

# TECHNICAL MANUAL



## PHILLIPS SQUARE DRIV<sup>®</sup> Drive Systems

Includes comprehensive engineering Head Standards, Driver Bit Standards, Gage Standards, Quality Standards and Punch Standards.



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# PHILLIPS SQUARE DRIV® Drive System Technical Manual



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Phillips Screw Company  
155 Farm Street  
Bellingham, MA 02019

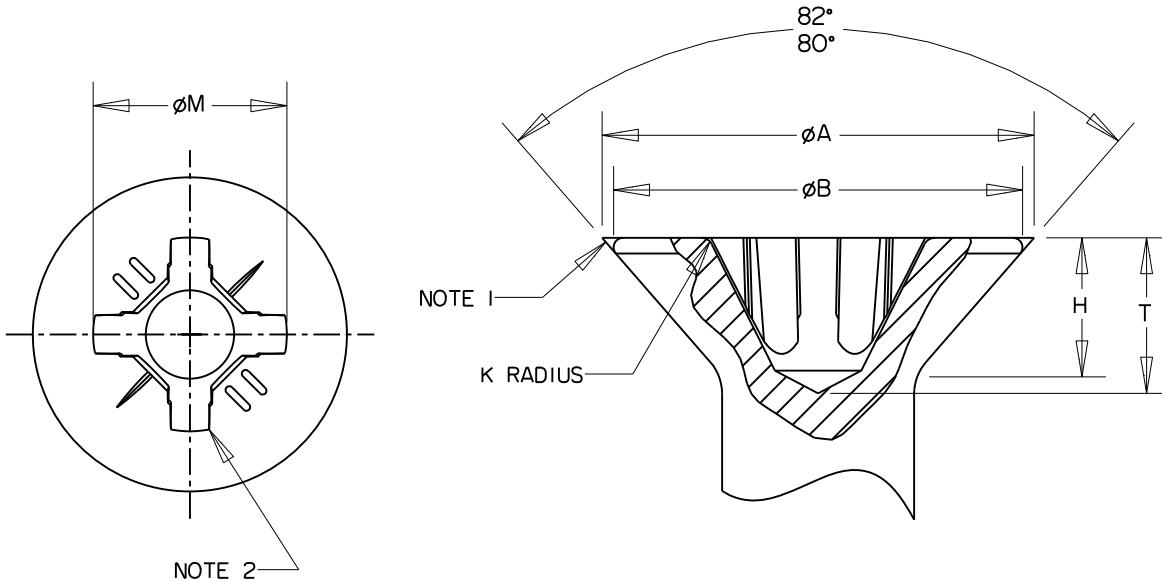
Phone: (774) 396-6190  
FAX: (508) 966-2326  
WWW: Phillips-Screw.com

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Issue: 10/11

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PHILLIPS SQUARE-DRIV<sup>®</sup> ENGINEERING MANUAL  
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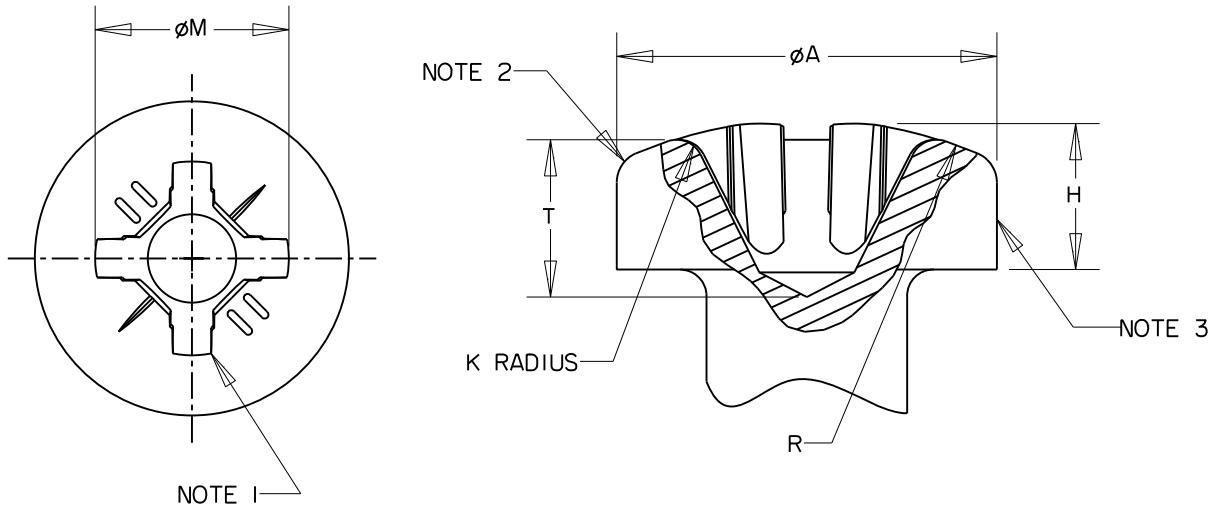


SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS			RECESS DIMENSIONS				DRIVER SIZE PSD	
		φA	φB	H	φM	T	K	PENETRATION		
		THEO.	MIN.	REF.	REF	REF	REF	MAX.	MIN.	
4	PSD-4FOI-SN	.225 .207	.195	.067	.129 .116	.090	.012	.044	.029	O-1
6	PSD-6FI2-SN	.292 .270	.257	.090	.182 .169	.114	.015	.074	.058	I-2
8	PSD-8F22-SN	.332 .308	.292	.100	.190 .177	.122	.015	.060	.044	2-2
10	PSD-10F22-SN	.385 .359	.340	.116	.209 .196	.141	.015	.079	.063	
1/4	PSD-25F33-SN	.507 .477	.452	.153	.291 .278	.179	.020	.123	.106	3-3

NOTES:

1. EDGE OF HEAD MAY BE ROUNDED OR FLAT.
2. RECESS PER DRAWINGS PSC-914-PAD, PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
3. DIMENSIONS ARE IN INCHES.
4. DRAWING NOT TO SCALE.
5. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

© COPYRIGHT 2011 PHILLIPS SCREW COMPANY. ALL RIGHTS RESERVED.		TITLE: PHILLIPS SQUARE-DRIV® FLAT HEAD SCREWS (INCH)		
DRAWN E.SEGARRA	DATE 3-04-02	DRAWING NUMBER PSC-968		SHEET 1 OF 1
CHECKED G. LaMONICA	DATE 8-21-02	PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326		
PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY				



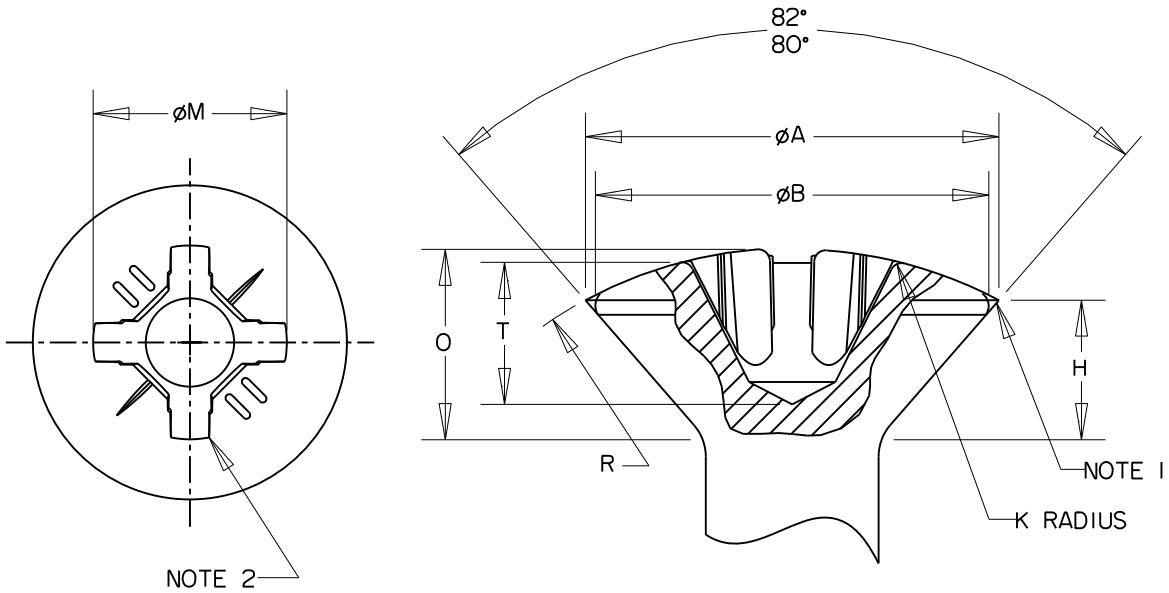
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS			RECESS DIMENSIONS				DRIVER SIZE PSD	
		ØA	H	R REF.	ØM REF	T REF	K REF	PENETRATION		
								MAX.	MIN.	
4	PSD-4POI-SN	.220 .206	.094 .089	.248	.144 .131	.103	.012	.057	.042	O-1
6	PSD-6PI2-SN	.270 .260	.102 .097	.301	.175 .162	.103	.015	.063	.047	I-2
8	PSD-8P22-SN	.322 .306	.127 .115	.352	.199 .186	.128	.015	.065	.049	2-2
10	PSD-10P22-SN	.374 .358	.146 .138	.413	.221 .208	.150	.015	.088	.072	
1/4	PSD-25P33-SN	.492 .473	.188 .175	.535	.298 .285	.181	.020	.125	.108	3-3

NOTES:

1. RECESS PER DRAWINGS PSC-914-PAD, PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
2. THE HEAD CROWN CORNER IS NOT CONTAINED IN THE PUNCH CAVITY AND IS TO BE FREE FLOWED.
3. TO INSURE GOOD FILL OF THE RECESS CAVITY, THE SIDES OF THE HEAD MUST BE CONTAINED IN THE HEADING DIE.
4. DRAWING NOT TO SCALE.
5. DIMENSIONS ARE IN INCHES.
6. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

REVISION REV: II-26-03 REV: IO-19-06 REV: 12-09-II

© COPYRIGHT 2011 PHILLIPS SCREW COMPANY. ALL RIGHTS RESERVED.	TITLE: PHILLIPS SQUARE-DRIV® PAN HEAD SCREWS (INCH)		
	DRAWN E.SEGARRA	DATE 3-04-02	DRAWING NUMBER PSC-969
	CHECKED: G. LaMONICA	DATE 8-16-02	SHEET 1 OF 1
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326			
PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY			



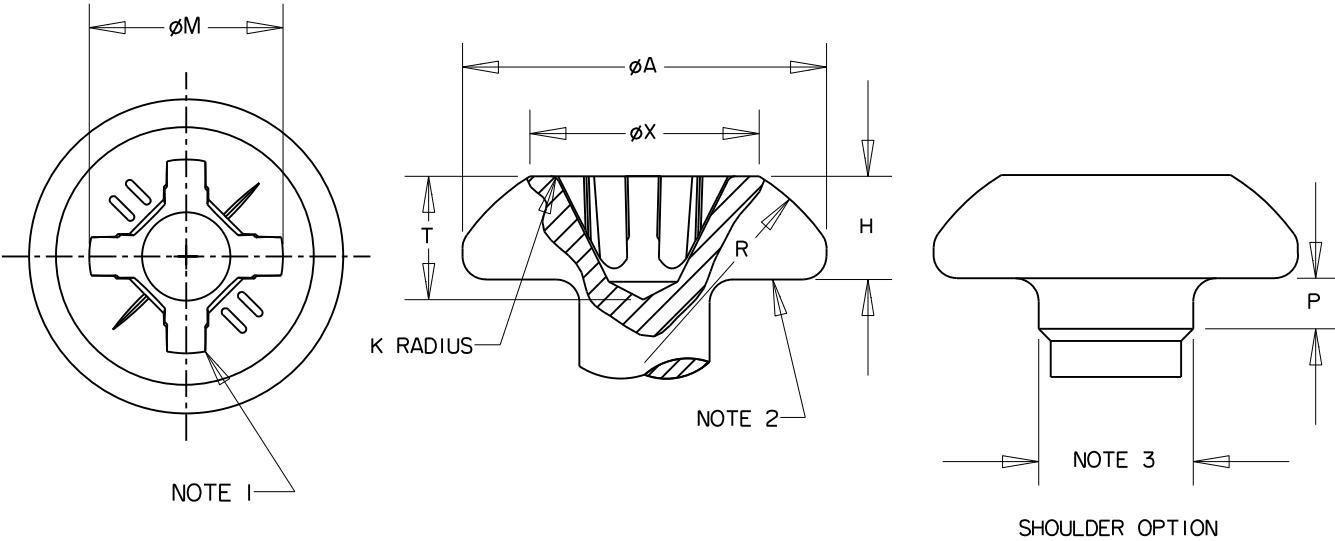
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS					RECESS DIMENSIONS					DRIVER SIZE PSD	
		ØA THEO.	ØB ABS. MIN.	H REF.	O	R REF.	ØM REF	T REF	K REF	PENETRATION			
										MAX.	MIN.		
4	PSD-4VOI-SN	.225 .207	.195	.067	.104 .084	.248	.141 .128	.100	.012	.054	.039	O-1	
6	PSD-6VI2-SN	.292 .270	.257	.090	.137 .118	.301	.198 .185	.126	.015	.086	.070	I-2	
8	PSD-8V22-SN	.332 .308	.292	.100	.152 .126	.352	.210 .197	.139	.015	.076	.060	2-2	
10	PSD-10V22-SN	.385 .359	.340	.116	.176 .148	.413	.234 .221	.162	.015	.100	.084		
1/4	PSD-25V33-SN	.507 .477	.452	.153	.232 .197	.535	.322 .309	.206	.020	.150	.133	3-3	

NOTES:

1. EDGE OF HEAD MAY BE ROUNDED OR FLAT.
2. RECESS PER DRAWINGS PSC-914-PAD, PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
3. DIMENSIONS ARE IN INCHES.
4. DRAWING NOT TO SCALE.
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DRAWN E.SEGARRA	DATE 3-04-02	DRAWING NUMBER PSC-970													
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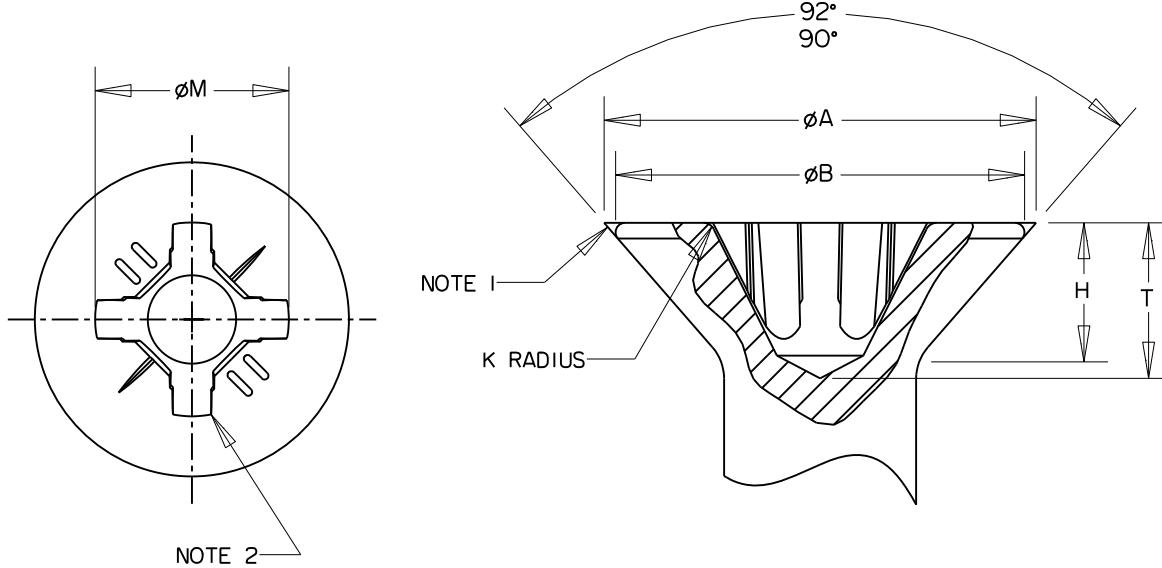
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS					RECESS DIMENSIONS					DRIVER SIZE PSD	
		ØA	H	ØX REF.	R REF.	P REF.	ØM REF	T REF	K REF	PENETRATION			
										MAX.	MIN.		
6	PSD-6T12-SN	.321 .303	.100 .090	.205	.181	.031	.176 .163	.108	.015	.068	.052	I-2	
8	PSD-8T22-SN	.384 .364	.120 .110	.230	.220	.031	.203 .190	.135	.015	.073	.057	2-2	
10	PSD-10T22-SN	.448 .425	.137 .127	.250	.269	.031	.220 .207	.152	.015	.090	.074		
1/4	PSD-25T33-SN	.573 .546	.175 .165	.340	.321	.063	.302 .289	.190	.020	.134	.117	3-3	

NOTES:

1. RECESS PER DRAWINGS PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
2. IF RECESS FALL AWAY IS TOO GREAT, THEN UNDERHEAD RINGS ON THE FACE OF HEADING DIE MAY BE REQUIRED TO CONTROL THE FREE FLOW OF MATERIAL.
3. OPTIONAL SHOULDER FOR LONG SCREWS WITH REDUCE BODY DIAMETER (MACHINE SCREW ONLY). DIAMETER NOT TO EXCEED MAXIMUM MAJOR DIAMETER OF THREAD.
4. DIMENSIONS ARE IN INCHES.
5. DRAWING NOT TO SCALE.
6. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

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CHECKED G. LaMONICA	DATE 8-16-02	SHEET 1 OF 1													
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326															
<p>PHILLIPS® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY</p>															



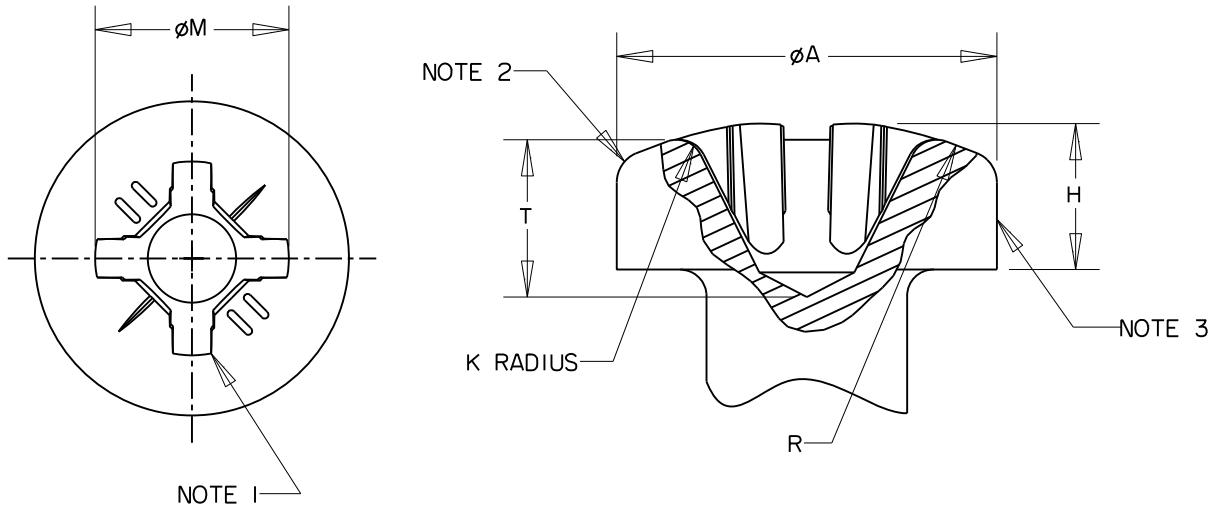
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS			RECESS DIMENSIONS				DRIVER SIZE PSD	
		ØA	ØB	H	ØM	T	K	PENETRATION		
		THEO.	MIN.	REF.	REF	REF	REF	MAX.	MIN.	
M3	PSD-4FOI-SN	6.3 5.9	5.2	1.65	3.28 2.95	2.29	0.30	1.12	0.74	O-1
M3.5	PSD-6FI2-SN	8.2 7.7	6.9	2.35	4.62 4.29	2.90	0.38	1.88	1.47	I-2
M4	PSD-8F22-SN	9.4 8.9	8.0	2.70	4.83 4.50	3.10	0.38	1.51	1.12	2-2
M5	PSD-10F22-SN	10.4 9.8	8.9	2.70	5.31 4.98	3.58	0.38	2.00	1.60	
M6	PSD-600F33-SN	12.6 11.9	10.9	3.30	6.81 6.48	3.96	0.51	2.54	2.11	3-3

NOTES:

1. EDGE OF HEAD MAY BE ROUNDED OR FLAT.
2. RECESS PER DRAWINGS PSC-914-PAD, PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
3. DIMENSIONS ARE IN METRIC.
4. DRAWING NOT TO SCALE.
5. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

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SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS			RECESS DIMENSIONS				DRIVER SIZE PSD	
		φA	H	R REF.	φM REF	T REF	K REF	PENETRATION		
								MAX.	MIN.	
M3	PSD-4POI-SN	5.6 5.3	2.4 2.2	6.30	3.66 3.33	2.62	0.30	1.45	1.07	O-1
M3.5	PSD-6PI2-SN	7.0 6.6	2.6 2.3	7.64	4.45 4.11	2.62	0.38	1.60	1.19	I-2
M4	PSD-8P22-SN	8.0 7.6	3.2 2.9	8.94	5.05 4.72	3.25	0.38	1.65	1.24	2-2
M5	PSD-10P22-SN	9.5 9.1	3.7 3.4	10.49	5.61 5.28	3.81	0.38	2.24	1.83	
M6	PSD-25P33-SN	12.0 11.5	4.6 4.3	13.59	7.57 7.24	4.60	0.51	3.18	2.74	3-3

NOTES:

1. RECESS PER DRAWINGS PSC-914-PAD, PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
2. THE HEAD CROWN CORNER IS NOT CONTAINED IN THE PUNCH CAVITY AND IS TO BE FREE FLOWED.
3. TO INSURE GOOD FILL OF THE RECESS CAVITY, THE SIDES OF THE HEAD MUST BE CONTAINED IN THE HEADING DIE.
4. DRAWING NOT TO SCALE.
5. DIMENSIONS ARE IN METRIC.
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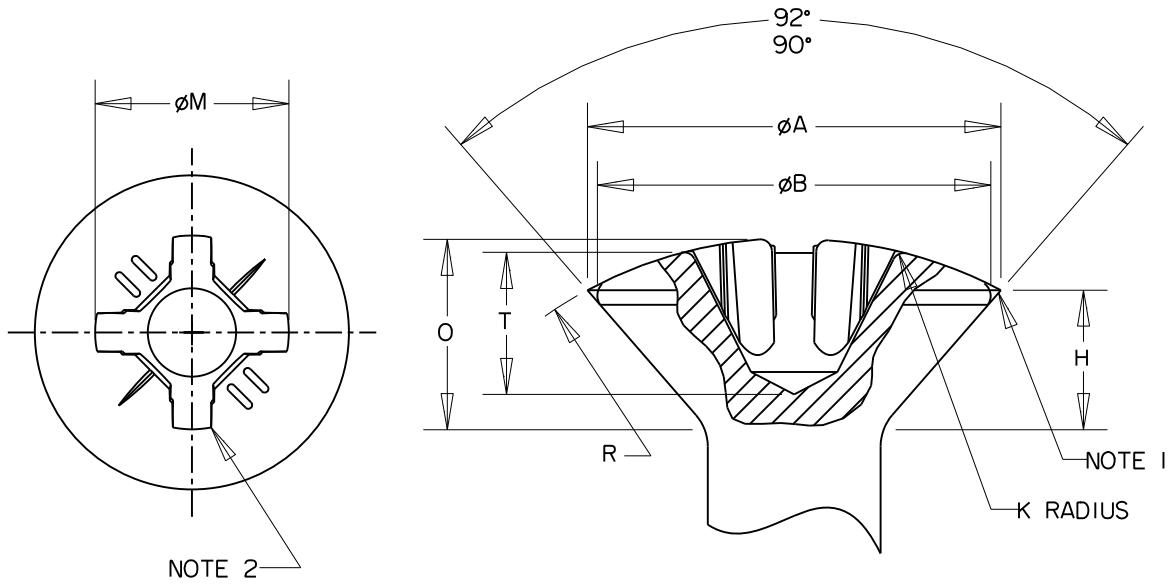
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TITLE: PHILLIPS SQUARE-DRIV®  
PAN HEAD SCREWS (METRIC)

DRAWN E.SEGARRA	DATE 3-04-02	DRAWING NUMBER PSC-973
CHECKED: G. LaMONICA	DATE 8-16-02	SHEET 1 OF 1

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

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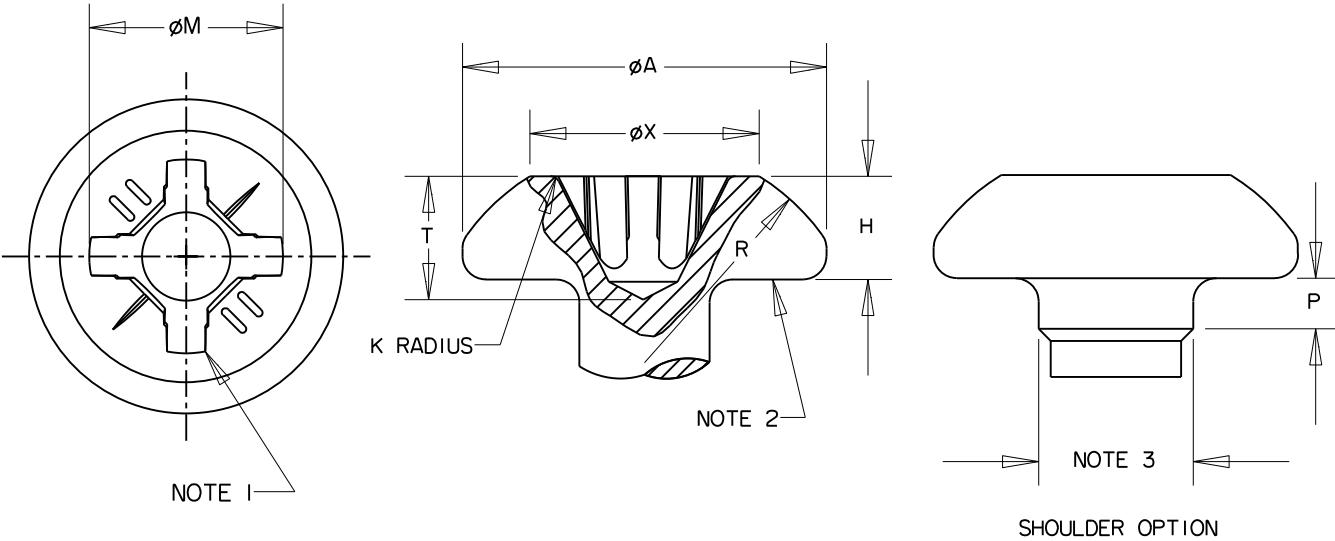
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS					RECESS DIMENSIONS					DRIVER SIZE PSD	
		ØA THEO.	ØB MIN.	H REF.	O REF.	R REF.	ØM REF	T REF	K REF	PENETRATION			
										MAX.	MIN.		
M3	PSD-300VOI-SN	6.3 5.9	5.2	1.65	2.64 2.31	6.0	3.73 3.40	2.69	0.30	1.52	1.14	O-1	
M3.5	PSD-350VI2-SN	8.2 7.7	6.9	2.35	3.53 3.13	8.5	5.08 4.75	3.25	0.38	2.23	1.83	I-2	
M4	PSD-400V22-SN	9.4 8.9	8.0	2.70	4.06 3.66	9.5	5.72 5.38	3.90	0.38	2.32	1.91	2-2	
M5	PSD-500V22-SN	10.4 9.8	8.9	2.70	4.39 3.91	9.5	6.17 5.84	4.35	0.38	2.77	2.36		
M6	PSD-600V33-SN	12.6 11.9	10.9	3.30	5.28 4.74	12.0	7.75 7.42	4.78	0.51	3.36	2.92	3-3	

NOTES:

1. EDGE OF HEAD MAY BE ROUNDED OR FLAT.
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5. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

REVISION REV: II-26-03 REV: IO-19-06 REV: 12-12-II

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DRAWN	E.SEGARRA	DATE	3-04-02	DRAWING NUMBER														
CHECKED:	G. LaMONICA	DATE	8-21-02	PSC-974														
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326				SHEET 1 OF 1														
<p>PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY</p>																		



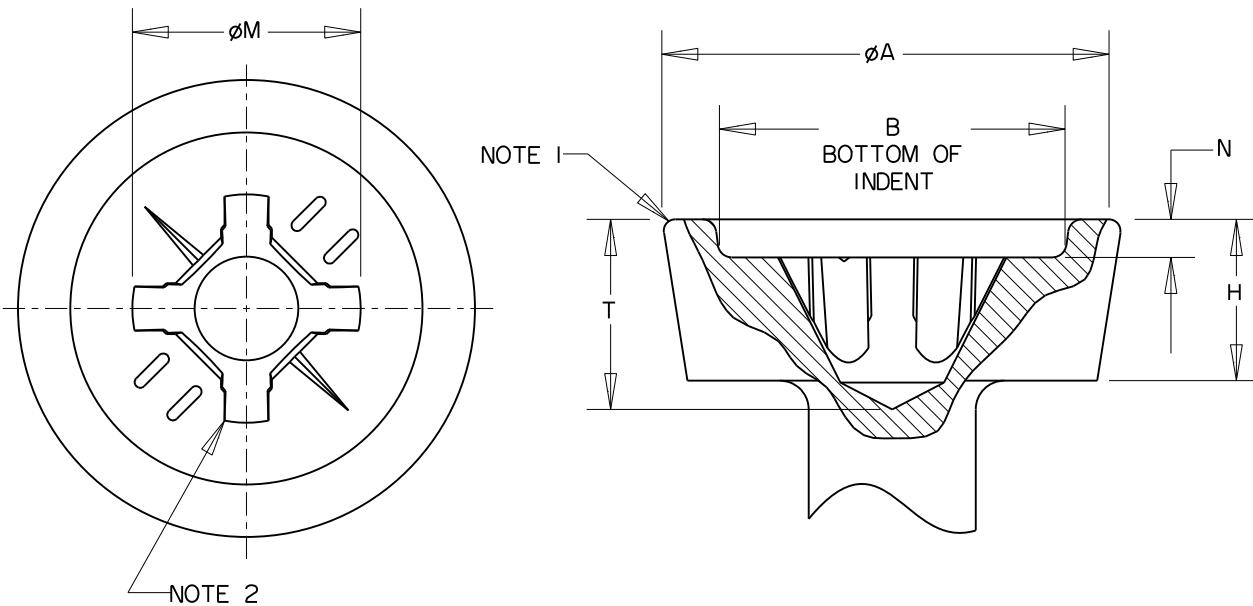
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS					RECESS DIMENSIONS					DRIVER SIZE PSD	
		ØA	H	ØX REF.	R REF.	P REF.	ØM REF	T REF	K REF	PENETRATION			
										MAX.	MIN.		
M3.5	PSD-6T12-SN	8.15 7.70	2.54 2.29	5.21	4.60	0.79	4.47 4.14	2.74	0.38	1.73	1.32	I-2	
M4	PSD-8T22-SN	9.75 9.25	3.05 2.79	5.84	5.59	0.79	5.16 4.83	3.43	0.38	1.85	1.45	2-2	
M5	PSD-IOT22-SN	11.38 10.80	3.48 3.23	6.35	6.83	0.79	5.59 5.26	3.86	0.38	2.29	1.88		
M6	PSD-25T33-SN	14.55 13.87	4.45 4.19	8.64	8.15	1.60	7.67 7.34	4.83	0.51	3.40	2.97	3-3	

NOTES:

1. RECESS PER DRAWINGS PSC-915-PAD, PSC-916-PAD AND PSC-917-PAD.
2. IF RECESS FALL AWAY IS TOO GREAT, THEN UNDERHEAD RINGS ON THE FACE OF HEADING DIE MAY BE REQUIRED TO CONTROL THE FREE FLOW OF MATERIAL.
3. OPTIONAL SHOULDER FOR LONG SCREWS WITH REDUCE BODY DIAMETER (MACHINE SCREW ONLY). DIAMETER NOT TO EXCEED MAXIMUM MAJOR DIAMETER OF THREAD.
4. DIMENSIONS ARE IN METRIC.
5. DRAWING NOT TO SCALE.
6. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

REVISION REV: II-26-03 REV: IO-19-06 REV: 12-12-II

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DRAWN E. SEGARRA	DATE 3-04-02	DRAWING NUMBER PSC-975													
CHECKED: G. LaMONICA	DATE 8-16-02	SHEET 1 OF 1													
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326															
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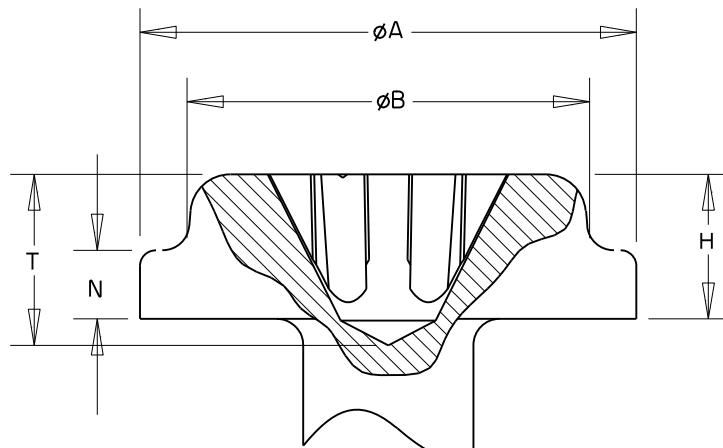
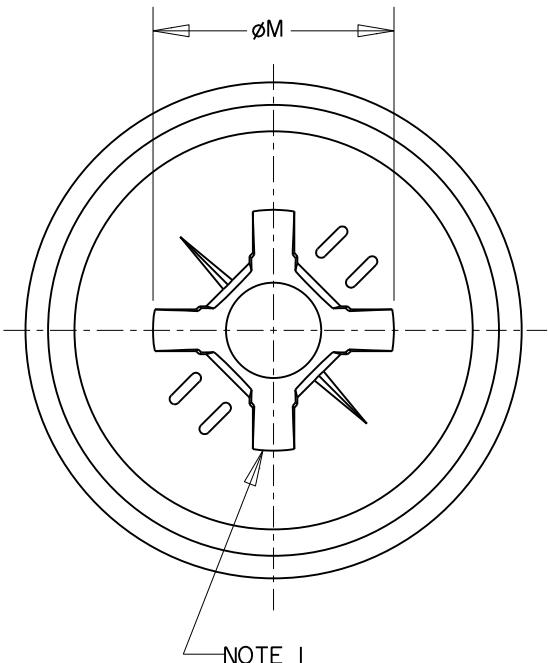
SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS			RECESS DIMENSIONS				DRIVER SIZE PSD
		φA	φB	H	φM	N MAX.	T REF	PENETRATION INCL. BUTTON	
		MAX.	MIN.						
8	PSD-8SH22-SN	.400 .394	.310 .294	.150 .140	.200 .187	.033	.165	.103 .085	2-2

NOTES:

1. EDGE OF HEAD MAY BE ROUNDED OR FLAT.
2. RECESS PER DRAWING PSC-916-PAD.
3. DIMENSIONS ARE IN INCHES.
4. DRAWING NOT TO SCALE.
5. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

REVISION REV: 11/26/03 REV: 12/28/06 REV: 12/13/11

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DRAWN G.DILLING	DATE 2/20/03	DRAWING NUMBER  PSC-996					
CHECKED: G.DILLING	DATE 2/24/03	SHEET 1 OF 1					
PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326							
PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY							



SCREW SIZE	PUNCH NUMBER	HEAD DIMENSIONS				RECESS DIMENSIONS			DRIVER SIZE PSD	
		ØA	ØB	H	N	ØM	T REF	PENETRATION		
								MAX.	MIN.	
8	PSD-8PW22-SN	.417 .392	.322	.129 .106	.065 .055	.200 .187	.132	.070	.053	2-2
10	PSD-10PW22-SN	.482 .459	.391 .376	.151 .137	.078 .066	.230 .217	.162	.100	.084	2-2

NOTES:

1. RECESS PER DRAWING PSC-916-PAD.
2. DIMENSIONS ARE IN INCHES.
3. DRAWING NOT TO SCALE.
4. SCREW PENETRATION VALUES DERIVE FROM USING GAUGES "PSC-943 THRU PSC-946".

