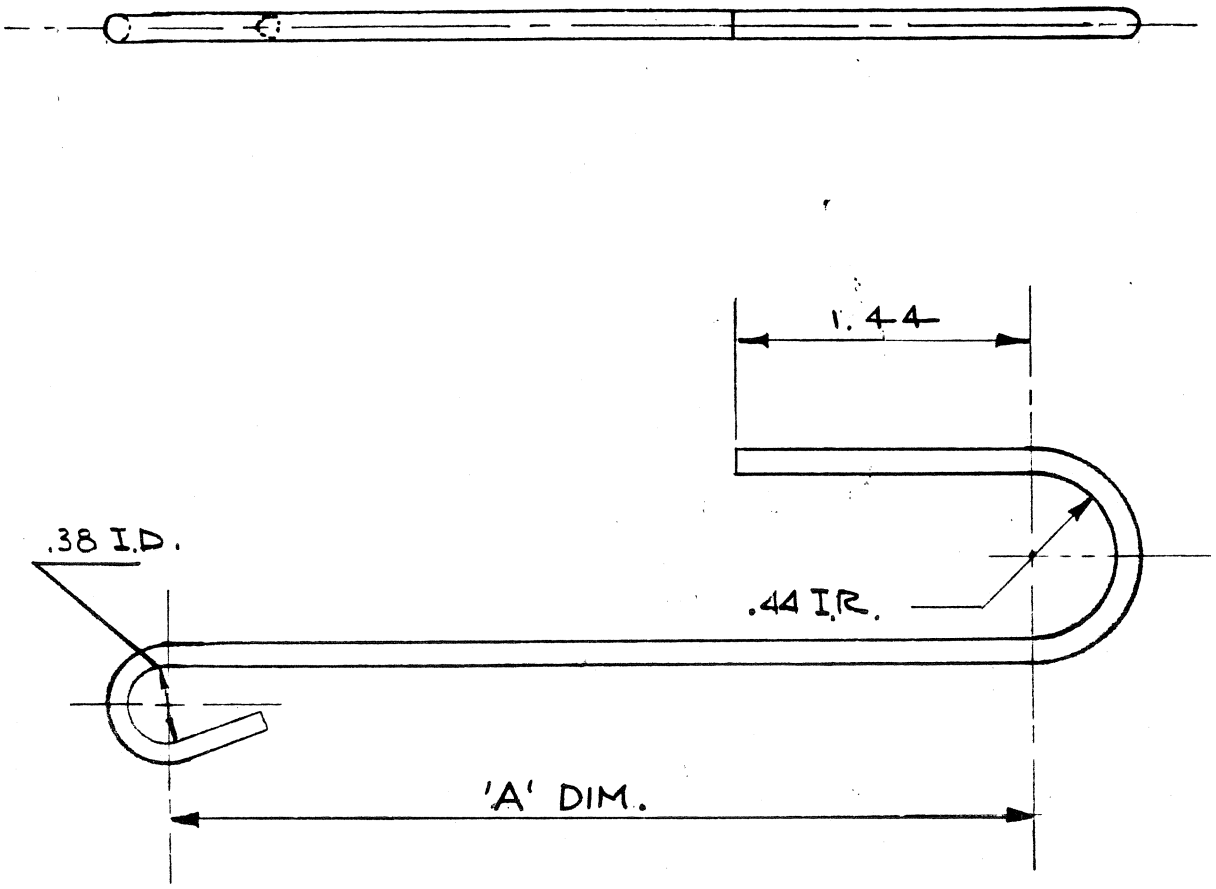
23-4779

PRINT ISSUED	TITLE	PART NO.
6-22-70	ANCHOR, SPRING	23-4779
LAST CHG. LTR. F		SHEET 1 OF 1

CHG	BY	DATE	WAS
-	CRC	3/9/83	Added -001 1180B
F	BT	5/23/84	From SAE 1010-20 0797C to ASTM A227



'A' DIMENSION	MATERIAL	DEVELOPED LENGTH	FREIGHTLINER PART NUMBER
4.38	(1)	9.00	23-4779-000
1.12	(1)	4.00	-001 (E)

CHG	BY	DATE	WAS
A	PRJ	12-2-68	B Size Drawing
B	SK	6-3-69	Developed Length 9 In.
C	KJA	6-10-70	Looped Eye & .38 Offset
D	SB	2-1-77	w/o Zink coat or Paint 65230

(1.) 1/8 dia. hard drawn steel ASTM A227. (F)
Zink coated per F/L 49-00005-102 and/or painted. (D)

