1/16	CT9410	BRZCT9410
3/4	11/16	1 1/4	CT9412	BRZCT9412
1	13/16	1 1/2	CT9216 (4)	BRZCT9216
1	13/16	1 1/2	CT9416	BRZCT9416
2 3/4	2 5/16	3 1/4	CT9444	23-12485-275

ENGINEERING NOTES:

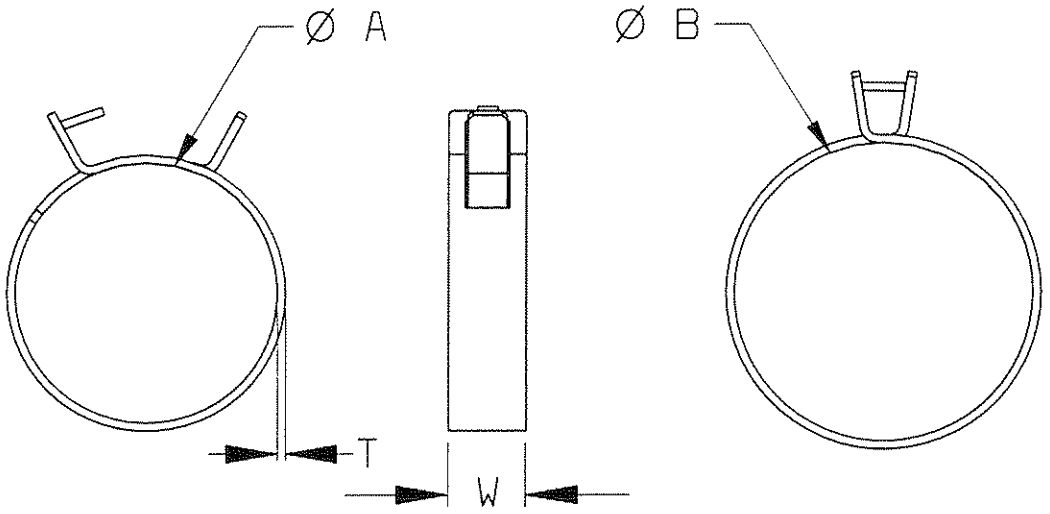
1. MATERIAL: BAND, WASHER AND HOUSING - 300 SERIES STAINLESS STEEL
   SCREW, 5/16 HEX HEAD - 410 STAINLESS STEEL
2. DIMENSIONS ARE FOR REFERENCE ONLY.
3. IDENTIFY COMPONENT PER FL SPEC 49-00051.

(4) MATERIAL: BAND, WASHER AND HOUSING - 300 SERIES STAINLESS STEEL,
SCREW, 5/16 HEX HEAD - CARBON STEEL

5. RECOMMENDED INSTALLATION 40 INCH POUNDS MAX.

CHG	JOB NO	DATE	BY	REVISION
-	P03175-58	01/07/98	DAJ	INITIAL RELEASE
A	P03175-73	03/20/98	DAJ	PART NUMBER 23-12485-275 WAS 23-12485-000.
B	PA2042-97	11/08/99	LFB	CORRECTED TEXT THICKNESS.

DRAWN	KLS	TITLE	DRAWING NUMBER	
APPRV	DAJ	CLAMP SPRING STEEL, ROTOR CLAMP	23-12691	
DATE	10/18/99			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A

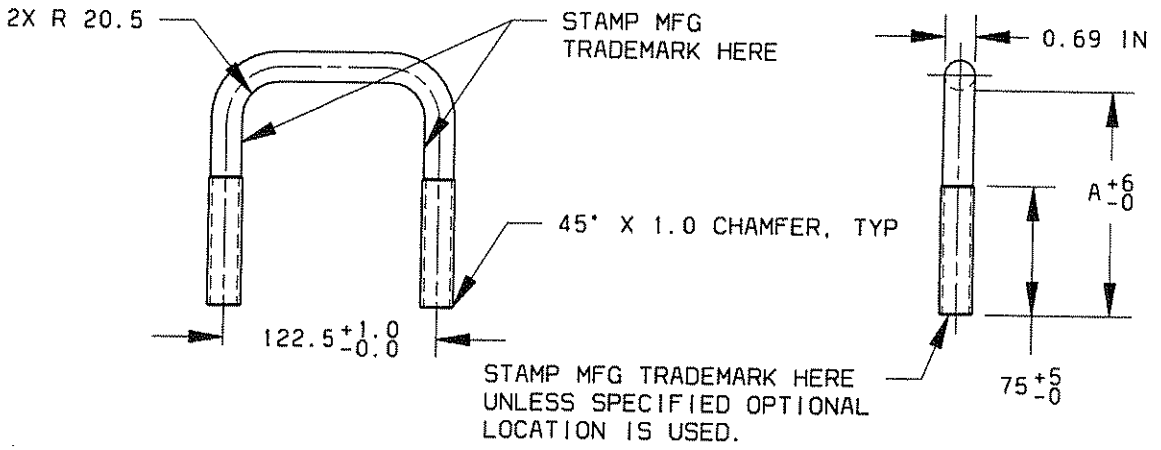


HOSE O.D. INSTALLED	MAX DIA IN FREE POSITION (A)	FULLY EXPANDED DIA (B)	MATERIAL WIDTH (W)	MATERIAL THICKNESS (T)	SUPPLIER NUMBER	FREIGHTLINER PART NUMBER
MM	MM	MM	MM	MM		
24.0	22.0	26.0	15.0	1.30	CTB-24	23-12691-000
27.0	25.2	28.9	15.0	1.60	CTB-27	23-12691-001
35.0	31.5	38.0	15.0	1.73	CTB-35	23-12691-002
17.0	15.2	18.5	15.0	0.85	CTB-17	23-12691-003

