

SEAL SIZE - 1-3/8

TYPE - ZA

BILL OF MATERIAL

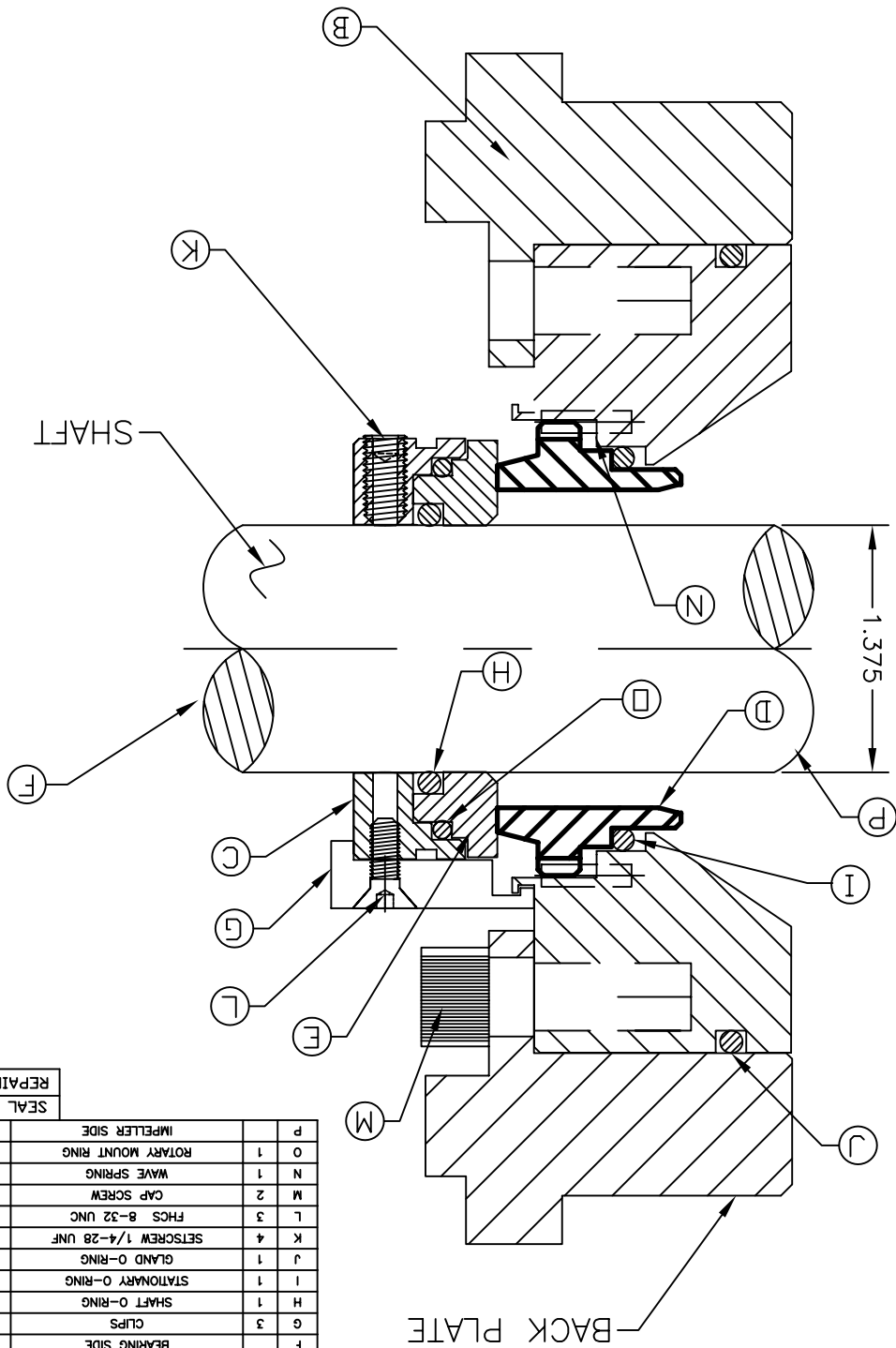
NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1375R4	1
A	2	DOWEL PIN 1/8 X 1/2	--	--	--	1
B	1	ZA R1 GLAND	--	316L	ZA1375GR1	3
C	1	ZA R4 ROTARY COLLAR	--	316L	ZA1375A1R4	4
D	1	ZA R2 STATIONARY	--	316L	ZA1375B1R4	5
E	1	ROTARY INSERT	--	SiC	ZA1375AR4	6
F		BEARING SIDE	--			
G	3	CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VITON	-220	1
I	1	STATIONARY O-RING	--	VITON	-226	1
J	1	GLAND O-RING	--	VITON	-244	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	2	CAP SCREW	1	302 SS	3/8-16	1
N	1	WAVE SPRING	--	17-7 PH	WS1375ZA/N	1
O	1	ROTARY MOUNT RING	--	VITON	-135	1
P		IMPELLER SIDE	--			

DATE:	6/3/03
MATERIAL:	--
DRAWN BY:	RE
DWG #:	ZA1375R4
SHEET #:	1 OF 7
APPROVED:	RE
DATE:	8/29/03

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 PATENT PENDING

ZM TECHNOLOGIES
 2280 STEWART BL UNIT #6
 STOCKTON CA 95205
 PHONE (209) 547-1985
 FAX (209) 464-8140

TITLE: ZA CARTRIDGE SEAL
 ZA 8 B.P.



NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1375R4	1
A	2	DOWEL PIN 1/8 X 1/2	--	--	--	1
B	1	ZA R1 GLAND	--	316L	ZA1375GR1	3
C	1	ZA R4 ROTARY COLLAR	--	316L	ZA1375A1R4	4
D	1	ZA R2 STATIONARY	--	316L	ZA1375B1R4	5
E	1	ROTARY INSERT	--	SIC	ZA1375AR4	6
F	3	BEARING SIDE CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VTN	--220	1
I	1	STATIONARY O-RING	--	VTN	--226	1
J	1	GLAND O-RING	--	VTN	--244	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	2	CAP SCREW	3/8-16	302 SS	3/8-16	1
N	1	WAVE SPRING	17-7 PH	WS1375ZA/N	--	1
O	1	ROTARY MOUNT RING	--	VTN	--135	1
P	1	IMPPELLER SIDE	--	--	--	1

SEAL KIT CONSISTS OF: C, D, E, G, H, I, J, K, L, N, O
 REPAIR KIT CONSISTS OF: E, G, H, I, J, K, L, N, O

BILL OF MATERIAL


SEAL SIZE - 1-3/8 TYPE - ZA

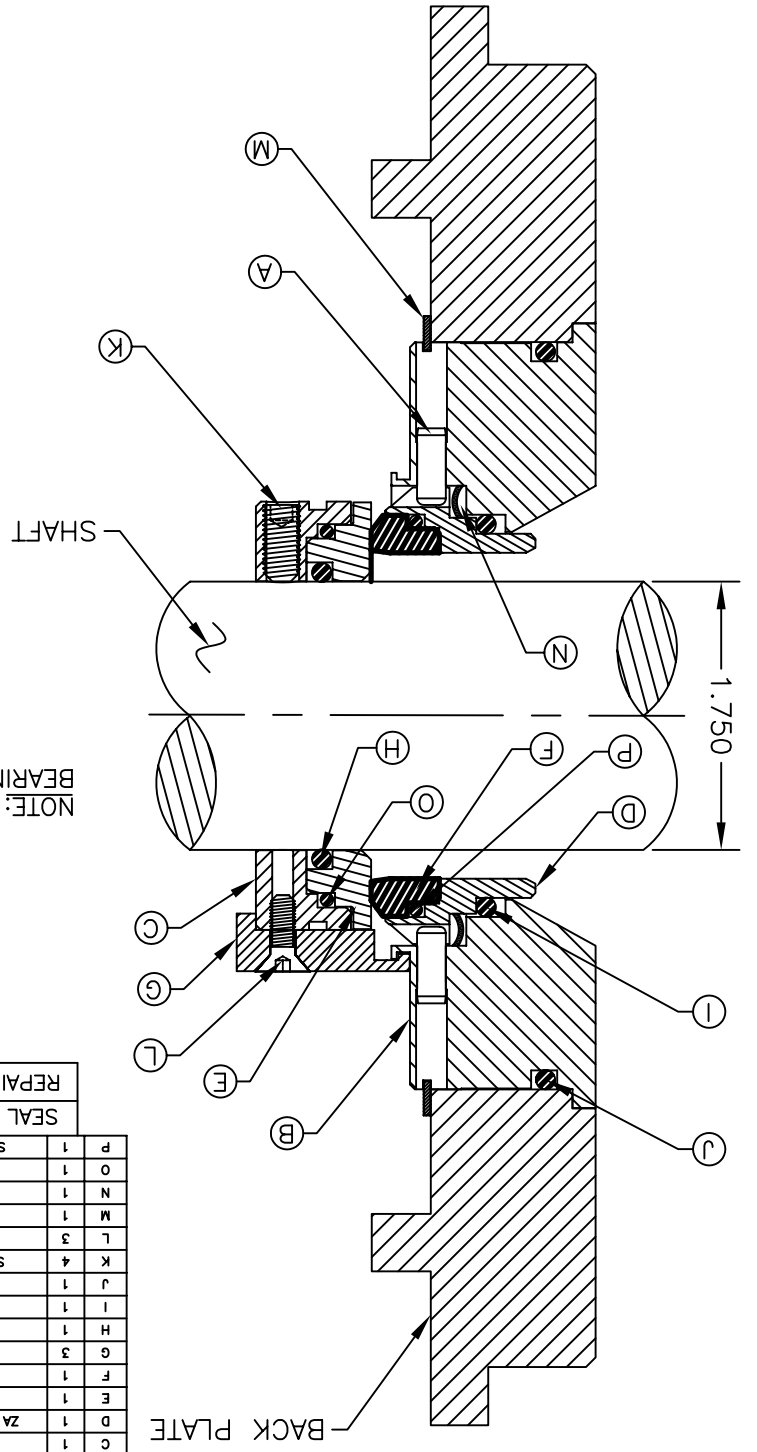
SEAL SIZE -- 1-3/4

TYPE -- ZA

BILL OF MATERIAL

NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1750R4	1
A	2	DOWEL PIN 3/16 X 1/2	--	--	--	1
B	1	ZA R2 GLAND	--	316L	ZA1750GR2	3
C	1	ZA R4 ROTARY COLLAR	--	316L	ZA17501R4	4
D	1	ZA R4 STATIONARY RETAINER	--	316L	ZA1750B1R4	5
E	1	ROTARY INSERT	--	SiC	ZA1750AR4	6
F	1	STATIONARY INSERT	--	SiC/TC/CBN	ZA1750BR4	7
G	3	CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VITON	-224	1
I	1	STATIONARY O-RING	--	VITON	-229	1
J	1	GLAND O-RING	--	VITON	-247	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	1	RETAINING RING	--	302 SS	RR1750ZA	1
N	1	WAVE SPRING	--	17-7 PH	WS1750ZA/N	1
O	1	ROTARY MOUNT RING	--	VITON	-141	1
P	1	STATIONARY MOUNT RING	--	VITON	-143	1

DATE: 6/3/03	MATERIAL: --	DRAWN BY: RB	DWG #: ZA1750R4	SHEET #: 1 OF 8	APPROVED: RE	DATE: 8/29/03
TITLE: 1-3/4" ZA CARTRIDGE SEAL						
 ZM TECHNOLOGIES 2280 STEWART ST. UNIT #6 STOCKTON, CA, 95205 PHONE (209) 547-1965 FAX (209) 464-8140						
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PATENT PENDING						