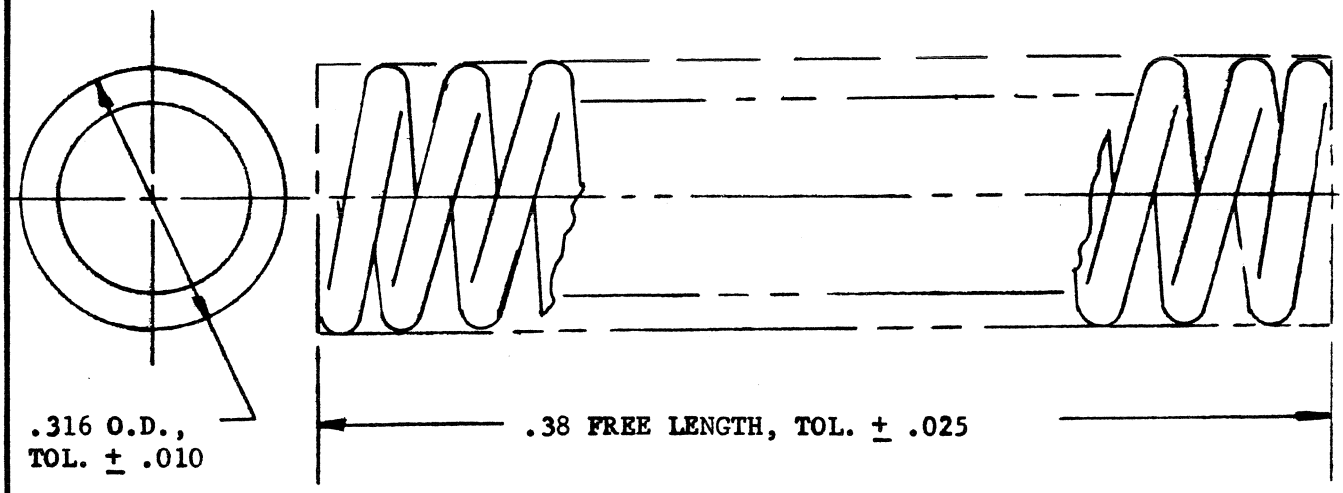
COMPLIED	PRJ	DATE DRAWN	MASTER NO		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	12-2-68	03200	18201		VEHICLE

Portland FREIGHTLINER CORPORATION Oregon 97208

FE 6-6-69 D C

23-9019

PRINT ISSUED		TITLE	PART NO.
6-1-70	②	SPRING COMPRESSION 180 LB. x .38 IN FREE IN.	23-9019
LAST CHG. LTR. D			SHEET OF



SPRING SPECIFICATIONS			
NUMBER OF COILS		2 ACTUAL	4 TOTAL
DIRECTION OF COIL			RIGHT
ENDS	CLOSED, NOT GROUND		
RATE - LBS/IN. (TOL. ± 15%)			180
③ CLOSED LENGTH		REF	.211
④ LOAD TO CLOSE		REF	30.
⑤ STRESS WHEN CLOSED		REF	250,000
① MATERIAL	OIL-TEMPERED WIRE ASTM 229 OR EQUIVALENT		
WIRE DIAMETER (TOL. ± .001)			.047 (18 GA.)
⑥ FINISH	NONE		
INSPECT AT: MINIMUM YIELD LENGTH .282 LOAD 17.7 ± 5%			
MAXIMUM LENGTH SET AFTER TEST .031 INCH			

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
C	KJA	9-28-68	B Size Print
D	KJA	2-16-70	2=365; 3=.221; 4=70.08
			5=234,000; 6=Cad Plate