REVISION REV: 11/26/03 REV: 4/11/05 REV: 12/28/06 REV: 12/13/11

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TITLE: PHILLIPS SQUARE-DRIV®  
SPECIAL FLAT PAN WASHER HEAD SCREW

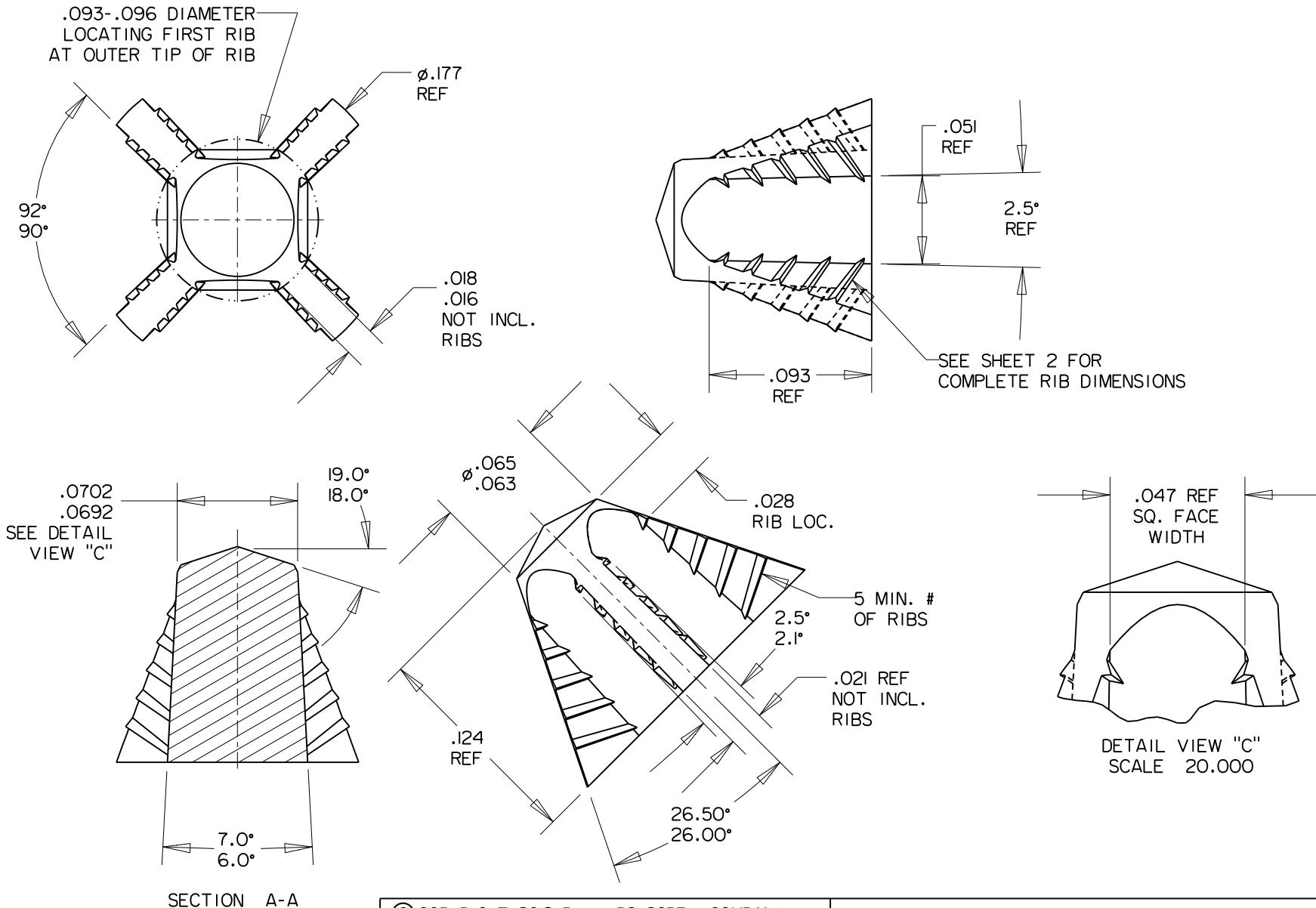
DRAWN G.DILLING	DATE 2/20/03	DRAWING NUMBER PSC-997
CHECKED: G.DILLING	DATE 2/24/03	SHEET 1 OF 1

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
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AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY

PHILLIPS SQUARE-DRIV<sup>®</sup> ENGINEERING MANUAL  
INDEX  
DRIVERS

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PSC-932	PSD (I-2) SOLID NOSE DRIVER POINT DIMENSIONS	SHEET 2	2/24/12
PSC-933	PSD (2-2) SOLID NOSE DRIVER POINT DIMENSIONS	SHEET 1	4/4/14
PSC-934	PSD (3-3) SOLID NOSE DRIVER POINT DIMENSIONS	SHEET 2	4/4/14
PSC-937	PSD INSERT DRIVER BITS	SHEET 1	5/17/05
		SHEET 2	5/17/05
		SHEET 1	9/24/02
		SHEET 2	9/24/02
			10/9/02



SECTION A-A

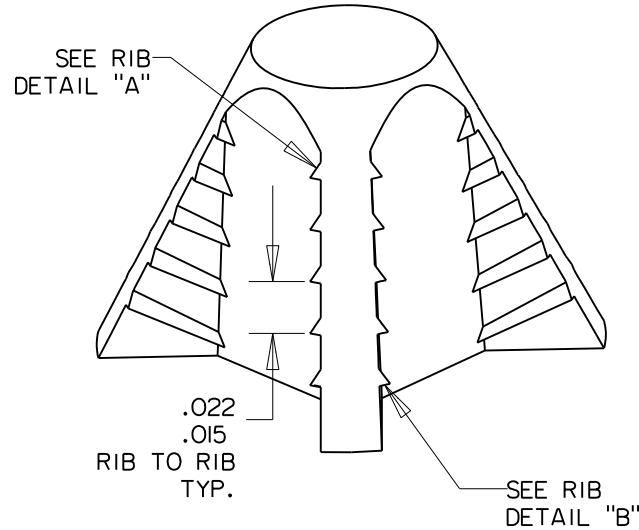
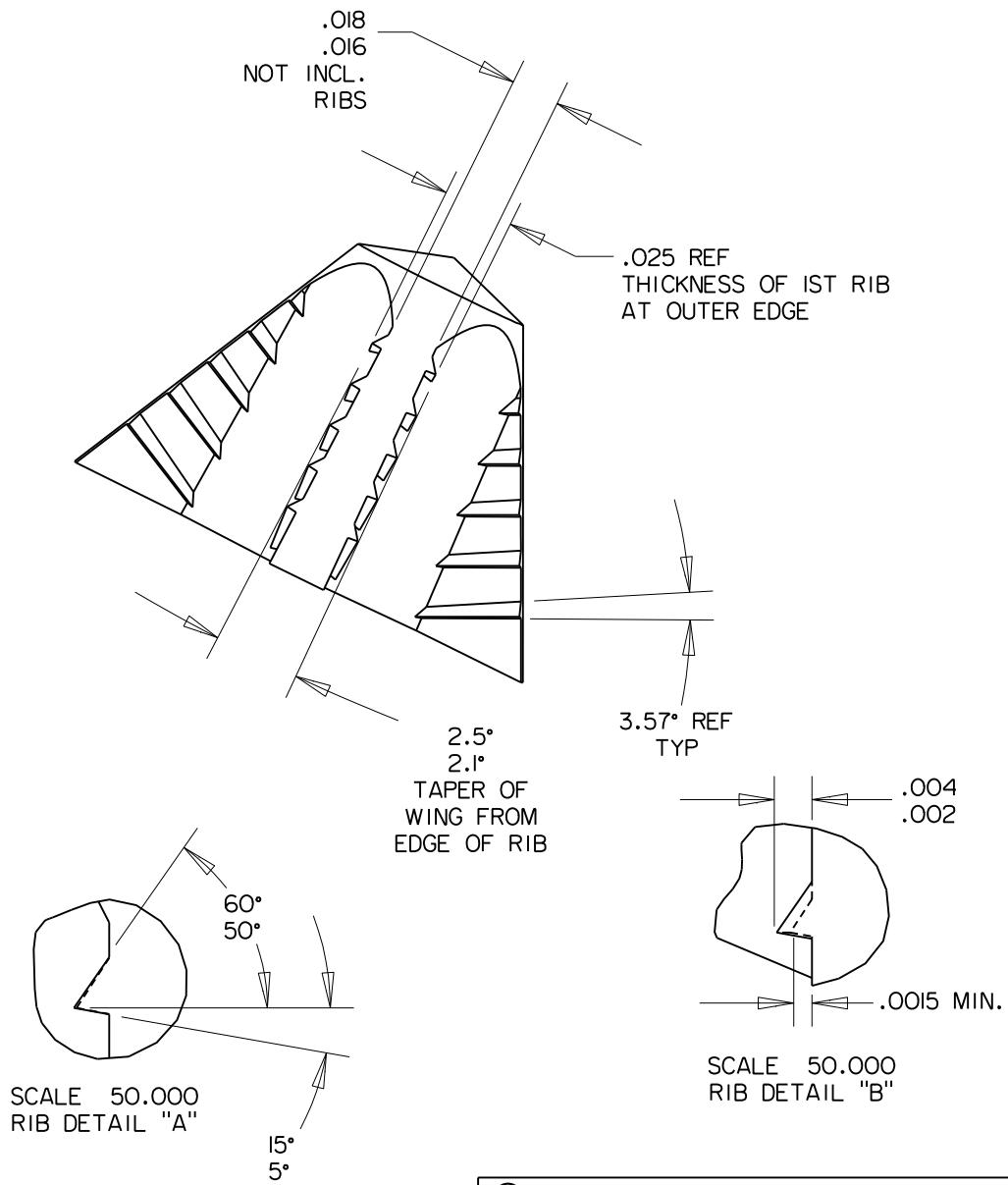
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### PSD O-I SOLID NOSE DRIVER DIMENSIONS

DRAWN	G.DILLING	DATE	DRAWING NUMBER
CHECKED:	G.DILLING	DATE	
		7/17/02	PSC-931
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.			
PHONE: 774-396-6190 FAX: 508-966-2326			

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SCALE 50.000  
RIB DETAIL "A"

SCALE 50.000  
RIB DETAIL "B"

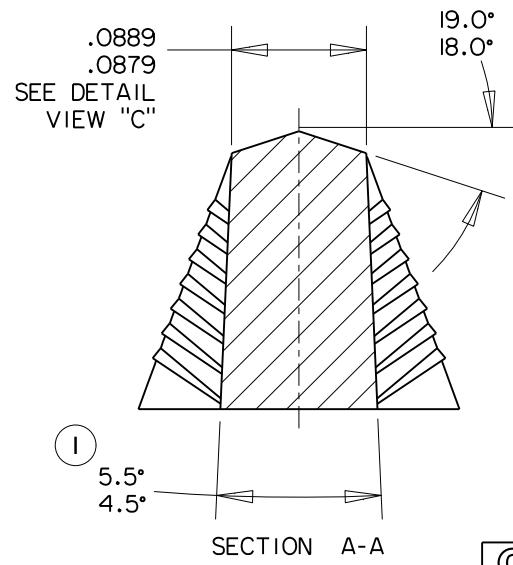
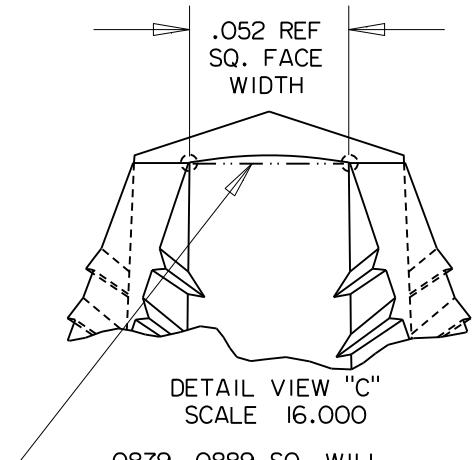
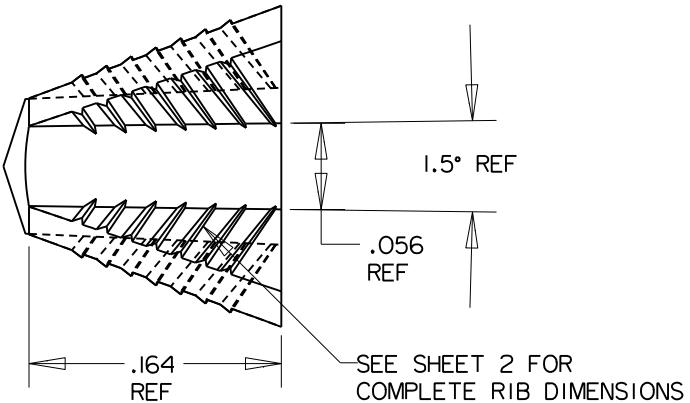
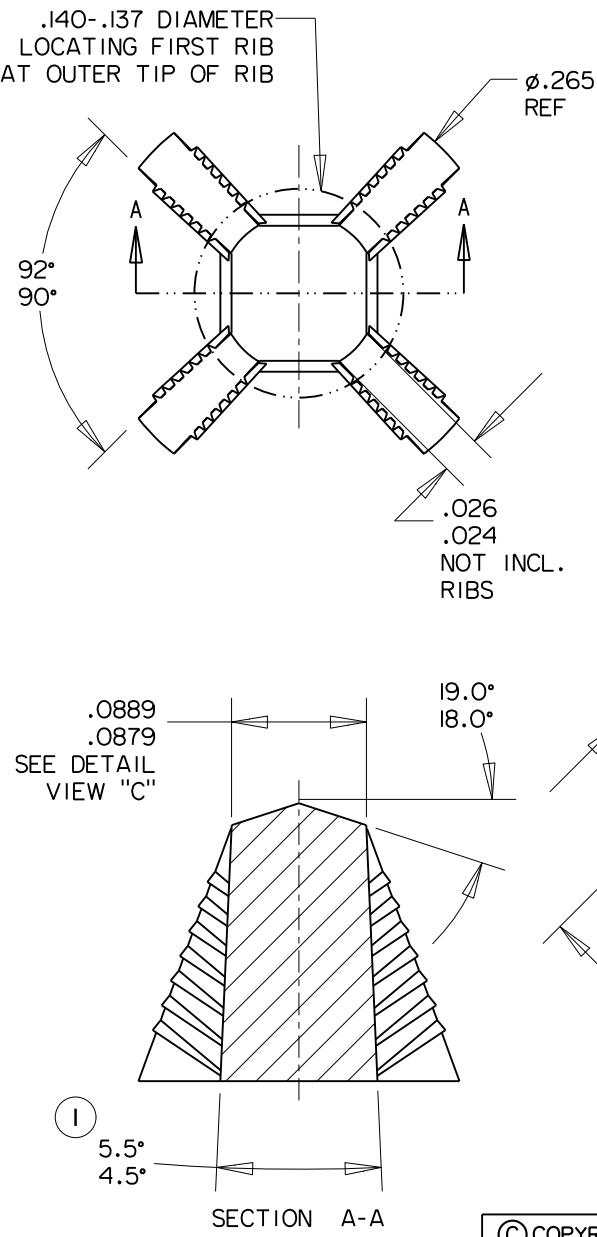
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### PSD O-I SOLID NOSE DRIVER DIMENSIONS

DRAWN	G.DILLING	DATE	DRAWING NUMBER
CHECKED:	G.DILLING	DATE	PSC-931
		7/17/02	SHEET 2 OF 2
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.			
PHONE: 774-396-6190 FAX: 508-966-2326			

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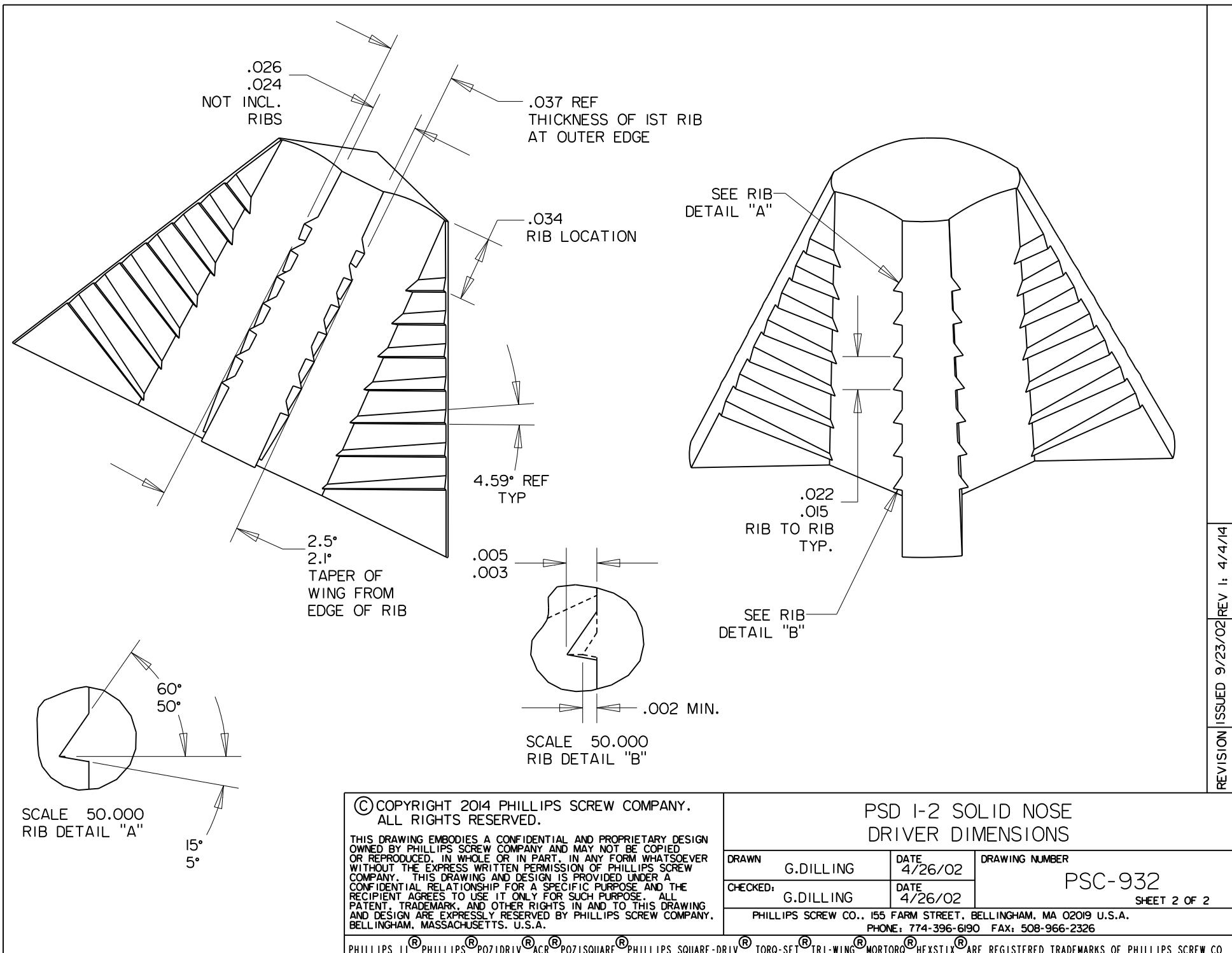
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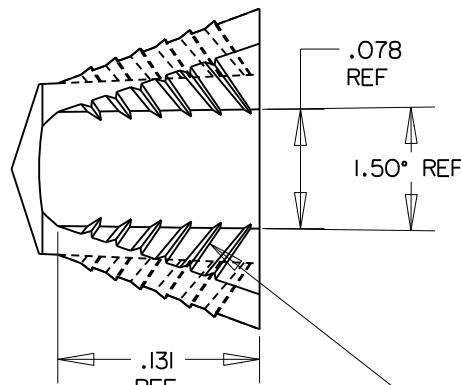
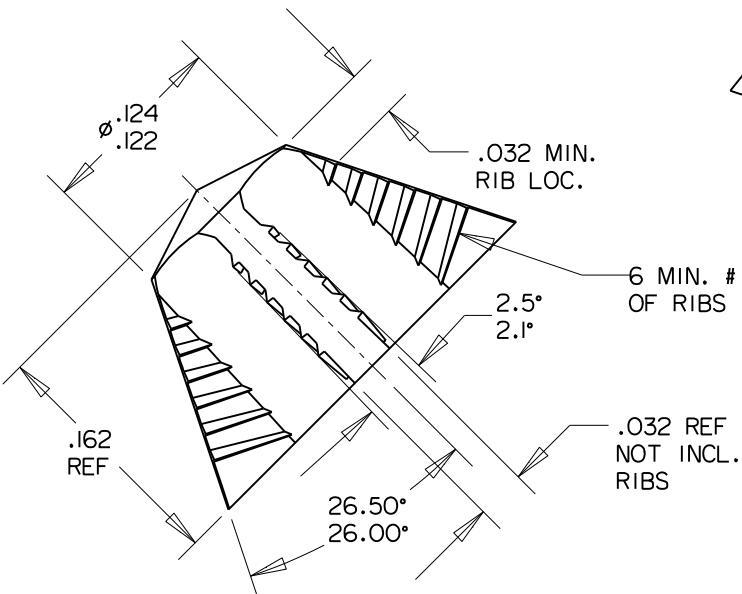
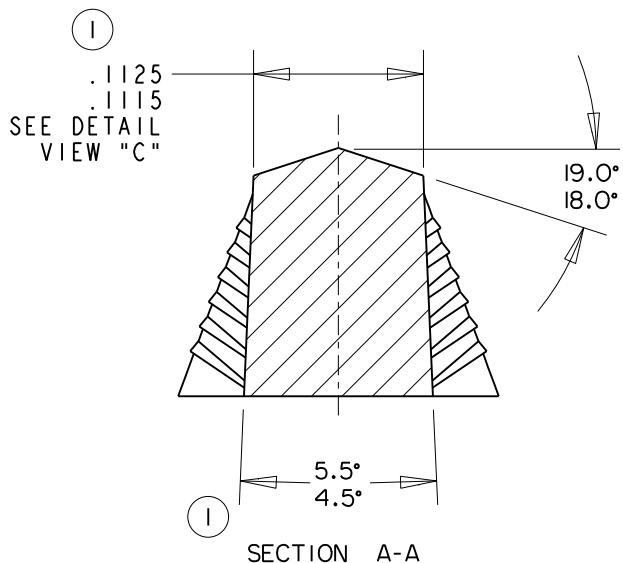
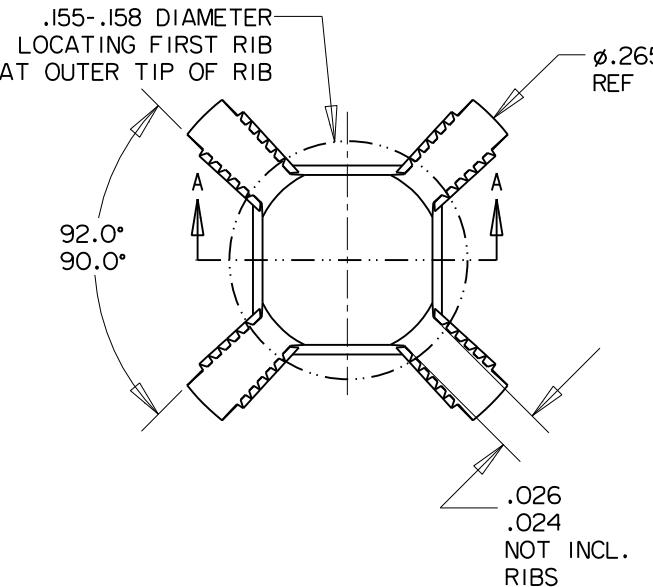
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### PSD I-2 SOLID NOSE DRIVER DIMENSIONS

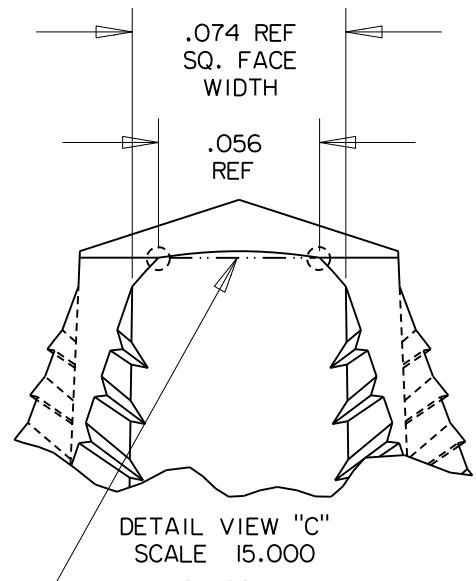
DRAWN	G.DILLING	DATE	DRAWING NUMBER
CHECKED:	G.DILLING	DATE	PSC-932
		4/26/02	SHEET 1 OF 2
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.			
PHONE: 774-396-6190 FAX: 508-966-2326			

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SEE SHEET 2 FOR COMPLETE RIB DIMENSIONS



DETAIL VIEW "C" SCALE 15.000  
.1115-.1125 SQ. WILL BE GAGED FROM BOTTOM OF CREST WITH RING GAGE AS SHOWN.  
INTERSECTIONS (CIRCLED) MUST BE BETWEEN THE LIMIT STEPS OF THE GUAGE.

REVISION ISSUED 9/17/02 REV I: 5/17/02

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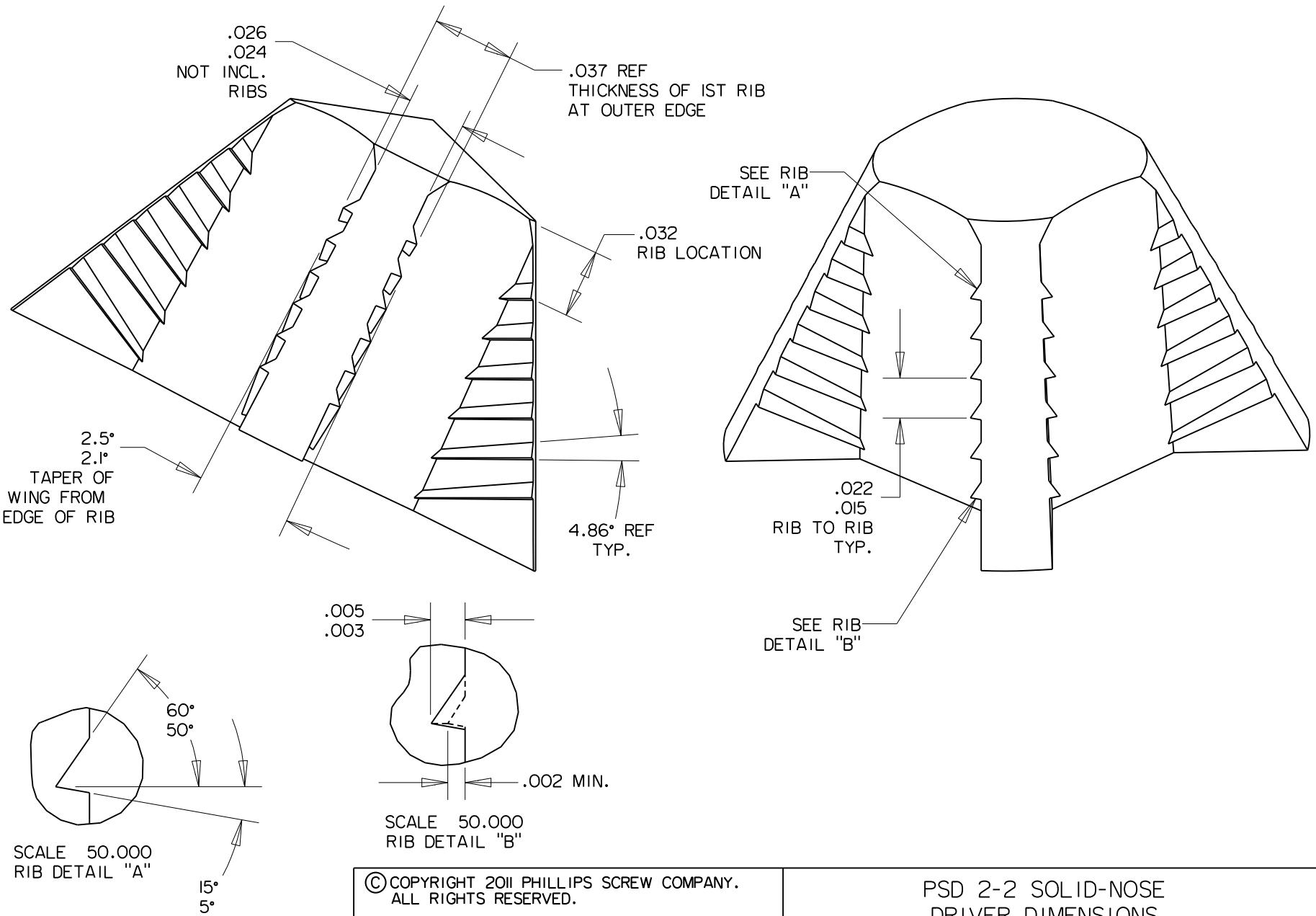
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### PSD 2-2 SOLID-NOSE DRIVER DIMENSIONS

DRAWN	G.DILLING	DATE	DRAWING NUMBER
		4/22/02	PSC-933
CHECKED:	G.DILLING	DATE	SHEET 1 OF 2

PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

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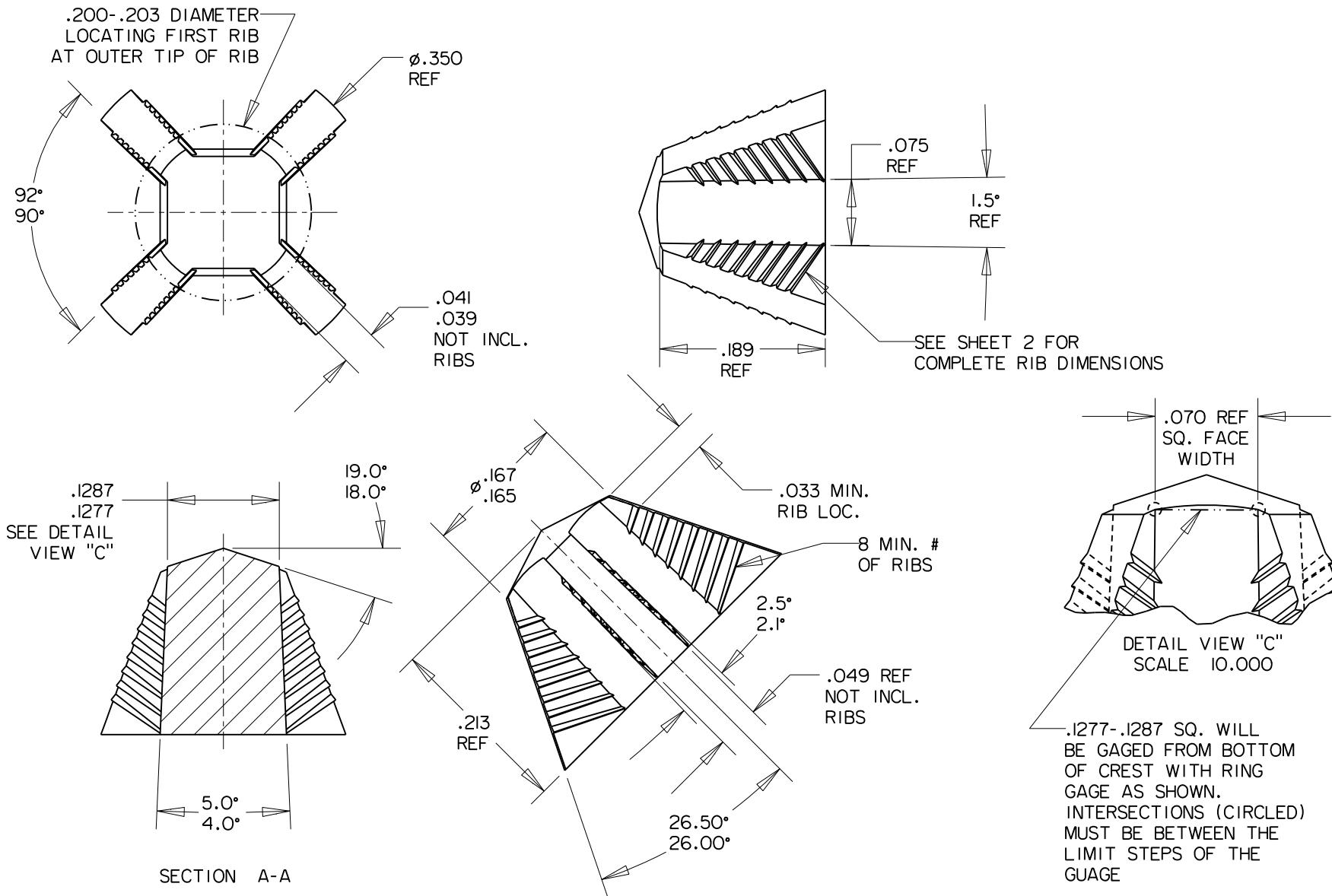
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### PSD 2-2 SOLID-NOSE DRIVER DIMENSIONS

DRAWN	G.DILLING	DATE	DRAWING NUMBER
CHECKED:	G.DILLING	DATE	PSC-933
		4/23/02	SHEET 2 OF 2
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326			