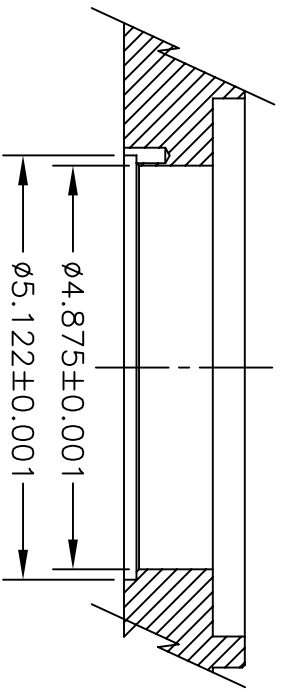


NOTE:
IMPELLER NOT SHOWN

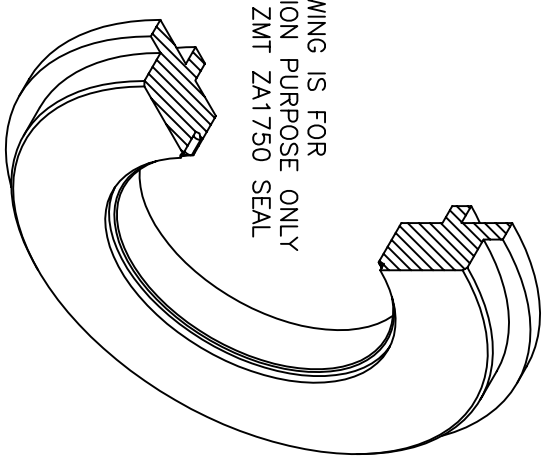
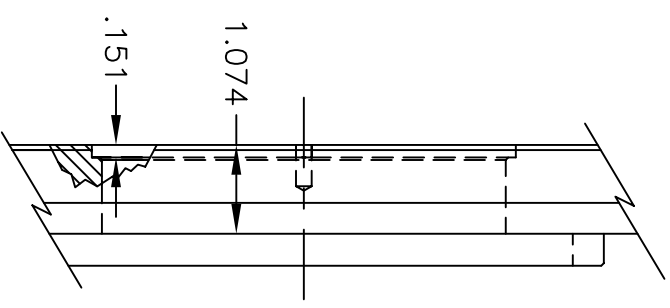
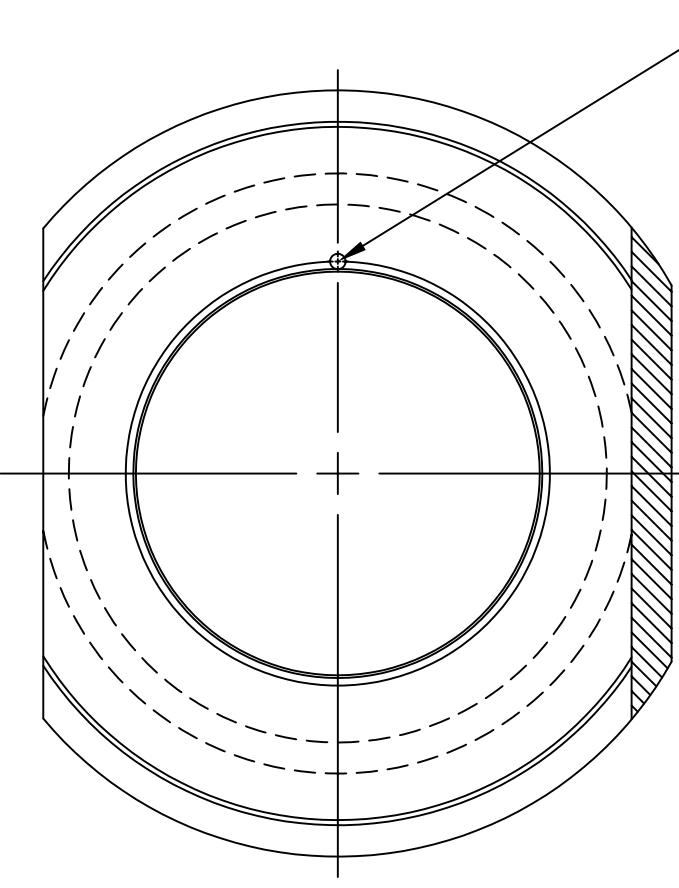
BILL OF MATERIAL		TYPE - ZA				
NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1750R4	1
A	2	DOWEL PIN 3/16 X 1/2	--	--	--	1
B	1	ZA R2 GLAND	--	--	ZA1750GR2	3
C	1	ZA R4 ROTARY COLLAR	--	--	ZA17501R4	4
D	1	ZA R4 STATIONARY RETAINER	--	--	ZA1750B1R4	5
E	1	ROTARY INSERT	--	SIC	ZA1750AR4	6
F	1	STATIONARY INSERT	--	SIC/TC/CBN	ZA1750BR4	7
G	3	CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VTN	--224	1
I	1	STATIONARY O-RING	--	VTN	--229	1
J	1	GLAND O-RING	--	VTN	--247	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	1	RETAINING RING	--	302 SS	RR1750ZA	1
N	1	WAVE SPRING	--	17-7 PH	WS1750ZA/N	1
O	1	ROTARY MOUNT RING	--	VTN	--141	1
P	1	STATIONARY MOUNT RING	--	VTN	--143	1

SEAL KIT CONSISTS OF: C, D, E, F, G, H, I, J, K, L, N, O, P

REPAIR KIT CONSISTS OF: E, F, G, H, I, J, K, L, N, O, P



Ø.188 X 1/2 PIN
5.870 B.C.