SPECIFICATIONS:
1. MATERIAL: CHROME VANADIUM SAE/1074
2. FINISH: ZINC RICH PAINT

CHG	JOB NO	DATE	BY	REVISION
-	B35809-01	10/18/99	KLS	INITIAL RELEASE
A	B35809-03	10/22/99	LFB	ADDED -002, -003.

DRAWN	LFB	TITLE U-BOLT SUSPENSION	DRAWING NUMBER 23-12734
APPRV	DAJ		
DATE	12/03/99		
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM			



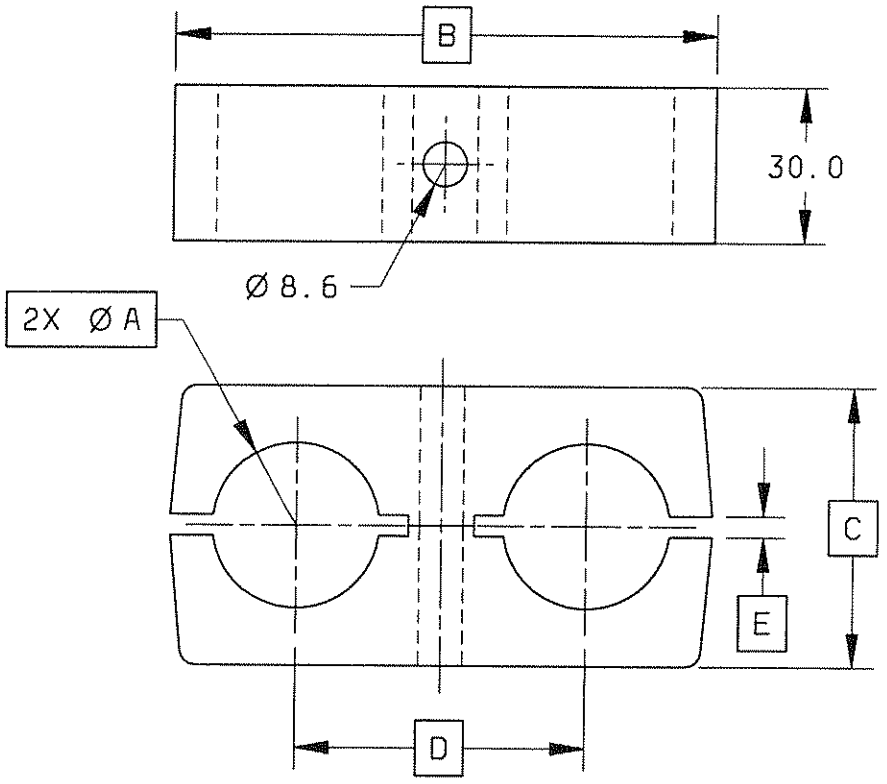
THREAD SIZE (IN)	ESTIMATED WEIGHT	DIM A	FREIGHTLINER PART NUMBER
3/4-16 UNF ROLLED THREADS	1.6	130	680 322 03 25
	1.9	175	680 322 04 25
	2.9	265	680 322 06 25
	2.4	215	680 322 07 25
	1.7	150	680 322 11 25
	2.1	190	680 322 12 25
	2.6	230	680 322 13 25
	2.8	255	680 322 14 25
	3.0	275	680 322 17 25
	1.3	120	23-12734-120
	3.2	295	23-12734-295

ENGINEERING NOTES:

1. HEAT TREAT AND MECHANICAL PROPERTIES TO BE IN ACCORDANCE WITH SAE J429 GRADE 8.
   OPTION: COLFORM STEEL C1552.
2. ALL DIMENSIONS ARE IN MILLIMETERS (MM) UNLESS OTHERWISE NOTED.

CHG	JOB NO	DATE	BY	REVISION
-	P08499-03	12/03/99	LFB	INITIAL RELEASE
A	P06063-05	01/19/00	LFB	ADDED -295. REVISED TOL TO BE +1.0 WAS +0.1.

DRAWN	AJD	TITLE CLAMP-TUBE TWIN SERIES, INCH	DRAWING NUMBER 23-12764
APPRV	DAJ		
DATE	02/08/00	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CATIA ORIGINAL			



ØA IN	ØA MM	B	C	D	E	PARKER PART NUMBER	FREIGHTLINER PART NUMBER
1.25	32.0	103.9	54.1	55.9	4.1	5320/320-PP	23-12764-125

1. ONE CLAMP SET INCLUDES TWO IDENTICAL HALVES OF POLYPROPYLENE.

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