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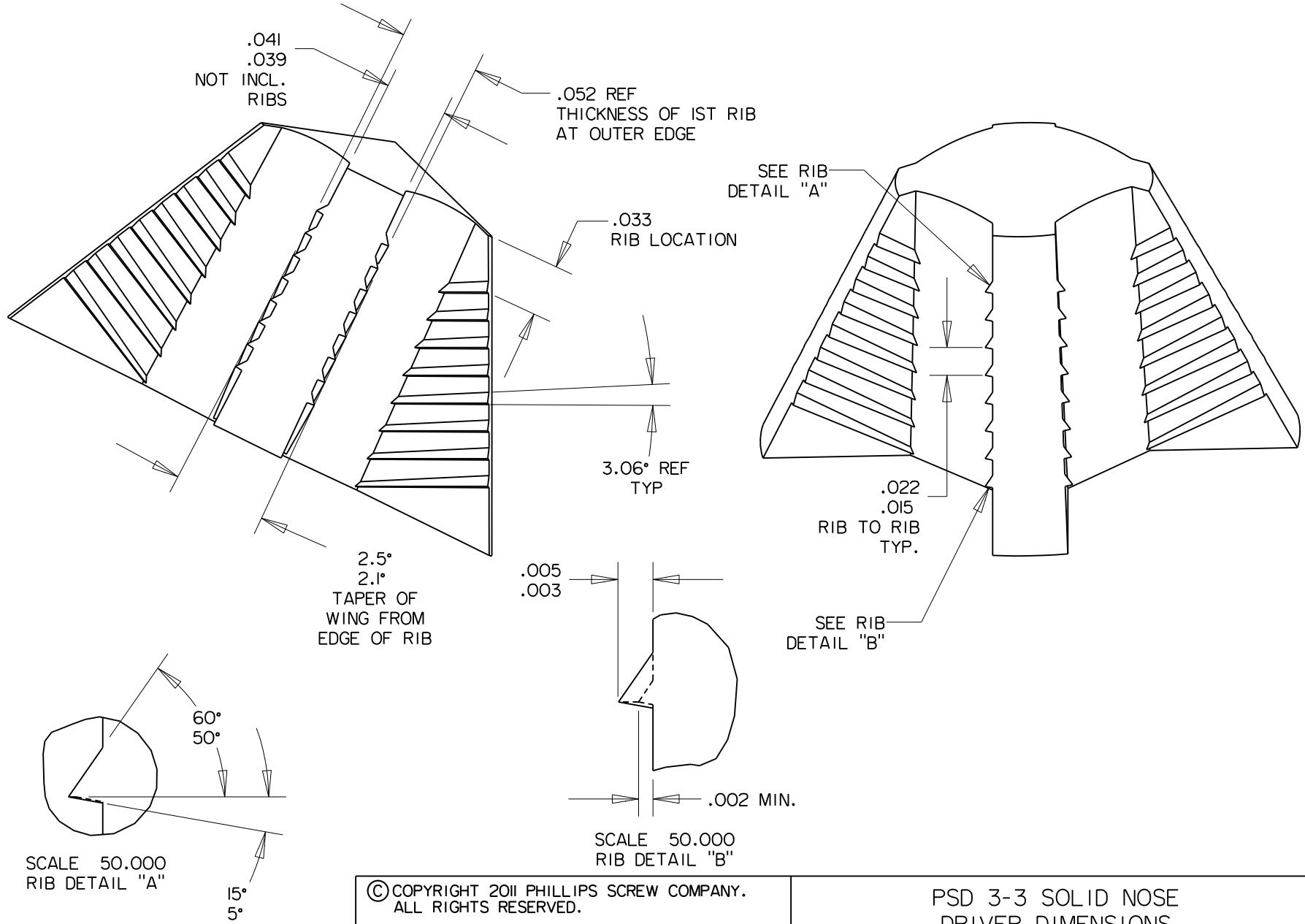
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### PSD 3-3 SOLID NOSE DRIVER DIMENSIONS

DRAWN	G.DILLING	DATE	DRAWING NUMBER
		4/29/02	PSC-934
CHECKED:	G.DILLING	DATE	SHEET 1 OF 2

PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

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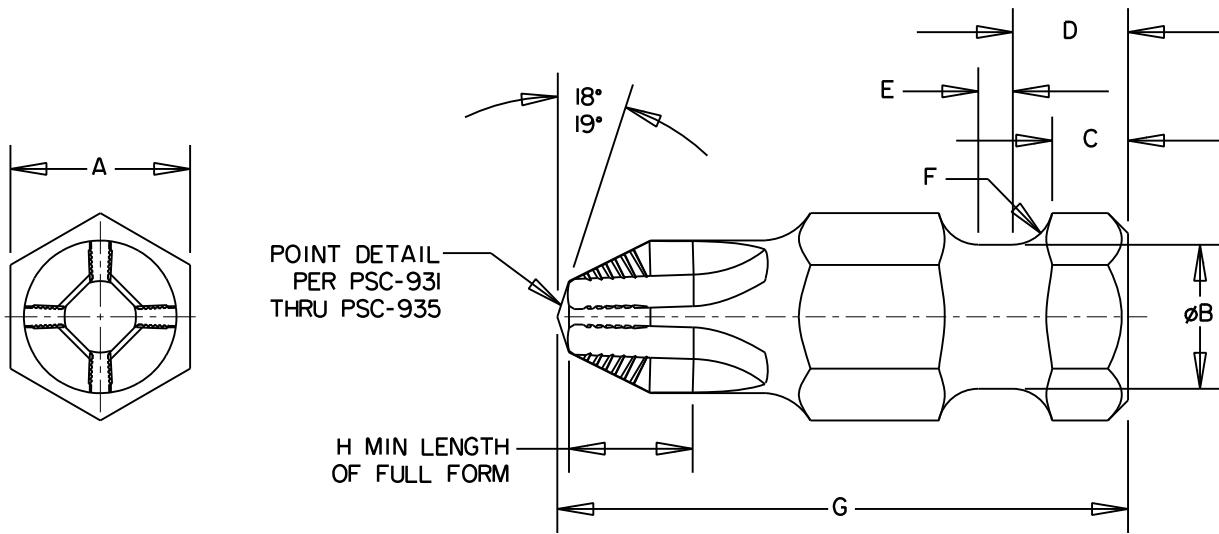
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### PSD 3-3 SOLID NOSE DRIVER DIMENSIONS

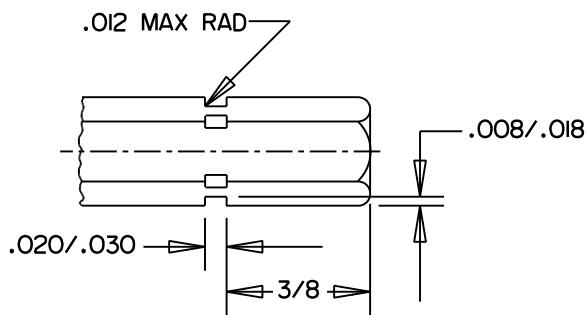
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		4/23/02	PSC-934
CHECKED:	G.DILLING	DATE 4/23/02	SHEET 2 OF 2

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PHONE: 774-396-6190 FAX: 508-966-2326

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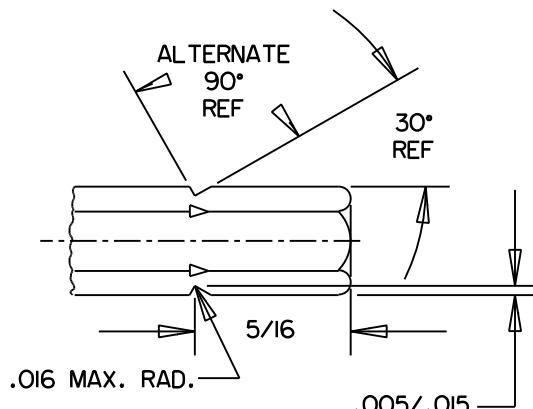


### STYLE A GROOVE



5/16 HEX

### STYLE B GROOVE



1/4 HEX

POINT SIZE	+.000 -.005 A	+.000 -.005 B	±.015 C	±.015 D	±.015 E	±.015 F	±.015 G	±.015 H
0-1								.125
I-2	.250	.187	.250	.375			1.000	
2-2	.312	.250	.281	.406	.062	.094	.1250	.187
3-3	.250	.187	.250	.375			1.000	
	.312	.250	.281	.406			.1250	.281

REFER TO PSC-PSC-908 FOR MATERIAL, HEAT TREAT AND MARKING.

REVISION ISSUED 10/9/02

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TITLE:

PHILLIPS SQUARE-DRIV  
INSERT DRIVER BIT

DRAWN

G.DILLING

DATE

10/8/02

DRAWING NUMBER

PSC-937

CHECKED:

G.DILLING

DATE

10/8/02

SHEET 1 OF 1

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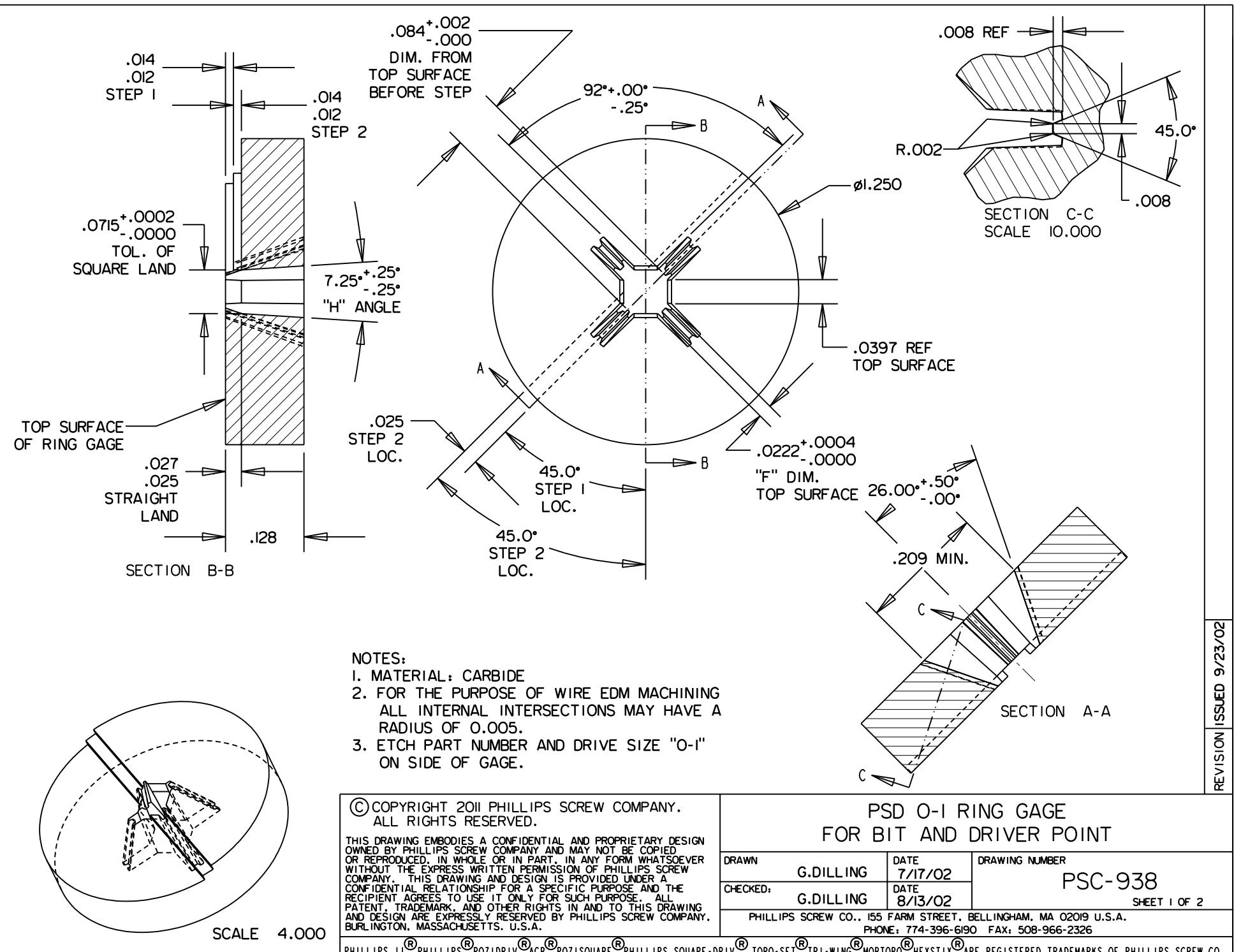
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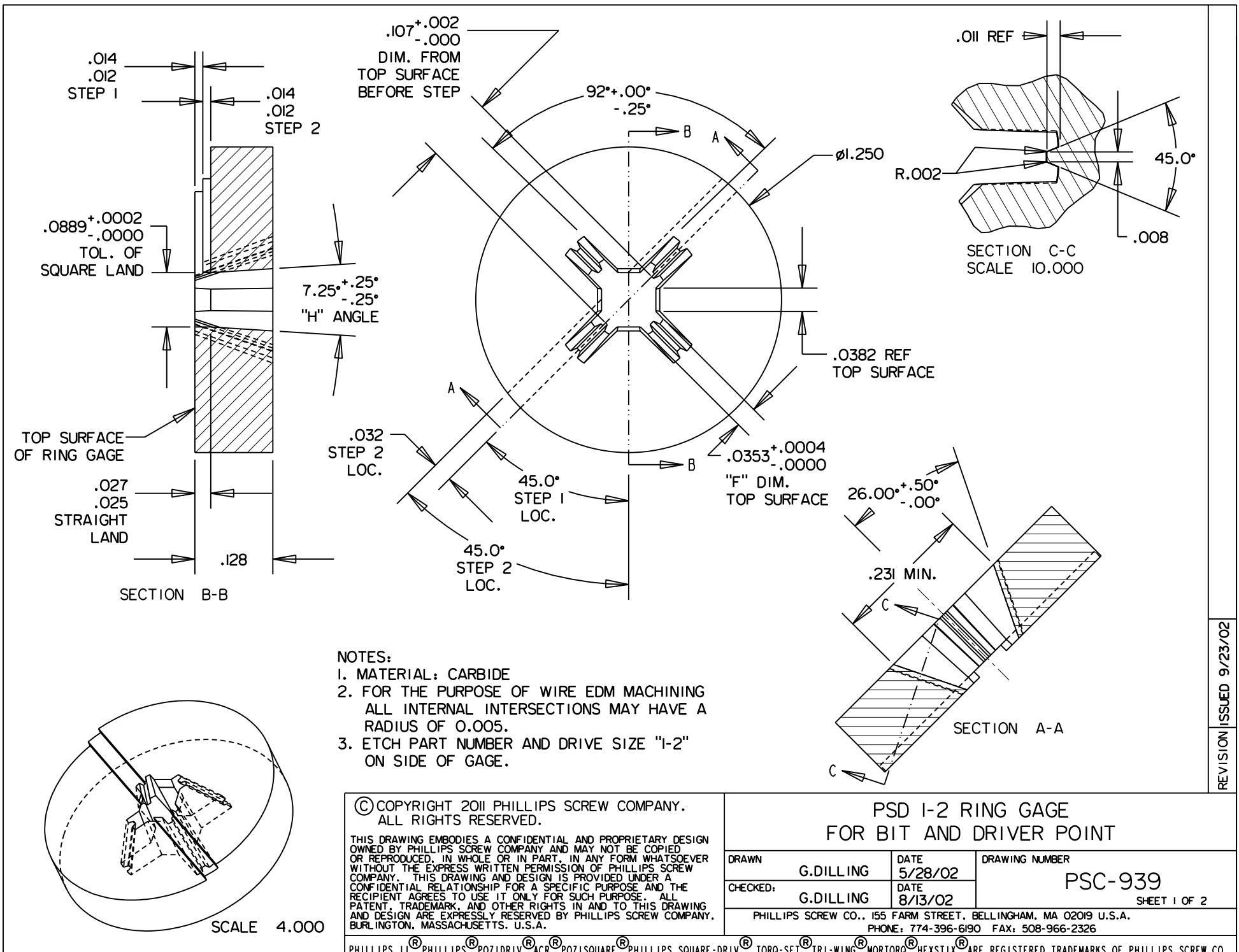
PHILLIPS SQUARE-DRIV<sup>®</sup> ENGINEERING MANUAL

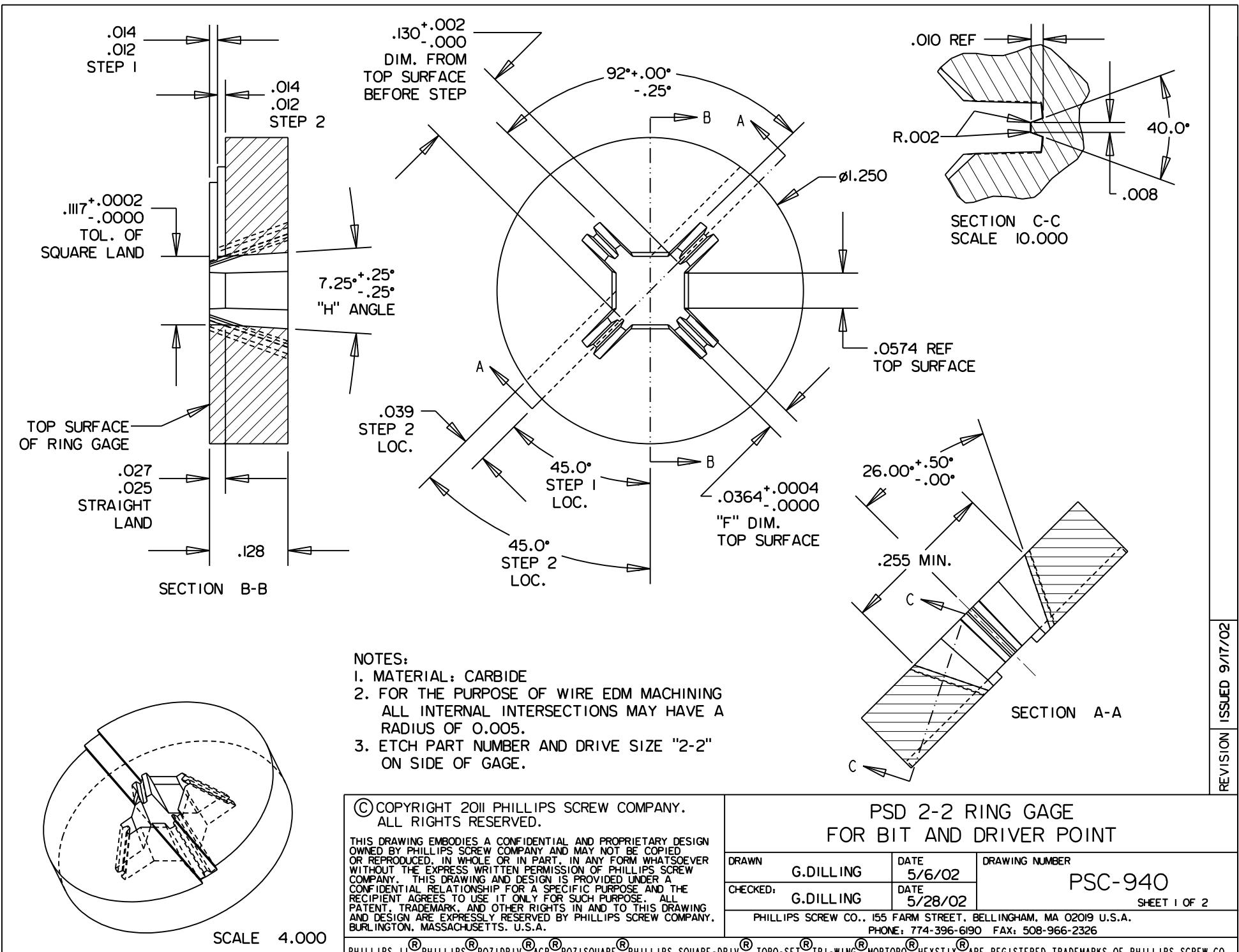
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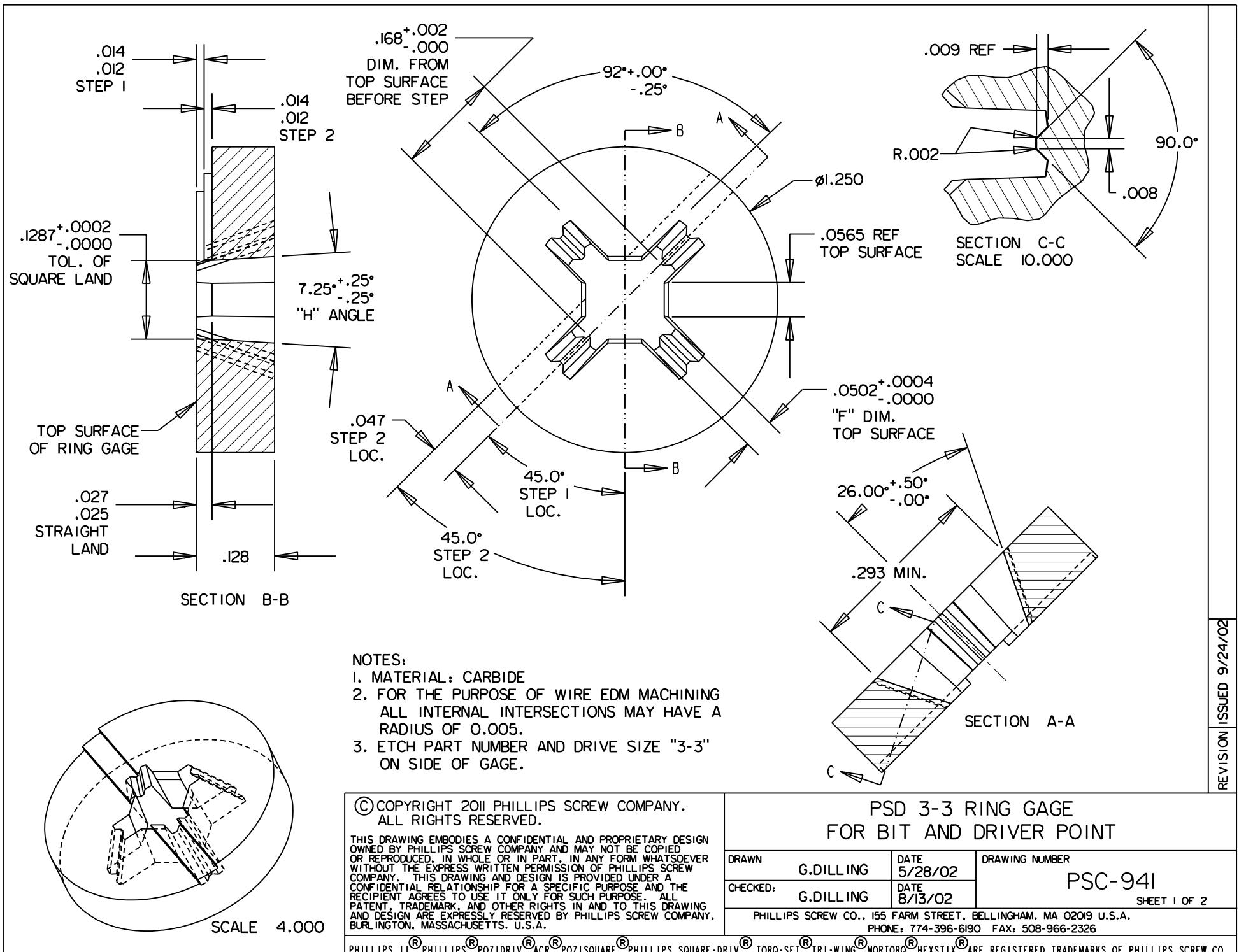
GAGES

PSC-938	PSD (O-1) DIMENSIONAL BIT RING GAGE	9/23/02
PSC-939	PSD (I-2) DIMENSIONAL BIT RING GAGE	9/23/02
PSC-940	PSD (2-2) DIMENSIONAL BIT RING GAGE	9/17/02
PSC-941	PSD (3-3) DIMENSIONAL BIT RING GAGE	9/24/02
PSC-943	PSD (O-1) PENETRATION GAGE	9/30/02
PSC-944	PSD (I-2) PENETRATION GAGE	9/30/02
PSC-945	PSD (2-2) PENETRATION GAGE	9/30/02
PSC-946	PSD (3-3) PENETRATION GAGE	9/30/02
PSC-948	PSD (O-1) SQUARE PLUG GAGE	12/16/02
PSC-949	PSD (I-2) SQUARE PLUG GAGE	12/16/02
PSC-950	PSD (2-2) SQUARE PLUG GAGE	12/16/02
PSC-951	PSD (3-3) SQUARE PLUG GAGE	12/16/02
PSC-953	PSD (O-1) WING PLUG GAGE	8/14/02
PSC-954	PSD (I-2) & (2-2) WING PLUG GAGE	8/6/02
PSC-955	PSD (3-3) WING PLUG GAGE	8/14/02
PSC-957	PSD PENETRATION LAYOUT AND FORMULA	10/23/02
PSC-959	PSD (O-1) PUNCH PENETRATION GAGE	1/11/03
PSC-960	PSD (I-2) PUNCH PENETRATION GAGE	1/11/03
PSC-961	PSD (2-2) PUNCH PENETRATION GAGE	1/10/03
PSC-962	PSD (3-3) PUNCH PENETRATION GAGE	1/14/03
PSC-977	PSD (O-1) STICK FIT RING GAGE	1/02/03
PSC-978	PSD (I-2) STICK FIT RING GAGE	11/12/02
PSC-979	PSD (2-2) STICK FIT RING GAGE	11/12/02
PSC-980	PSD (3-3) STICK FIT RING GAGE	1/6/03
PSC-991	PSD (O-1) TORQUE TEST BLOCK	1/03/03
PSC-992	PSD (I-2) TORQUE TEST BLOCK	1/03/03
PSC-993	PSD (2-2) TORQUE TEST BLOCK	1/03/03
PSC-994	PSD (3-3) TORQUE TEST BLOCK	1/03/03

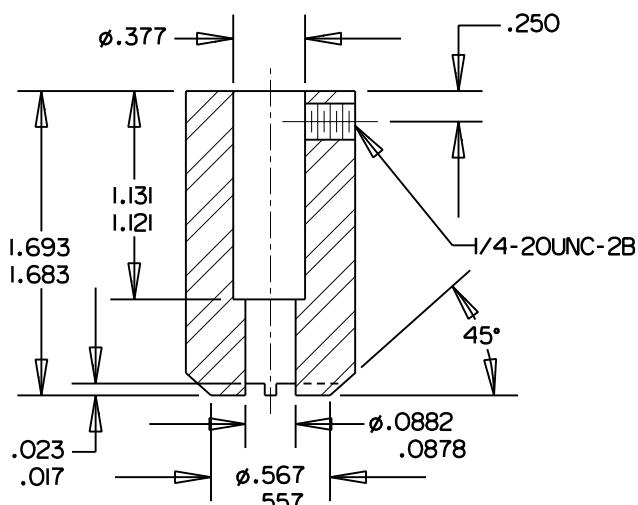




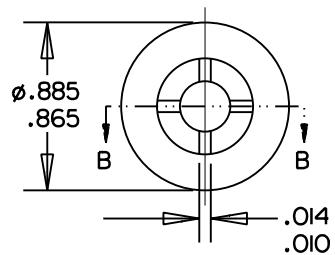




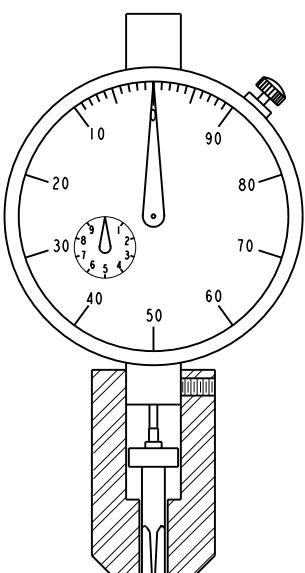
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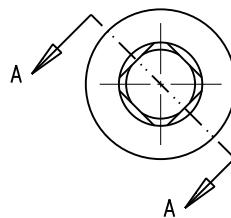
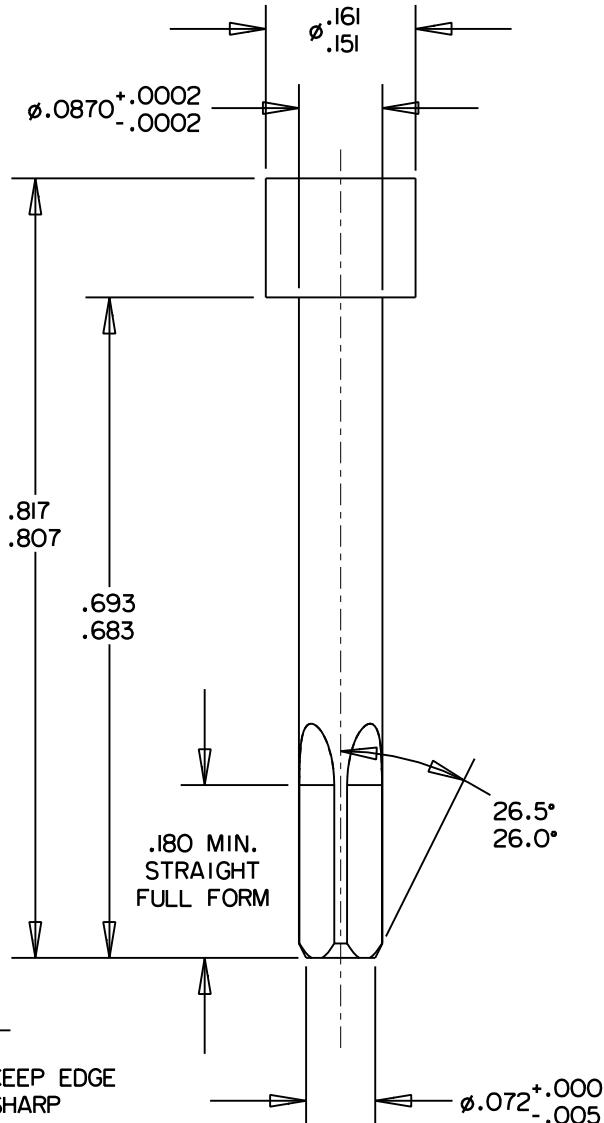
SECTION B-B



### GAGE ASSEMBLY



SECTION A-A  
SCALE 11.000



NOTE:

1. GAGE POINT MATERIAL: CARBIDE.
2. STAMP PART NUMBER & POINT SIZE ON BODY OF GAGE.
3. STANDARD DIAL GAGE WITH NUMERALS READING COUNTER-CLOCKWISE IN THOUSANDTHS.

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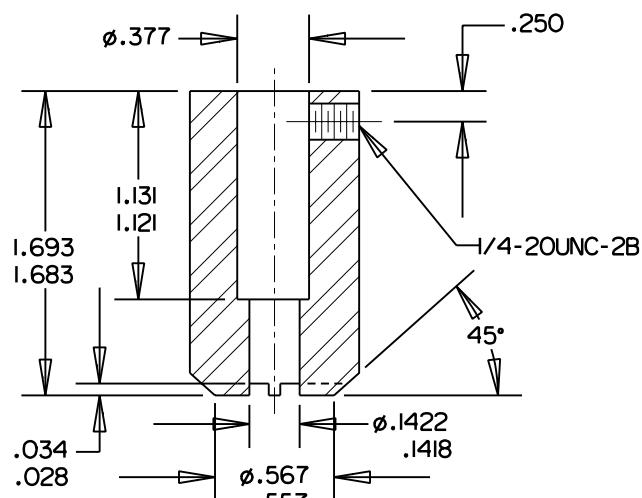
TITLE:

PSD PENETRATION  
GAGE POINT O-I

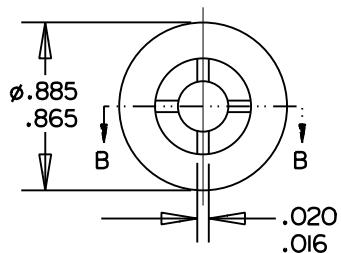
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G.DILLING	7-25-02	PSC-943
CHECKED: G.DILLING	DATE 8-06-02	SHEET 1 OF 1
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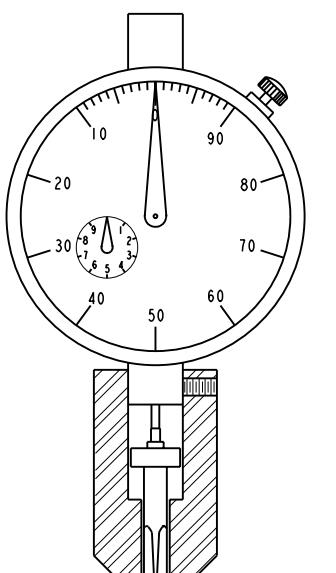
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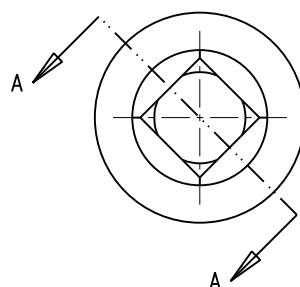
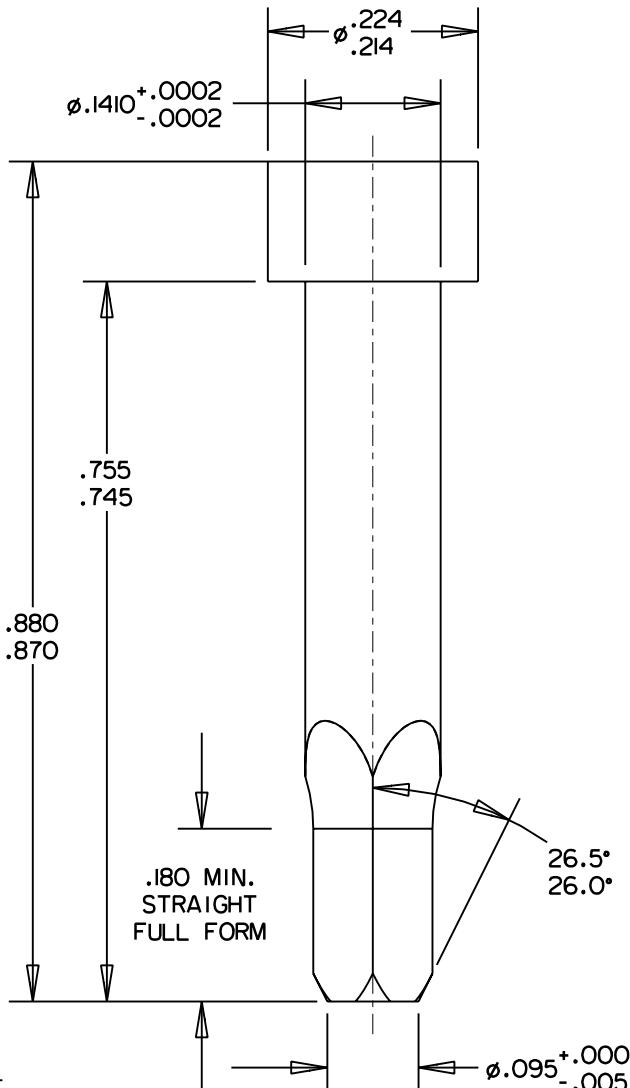
SECTION B-B



### GAGE ASSEMBLY



SECTION A-A  
SCALE 9.000



#### NOTE:

1. GAGE POINT MATERIAL: CARBIDE.
2. STAMP PART NUMBER & POINT SIZE ON BODY OF GAGE.
3. STANDARD DIAL GAGE WITH NUMERALS READING COUNTER-CLOCKWISE IN THOUSANDTHS.