NOTE:
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TO FIT A ZMT ZA1750 SEAL

ZM TECHNOLOGIES
2250 STEWART ST. UNIT #6
STOCKTON CA. 95205
PHONE (209) 547-1965
FAX (209) 464-8140

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DATE: 4/23/04		MATERIAL: 316L		DRAWN BY: RE		DWG #: ZA1750BP-M		SHEET #: 8 OF 8		APPROVED: RE		Date: 9/26/03	
TITLE: ZMT BACK-PLATE MODIFICATION		REV: 1		REV: 1		REV: 1		REV: 1		REV: 1		REV: 1	

REV	DESCRIPTION	BY	DATE
1	ZA1750BP-M WAS ANSII 750BP-M	RB	7/30/03

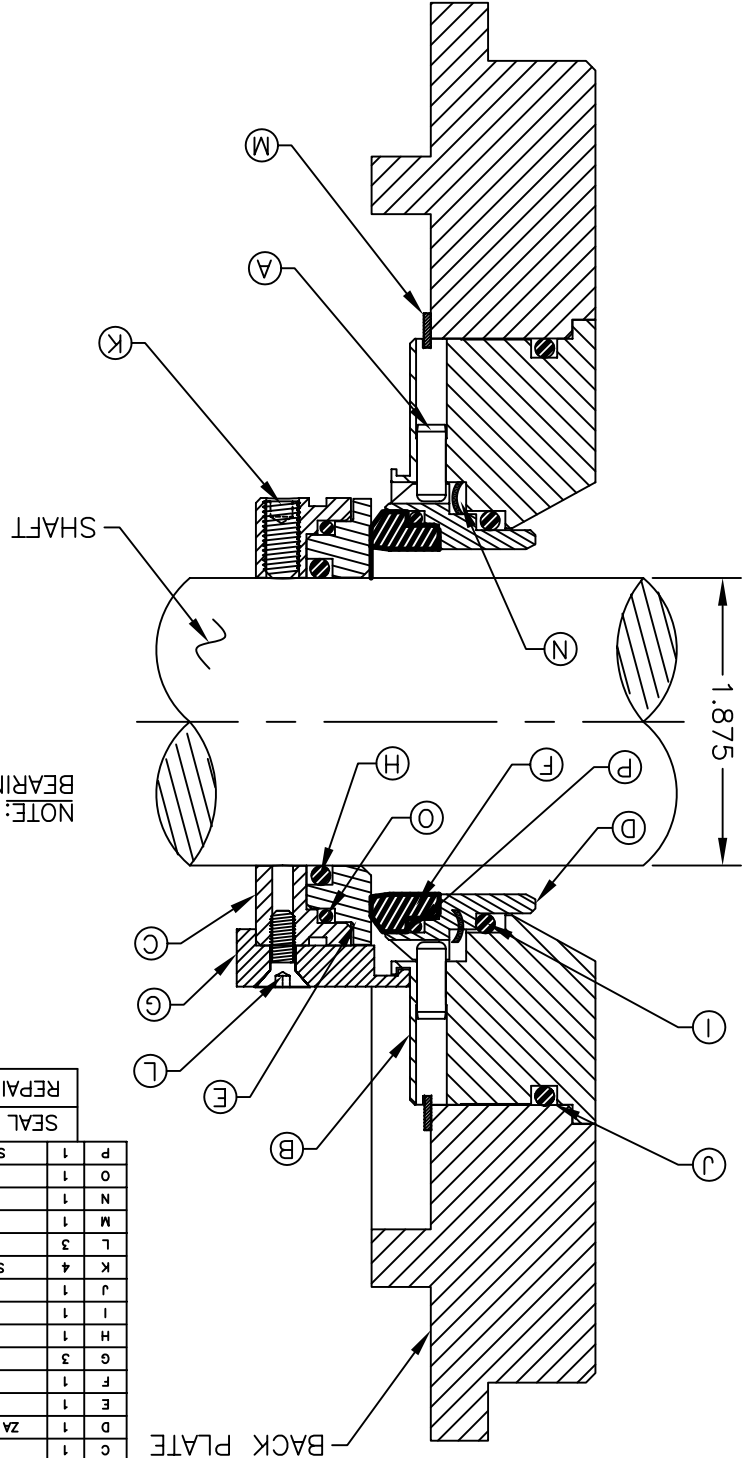
SEAL SIZE -- 1-7/8

TYPE -- ZA

BILL OF MATERIAL

NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1875R4	1
A	2	DOWEL PIN 3/16 X 1/2	--	--	--	1
B	1	ZA R2 GLAND	--	316L	ZA1875R2	3
C	1	ZA R4 ROTARY COLLAR	--	316L	ZA18751R4	4
D	1	ZA R4 STATIONARY RETAINER	--	316L	ZA1875B1R4	5
E	1	ROTARY INSERT	--	SiC	ZA1875AR4	6
F	1	STATIONARY INSERT	--	SiC/TC/CBN	ZA1875BR4	7
G	3	CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VITON	-225	1
I	1	STATIONARY O-RING	--	VITON	-230	1
J	1	GLAND O-RING	--	VITON	-248	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	1	RETAINING RING	--	302 SS	RR1875ZA	1
N	1	WAVE SPRING	--	17-7 PH	WS1875ZA/N	1
O	1	ROTARY MOUNT RING	--	VITON	-143	1
P	1	STATIONARY MOUNT RING	--	VITON	-145	1

DATE: 4/5/04	MATERIAL: --	DRAWN BY: RE	DWG #: ZA875R4	SHEET #: 1 OF 8	APPROVED: RE	DATE: 4/7/04
TITLE: ZA CARTRIDGE SEAL						
DATE: ZA 10 B.P.						
REV: --						
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NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA1875R4	1
A	2	DOWEL PIN 3/16 X 1/2	--	--	--	1
B	1	ZA R2 GLAND	316L	316L	ZA1875R2	3
C	1	ZA R4 ROTARY COLLAR	316L	316L	ZA18751R4	4
D	1	ZA R4 STATIONARY RETAINER	316L	316L	ZA1875B1R4	5
E	1	ROTARY INSERT	--	SIC	ZA1875AR4	6
F	1	STATIONARY INSERT	--	SIC/TC/CBN	ZA1875BR4	7
G	3	CLIPS	--	ALUMINIUM	T137CLP	1
H	1	SHAFT O-RING	--	VTN	--225	1
I	1	STATIONARY O-RING	--	VTN	--230	1
J	1	GLAND O-RING	--	VTN	--248	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	1	RETAINING RING	--	302 SS	RR1875ZA	1
N	1	WAVE SPRING	--	17-7 PH	WS1875ZA/N	1
O	1	ROTARY MOUNT RING	--	VTN	--143	1
P	1	STATIONARY MOUNT RING	--	VTN	--145	1