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	9-30-68		①	VEHICLE

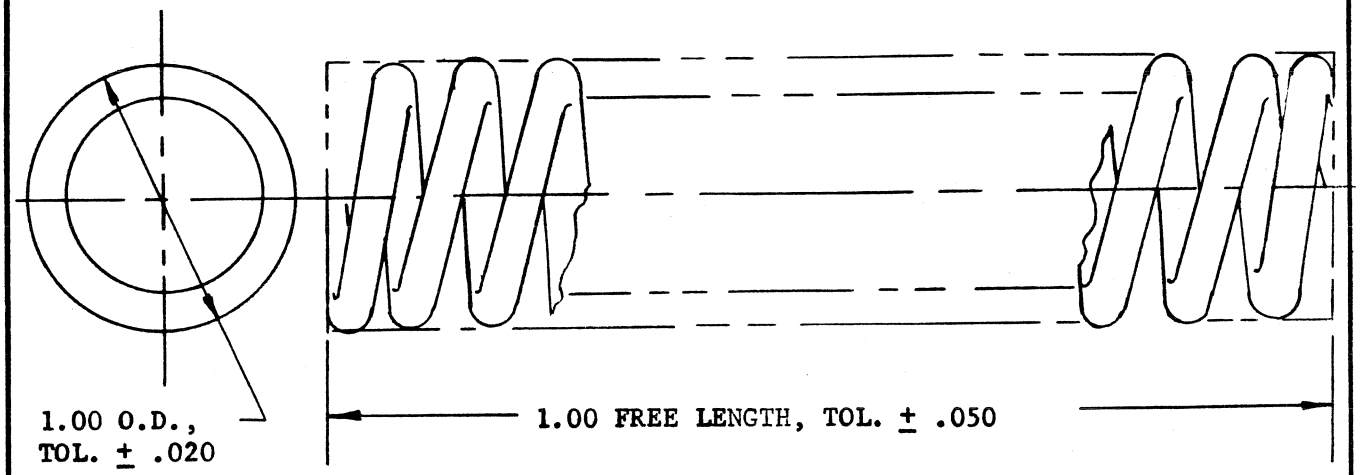
10-3-68

Portland FREIGHTLINER CORPORATION Oregon 97208

M/F

23-9022

PRINT ISSUED		TITLE	PART NO.
		SPRING, COMPRESSION 219 $\frac{LB}{IN.}$ x 1.00 IN. FREE	23-9022
LAST CHG. LTR.	B		SHEET OF



SPRING SPECIFICATIONS:		
NUMBER OF COILS	2 ACT	4 TOT
DIRECTION OF COIL		RIGHT
ENDS	CLOSED & GROUND 3°	
RATE - LBS/IN. (TOL. ± 10%)		219 #
CLOSED LENGTH	REF	.48
LOAD TO CLOSE (TOL. ± REF)		113.88
STRESS WHEN CLOSED		117,000
① MATERIAL	OIL-TEMPERED WIRE ASTM 229 OR EQUIVALENT	
WIRE DIAMETER (TOL. ± .002)		.120(11GA.)
FINISH	PLAIN	
INSPECT AT: MIN. YIELD LENGTH .64 LOAD 78 ± 5%		
MAXIMUM LENGTH SET AFTER TEST .033 INCH		

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
B	KJA	9-18-68	WAS B SIZE DRAWING

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	9-18-68		①	22-9427 22-10955

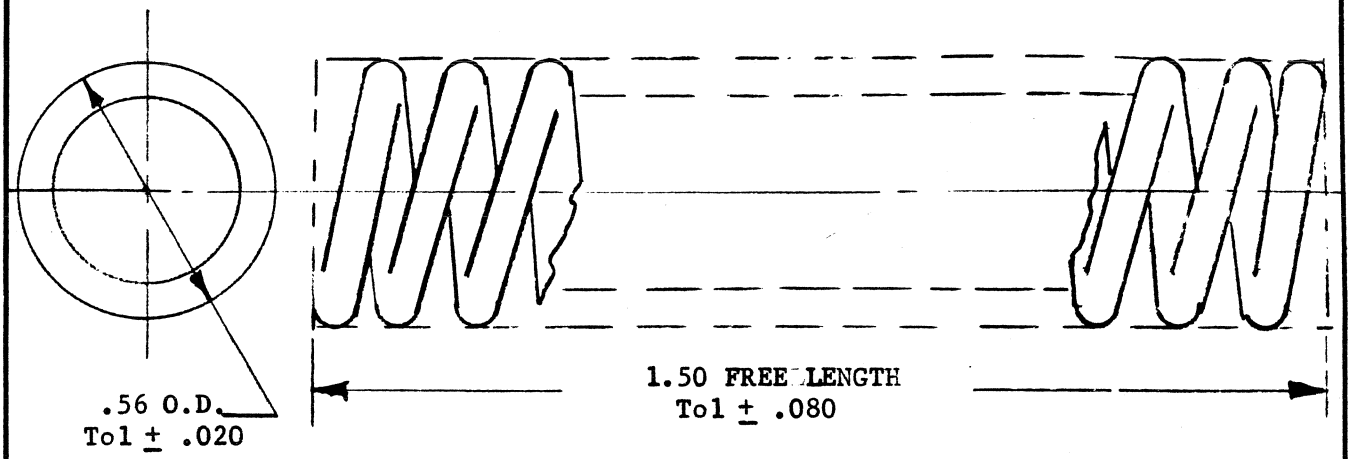
Portland FREIGHTLINER CORPORATION Oregon 97208

23-9033

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
C	PRJ	12-23-68	B Size Drawing

PRINT ISSUED	TITLE	PART NO.
1-15-69	SPRING, COMPRESSION 460 Lbs/In x 1.50 In FREE	23-9033
LAST CHG. LTR. C		SHEET OF



SPRING SPECIFICATIONS		
NUMBER OF COILS	7 ACTUAL	9 TOTAL
DIRECTION OF COIL		OPTIONAL
ENDS	OPEN & GROUND	
RATE - Lbs/In (Tol ± 8%)		460#
CLOSED LENGTH		1.125
STRESS WHEN CLOSED		144,327.6
LOAD TO CLOSE (TOL ± 10%)		172.50
(1) MATERIAL	STL SPRING WIRE	
	ASTM 229	
WIRE DIA (Tol ± .002) .125		
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH: 1.145 LOAD: 163 ± 8		
MAXIMUM LENGTH SET AFTER TEST .032 In.		