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TITLE:

PSD PENETRATION  
GAGE POINT I-2

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DRAWN

CHECKED:

G.DILLING

G.DILLING

DATE

DATE

7-25-02

8-05-02

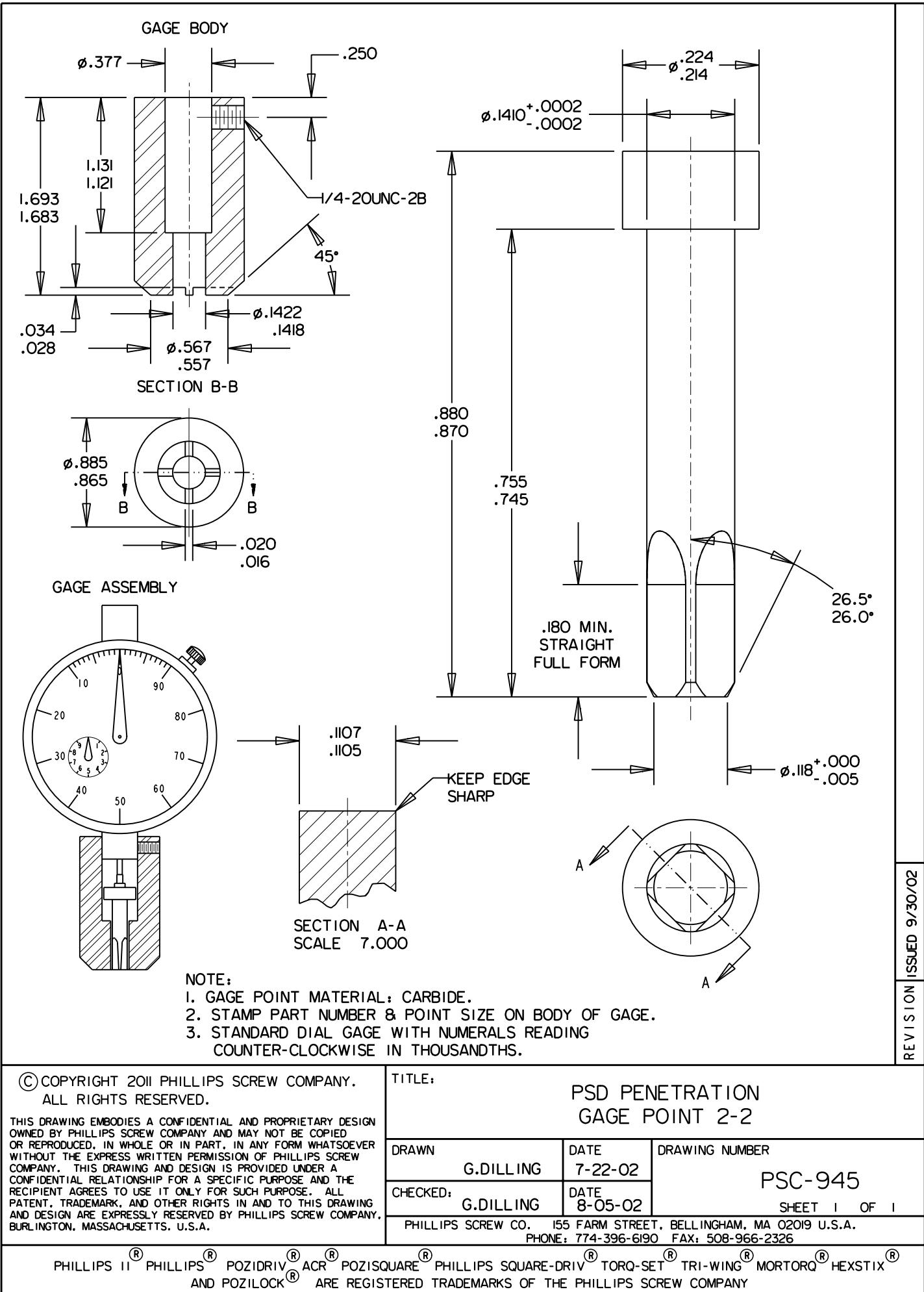
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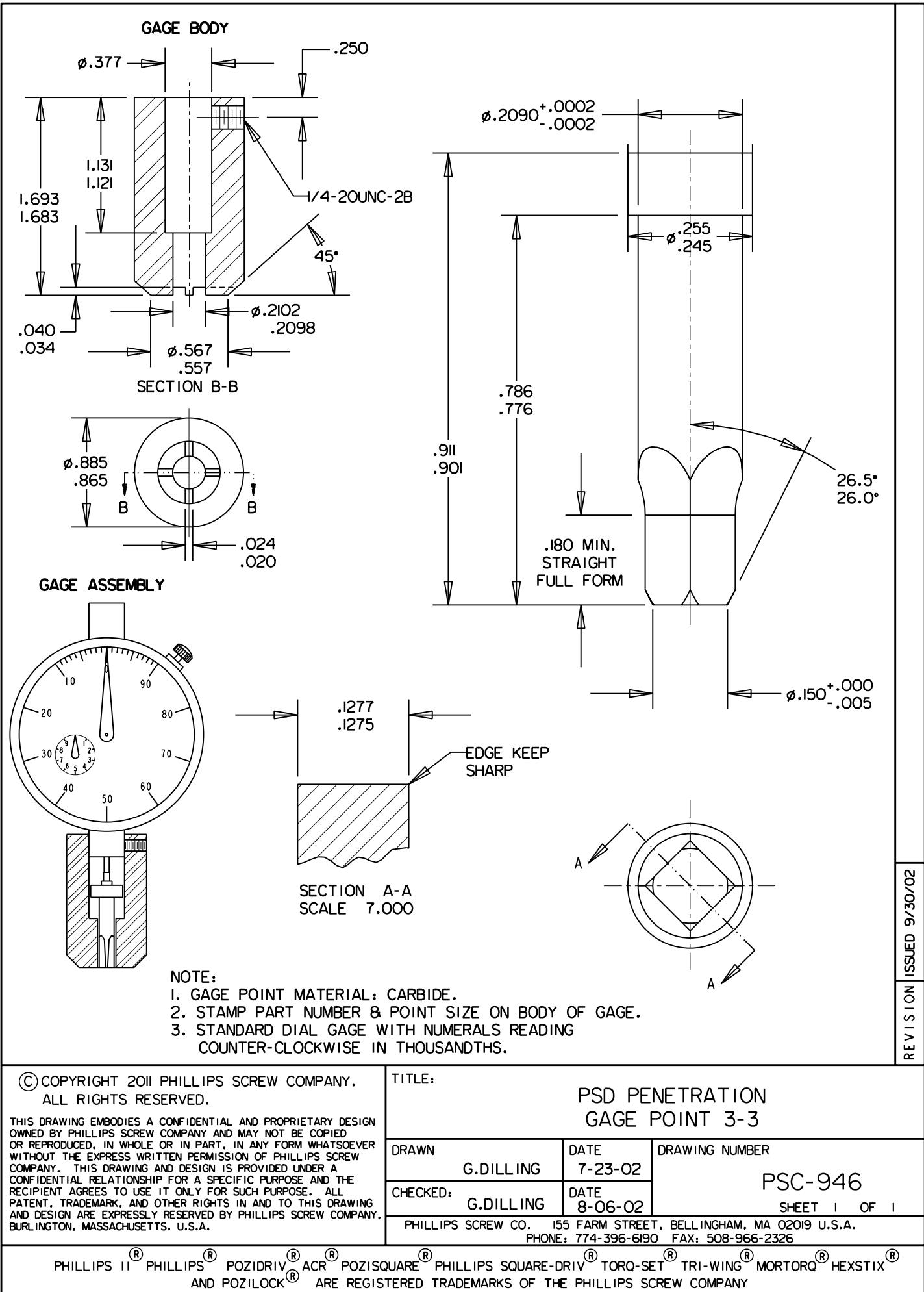
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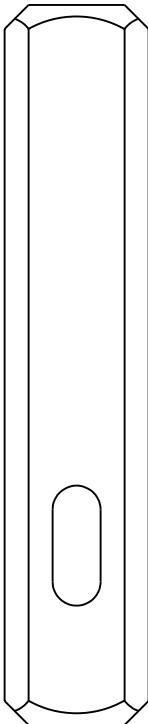
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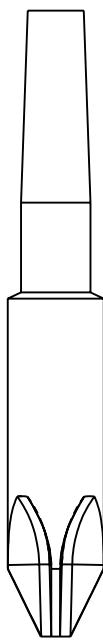
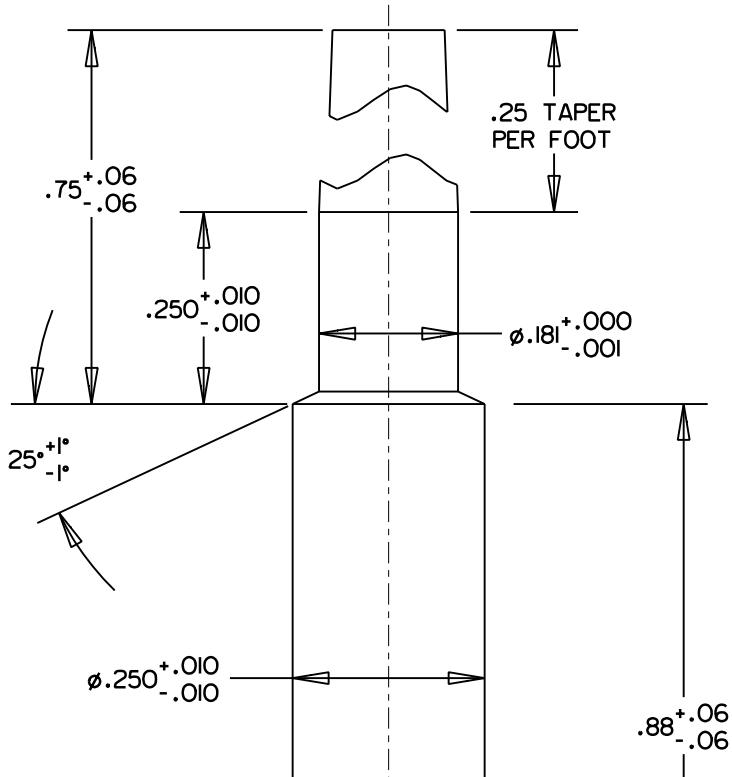
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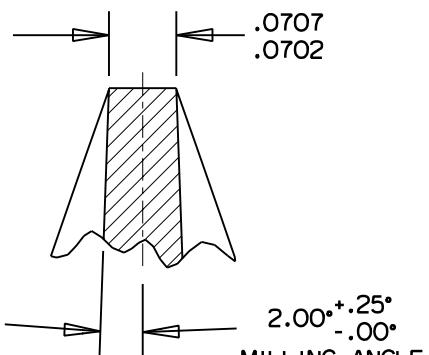




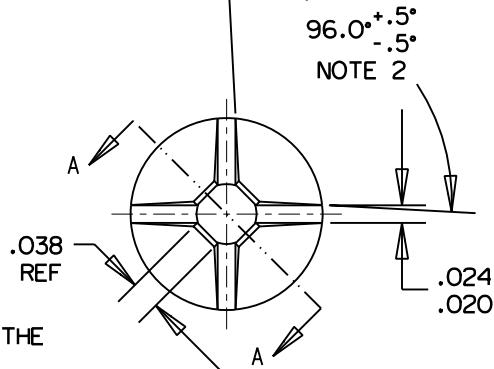
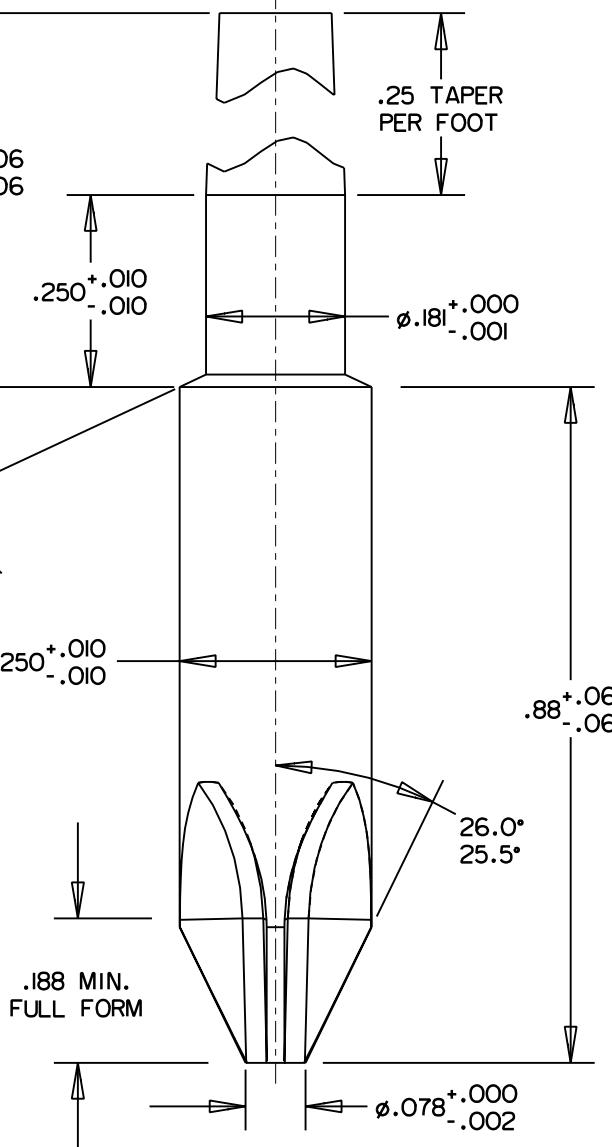
GAGE HANDLE



GAGE POINT



SECTION A-A  
SCALE 5.000



REVISION REVISED 12/16/02

NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
4. MATERIAL: CARBIDE.

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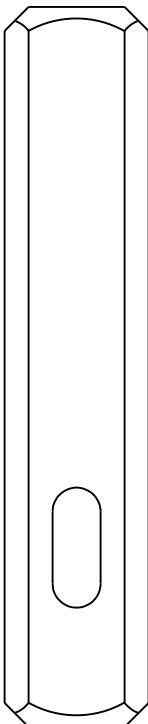
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TITLE: PSD O-I  
SQUARE PLUG GAGE

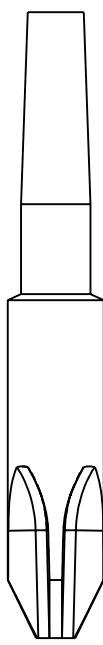
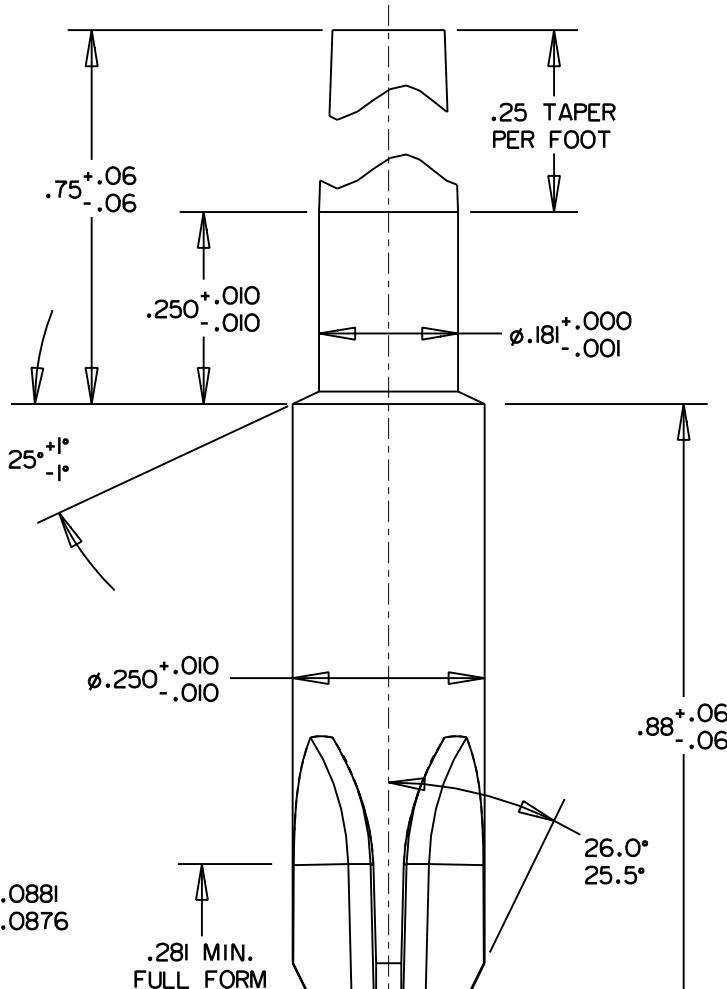
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CHECKED: G.DILLING	DATE 8-13-02	SHEET 1 OF 1

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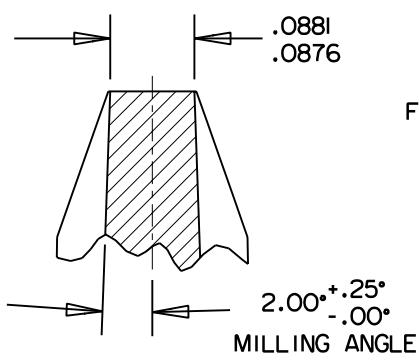
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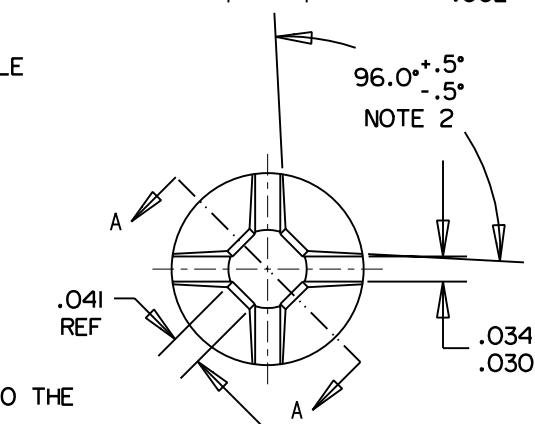
GAGE HANDLE



GAGE POINT



SECTION A-A  
SCALE 5.000



NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
4. MATERIAL: CARBIDE.

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TITLE:

PSD I-2  
SQUARE PLUG GAGE

DRAWN  
G.DILLING

DATE  
7-22-02

DRAWING NUMBER

PSC-949

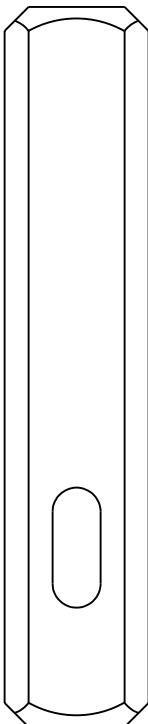
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DATE  
8-06-02

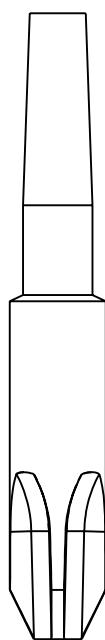
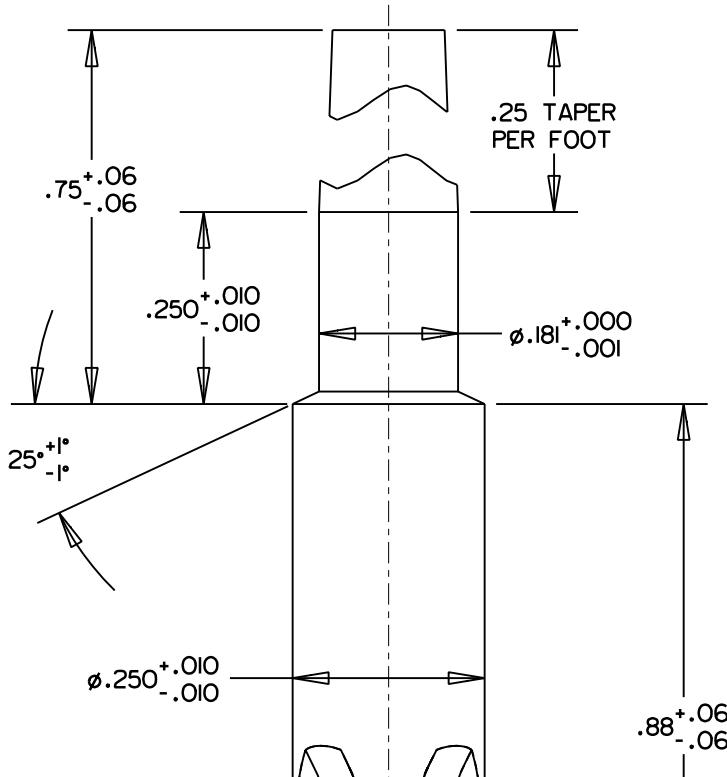
SHEET 1 OF 1

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PHONE: 774-396-6190 FAX: 508-966-2326

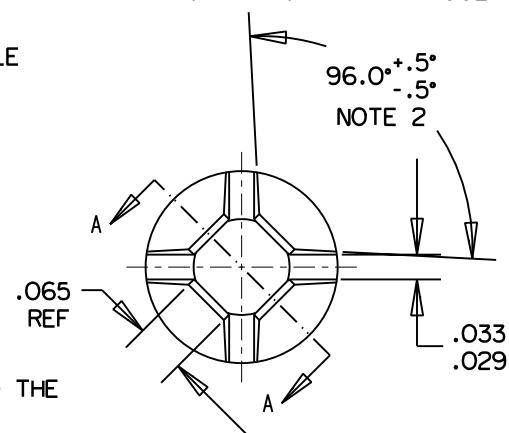
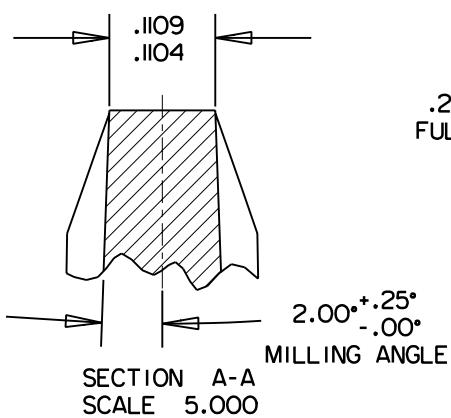
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GAGE HANDLE



GAGE POINT



NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
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TITLE:

PSD 2-2  
SQUARE PLUG GAGE

DRAWN

G.DILLING

DATE

7-22-02

DRAWING NUMBER

PSC-950

CHECKED:

G.DILLING

DATE

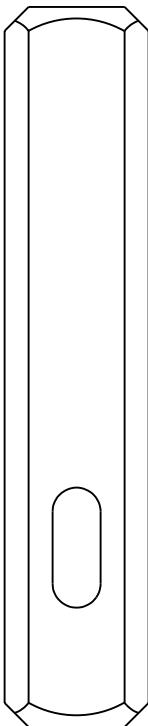
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SHEET 1 OF 1

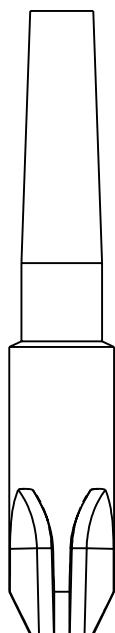
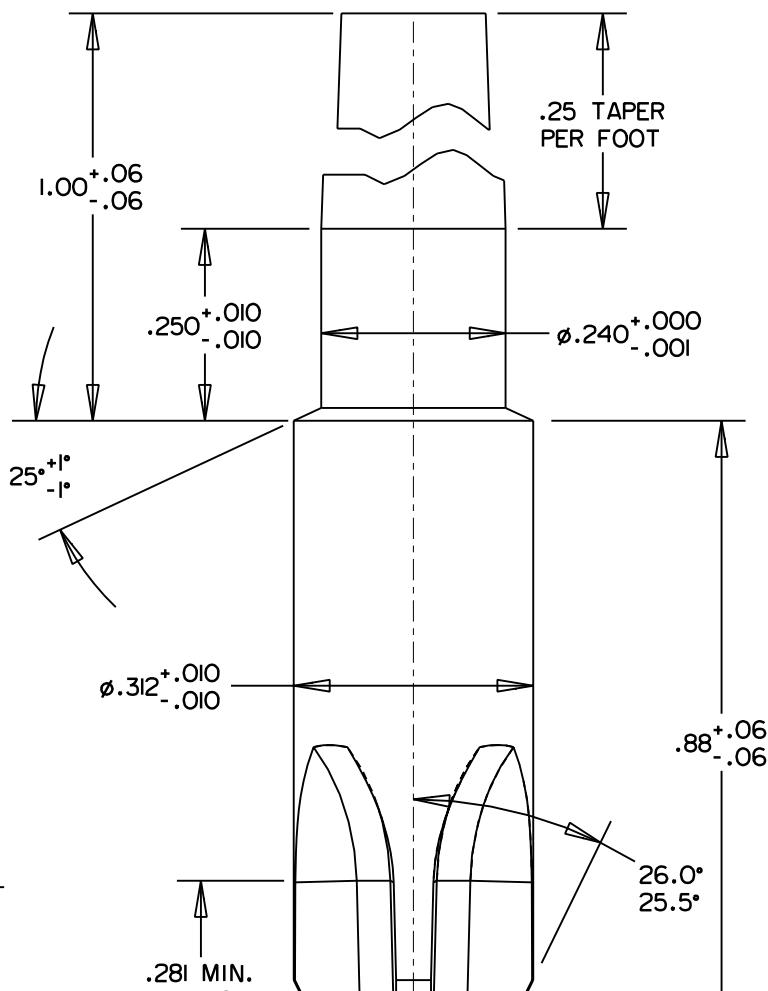
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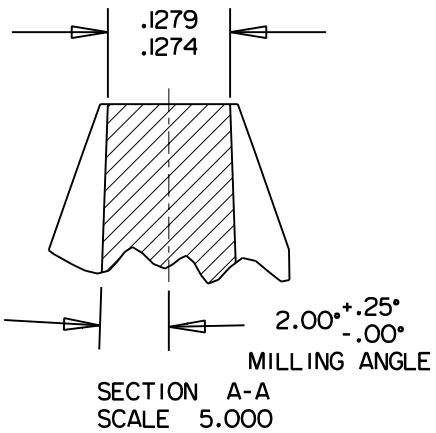
REVISION REVISED 12/6/02



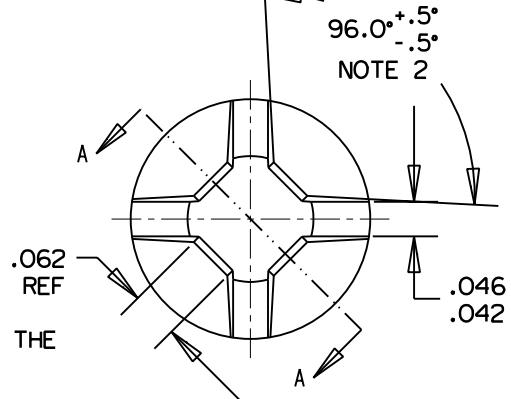
GAGE HANDLE



GAGE POINT



SECTION A-A  
SCALE 5.000



- NOTES:
1. STAMP POINT SIZE ON ALL GAGES.
  2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
  4. MATERIAL: CARBIDE.

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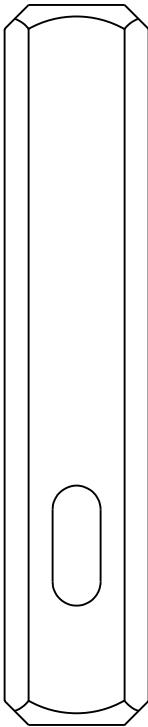
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TITLE:  
PSD 3-3  
SQUARE PLUG GAGE

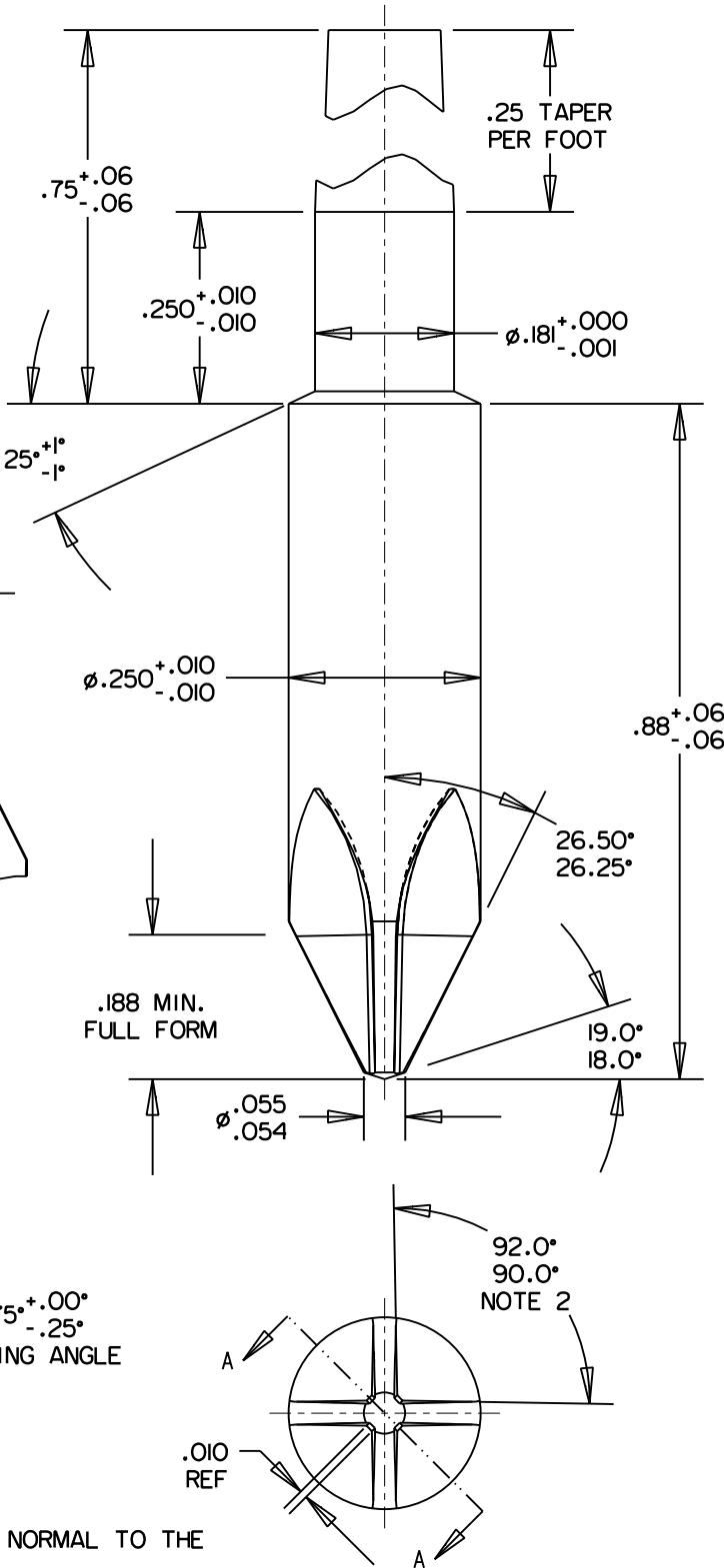
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CHECKED:	DATE	SHEET 1 OF 1
G.DILLING	8-13-02	

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GAGE HANDLE



GAGE POINT

NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
4. MATERIAL: CARBIDE.

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TITLE:

PSD O-I  
WING PLUG GAGE

DRAWN

G.DILLING

DATE

8-13-02

DRAWING NUMBER

PSC-953

CHECKED:

G.DILLING

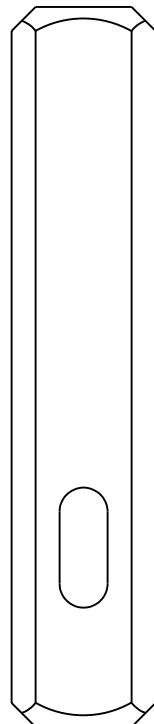
DATE

8-14-02

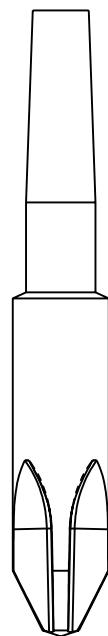
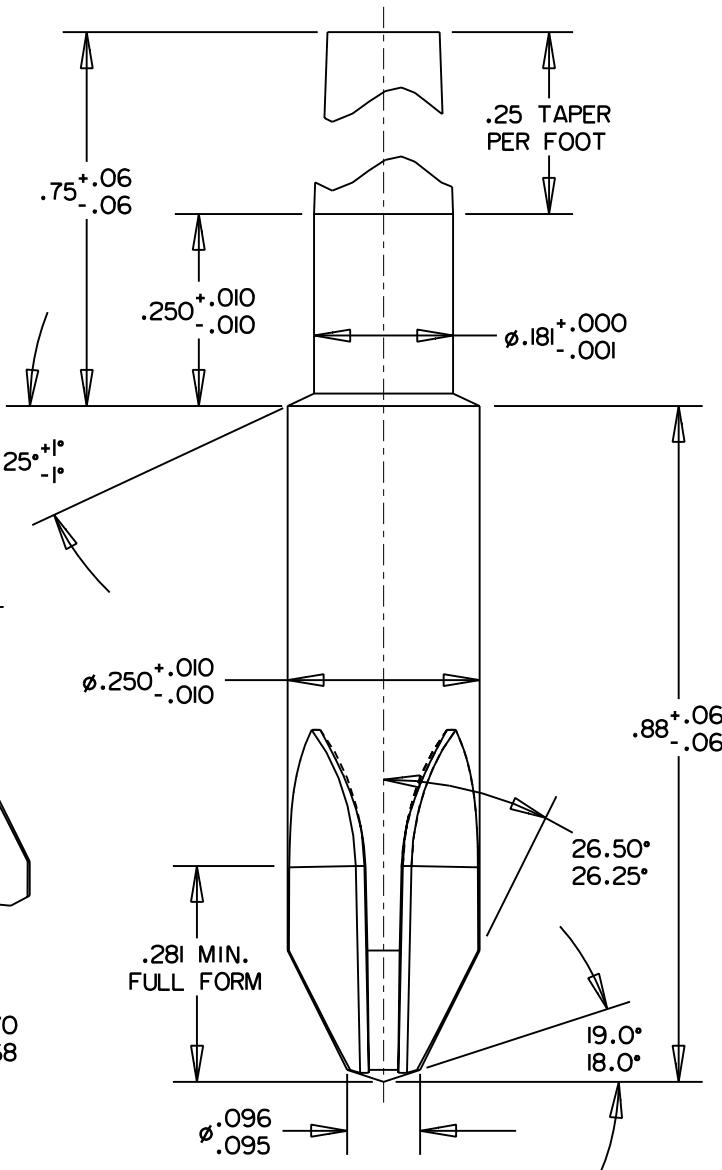
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PHONE: 774-396-6190 FAX: 508-966-2326

REVISION ISSUED 8/14/02

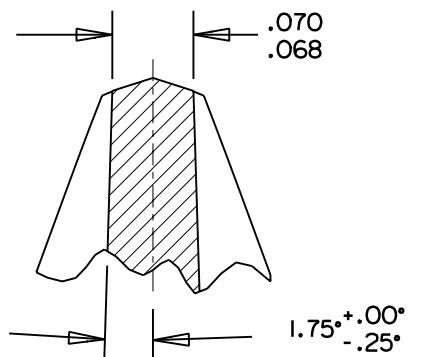
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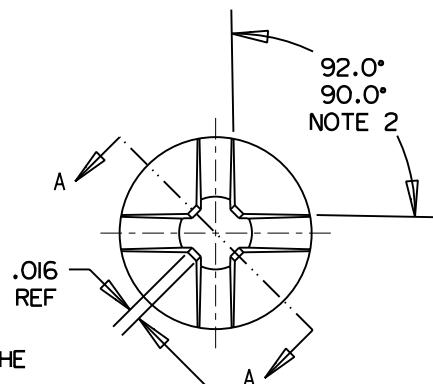
GAGE HANDLE



GAGE POINT



SECTION A-A  
SCALE 6.000



NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
4. MATERIAL: CARBIDE.