SEAL KIT CONSISTS OF: C, D, E, F, G, H, I, J, K, L, N, O, P
 REPAIR KIT CONSISTS OF: E, F, G, H, I, J, K, L, N, O, P

BILL OF MATERIAL		TYPE - ZA				
NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
SEAL KIT CONSISTS OF: C, D, E, F, G, H, I, J, K, L, N, O, P						
REPAIR KIT CONSISTS OF: E, F, G, H, I, J, K, L, N, O, P						

SEAL SIZE -- 2--1/2

TYPE -- ZA

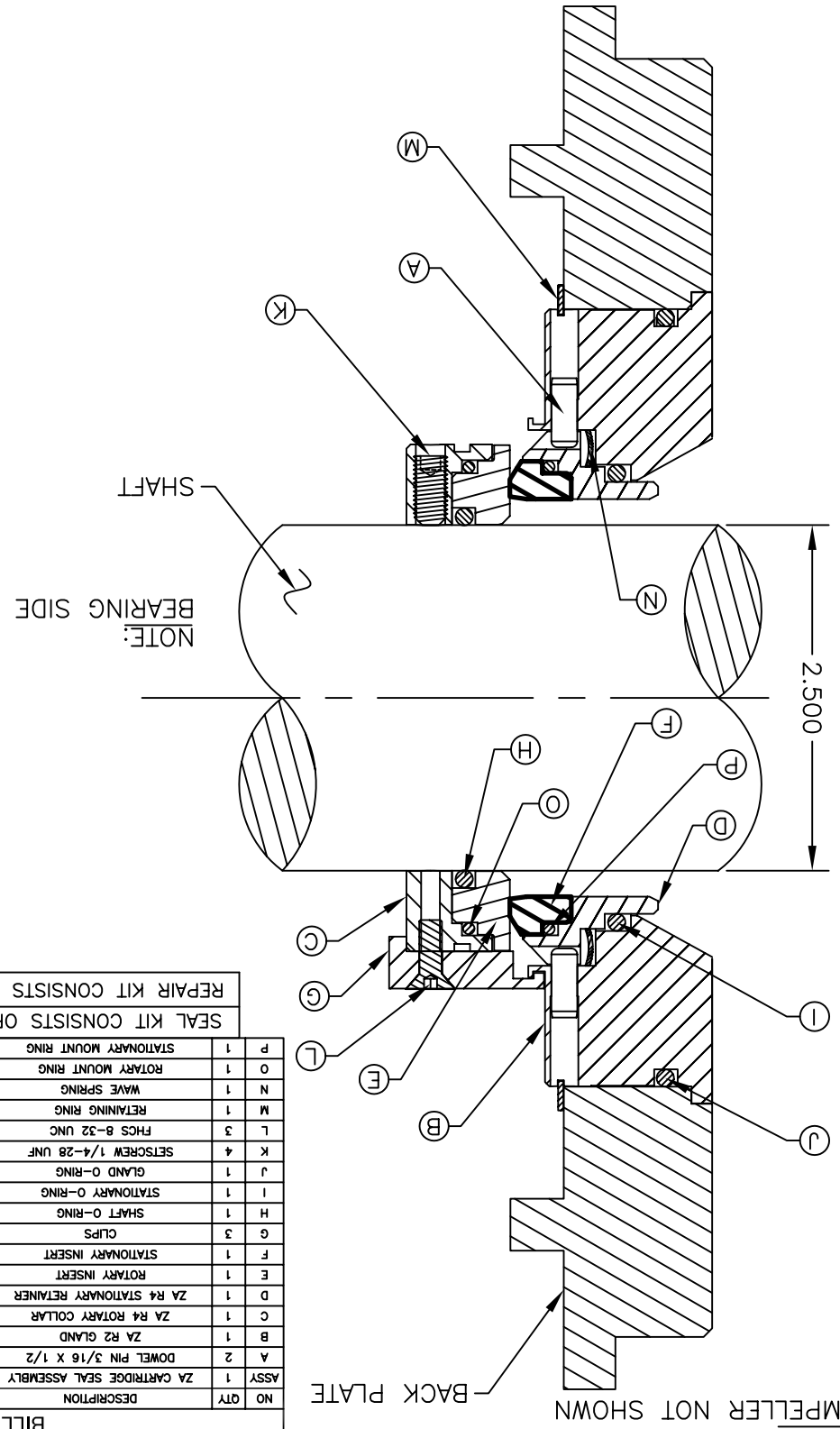
BILL OF MATERIAL

NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	---	---	ZA2500R4	1
A	2	DOWEL PIN 3/16 X 1/2	---	---	---	1
B	1	ZA R2 GLAND	---	316L	ZA2500GR2	3
C	1	ZA R4 ROTARY COLLAR	---	316L	ZA2500A1R4	4
D	1	ZA R4 STATIONARY RETAINER	---	316L	ZA2500B1R4	5
E	1	ROTARY INSERT	---	SiC	ZA2500AR4	6
F	1	STATIONARY INSERT	---	SiC/TC/CBN	ZA2500BR4	7
G	3	CLIPS	---	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	----	VITON	-230	1
I	1	STATIONARY O-RING	---	VITON	-235	1
J	1	GLAND O-RING	---	VITON	-253	1
K	4	SETSCREW 1/4-28 UNF	1/2	316 SS	---	1
L	3	FHCS 8-32 UNC	1/2	316 SS	---	1
M	1	RETAINING RING	---	302 SS	RR2500ZA	1
N	1	WAVE SPRING	---	17-7 PH	WS2500ZA/N	1
O	1	ROTARY MOUNT RING	---	VITON	-153	1
P	1	STATIONARY MOUNT RING	----	VITON	-153	1

REV	DESCRIPTION	BY	DATE
1	ZA2500R4 WAS ANSI2500R4	RB	7/30/03

DATE: 5/22/03	MATERIAL: --	DRAWN BY: RE	DWG #: ZA2500R4	SHEET #: 1 OF 8	APPROVED: RE	DATE: 1/22/04
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 STOCKTON CA, 95209
 PHONE (209) 547-1965
 FAX (209) 464-8140