COMPILED	PRJ	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	12-23-68		(1)	VEHICLE

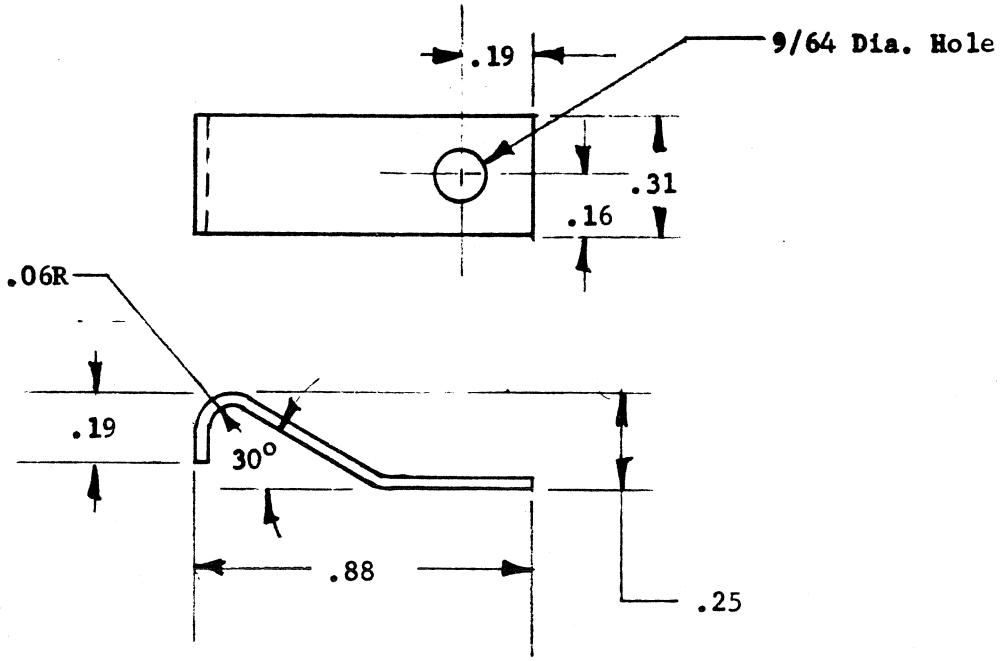
Portland FREIGHTLINER CORPORATION Oregon 97208

23-9038

PRINT ISSUED	TITLE	PART NO.
1-23-69	SPRING, SELF-LOCKING PIN	23-9038
LAST CHG. LTR. B		SHEET OF

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
B	PRJ	12-23-68	B Size Drawing