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TITLE:

PSD 2-2 AND I-2  
WING PLUG GAGE

DRAWN  
G.DILLING

DATE  
7-22-02

DRAWING NUMBER

PSC-954

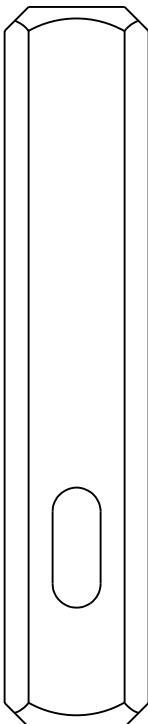
CHECKED  
G.DILLING

DATE  
8-06-02

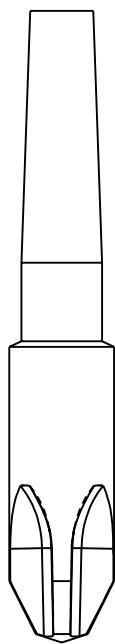
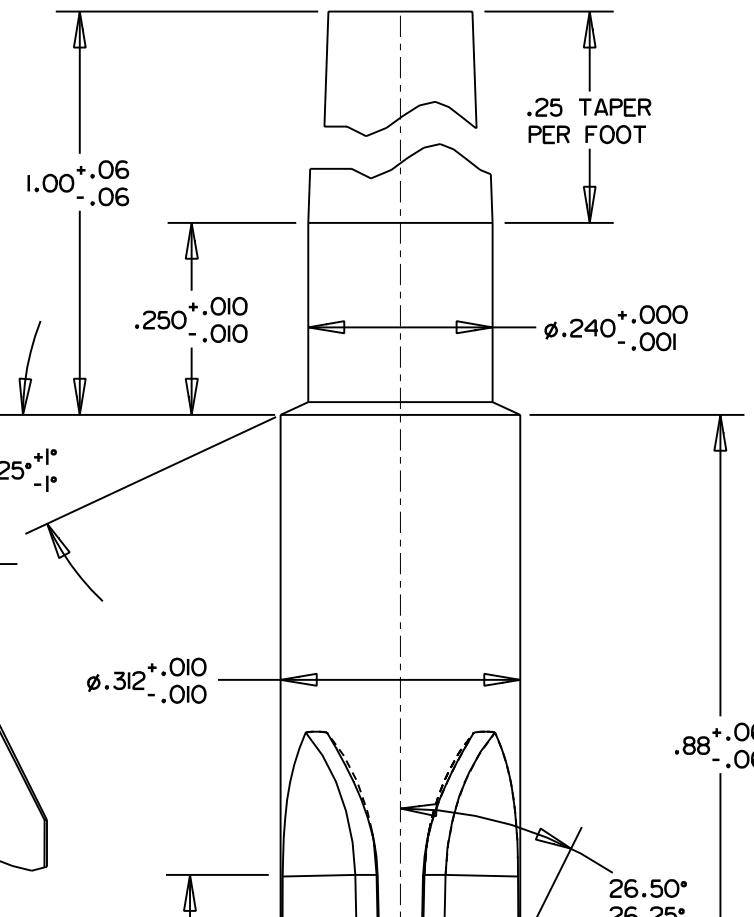
SHEET 1 OF 1

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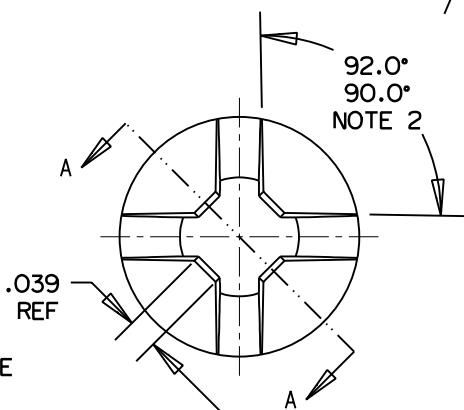
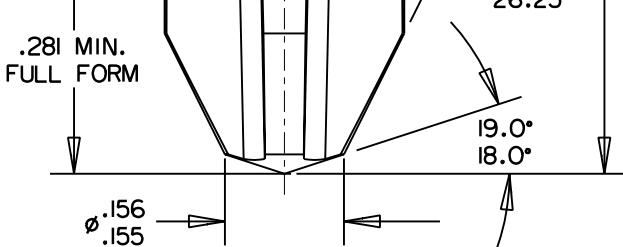
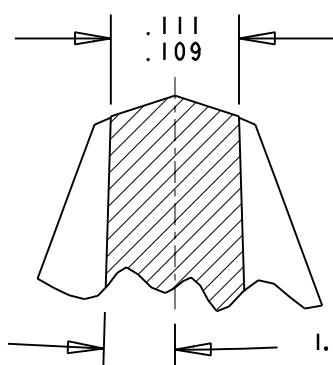
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GAGE HANDLE



GAGE POINT



NOTES:

1. STAMP POINT SIZE ON ALL GAGES.
2. INCLUDED WING ANGLE IS MEASURED NORMAL TO THE MILLING ANGLE IN SECTION A-A.
4. MATERIAL: CARBIDE.

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TITLE:

PSD 3-3  
WING PLUG GAGE

DRAWN

G.DILLING

DATE

8-13-02

DRAWING NUMBER

PSC-955

CHECKED:

G.DILLING

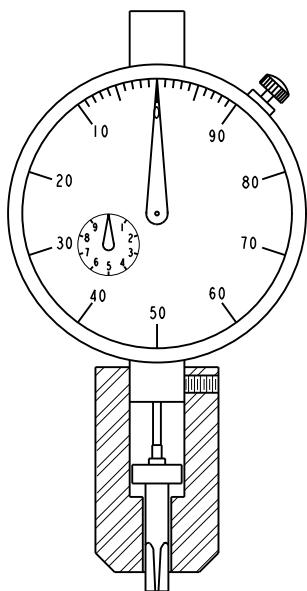
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8-14-02

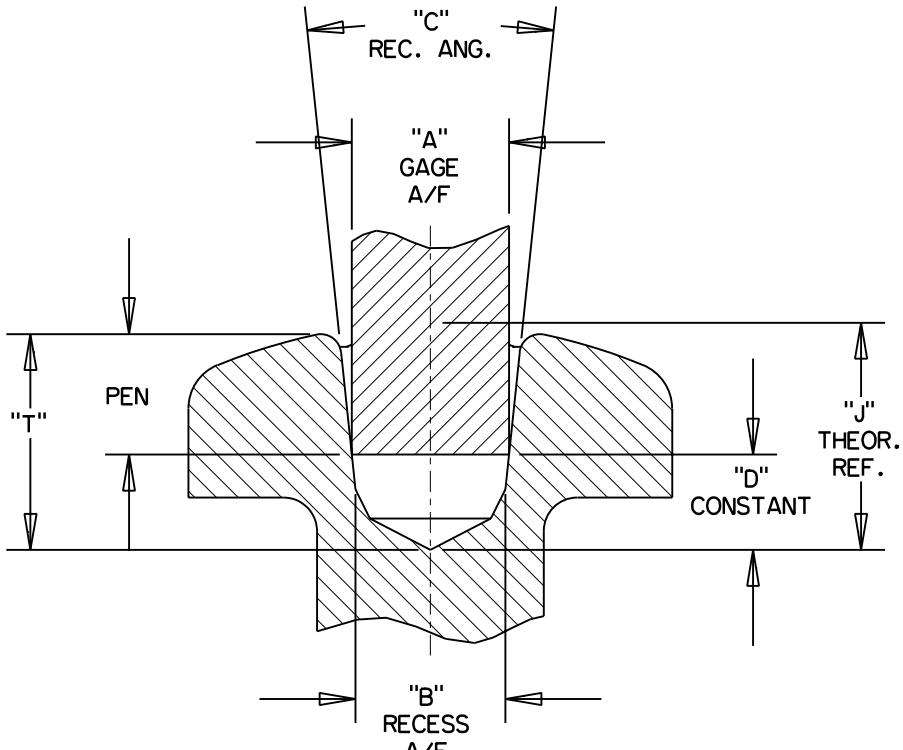
SHEET 1 OF 1

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GAGE ASSEMBLY



PSD MAX. PENETRATION				
RECESS SIZE	A MIN.	B MAX.	C MAX.	D
0-1	.0703	.0682	8°	.046
I-2	.0877	.0852	8°	.040
2-2	.1105	.1075	8°	.062
3-3	.1275	.1242	8°	.056
SCREW HEAD MAX. T - D = MAX. PEN				

PSD MIN. PENETRATION				
RECESS SIZE	A MAX.	B MIN.	C MIN.	D
0-1	.0705	.0672	7°	.057
I-2	.0879	.0842	7°	.052
2-2	.1107	.1065	7°	.074
3-3	.1277	.1232	7°	.069
SCREW HEAD MIN. T - D = MIN. PEN				

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TITLE:

### PSD PENETRATION LAYOUT AND FORMULA

DRAWN

G.DILLING

DATE

10-22-02

DRAWING NUMBER

PSC-957

CHECKED:

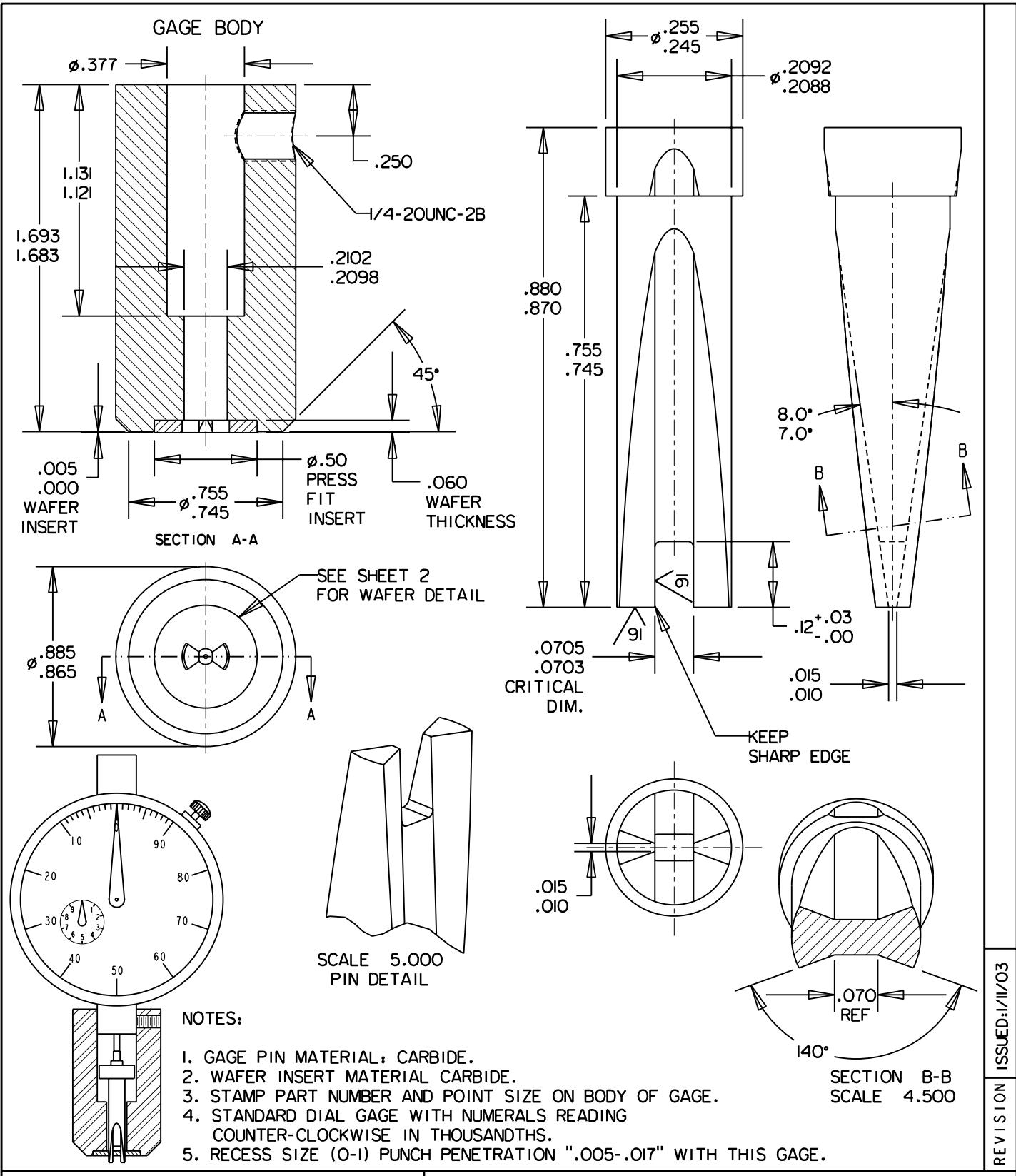
G.DILLING

DATE

10-23-02

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TITLE:

PSD PUNCH PENETRATION  
GAGE POINT O-1

DRAWN

G.DILLING

DATE

1/09/03

DRAWING NUMBER

PSC-959

CHECKED:

G.DILLING

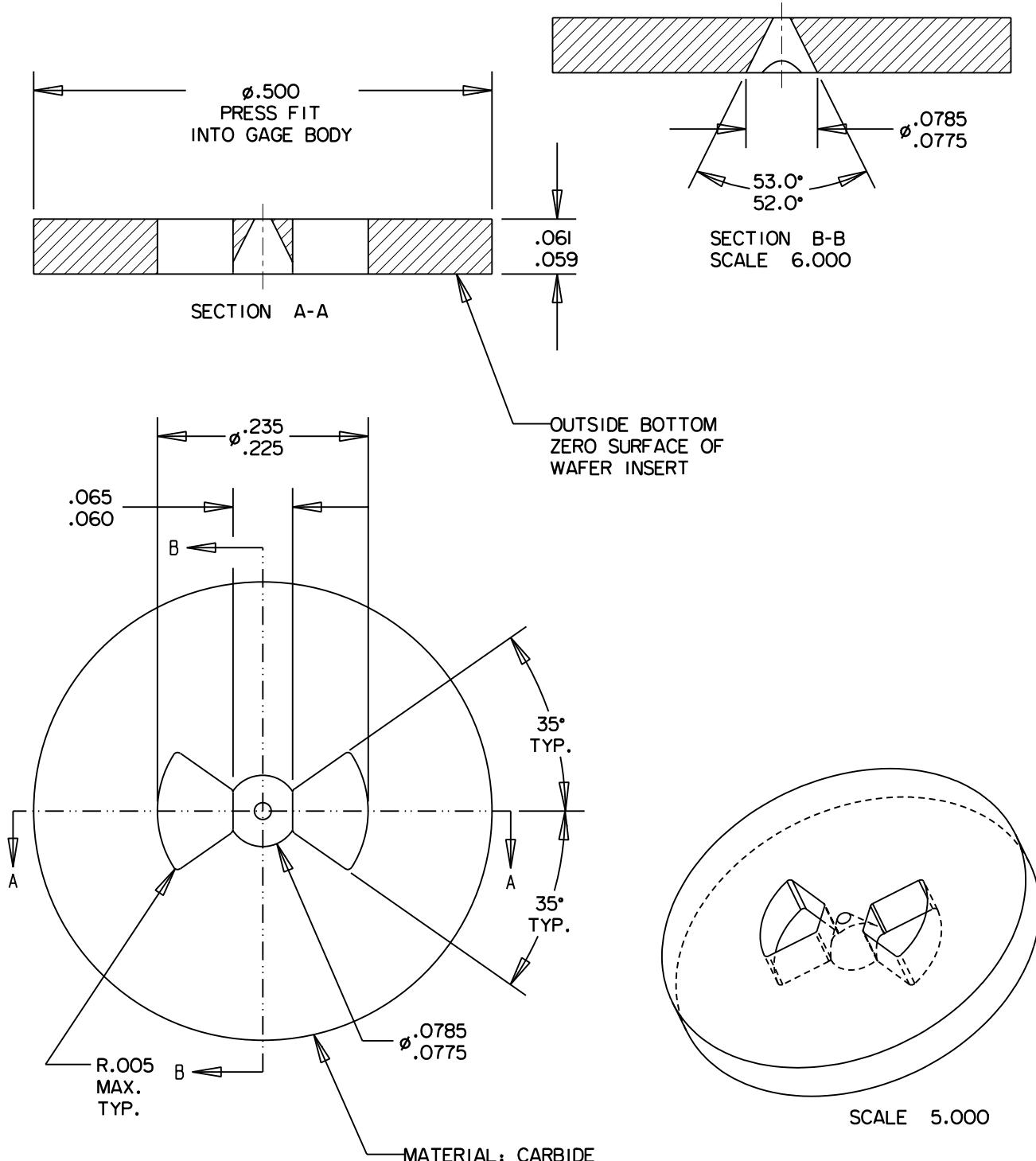
DATE

1/11/03

SHEET 1 OF 2

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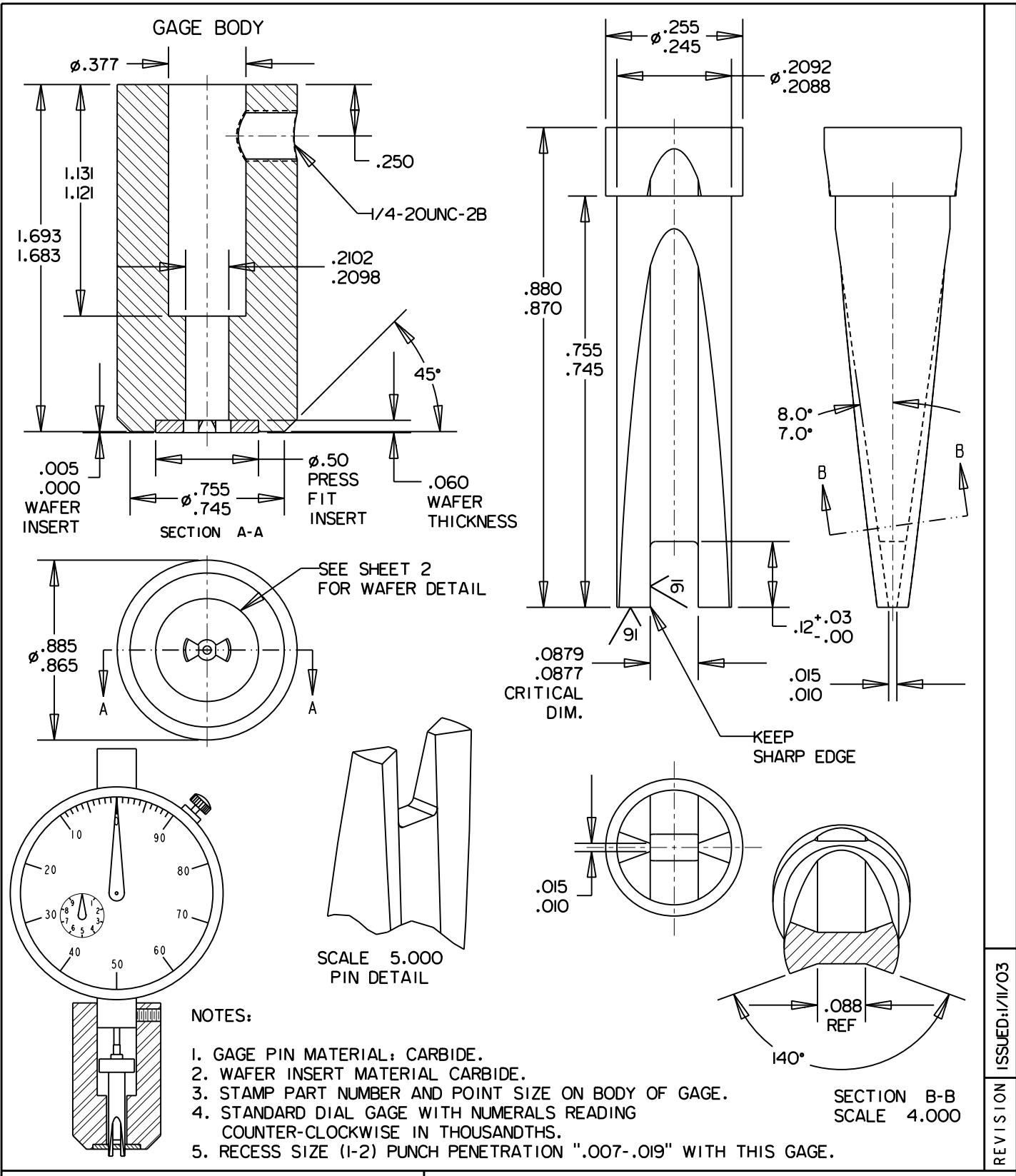
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WAFER INSERT O-1

DRAWN	DATE	DRAWING NUMBER
G.DILLING	1/09/03	PSC-959

CHECKED:	DATE	
G.DILLING	1/11/03	SHEET 2 OF 2

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TITLE:

### PSD PUNCH PENETRATION GAGE POINT I-2

DRAWN

G.DILLING

DATE

1/09/03

DRAWING NUMBER

PSC-960

CHECKED:

G.DILLING

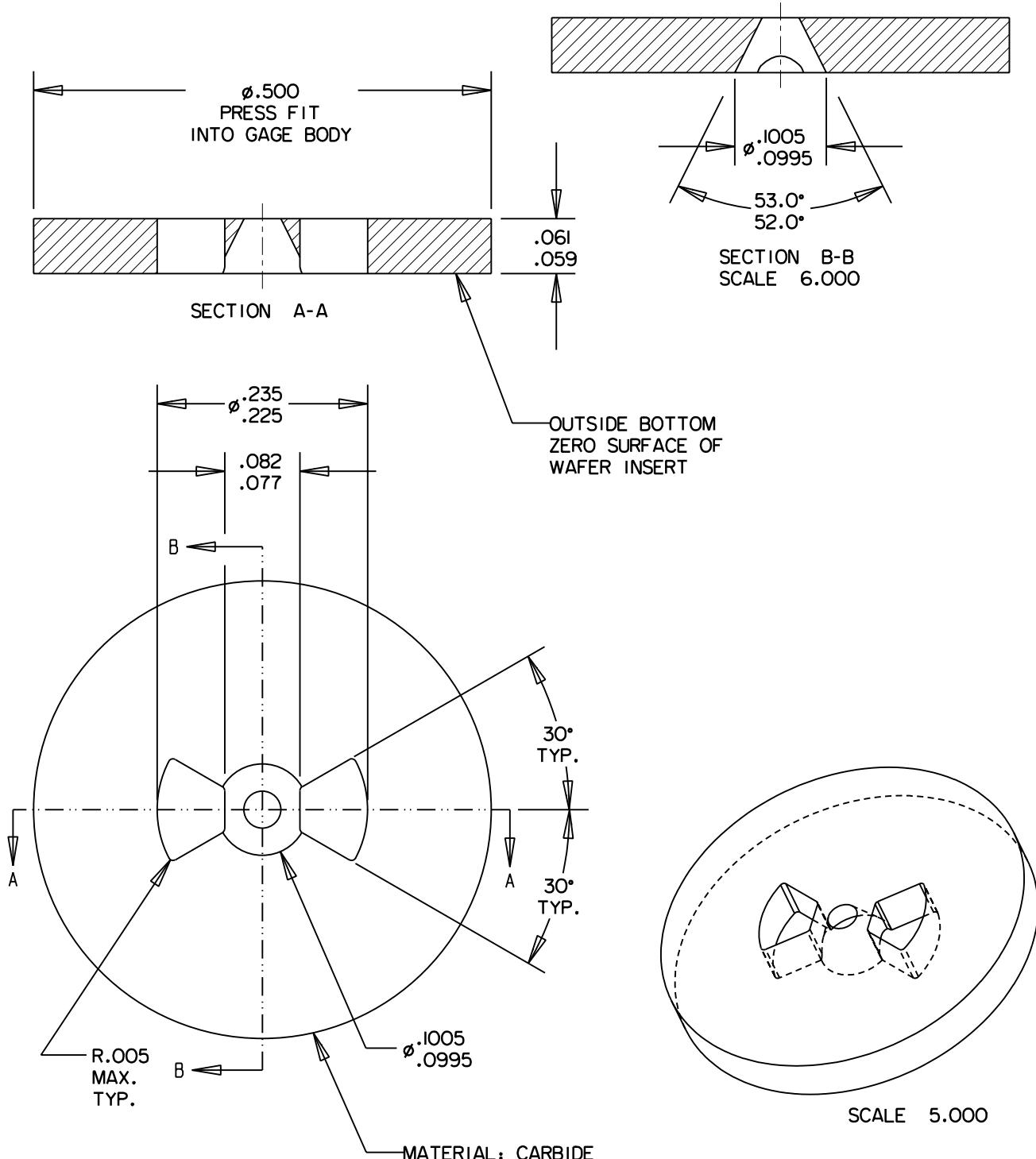
DATE

1/11/03

SHEET 1 OF 2

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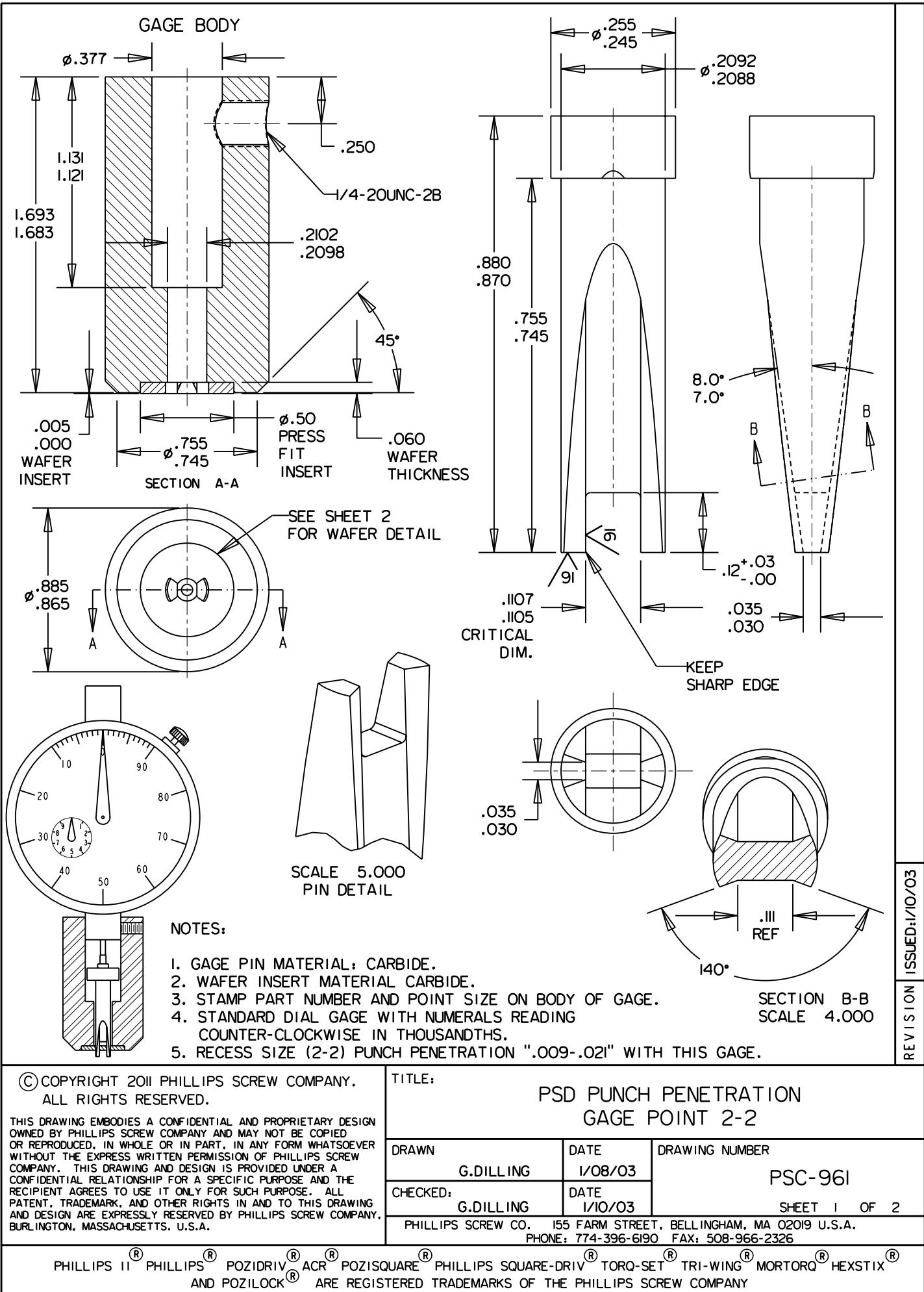
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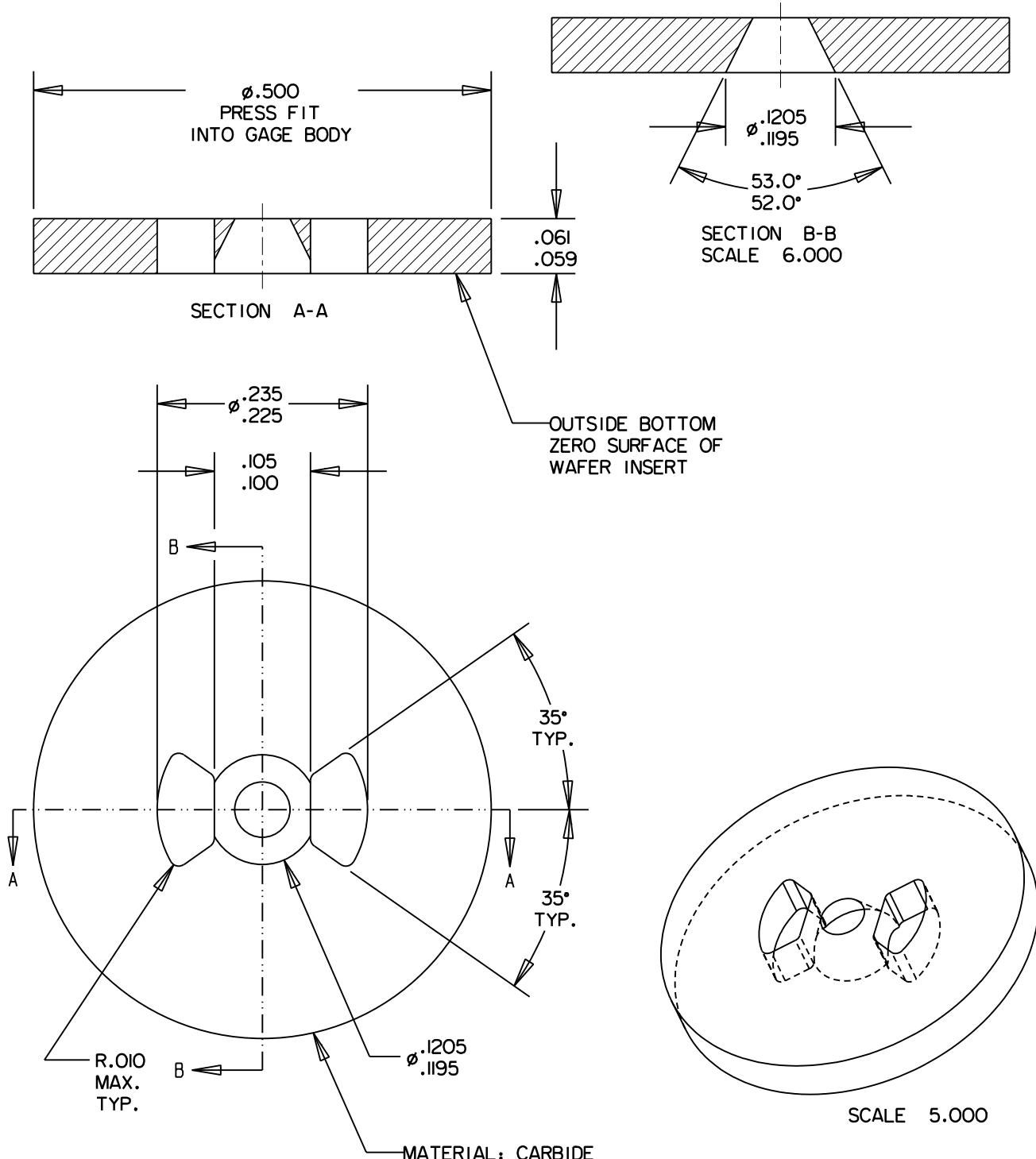
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WAFER INSERT I-2