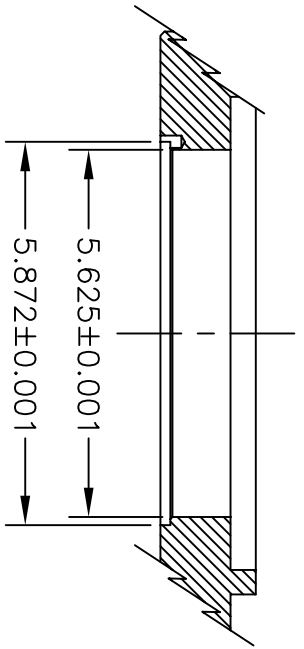


NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZA CARTRIDGE SEAL ASSEMBLY	--	--	ZA2500R4	1
A	2	DOWEL PIN 3/16 X 1/2	--	--	--	1
B	1	ZA R2 GLAND	--	316L	ZA2500GR2	3
C	1	ZA R4 ROTARY COLLAR	--	316L	ZA2500AR4	4
D	1	ZA R4 STATIONARY RETAINER	--	316L	ZA2500BR4	5
E	1	ROTARY INSERT	--	SIC	ZA2500AR4	6
F	1	STATIONARY INSERT	--	SIC/TC/CBN	ZA2500BR4	7
G	3	CLIPS	--	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	--	VTN	-230	1
I	1	STATIONARY O-RING	--	VTN	-235	1
J	1	GLAND O-RING	--	VTN	-253	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	--	1
L	3	FHCS 8-32 UNC	1/2	316 SS	--	1
M	1	RETAINING RING	--	302 SS	RR2500ZA	1
N	1	WAVE SPRING	--	17-7 PH	WS2500ZA/N	1
O	1	ROTARY MOUNT RING	--	VTN	-153	1
P	1	STATIONARY MOUNT RING	--	VTN	-153	1

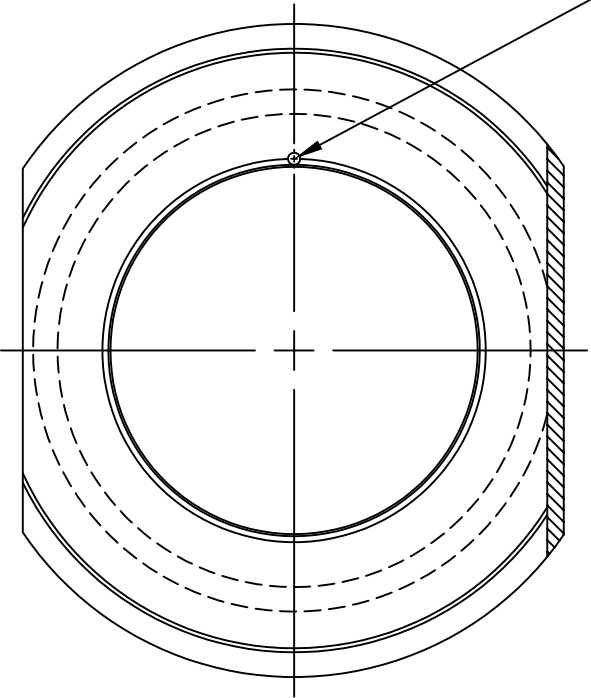
SEAL KIT CONSISTS OF: C, D, E, F, G, H, I, J, K, L, N, O, P
 REPAIR KIT CONSISTS OF: E, F, G, H, I, J, K, L, N, O, P

SEAL SIZE - 2-1/2 TYPE - ZA

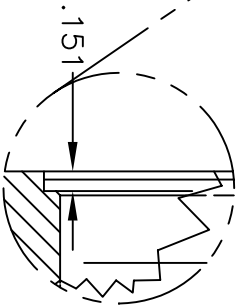
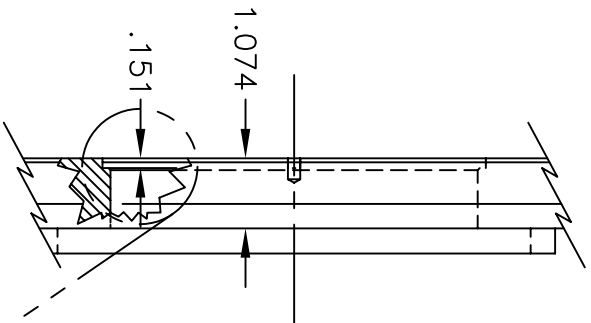
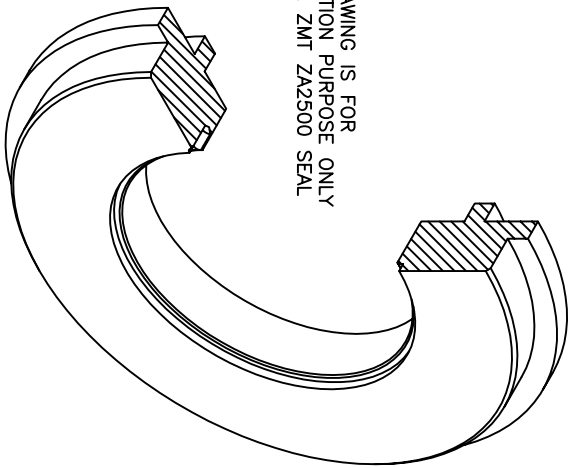
BILL OF MATERIAL



Ø.188 X 1/2 PIN



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TITLE: ZMT BACK PLATE MODIFICATION