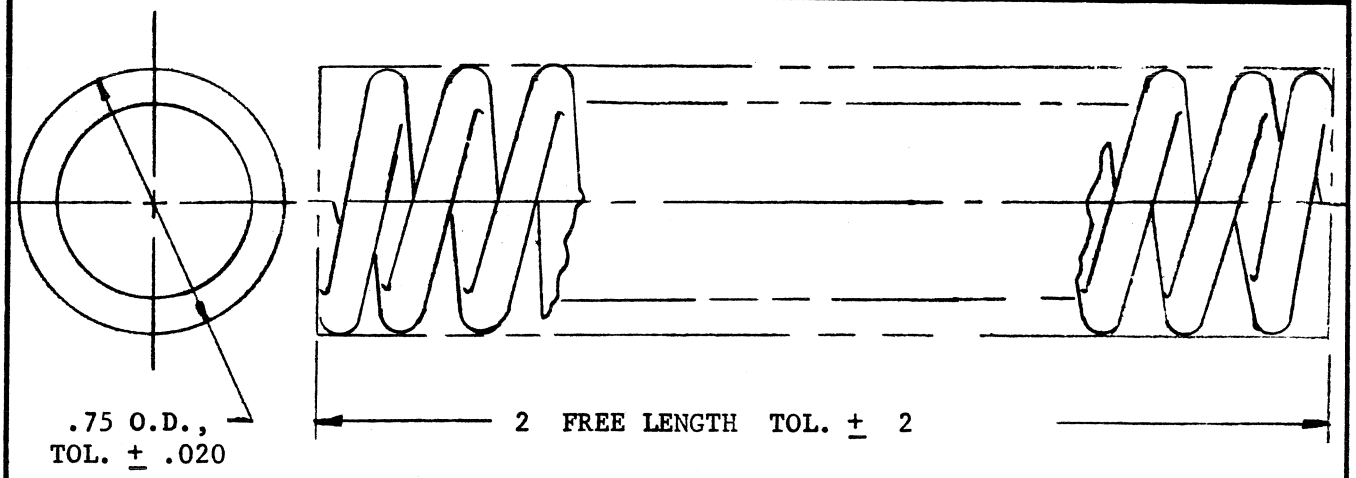
1. .03 Thick Spring Steel

COMPILED	PRJ	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED		12-23-68		1	A23-9036

Portland FREIGHTLINER CORPORATION Oregon 97208

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION .080 WIRE x .75 COIL O.D.	23-9043-000
LAST CHG. LTR.	J		SHEET 1 OF 7



SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 16	TOTAL 18
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 12.2	TOL. 5%
CLOSED LENGTH	REF	1.44
LOAD TO CLOSE	REF	22.1
STRESS WHEN CLOSED	REF	86,000
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD 21 ± 5%		
2 FREE LENGTH	LENGTH 3.25 TOL. ± .080	

MAXIMUM LENGTH SET AFTER TEST .030 INCH

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	Was B Size Drawing
J	DIH	7-28-69	Added sheet 7

COMPILED	K. J. A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K. J. A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

8-8-9

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION	23-9043-001
LAST CHG. LTR.	J	.080 WIRE x .75 COIL O.D.	SHEET 2 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	Was B Size Drawing
J	DIH	7-28-69	Added sheet 7

SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 6	TOTAL 8
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 33	TOL. 8%
CLOSED LENGTH	REF	0.64
LOAD TO CLOSE	REF	26.1
STRESS WHEN CLOSED	REF	100,000
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD 24 ± 5%		
2 FREE LENGTH	LENGTH 1.44	
	TOL. ± .080	

MAXIMUM LENGTH SET AFTER TEST .030 INCH

COMPILED	K. J. A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K. J. A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

8-8-9

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION .080 WIRE x .75 COIL O.D.	23-9043-002
LAST CHG. LTR.	J		SHEET 3 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	Was B Size Drawing
J	DIH	7-28-69	Added sheet 7

SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 4	TOTAL 6
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 49	TOL. 8%
CLOSED LENGTH	REF	.48
LOAD TO CLOSE	REF	31.2
STRESS WHEN CLOSED	REF	121,000
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL. ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD 27.4 ± 5%		
2 FREE LENGTH	LENGTH 1.12 TOL. ± .080	

MAXIMUM LENGTH SET AFTER TEST .030 INCH

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

E-8-9

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION .080 WIRE x .75 COIL O.D.	23-9043-003
LAST CHG. LTR.	J		SHEET 4 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	Was B Size Drawing
J	DIH	7-28-69	Added sheet 7

SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 19	TOTAL 22
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 9.25	TOL. 5%
CLOSED LENGTH	REF	1.76
LOAD TO CLOSE	REF	23.03
STRESS WHEN CLOSED	REF	90,277.52
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH LOAD		
2 FREE LENGTH	LENGTH 4.25 TOL. ± .150	

MAXIMUM LENGTH SET AFTER TEST _____INCH

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

8-8-9

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION	23-9043-004
LAST CHG. LTR.	J	.080 WIRE x .75 COIL O.D.	SHEET 5 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	B Size Drawing
J	DIH	7-28-69	Added sheet 7

SPRING SPECIFICATIONS

NUMBER OF COILS	ACTUAL 6	TOTAL 9
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 33.5	TOL. 8%
CLOSED LENGTH	REF	.72
LOAD TO CLOSE	REF	30.15 10%
STRESS WHEN CLOSED	REF	118,188.00
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH _____ LOAD _____		
2 FREE LENGTH	LENGTH 1.62	
	TOL. ± ..080	

MAXIMUM LENGTH SET AFTER TEST _____ INCH

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K J. A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

8-8-9

23-9043

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION .080 WIRE x .75 COIL O.D.	23-9043-005
LAST CHG. LTR.	J		SHEET 6 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
I	KJA	9-28-68	Was B Size Drawing
J	DIH	7-28-69	Added sheet 7

SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 13	TOTAL 15
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 15	TOL. 6%
CLOSED LENGTH	REF	1.20
LOAD TO CLOSE	REF	21.2
STRESS WHEN CLOSED	REF	82,000
(1) MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD 21.2 ± 5%		
2 FREE LENGTH	LENGTH 2.69 TOL. ± .110	