DRAWN	DATE	DRAWING NUMBER
G.DILLING	1/09/03	PSC-960
CHECKED:	DATE	SHEET 2 OF 2
G.DILLING	1/11/03	

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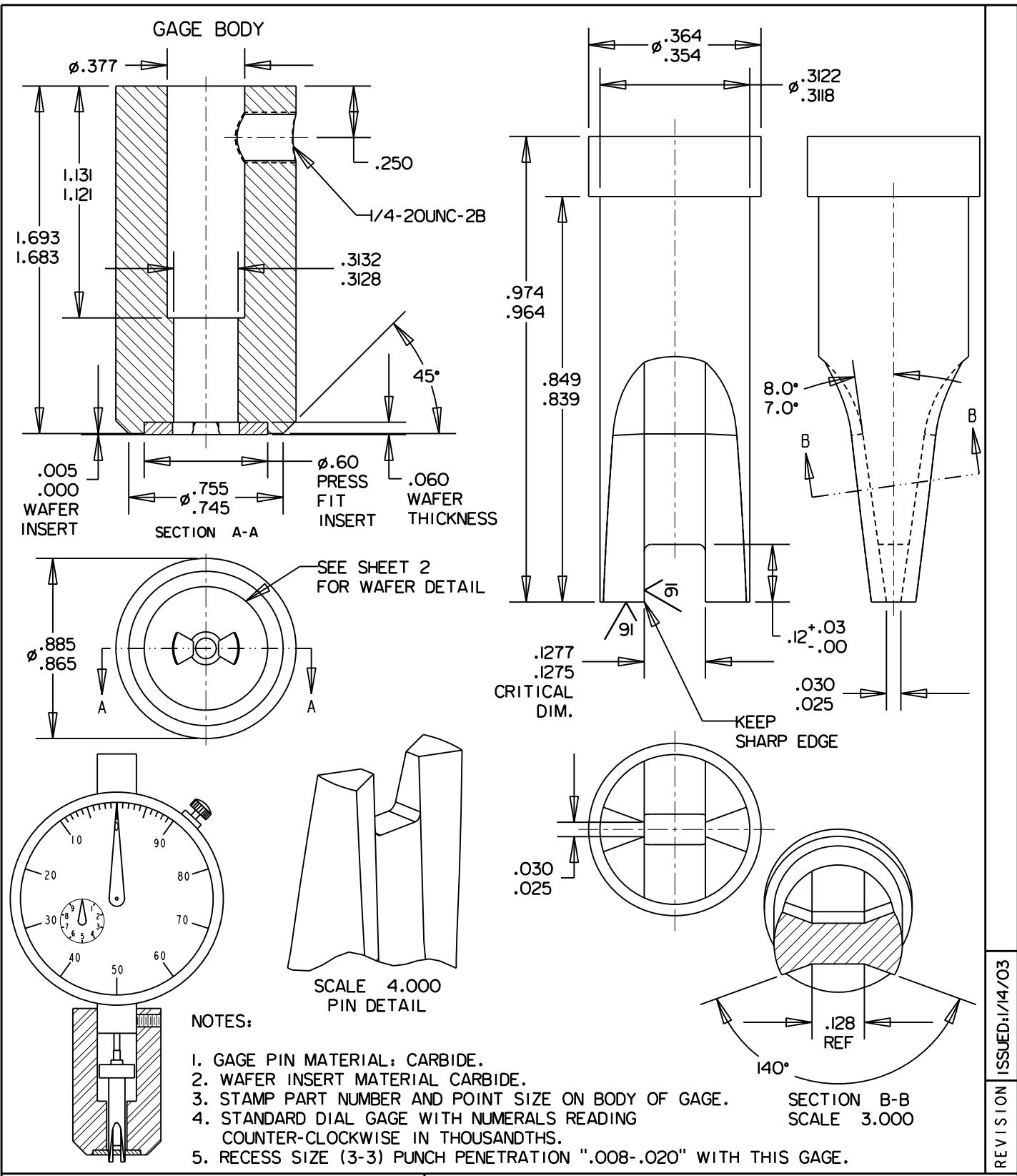
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TITLE:  
PSD PUNCH PENETRATION  
WAFER INSERT 2-2

DRAWN G.DILLING	DATE 1/08/03	DRAWING NUMBER PSC-961
CHECKED G.DILLING	DATE 1/10/03	SHEET 2 OF 2

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TITLE:

PSD PUNCH PENETRATION  
GAGE POINT 3-3

DRAWN

G.DILLING

DATE

1/13/03

DRAWING NUMBER

PSC-962

CHECKED:

G.DILLING

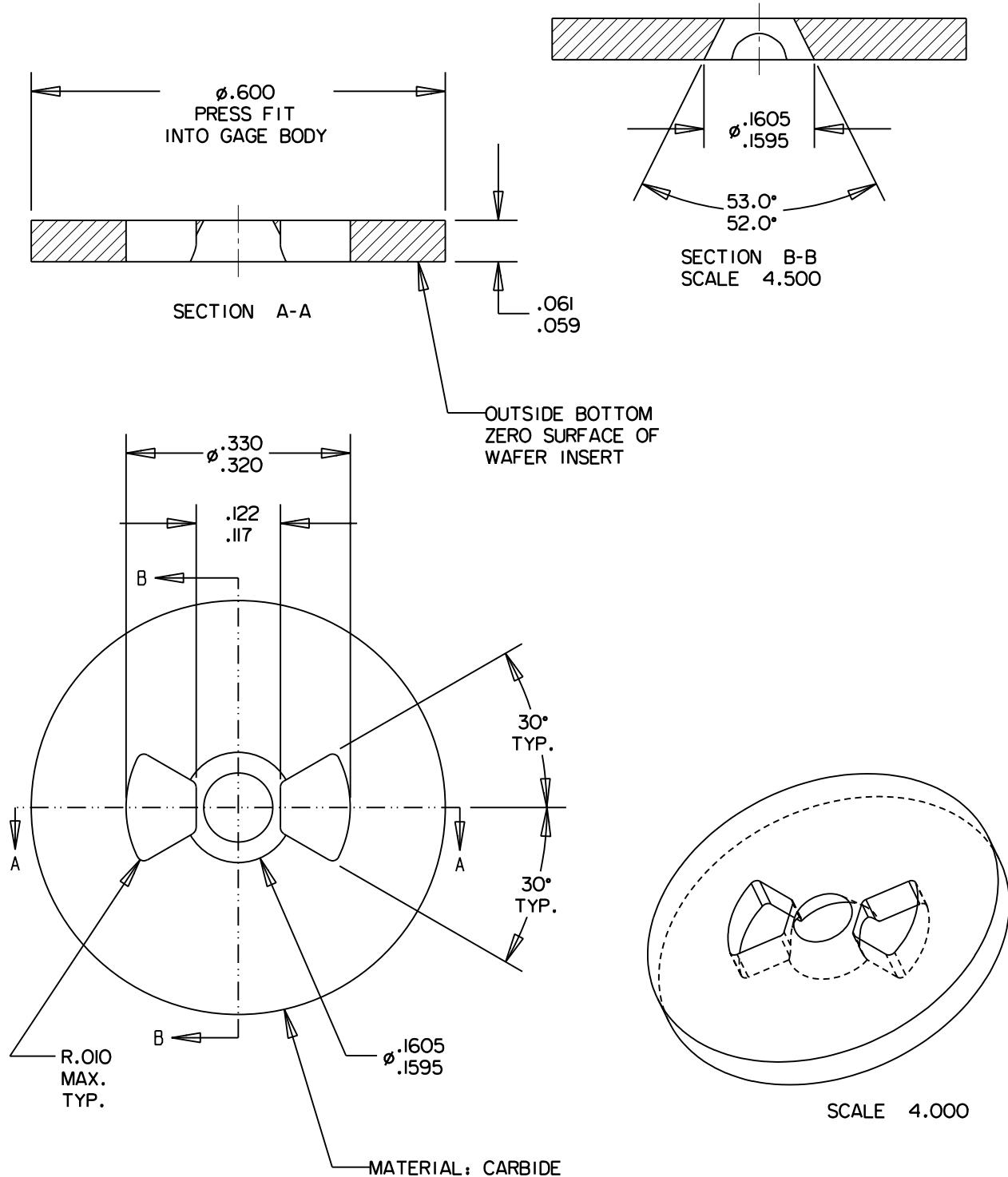
DATE

1/14/03

SHEET 1 OF 2

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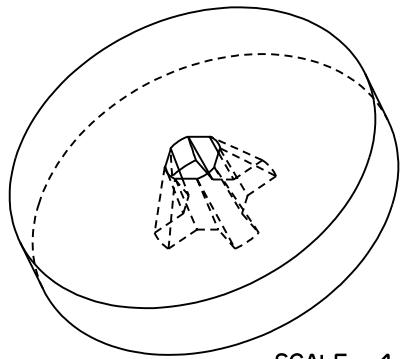
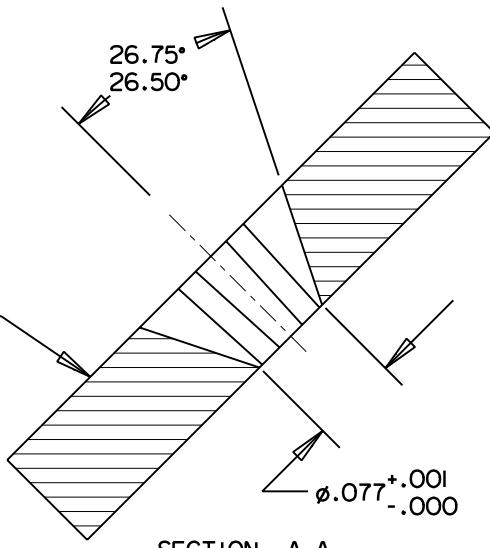
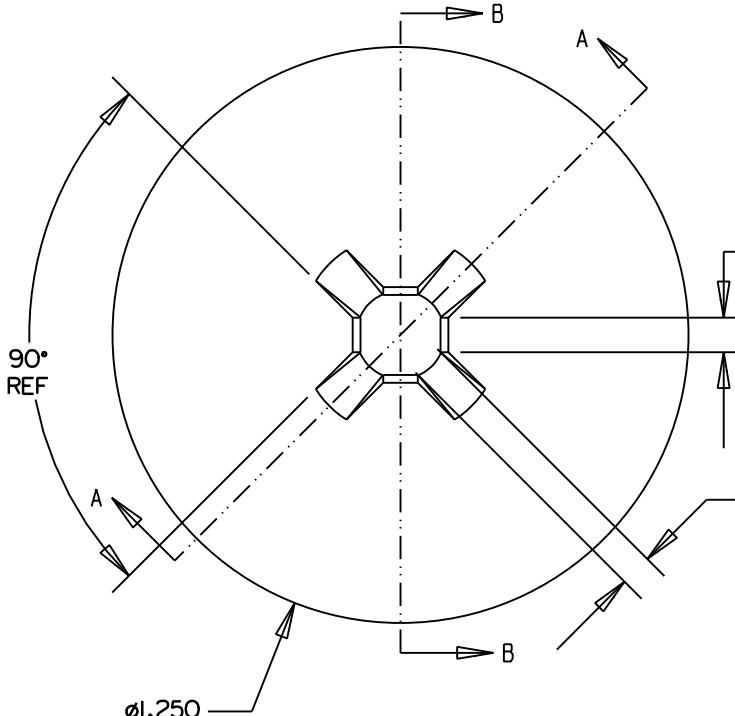
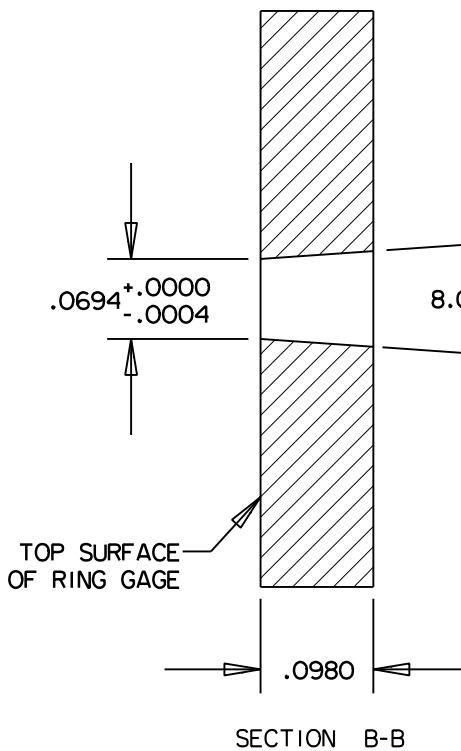
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### PSD PUNCH PENETRATION WAFER INSERT 3-3

DRAWN	DATE	DRAWING NUMBER
G.DILLING	1/13/03	PSC-962
CHECKED: G.DILLING	DATE 1/14/03	SHEET 2 OF 2

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NOTES:

1. MATERIAL: CARBIDE
2. FOR THE PURPOSE OF WIRE EDM MACHINING ALL INTERNAL INTERSECTIONS MAY HAVE A RADIUS OF 0.005.
3. ETCH PART NUMBER AND DRIVE SIZE "O-1" ON SIDE OF GAGE.
4. SQUARE PENETRATION ".092-.087" WITH PSC-943 "O-1" PEN GAGE.

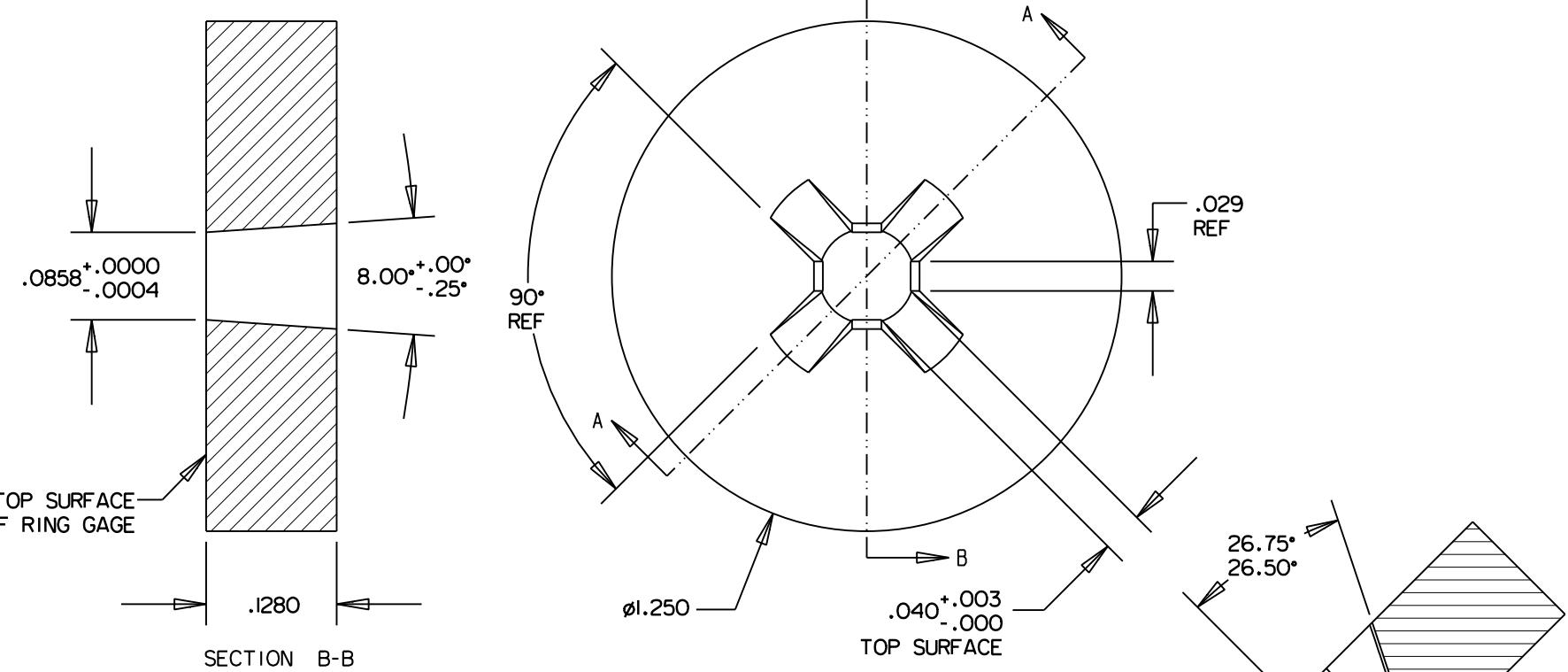
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PSD O-1 STICK FIT RING GAGE  
FOR BIT AND DRIVER POINT

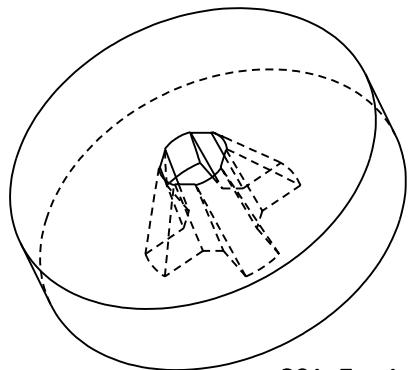
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CHECKED:	G.DILLING	DATE	1/02/03	PSC-977
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.				SHEET 1 OF 2
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NOTES:

1. MATERIAL: CARBIDE
2. FOR THE PURPOSE OF WIRE EDM MACHINING ALL INTERNAL INTERSECTIONS MAY HAVE A RADIUS OF 0.005.
3. ETCH PART NUMBER AND DRIVE SIZE "I-2" ON SIDE OF GAGE.
4. SQUARE PENETRATION ".110-.114" WITH PSC-944 "I-2" PEN GAGE.



SCALE 4.000

BOTTOM SURFACE  
OF RING GAGE

SECTION A-A

REVISION ISSUED: 11/12/02

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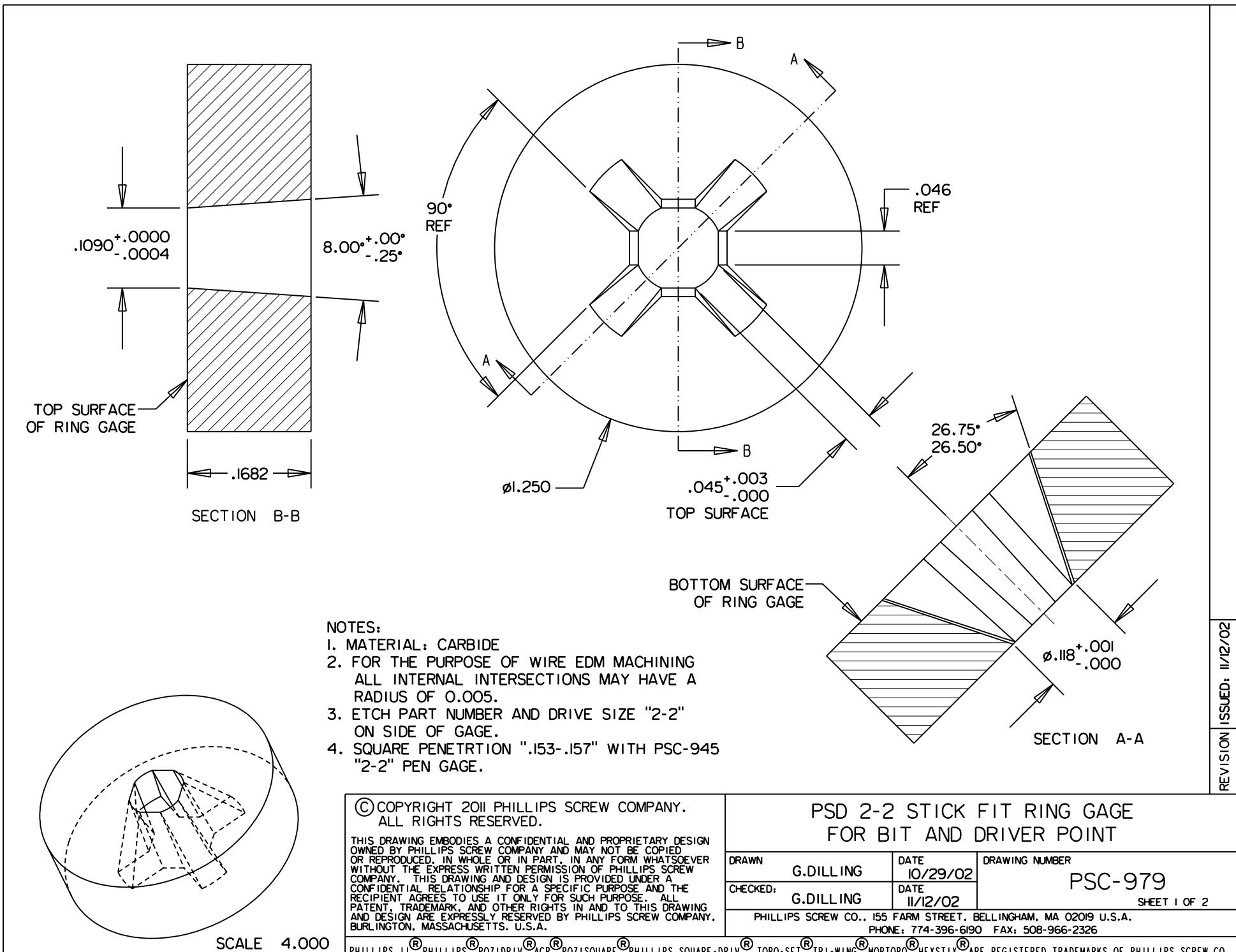
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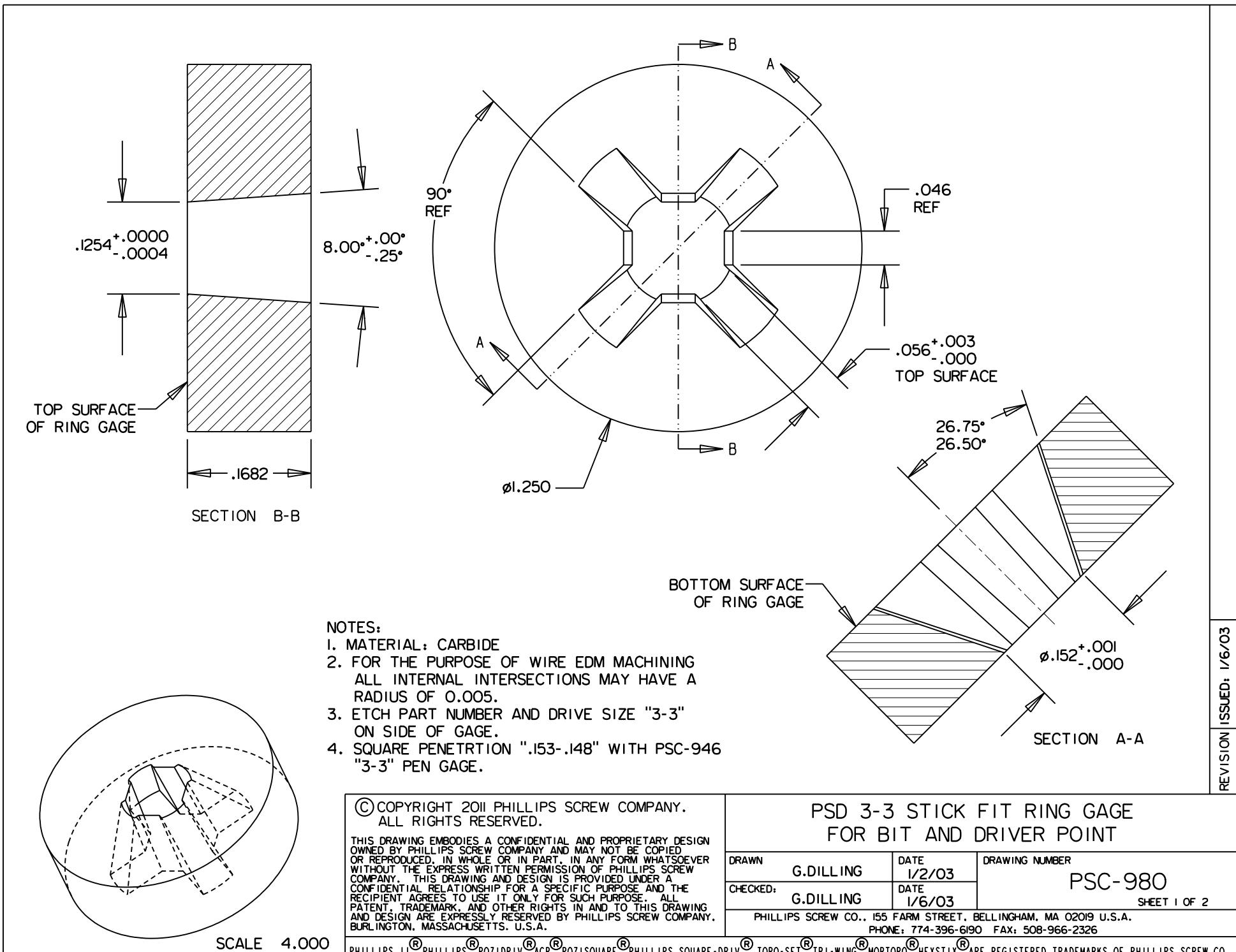
PSD I-2 STICK FIT RING GAGE  
FOR BIT AND DRIVER POINT

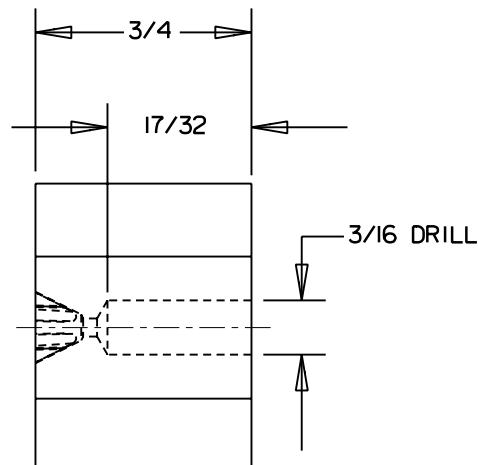
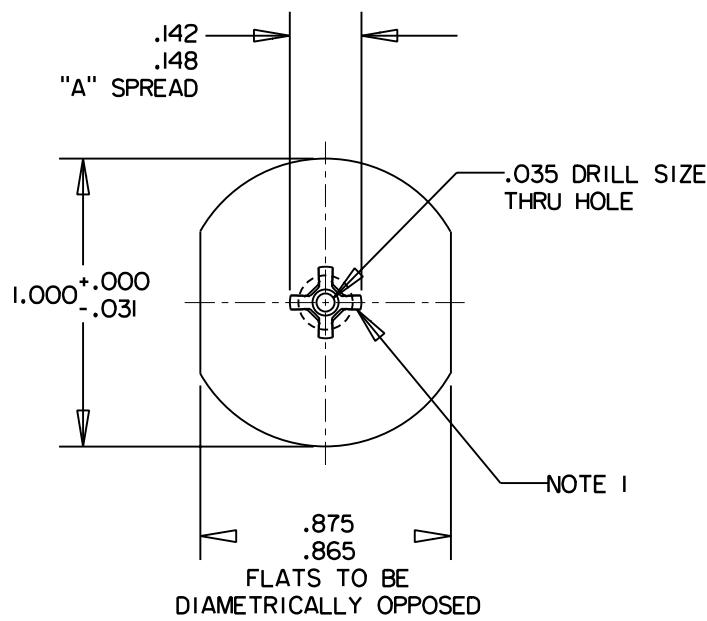
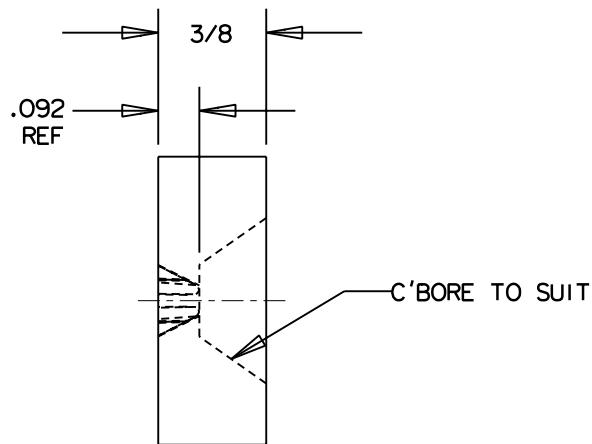
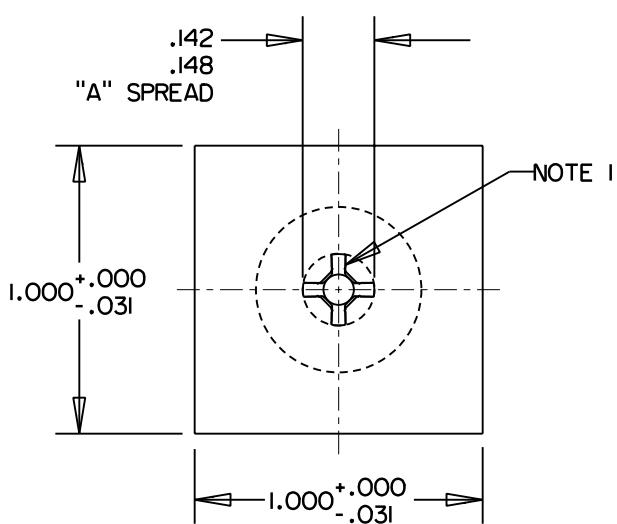
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CHECKED:	G.DILLING	DATE	11/12/02	PSC-978

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#### NOTES:

1. PSD O-I RECESS PER PSC-914 DRAWING.
2. MATERIAL: MOTUNG OR EQUIV., HEAT TREAT: Rc 61-63.
3. MARKING: IDENTIFY WITH THIS DWG NO. AND APPLICABLE POINT SIZE NO.. LOCATED ON TOP OR SIDE SURFACE.
4. RECESS PENETRATION .065-.048 WITH PSC-943 PEN GAGE.

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TITLE:

#### PSD O-I TORQUE TEST BLOCKS

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SHEET 1 OF 1

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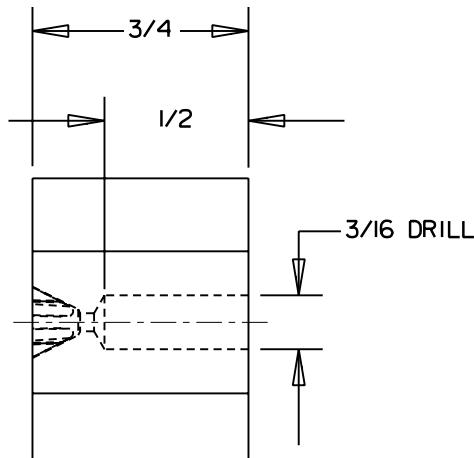
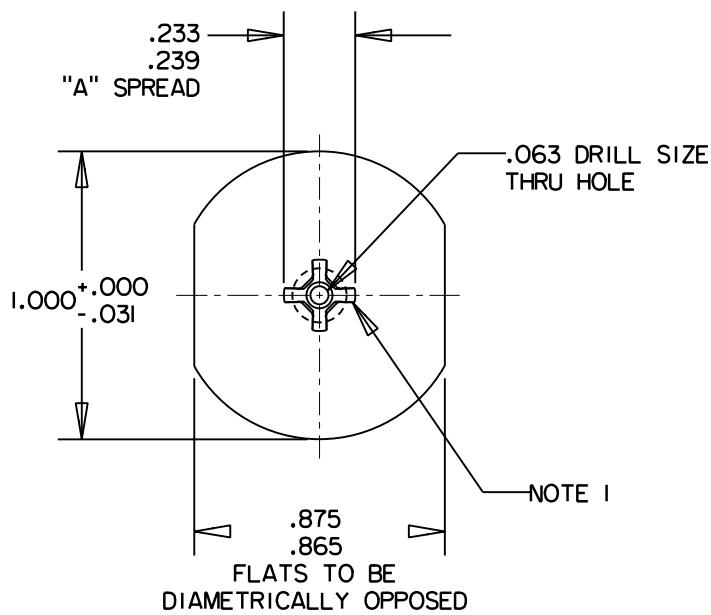
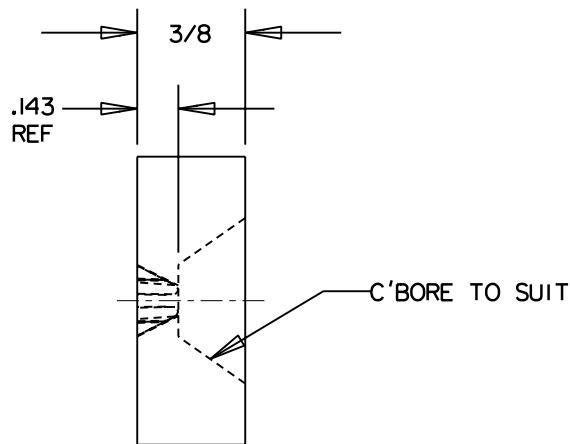
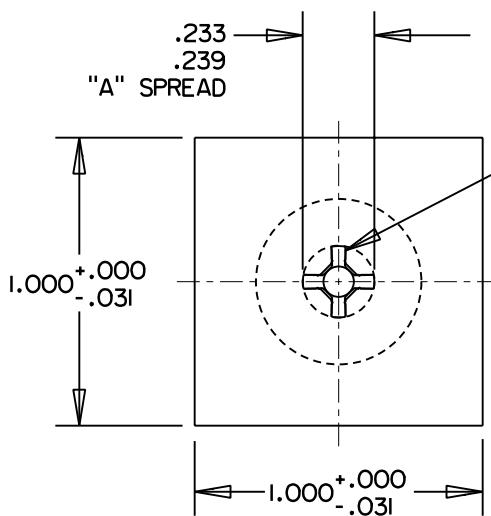
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NOTES:

1. PSD I-2 RECESS PER PSC-915 DRAWING.
2. MATERIAL: MOTUNG OR EQUIV., HEAT TREAT: Rc 61-63.
3. MARKING: IDENTIFY WITH THIS DWG NO. AND APPLICABLE POINT SIZE NO., LOCATED ON TOP OR SIDE SURFACE.
4. RECESS PENETRATION .133-.115 WITH PSC-944 PEN GAGE.