DATE: 9/2/03

GLAND STYLE: NONE

DRAWN BY: RE

DWG #: ZA2500BP-M

SHEET #: 8 OF 8

APPROVED: RE

Date: 4/23/04

REV

DESCRIPTION

BY

DATE

SEAL SIZE -- 3

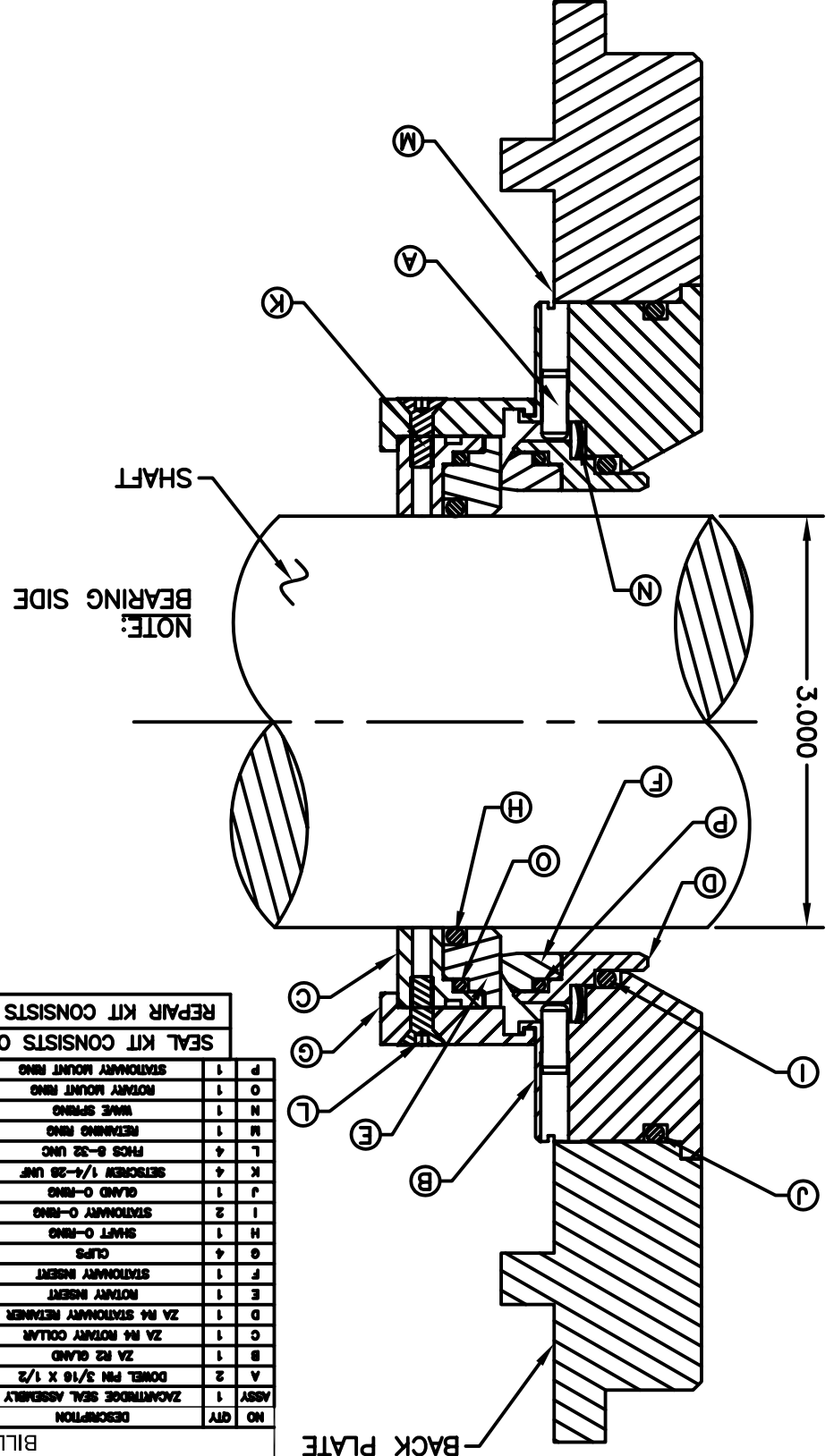
TYPE -- ZA

BILL OF MATERIAL

NO	QTY	DESCRIPTION	LENGTH	MATERIAL	DRAWING #	SHEET #
ASSY	1	ZACARTRIDGE SEAL ASSEMBLY	---	---	ZA3000R4	1
A	2	DOWEL PIN 3/16 X 1/2	---	---	---	1
B	1	ZA R2 GLAND	---	316L	ZA3000GR2	3
C	1	ZA R4 ROTARY COLLAR	---	316L	ZA3000A1R4	4
D	1	ZA R4 STATIONARY RETAINER	---	316L	ZA3000B1R4	5
E	1	ROTARY INSERT	---	SiC	ZA3000AR4	6
F	1	STATIONARY INSERT	---	SiC/TC/CBN	ZA3000BR4	7
G	4	CLIPS	---	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	----	VITON	-234	1
I	2	STATIONARY O-RING	---	VITON	-239	1
J	1	GLAND O-RING	---	VITON	-255	1
K	4	SETScrew 1/4-28 UNF	1/2	316 SS	---	1
L	4	FHCS 8-32 UNC	1/2	316 SS	---	1
M	1	RETAINING RING	---	302 SS	RR3000ZA	1
N	1	WAVE SPRING	---	17-7 PH	WS3000ZA/N	1
O	1	ROTARY MOUNT RING	---	VITON	-154	1
P	1	STATIONARY MOUNT RING	----	VITON	-154	1

DATE: 4/12/04	MATERIAL: ZACARTDGE SEAL	DRAWN BY: RE	DWG # ZAC000R4	SHEET # 1 OF 8	APPROVED: RE	DATE: 4/13/04
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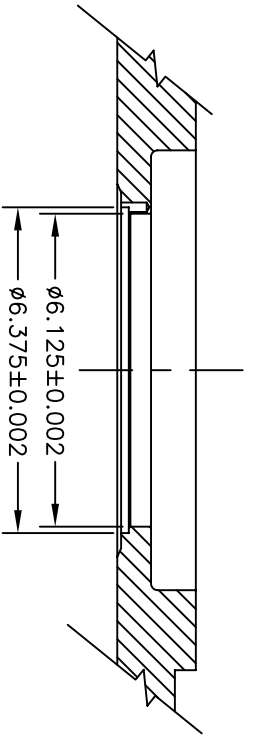
NOTE:
IMPELLER NOT SHOWN