MAXIMUM LENGTH SET AFTER TEST .030 INCH

COMPILED	K.J.A	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	10-2-68		(1)	VEHICLE

10-15-68

Portland FREIGHTLINER CORPORATION Oregon 97208

8-8-9

PRINT ISSUED		TITLE	PART NO.
		SPRING - COMPRESSION .080 WIRE x .75 COIL O.D.	23-9043-006
LAST CHG. LTR.	J		SHEET 7 OF 7

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
J	DIH	7-28-69	Added Sheet 7

SPRING SPECIFICATIONS		
NUMBER OF COILS	ACTUAL 9	TOTAL 12
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ±)	RATE 21	TOT. 5%
CLOSED LENGTH	REF	.97
LOAD TO CLOSE	REF	21.6
STRESS WHEN CLOSED	REF	85,000
① MATERIAL	MUSIC WIRE ASTM A228-51 (QQ-W-470)	
WIRE DIAMETER (TOL ± .001)		.080
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD		
2 FREE LENGTH	LENGTH 2.00 TOL. ± .110	

MAXIMUM LENGTH SET AFTER TEST INCH

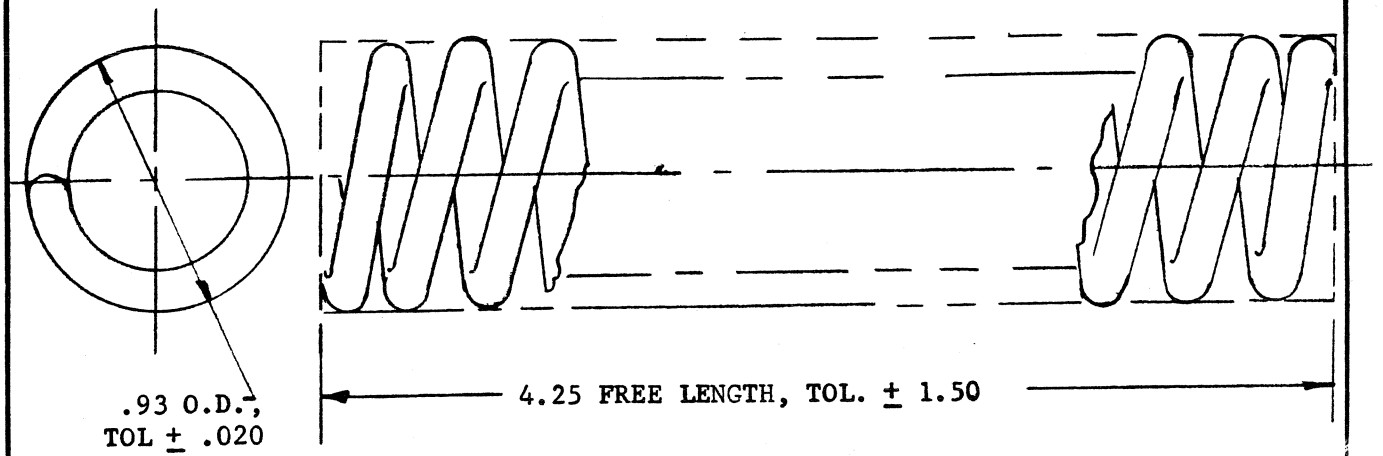
COMPILED	D.H.	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	8-5-69		①	VEHICLE

Portland FREIGHTLINER CORPORATION Oregon 97208

8-2-7

23-9055

PRINT ISSUED		TITLE	PART NO.
		SPRING COMPRESSION 28 LBS/IN. x 4.25 IN. FREE	23-9055
LAST CHG. LTR.	C		SHEET OF



SPRING SPECIFICATIONS		
NUMBER OF COILS	13 ACT.	16 TOT.
DIRECTION OF COIL		RIGHT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ± 5%)		24
CLOSED LENGTH	(REF)	1.68
LOAD TO CLOSE	(REF)	61.5
STRESS WHEN CLOSED	(REF)	131,000
① MATERIAL	OIL TEMPER WIRE ASTM 229 B or EQUIVALENT	
WIRE DIAMETER (TOL. ± .002)		.105
FINISH	PLAIN	
INSPECT AT: MINIMUM YIELD LENGTH CLOSED LOAD 61.5 ± 5%		
MAXIMUM LENGTH SET AFTER TEST .030 INCH		

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
C	KJA	9-27-68	B Size Drw & Upgaged

COMPILED	P. W.	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A	9-28-68		①	VEHICLE