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TORQUE TEST BLOCKS

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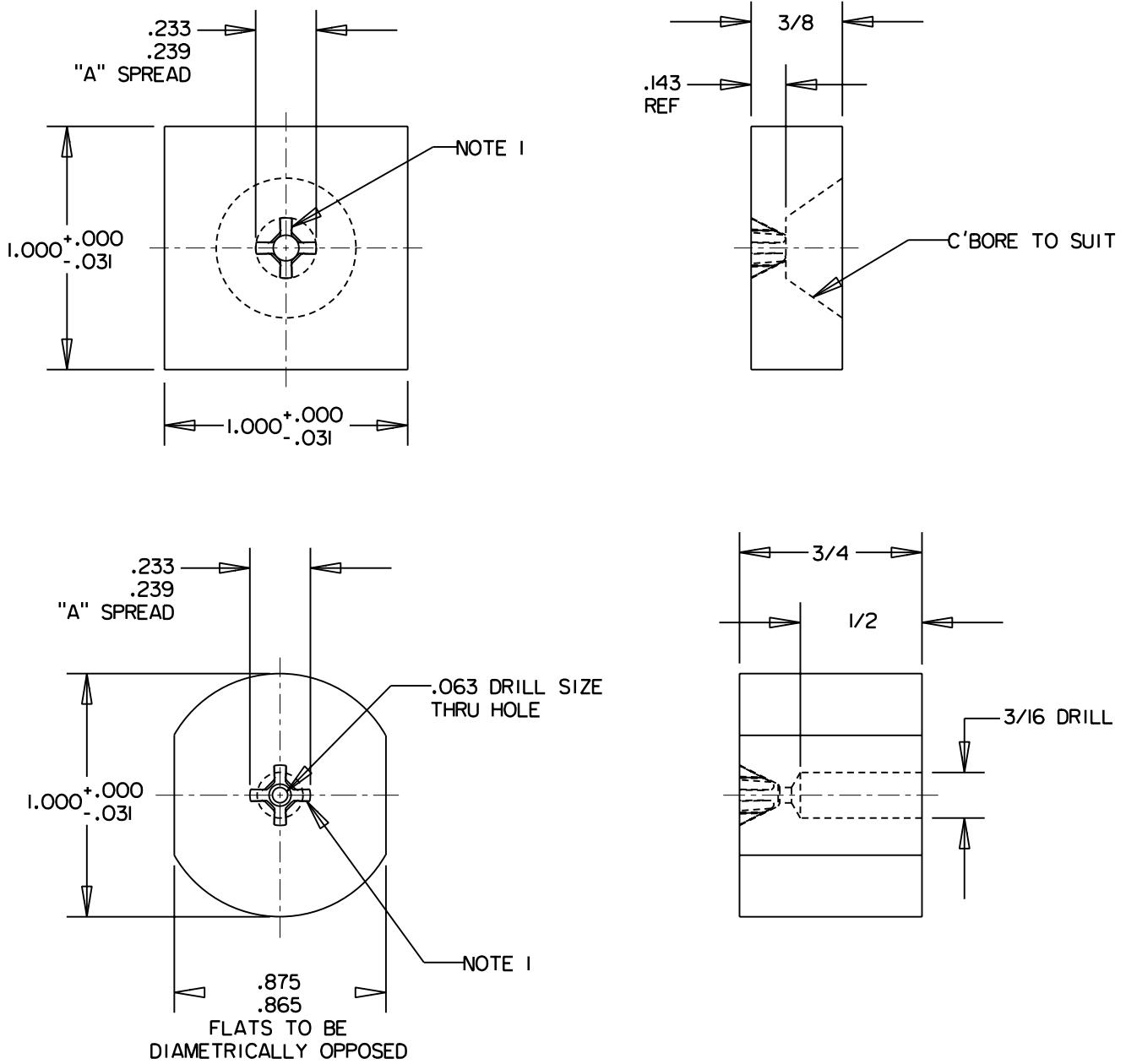
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NOTES:

1. PSD 2-2 RECESS PER PSC-916 DRAWING.
2. MATERIAL: MOTUNG OR EQUIV., HEAT TREAT: Rc 61-63.
3. MARKING: IDENTIFY WITH THIS DWG NO. AND APPLICABLE POINT SIZE NO., LOCATED ON TOP OR SIDE SURFACE.
4. RECESS PENETRATION .000-.093 WITH PSC-945 PEN GAGE.

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TITLE:

PSD 2-2  
TORQUE TEST BLOCKS

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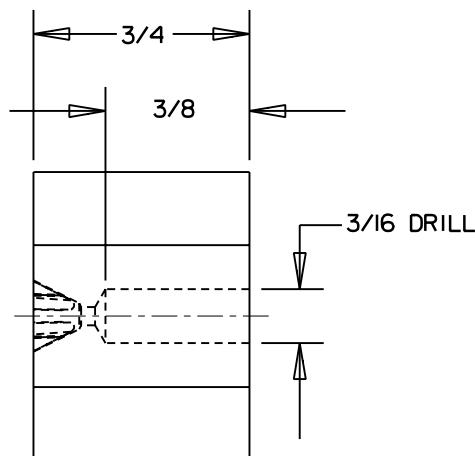
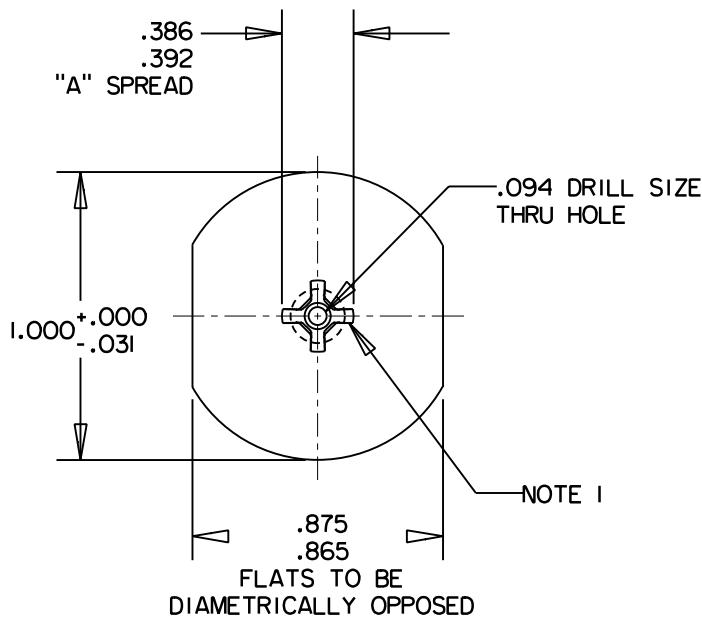
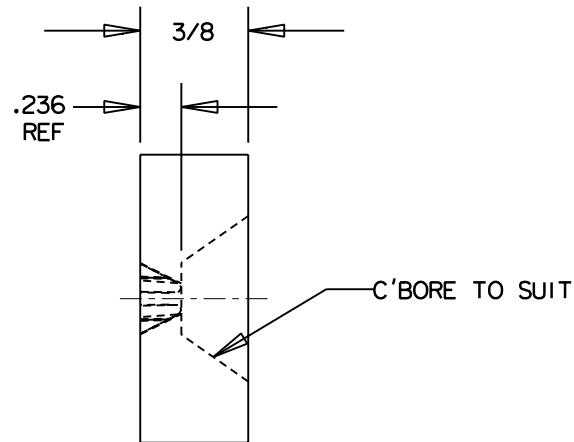
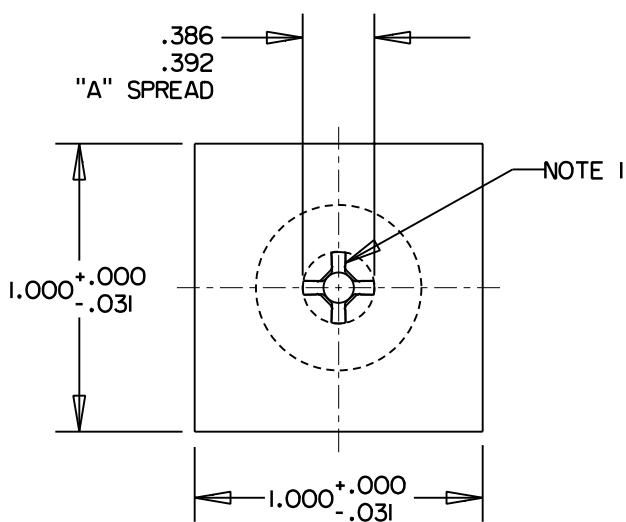
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#### NOTES:

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3. MARKING: IDENTIFY WITH THIS DWG NO. AND APPLICABLE POINT SIZE NO.. LOCATED ON TOP OR SIDE SURFACE.
4. RECESS PENETRATION .226-.207 WITH PSC-946 PEN GAGE.

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**PHILLIPS SQUARE-DRIV® ENGINEERING MANUAL  
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TITLE: QUALITY SPECIFICATIONS INDEX  
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# PHILLIPS SQUARE-DRIV® BIT AND HAND DRIVER SPECIFICATIONS

## 1.0 Scope:

The following document covers the equipment, procedures, test values and inspection criteria for Phillips Square-Driv screwdrivers, insert bits and power bits.

## 2.0 Applicable Drawings:

PSC-931 for 0-1, PSC-932 for 1-2, PSC-933 for 2-2 & PSC-934 for 3-3 drawings for bit and driver point dimensions.  
PSC-938 for 0-1, PSC-939 for 1-2, PSC-940 for 2-2 & PSC-941 for 3-3 drawings for bit and driver point ring gages.  
PSC-991 for 0-1, PSC-992 for 1-2, PSC-993 for 2-2 & PSC-994 for 3-3 drawings for bit Torque test blocks. PSC-977 for 0-1, PSC-978 for 1-2, PSC-979 for 2-2 and PSC-980 for 3-3 drawings for functional "stick fit" ring gauges.

## 3.0 Requirements:

3.1.1 Materials ~ The materials used to manufacture Phillips Square-Driv bits and drivers shall conform to the material specified within this document, or have suitable characteristics in the final product form to satisfy the dimensional and physical test specified in this document.

3.2.1 In the case of hand screwdrivers, the handle and ferrule may be utilized for the "Point size markings in 4.2.1

3.2.2 Bits, if color coded, shall be colored as follows:



3.2.3 Dimensions ~ All bit and driver points shall conform to Phillips Screw Company's drawings PSC-931 for 0-1, PSC-932 for 1-2, PSC-933 for 2-2 & PSC-934 for 3-3

## 3.4 Quality ~

The workmanship shall be of the highest quality throughout. Bits and screwdrivers shall be free from rust, fins, burrs, sharp or rough edges, corners or surfaces and defects which may impair their serviceability or durability.

## 4.0 Detail Requirements:

### 4.1 Materials ~

Screwdrivers and bits shall be made from the following recommended, equivalent or superior material.

4.1.2 Hand Screwdrivers ~ These drivers shall be made from AISI S2 steel or equivalent, and heat-treated to a hardness of HRC 58-63.

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	CHECKED	G. DILLING	DATE 12/20/2002		
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4.1.3 Insert and Power Bits ~ These bits shall be made from AISI S2 steel or equivalent, and heat-treated to a hardness of HRC 58-61 for "I" hardness and HRC of 61 – 64 for "X" hardness.

4.1.4 Steel ~

AISI S2 - Type Analysis

Carbon	.50	-	.55
Manganese	.45	-	.55
Silicon	.90	-	1.10
Molybdenum	.45	-	.55
Vanadium	.15	-	.25

4.2 Test Requirements and Procedures:

All Phillips Square-Driv bits and drivers shall meet the minimum torsional strength specified under each type shown below:

4.2.1 Hand Screwdrivers and Power Bits ~

Minimum torsional strength:

Point Size	Torque (Lb Ins.)
PSD 0-1	38
PSD 1-2	128
PSD 2-2	182
PSD 3-3	400

4.2.2 Test Blocks ~

Screwdrivers and bits shall be tested in test blocks having the same form and size of recess as the bit point being tested. Screwdriver and bit test blocks shall be in accordance with drawings PSC-991 for 0-1, PSC-992 for 1-2, PSC-993 for 2-2 & PSC-994 for 3-3.

4.2.3 Test Procedures ~

The torsional loads shall be applied either with suitable torque wrenches or by means of a suitable lever system with dead weights. The driver or bit must be inserted fully into the test block and restrained in a hold down device to provide firm and positive engagement with no axial movement.

The torsional load at failure shall be taken as the strength of the driver or bit.

4.3 Sampling and Inspection Procedure:

4.3.1 Initial Qualification ~

Phillips Screw Company shall perform initial qualification inspection as required by the product and trademark license agreements. A required minimum of 25 pieces of each point are to be qualified.

4.3.2 Periodic Inspection ~

Every four (4) months, a letter will be sent requesting a minimum of three (3) pieces of each bit point size as required by the product and trademark license agreements.

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		REVISION REV1: 9-2-11 REV2: 4-18-12
4.3.3	Visual and Dimensional Inspection Sampling ~ All drivers and bits of the same size, class and type presented at one time shall be considered a lot for purposes of acceptance inspection and test.	
4.3.4	Count bits – up to 200 pieces, hand count. Over 200 pieces, scale count using Small bench scales.	
4.3.5	Inspect for burrs, proper identification and general acceptance. Up to 200 pieces – 100% check. Over 200 pieces use sampling plan as contained in this specification at the 6.5% AQL.	
4.3.6	Gage other bit physical dimensions per drawing: PSC-936. At the 6.5% AQL. check hex size and overall length and effectiveness of retaining grooves. Up to 200 pieces – check 10 pieces. Over 200 pieces – check 15 pieces. Retaining groove can be checked by inserting bits in a driver socket and verifying that they enter the socket reasonably well, are retained adequately, and will disengage readily. A detailed dimensional check of the retaining groove is not required.	
4.4	Final Quality Conformance Inspections ~ All drivers and bits of the same size, class and type presented at one time shall be considered a lot for purpose of acceptance in inspection and test. Typical industry standards for random sample of bits from each lot shall be inspected for visual and dimensional characteristics.	
4.4.1	Point Dimensions ~ Conformance to the required dimensions for the point shall be determined by the use of the PHILLIPS SQUARE-DRIV bit point gages PSC-938 for size 0-1, PSC-939 for size 1-2, PSC-940 for size 2-2 and PSC-941 for size 3-3.	
4.4.2	Acceptance ~ The bit point must seat firmly in the ring gage without shake or Wobble. For PSD 1-2, 2-2 and 3-3 bits, the square face tip must lie between the bottom and middle steps in the gage (See PSC-908 sheet 4 of 9, Figures 1 and 2). For PSD 0-1 bits, the square face tip must lie between the top and middle steps in the gage (See PSC-908 sheet 4 of 9, Figures 1A and 2A). Bits that pass the preceding dimensional acceptance test must be subjected to a functional "stick fit" test using the following ring gauges; PSC-977 for 0-1, PSC-978 for 1-2, PSC-979 for 2-2 and PSC-980 for 3-3. The bit must be pressed by firm hand pressure into the ring gauge. The assembly must then be held vertically by the bit with the gauge suspended on the tip. Any separation of the ring gauge from the bit denotes failure.	
4.4.3	Rejection ~ For PSD 1-2, 2-2, and 3-3 bits, the bit point is rejected if the square face tip extends above the middle step or falls short of the bottom step (see PSC- 908 sheet 5 of 9, Figures 3 and 4) For PSD 0-1 bits, the bit point is rejected if the square face tip extends above the top step or falls short of the middle step (see Figures 3A and 4A).	

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NOTE:  
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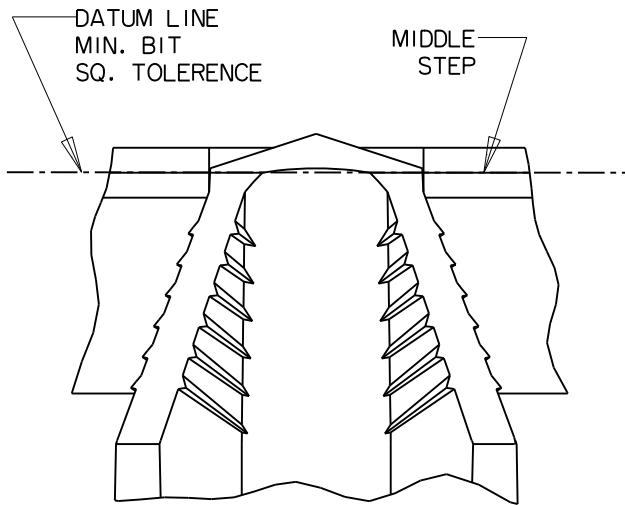


FIGURE 1.  
PSD 1-2, PSD 2-2  
AND PSD 3-3

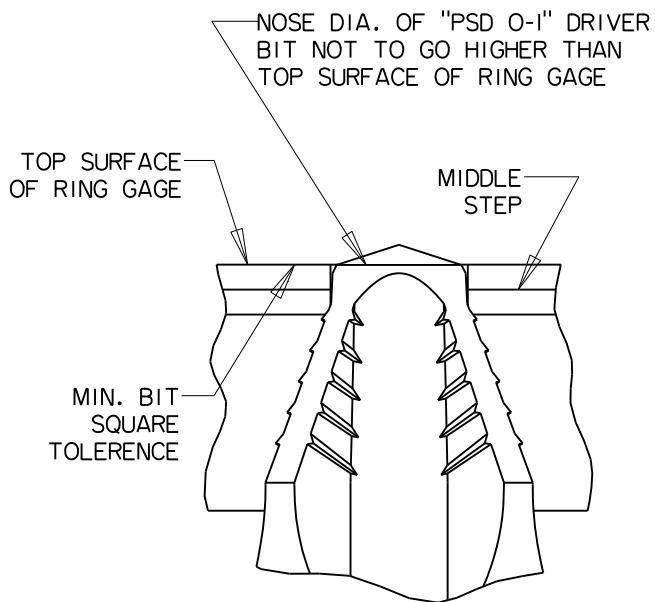


FIGURE 1A.  
PSD 0-1

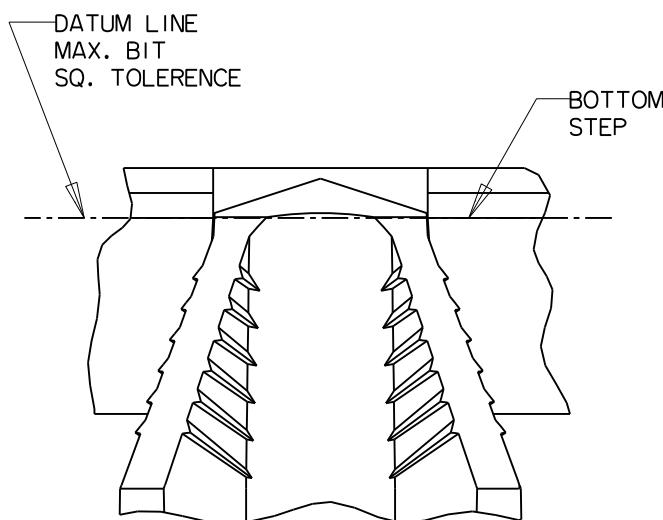


FIGURE 2.  
PSD 1-2, PSD 2-2  
AND PSD 3-3

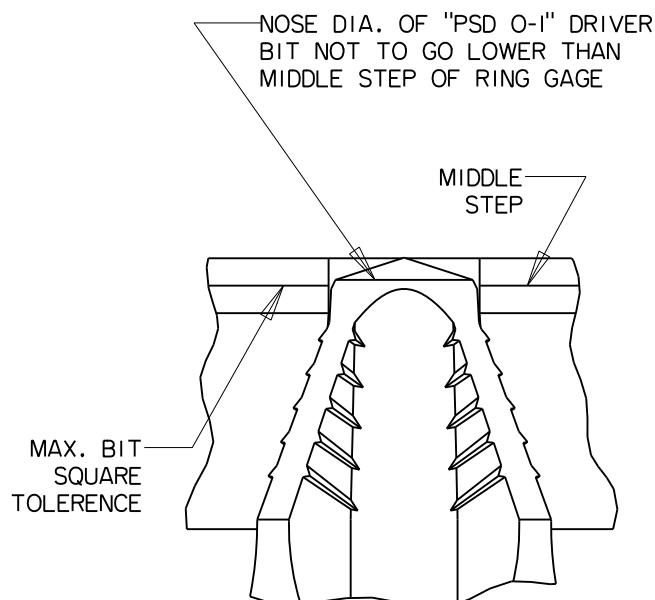


FIGURE 2A.  
PSD 0-1

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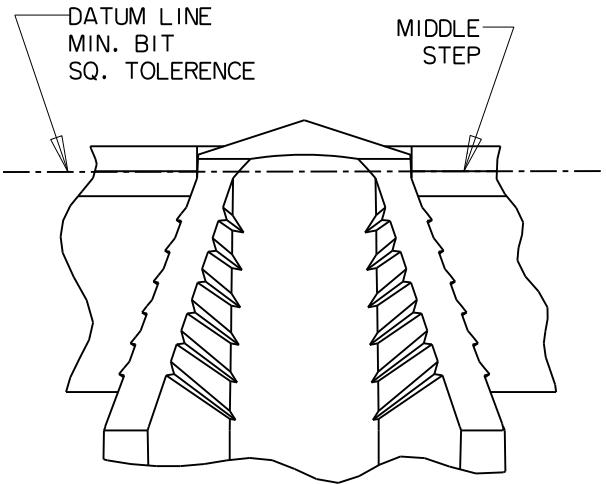


FIGURE 3.  
PSD I-2, PSD 2-2  
AND PSD 3-3

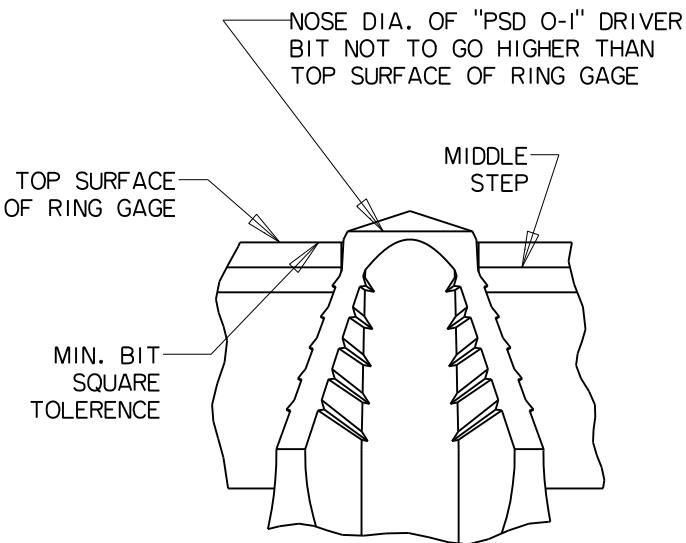


FIGURE 3A.  
PSD O-1

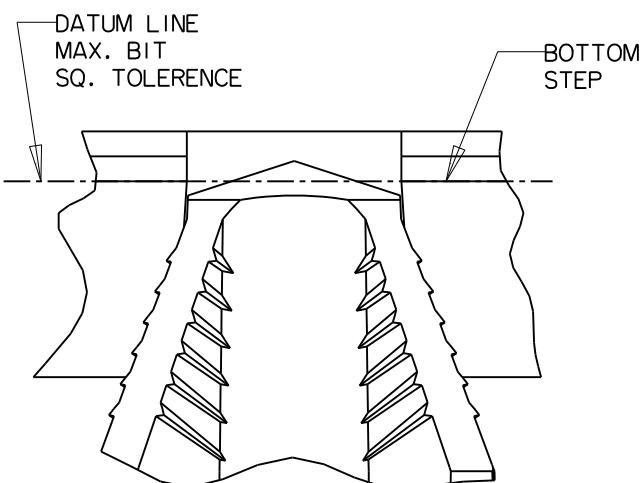


FIGURE 4.  
PSD I-2, PSD 2-2  
AND PSD 3-3

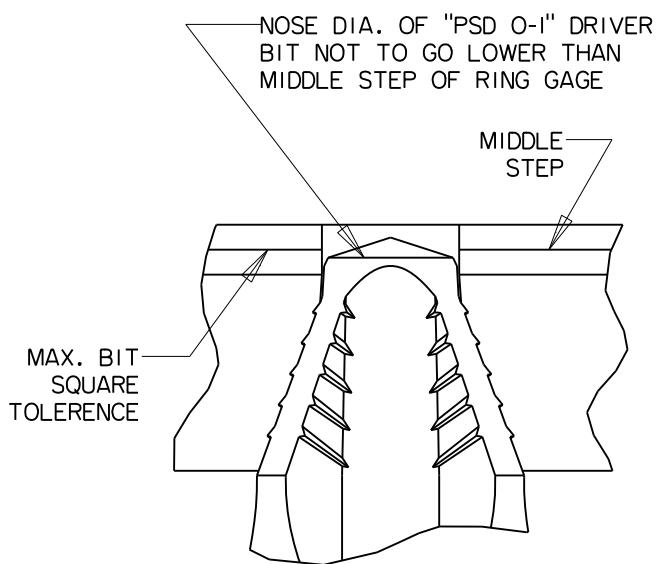


FIGURE 4A.  
PSD O-1

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TITLE:

BIT AND DRIVER SPECIFICATION  
PHILLIPS SQUARE-DRIV<sup>®</sup> RECESS

DRAWN

B.HUGHES

DATE

12/20/2002

DRAWING NUMBER

PSC-908

CHECKED:

G.DILLING

DATE

12/20/2002

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

SHEET 5 OF 9

PHILLIPS<sup>®</sup> PHILLIPS<sup>®</sup> POZIDRIV<sup>®</sup> ACR<sup>®</sup> POZISQUARE<sup>®</sup> PHILLIPS SQUARE-DRIV<sup>®</sup> TORQ-SET<sup>®</sup> TRI-WING<sup>®</sup> MORTORQ<sup>®</sup> HEXSTIX<sup>®</sup>  
AND POZILOCK<sup>®</sup> ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY

REVISION REV: 4/18/12

- 4.4.4 Hardness ~  
 Specified hardness requirements shall be tested on a Rockwell Tester using a diamond penetration point and employing a 150 Kilogram major load. Surface shall be suitably ground for test. Plating, decarburization shall be removed before testing. The hardness of all drivers and bits shall be taken as near to the tip as practicable.  
 For convenience in inspection, bits may be checked on surface of hex (non-destructive test) and accepted if Rc reading is within  $\pm 2$  points of specification. If surface reading exceeds  $\pm 2$  points, sample must be mounted and polished and micro-hardness tests conducted.  
 Rockwell Hardness: Up to 200 pieces – check 10 pieces.  
 Over 200 pieces – check 15 pieces.
- 4.4.5 Torsional Strength: Up to 200 pieces – check 10 pieces.  
 Over 200 pieces – check 15 pieces.
- 4.4.6 Torsional Fatigue Strength:  
 Drivers shall withstand 50 application cycles of the torsional fatigue load specified in Table 1. One cycle consists of torque first applied in the clockwise direction, then in the counterclockwise direction.

TABLE I

Driver Size	Minimum Torsional Strength (Lb Ins.)	Fatigue Torque limit (Lb ins.) $\pm 10\%$
0-1	38	23
1-2	128	77
2-2	182	109
3-3	400	240

- 5.0 Physical Properties:
- 5.0.1 Discontinuities:  
 Driver bits shall be free from discontinuities such as laps, seams, or inclusions greater in depth than 2 percent of the material thickness at the discontinuity location.
- 5.0.2 Cracks:  
 Driver bits shall be free from cracks in any location or direction. A crack is defined as a clean crystalline break passing through the grain or grain boundary without inclusion of foreign elements.

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BIT AND DRIVER SPECIFICATION  
 PHILLIPS SQUARE-DRIV® RECESS

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- 5.1** **Marking:**  
 Driver bits shall be marked by etching, stamping, or engraving onto each bit, the following minimum information:
- Manufacturer's name, symbol or code.
  - Recess or driver size.
  - The legend "PSD"
  - The legend "SN"  
(e.g. PSD 2-2 SN)
- In addition, if desired, the manufacturers or Phillips Screw Company part number may be marked when space permits. Marking may use more than one hex flat as required. Marking on the round shank is also permitted.
- 5.2** **Workmanship:**  
 Hanging burrs and slivers which might become dislodged in service shall be removed.
- All points must conform to the across the wing profiles for each size of bit. This must be done using a comparator at a minimum magnification of 20x.
- 6.0** **Quality Assurance Provisions:**
- 6.1** **Responsibility for Inspection:**  
 Unless otherwise specified in the contract or order, the manufacturer is responsible for the performance of all quality conformance inspection requirements as specified herein.
- 6.2** **Change of Product:**  
 After initial qualification approval, any change of product as regards to materials, design, construction, or methods of manufacture shall require review and approval of Phillips Screw Company and may require new qualification testing prior to incorporation into production lots.
- 6.3** **Qualification Testing:**  
 Qualification testing shall be performed per Paragraph 4.2 of this specification.
- 6.4** **Quality Conformance Inspection:**  
 Quality conformance inspection shall consist of the examinations and tests listed in Table II.

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TABLE II

<u>QUALITY CONFORMANCE INSPECTION</u>		
(Average Quality Level) <u>AQL</u>	<u>Examination or Test</u>	<u>Conditions &amp; Requirements</u>
1.0	Point Dimensions	Inspect using appropriate ring gage PSC-938 for size 0-1, PSC-939 for size, 1-2, PSC-940 for size 2-2 and PSC-941 for size 3-3.
1.0	"Stick Fit" Functional Test	Using the appropriate Gauge size 0-1, PSC-977, 1-2, PSC-978, 2-2, PSC-979 & 3-3, PSC-980. Press the bit into the gauge. "Stick Fit" is acceptable if the gauge remains on the bit.
1.0	Drive End Dimensions	Standard Inspection Equipment or Gages
2.5	Torsional Fatigue	Test per Paragraph 4.2.3 of this specification
2.5	Ultimate Torsional Strength	Using the same parts that passed Torque Fatigue, test per Paragraph 4.4.6 of this Specification.
2.5	Hardness *	Grind parallel flats perpendicular to the bit axis, measure hardness at point end per ASTM E18.
2.5	Marking	Visual
2.5	Surface Finish	Visual Inspection per ANSI B46.1.
2.5	Physical Properties	Visual Examination at a minimum of 6x Magnification.
4.0	Workmanship	Visual Examination

\* Destructive Test – test pieces shall not be delivered.

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BIT AND DRIVER SPECIFICATION  
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- 7.0 Notes:
- 7.1 Patent Coverage:  
United States Patent number 6,223,634 B1 covers the ACR® Rib System feature on the driver. Foreign Patents have also been issued.
- 7.2 Authorized Sources:  
The product defined herein and on associated detail drawings is subject to Product and Trademark Licenses issued by Phillips Screw Company.
- 7.3 Intended Use:  
Screwdriver and power driving bits for driving fasteners having Phillips Square-Driv recesses.

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## BIT AND DRIVER SPECIFICATION PHILLIPS SQUARE-DRIV® RECESS

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## RECESS INSPECTION PROCEDURES

This specification defines the recess inspection requirements for initial qualification inspection, first article inspection at the header and the final quality conformance inspection of **Phillips square-Driv®** recesses.

Inspection practice in accordance with procedures, sampling plans and specified gage sets forth herein will guarantee product uniformity for dimension, appearance, and function.

### 2. INSPECTION PLANS

#### 2.1 Initial Qualification:

The Phillips Screw Company shall perform initial qualification inspection.

Initial product qualification inspection is required by the product and trademark license agreements.

A requirement minimum of 50 pieces of each recess size and head style are to be qualified. Phillips Screw Company shall retain 25 pieces for reference material.

#### 2.2 Periodic Inspection:

Every (4) months a letter is sent requesting a minimum of 5 pieces of each recess size and head style, as required by the product and trademark license agreements.

#### 2.3 First Article Inspection:

The first article inspection requirements must be met at the header. Any defects in visual inspection or gage readings beyond the stated limits require head adjustment. This indicates a defective or incorrect punch number.

#### 2.4 Final Quality Conformance Inspection:

Typical random sample of sizes of the screw lot must meet the inspection requirements listed below.

### 3. INSPECTION REQUIREMENTS

#### 3.1 Visual Inspection:

Visual inspection uses an optical magnifying device of at least 10 (X) power.

Visually inspect the recess for the following:

- 3.1.1 Presence of 8 pads located on each of the inner wing surfaces. These pads must not be distorted in any way.
- 3.1.2 Head Markings must be to Phillips Screw Company drawing PSC-963
- 3.1.3 Definition of pad and recess formation: All surface intersections should exhibit clean smooth radii.

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3.1.1 The presence of irregular surfaces, as may be caused by a chipped punch is acceptable, provided that both the gage penetration and torque values obtained are acceptable.

3.2 Recess Wobble Gauging:

The condition of the recess is checked for wobble by the use of a master plug gage, per PSC-948 for size 0-1, PSC-949 for size 1-2, PSC-950 for size 2-2 and PSC-951 for size 3-3 within the **Phillips Square-Driv** recesses.

The Phillips wobble gage assembly is shown in FIGURE 1. on Sheet 3 of 7 of this QC Inspection requirements of the **Phillips Square-Driv** Technical Manual. Screws coated to a thickness greater than .003 inches (0.08mm) shall be stripped of such coating before inspection.

The limits of angular wobble for various recess sizes are as follows:

Recess Size	Allowable Wobble Angle
0-1	6
1-2	6
2-2	6
3-3	6

TABLE 1

Any individual screw recess having a reading beyond the tabulated limits is considered defective.

Accept the screw lot if no defective is found in a lot of 10 parts. Reject the lot if one or more defective parts are found in the lot.

3.3 In Process Control Gauging:

In process control is required to check for chipped and/or worn punches and under filled recesses.

All readings must be taken at the heading machine and the frequency must be determined by S.P.C. Critical Dimension recommendations. Use a "Catch Pan" for part collection at the heading machine. Before emptying the full "Catch Pan" into the production batch container the last 5 pieces must be checked as follows.

3.4 Recess Wobble Gauging:

Check for gauge wobble in the recess as defined in 3.2 Recess Wobble Gauging.

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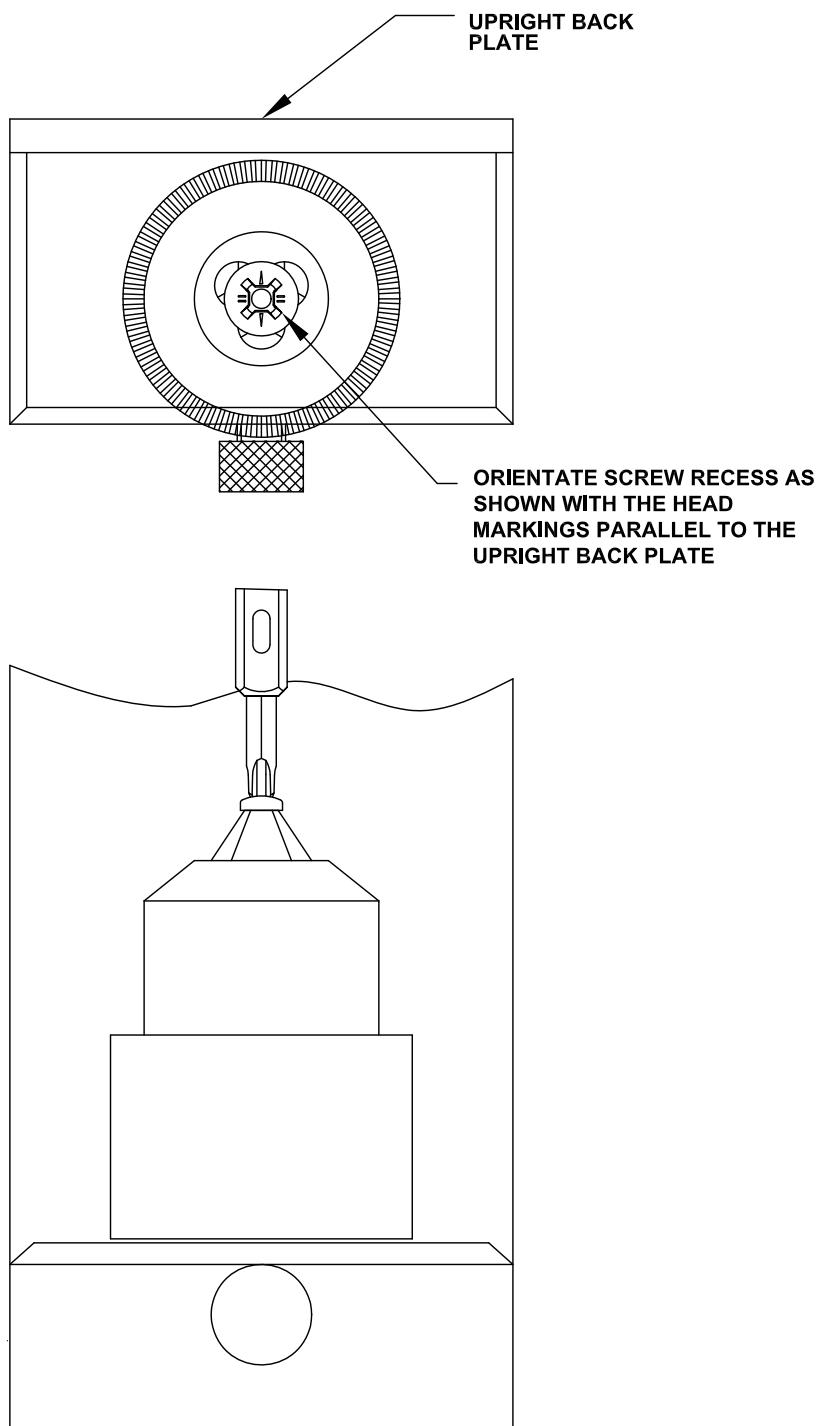
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**FIGURE 1 - WOBBLE TEST SETUP**

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### 3.4.1 Recess Square Gauging:

Using the appropriate Phillips Screw Company Square Recess Penetration Gauge PSC-943 for # 0-1, PSC-944 for # 1-2, PSC-945 for # 2-2, PSC-946 for # 3-3

Measure and record the gage penetration reading. This gage reading must lie between the Maximum and Minimum shown in the Head Dimension Standards in this **Phillips Square-Driv** Technical Manual.