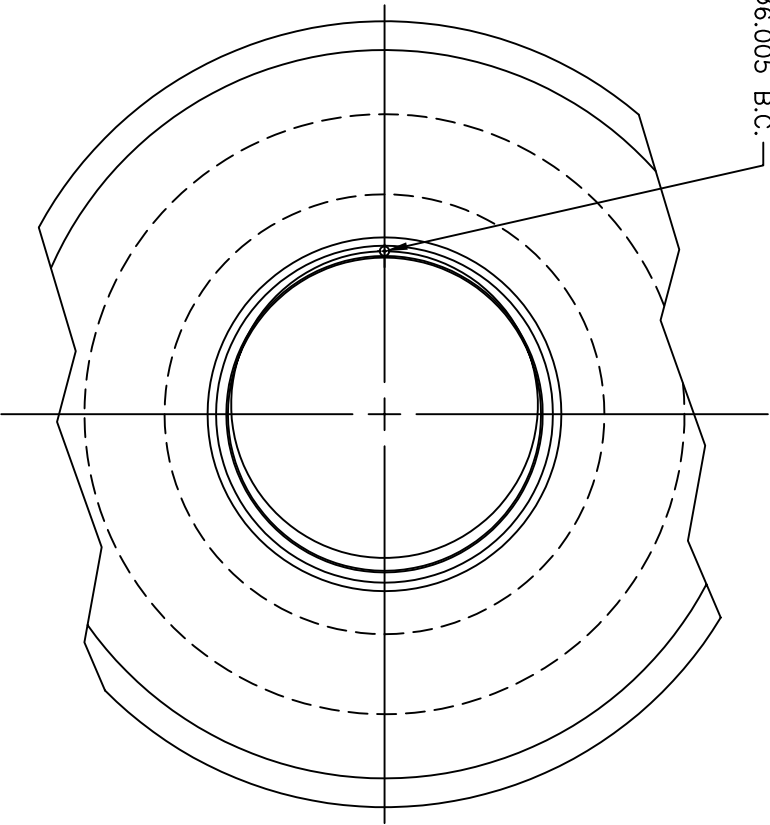
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ASST	1	ZACARTDGE SEAL ASSEMBLY	---	---	ZAC000R4	1
A	2	DOWNL PIN 3/16 X 1/2	---	---	---	1
B	1	ZA R2 GLAND	---	316L	ZAC000R2	3
C	1	ZA R4 ROTARY COLLAR	---	316L	ZAC000R4	4
D	1	ZA R4 ROTARY RETAINER	---	316L	ZAC000R4	5
E	1	ROTARY INSERT	---	SSC	ZAC000R4	6
F	1	STATIONARY INSERT	---	SSC/TC/CHN	ZAC000R4	7
G	4	CLIPS	---	ALUMINUM	T137CLP	1
H	1	SHAFT O-RING	---	---	---	1
I	2	STATIONARY O-RING	---	---	---	1
J	1	GLAND O-RING	---	---	---	1
K	4	SETSCREW 1/4-28 UNF	1/2	316 SS	---	1
L	4	PHCS 8-32 UNC	1/2	316 SS	---	1
M	1	RETAINING RING	---	302 SS	RN3000ZV2	1
N	1	WAVE SPRING	---	17-7 PH	W33000ZV/N	1
O	1	ROTARY MOUNT RING	---	---	---	1
P	1	STATIONARY MOUNT RING	---	---	---	1

SEAL KIT CONSISTS OF: C, D, E, F, G, H, I, J, K, L, N, O, P
 REPAIR KIT CONSISTS OF: E, F, G, H, I, J, K, L, N, O, P

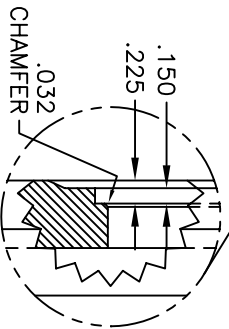
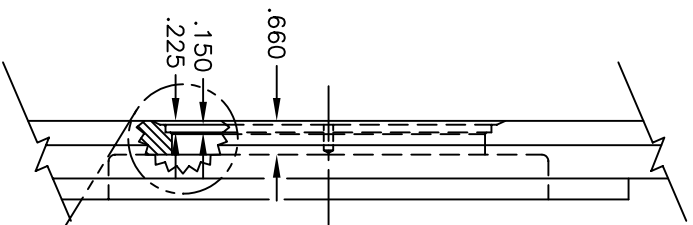
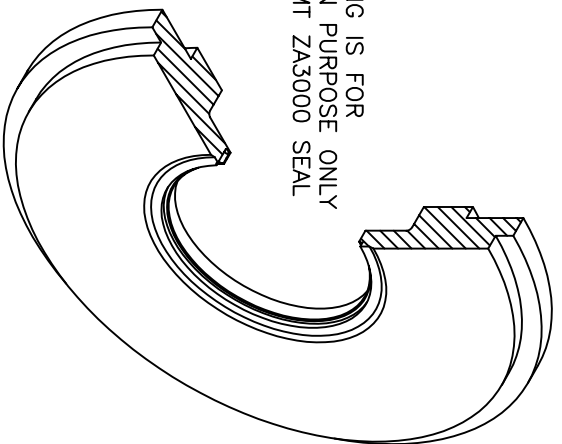
SEAL SIZE	TYPE	BILL OF MATERIAL	
3	ZA		



ON A $\phi 6.005$ B.C.



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STOCKTON, CA. 95205
PHONE (209) 547-1965
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TITLE: ZMT BACK PLATE MODIFICATION

ZA 3"

DATE:	MATERIAL:	DRAWN BY:	DWG #:	SHEET #:
8/12/03	316L	RE	ZA3000BP-M	8 of 8

REV	APPROVED:	Date:
1	RE	4/23/04

REV	DESCRIPTION	RE BY	DATE
1	CHGD C.B. FROM 5.751	RE	4/23/04