10-3-68

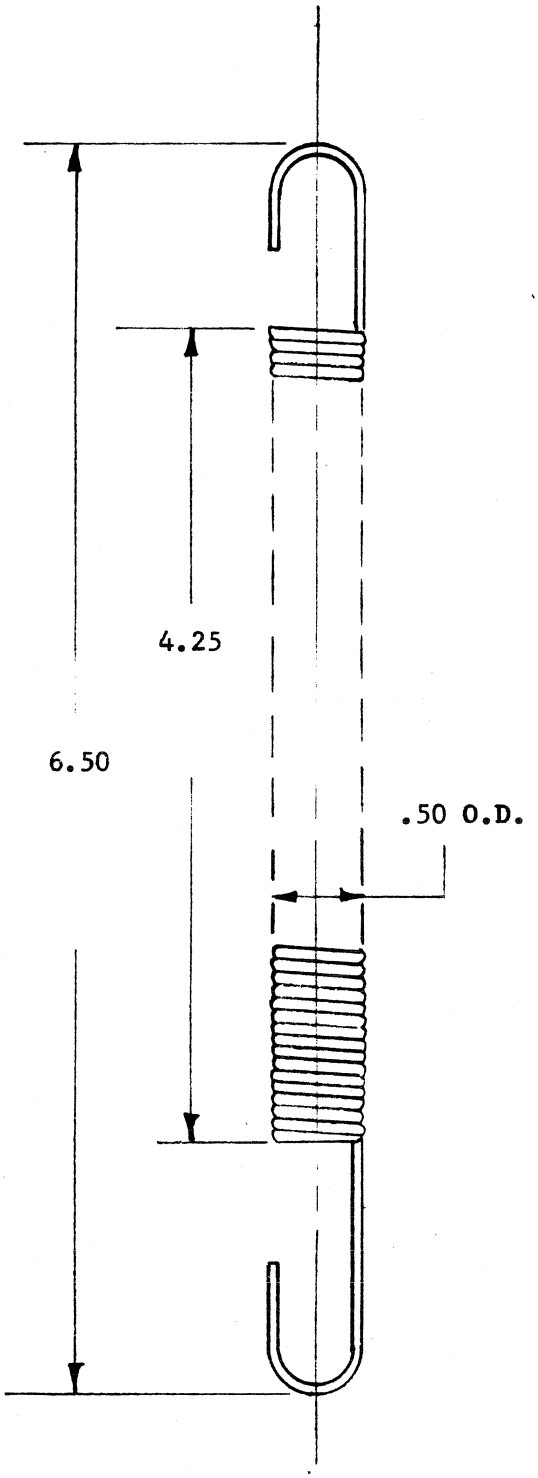
Portland FREIGHTLINER CORPORATION Oregon 97208

23-9059

PRINT ISSUED	TITLE	PART NO.
1-1569	SPRING, TENSION, .50" OD x 6.50" LONG, SCREEN DOOR TYPE WITH HOOKS EACH END	23-9059
LAST CHG. LTR. B		SHEET OF

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
B	PRJ	12-27-68	B Size Drawing



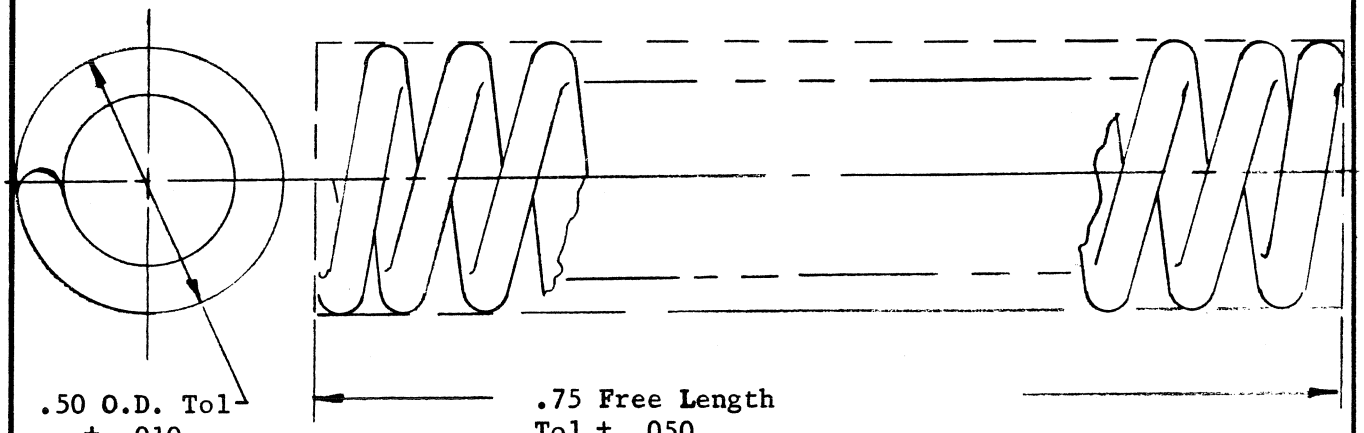
(1) 25 Ga. Oil Tempered Wire SAE 1090 - 1095

COMPILED	PRJ	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	C. J. A	12-27-68		(1)	VEHICLE

Portland FREIGHTLINER CORPORATION Oregon 97208

23-9

PRINT ISSUED	TITLE	PART NO.
1-10-69	SPRING COMPRESSION 850 lbs/inch x .75 inch Free	23-9095
LAST CHG. LTR. C		SHEET OF



SPRING SPECIFICATIONS		
NUMBER OF COILS	2 ACT	5 TOT
DIRECTION OF COIL		LEFT
ENDS	SQUARED, NOT GROUND	
RATE - LBS/IN. (TOL. ± 8%)		850
CLOSED LENGTH		.50
LOAD TO CLOSE (TOL. ± 10%)		212.50
STRESS WHEN CLOSED		351,900.000
① MATERIAL	STEEL SPRING WIRE ASTM 229	
WIRE DIAMETER (TOL ± .002)		.095
FINISH		
INSPECT AT: LENGTH _____ LOAD _____		
MAXIMUM LENGTH SET AFTER TEST _____ INCH		

CHG	BY	DATE	WAS

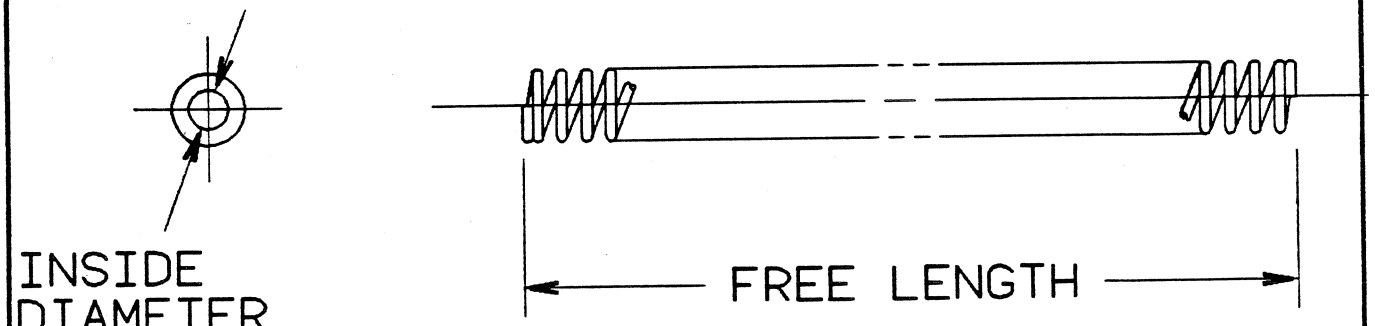
CHG	BY	DATE	WAS
C	PRJ	12-19-68	B Size Drawing

COMPILED	PJR	DATE DRAWN		MATERIAL	NEXT ASSY. NO.
APPROVED	K.J.A.	12-19-68		①	VEHICLE

Portland FREIGHTLINER CORPORATION Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
L0204	SPRING, COMPRESSION 7.7 LBS/IN X 4.000 IN FREE	23-11715
LAST CHG LTR: A		SHEET 1 OF 1

SKETCH



SPRING SPECIFICATIONS

INSIDE DIA	.267±.030
NO OF COILS	30 ACTIVE
TYPE ENDS	CLOSED, NOT GROUND
FREE LENGTH	4.000±.125
INITIAL LOAD	_____ MIN _____ MAX _____ INCHES
FINAL LOAD	_____ MIN _____ MAX _____ INCHES
RATE (±4 LB/IN)	13.0 LBS/IN
MATERIAL	HARD DRAWN STL
WIRE DIA	.054
FINISH	(1)

(A)

(A)

(1) ZINC PLATE PER F/L SPEC 49-00005-201

COMPILED	KRH	DATE DRAWN	CADAM ORIGINAL		MASTER NUMBER
APPROVED	KRH	01-22-85		-	

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

CHANGE INFORMATION

TR	JOB NO.	BY	DATE	CHANGE INFORMATION

CHANGE INFORMATION

JOB NO.	BY	DATE	CHANGE INFORMATION
03920E	KRH	06-08-87	FROM ±.062 TO ±.030
03920E	KRH	06-08-87	FROM ±10%,7.7 TO ±4LB/IN.13.0