For Special head designs approved by the Phillips Screw Company the gauging limits will be shown on the associated drawing.

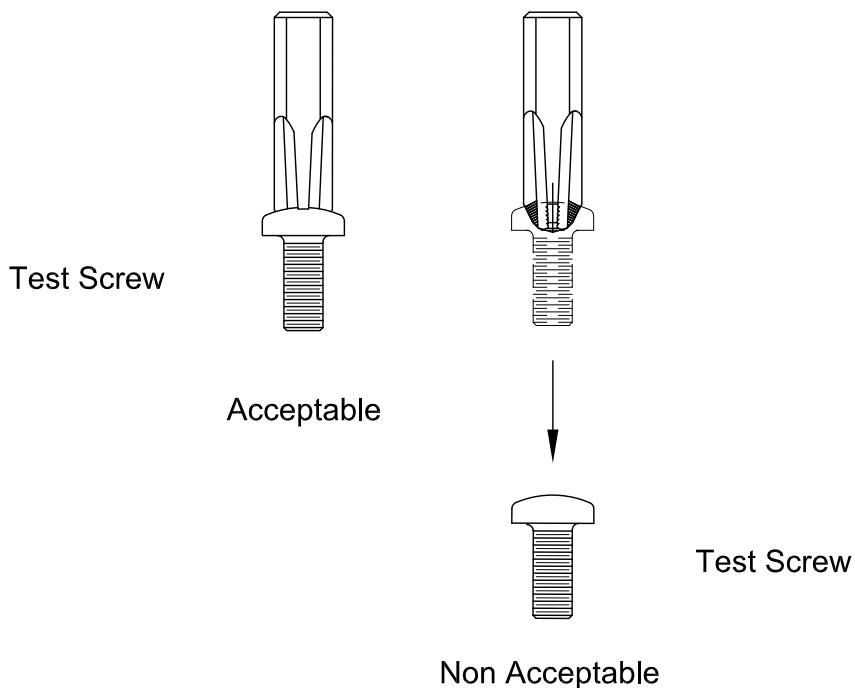
### 3.4.2 Functional Gage Fit:

This feature defines the functional gage fit of the **Phillips Square-Driv** recess.

This is achieved when a screw blank or finished screw is pushed with firm finger pressure onto the appropriate sized Plug Gage as shown in Para: 3.2. The screw should remain on the gage when both are held in a downwards vertical position.

See **FIGURE 2.** for depiction of **Acceptable** and **Non-acceptable** product.

Figure 2.



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### 3.4.3 Recess Wing Gauging:

To ensure that punch chipping and or wear of the punch nose does not cause the recess to be malformed and restrict the square on the bit from engaging correctly, a Wing Master Plug Gauge is to be used in the wings of the recess. The gauge must fully enter the recess and must clearly register along the outer surface of all four wings in the recess. This gauging also ensures that the recess is fully compatible with either Phillips or Pozidriv drivers.

The following gages are to be used: PSC-953 for 0-1 size, PSC-954 for either the 1-2 or 2-2 sizes & PSC-955 for 3-3 size.

### 3.4.4. Measurements out of tolerance shall be cause for rejection.

#### 3.5 Head Discontinuities:

Using the same sample lot, examine each piece for head discontinuities in accordance with figure 3, page # 6 of this document. Any individual piece exceeding these limits shall be considered a defective.

Accept the lot for further inspection if less than the allowable number of defectives is found.

Reject the lot if more than the allowable number of defectives is found.

#### 3.6 Recess to Shank Eccentricity:

Using the same sample lot, inspect each piece for eccentricity of recess shank.

Generally, this inspection will be most readily accomplished by a simple visual examination.

The recesses in screw heads shall not be eccentric with screw bodies by more than 6% of the nominal (basic) body diameter or .015", whichever is the greater. Table 2 lists the amount of recess eccentricity permitted for popular screw sizes.

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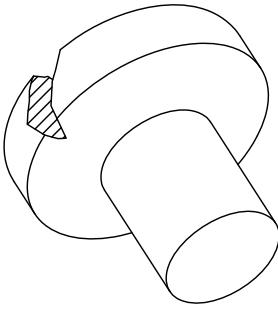
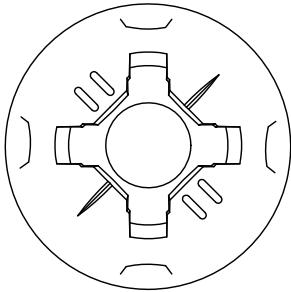
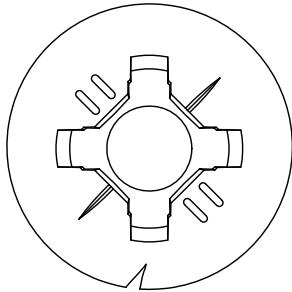
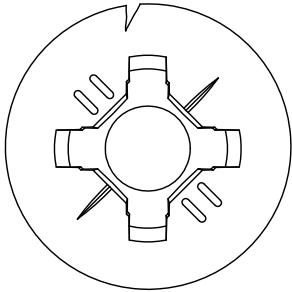
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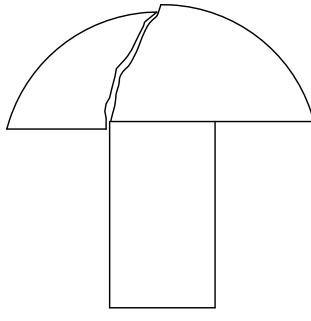
Figure 3

NOT ACCEPTABLE



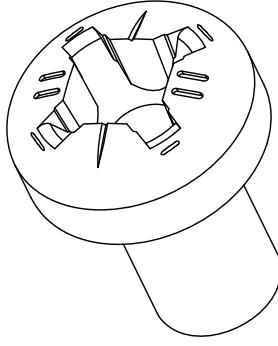
(1)

LARGE OPEN IMPERFECTIONS  
EXTENDING OVER 1/2 WAY  
TO RECESS



(2)

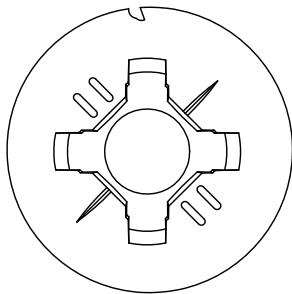
OPEN ANGULAR IMPERFECTIONS  
ON EDGE OF HEAD



(3)

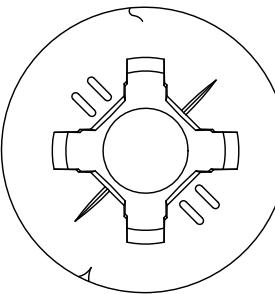
SLIVERS OR LOOSE  
FLAKES ON TOP OF HEAD

ACCEPTABLE



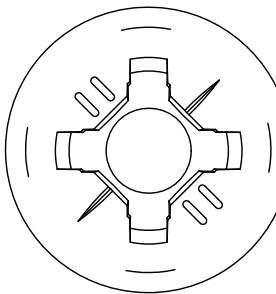
(4)

MULTIPLE IMPERFECTIONS  
NOT EXTENDING 1/2 WAY  
TO RECESS AND NOT  
AFFECTING USEABILITY



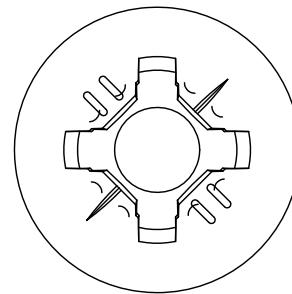
(5)

SLIGHT HAIR LINES



(6)

SLIGHT RECESS FLOW  
LINES



(7)

SLIGHT TOOL MARKS  
SLIGHT PIN MARKS

REVISION

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RECESS INSPECTION PROCEDURE  
PHILLIPS SQUARE- DRIV® RECESS

DRAWN  
**B. HUGHES** DATE  
12/20/2002

DRAWING NUMBER

PSC-930

SHEET 6 of 7

CHECKED:  
**G. DILLING** DATE  
12/20/2002

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

PHILLIPS II PHILLIPS POZIDRIV ACR POZISQUARE PHILLIPS SQUARE-DRIV TORQ-SET TRI-WING MORTORQ®  
HEXSTIX® POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY

TABLE 2.

<u>Screw Size</u>	<u>Normal Body Diameter</u>	<u>Allowable Eccentricity</u>
0	.060	.015
1	.073	.015
2	.086	.015
3	.089	.015
4	.112	.015
5	.125	.015
6	.138	.015
7	.151	.015
8	.164	.015
9	.177	.015
10	.190	.015
12	.216	.015
14	.242	.015
1/4	.250	.015
16	.268	.016
18	.294	.018
5/16	.3125	.019
20	.320	.019
24	.372	.022
3/8	.375	.023
7/16	.4375	.026
1/2	.500	.030

<u>Screw Size (Metric)</u>	<u>Normal Body Diameter</u> (Inches)	<u>Allowable Eccentricity</u> (Inches)
M1.6	.063	.015
M2	.079	.015
M2.2	.087	.015
M2.9	.114	.015
M3	.118	.015
M3.5	.138	.015
M3.9	.154	.015
M4	.157	.015
M4.2	.165	.015
M4.5	.177	.015
M4.8	.189	.015
M5	.197	.015
M5.5	.216	.015
M6	.236	.015
M6.3	.248	.015
M7	.276	.016
M8	.315	.019
M9.5	.374	.022
M10	.394	.024
M12	.472	.028

Any individual piece exceeding these limits shall be considered defective.

The lot is acceptable if fewer than the allowable number of defectives is found.

The lot must be rejected if more than the allowable number of defectives is found.

REVISION

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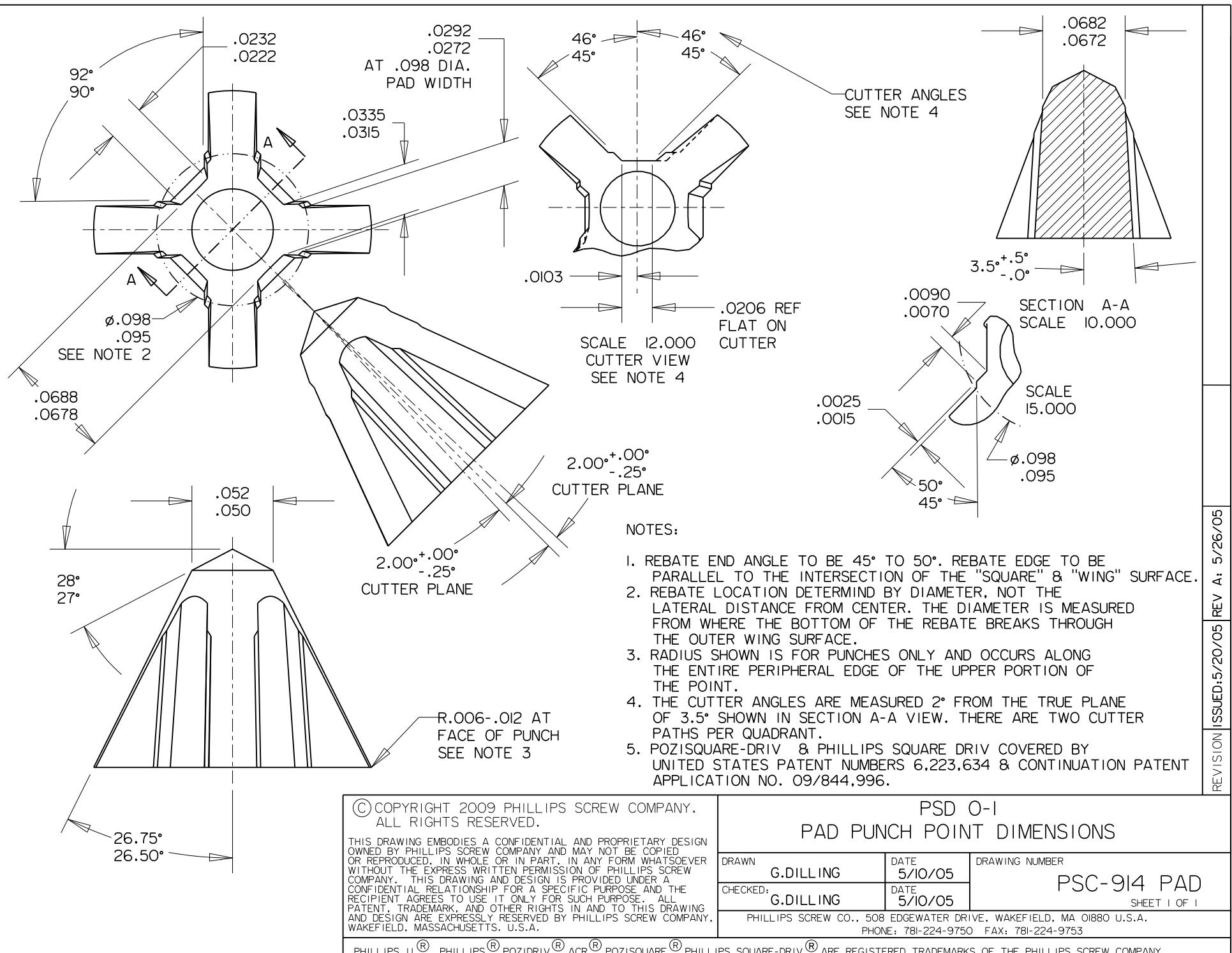
## RECESS INSPECTION PROCEDURE PHILLIPS SQUARE-DRIV® RECESS

DRAWN B. HUGHES	DATE 12/20/2002	DRAWING NUMBER  PSC-930
CHECKED: G. DILLING	DATE 12/20/2002	
PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326		

PHILLIPS II PHILLIPS POZIDRIV ACR POZISQUARE PHILLIPS SQUARE-DRIV TORQ-SET TRI-WING MORTORQ  
HEXSTIX POZILOCK ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY

PHILLIPS SQUARE-DRIV<sup>®</sup> ENGINEERING MANUAL  
INDEX  
PUNCH STANDARDS

PSC-914 PAD	PSD (0-1) PUNCH POINT DIMENSIONS	5/26/05
PSC-915 PAD	PSD (1-2) PUNCH POINT DIMENSIONS	4/29/05
PSC-916 PAD	PSD (2-2) PUNCH POINT DIMENSIONS	I2/I6/04
PSC-917 PAD	PSD (3-3) PUNCH POINT DIMENSIONS	6/07/05
PSC-963	PSD HEAD MARKINGS	I2/I3/II
PSC-982	FLAT HEAD PUNCHES	I2/I3/II
PSC-983	PAN HEAD PUNCHES	I2/I3/II
PSC-984	OVAL HEAD PUNCHES	I2/I3/II
PSC-985	TRUSS HEAD PUNCHES	I2/I3/II
PSC-987	FLAT TOP HEAD PUNCH SPECIALS	I2/I3/II
PSC-988	FLAT TOP PAN HEAD PUNCH SPECIALS	I2/I3/II



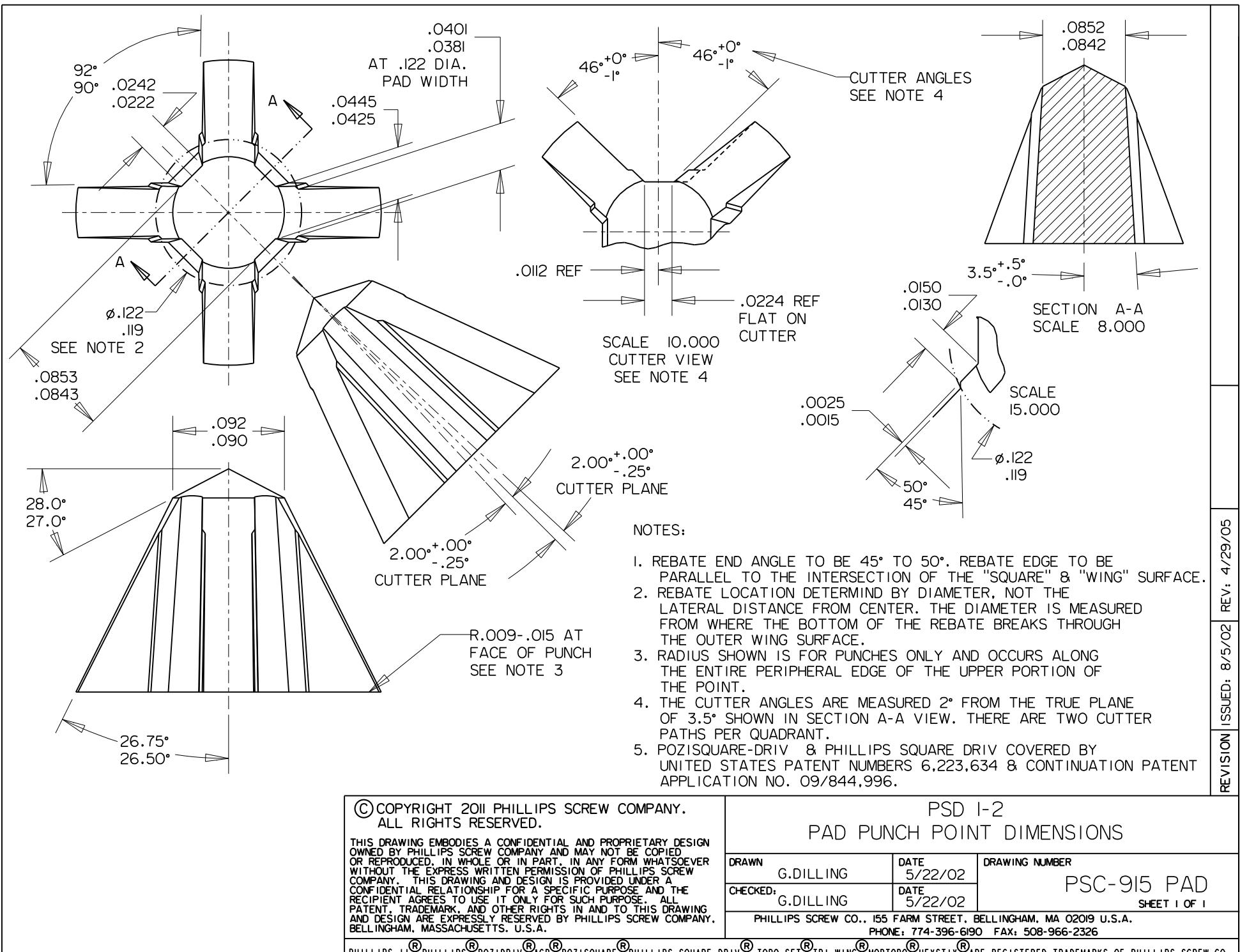
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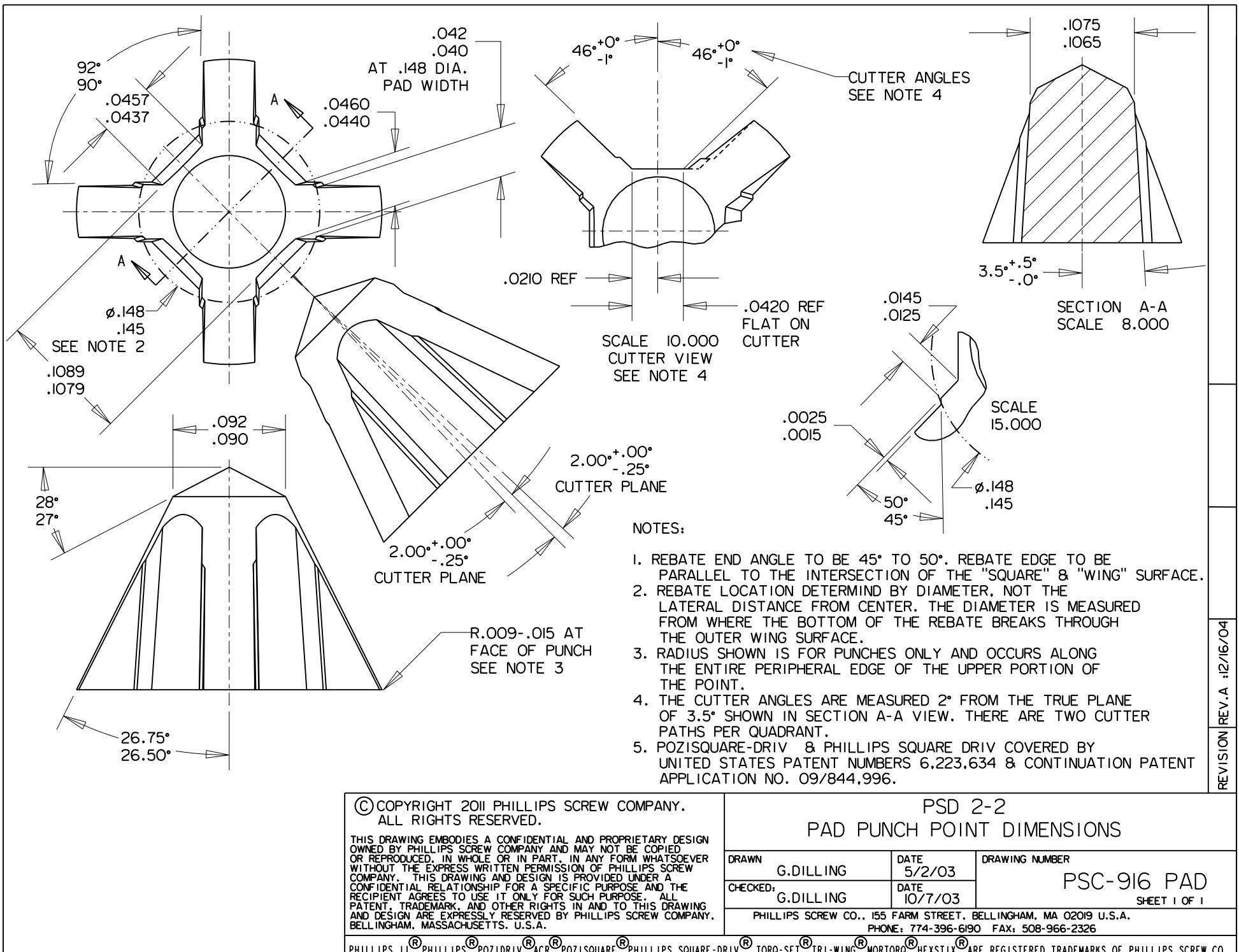
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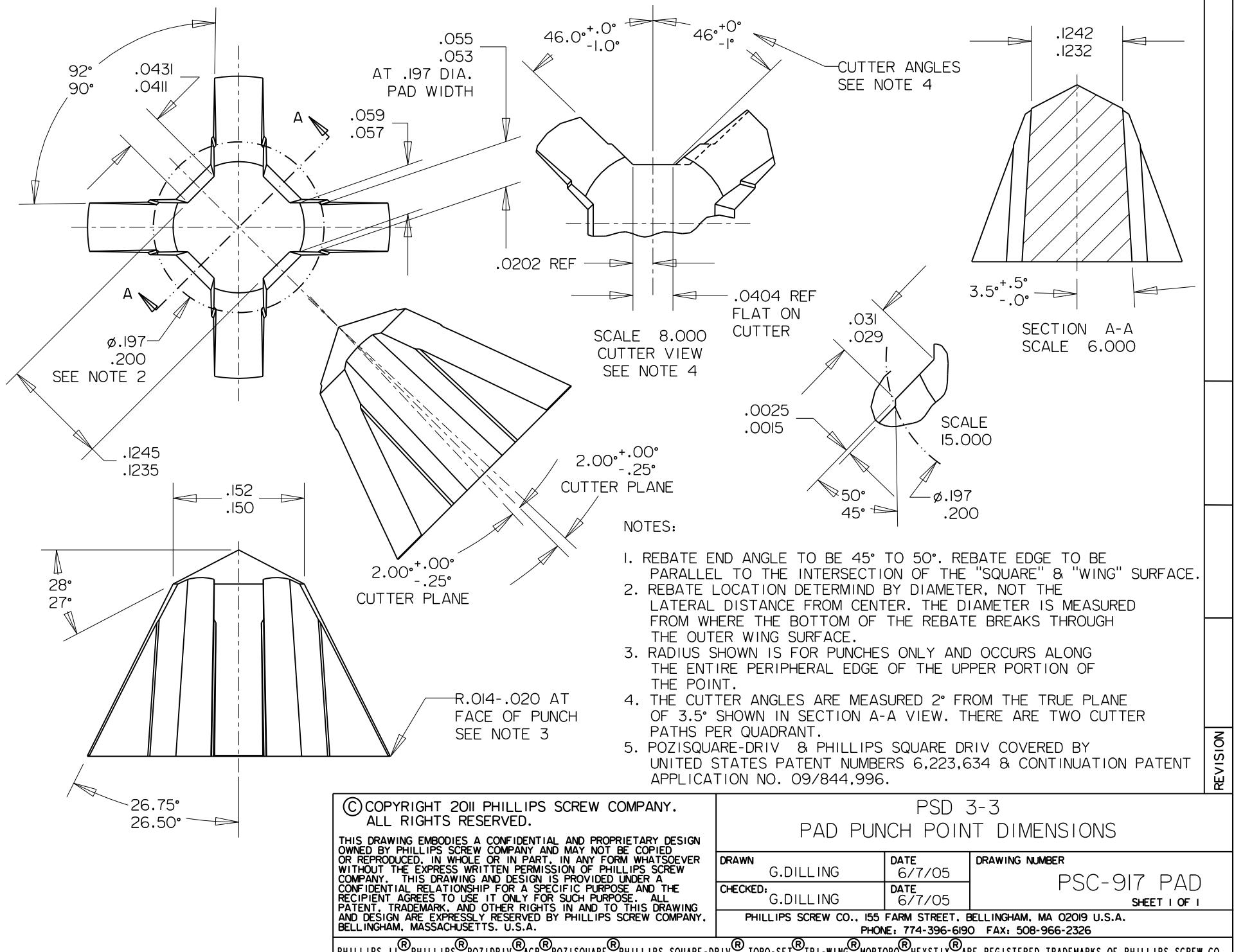
### PSD O-1 PAD PUNCH POINT DIMENSIONS

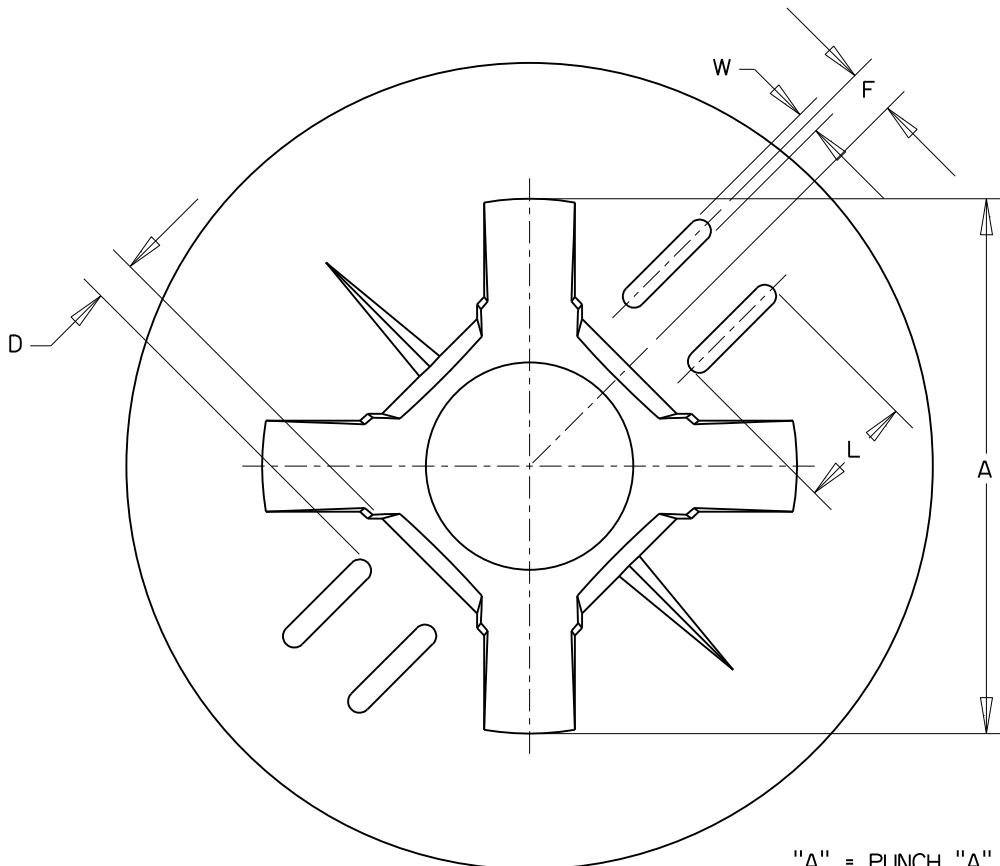
DRAWN	DATE	DRAWING NUMBER
G.DILLING	5/10/05	PSC-914 PAD
CHECKED: G.DILLING	5/10/05	SHEET 1 OF 1

PHILLIPS SCREW CO., 508 EDGEWATER DRIVE, WAKEFIELD, MA 01880 U.S.A.  
PHONE: 781-224-9750 FAX: 781-224-9753









"A" = PUNCH "A" DIMENSION

RECESS	W (REF.)	D (MIN.)	F	L	HEIGHT NOTE 2
PSD2 0-1	.008	.005	.015 .010	.025 .030	.002 .004
PSD2 1-2	.008	.010	.015 .010	.025 .030	.002 .004
PSD2 2-2	.010	.018	.020 .015	.035 .040	.002 .004
PSD2 3-3	.010	.025	.020 .015	.050 .060	.002 .004

NOTES:

1. MARKING FOR PHILLIPS SQUARE-DRIV SCREWS CONSISTS OF TWO PAIRS OF PARALLEL LINES ON OPPOSITE SIDES OF THE SCREW HEAD AND RADIAL NOTCHES IN THE TWO REMAINING QUADRANTS.
2. THIS DIMENSION WOULD BE THE HEIGHT OF MARKING ON A PUNCH FACE AND DEPTH ON A SCREW HEAD.
3. MARKING MUST BE PLAINLY VISIBLE ON HEAD PRODUCT.

REVISION    ISSUED 1/15/03    REV: 4/1/03    REV: 12/13/01

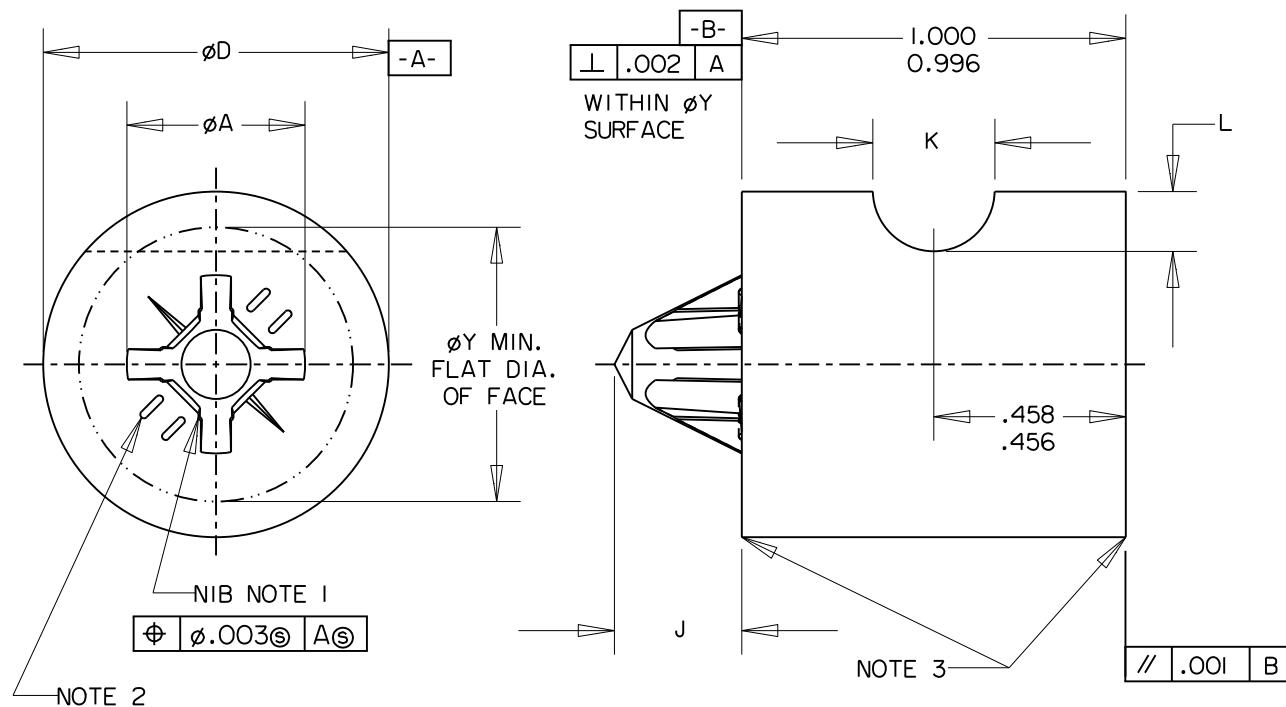
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TITLE: PHILLIPS SQUARE-DRIV®  
HEAD MARKINGS

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DRAWN G.DILLING	DATE 10/22/02	DRAWING NUMBER PSC-963  SHEET 1 OF 1
CHECKED: G.DILLING	DATE 10/23/02	
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326		

PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX®  
AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY



SCREW SIZE	PUNCH NO.	SEE NOTE 6									
		+ .004 -.000	± .0005	+ .004 -.000	+ .001 -.000	+ .000 -.001	MIN.	PHILLIPS PEN GAGE	MAX.	MIN.	DRIVE SIZE
4 M3	PSD-4FO1-SN	.123	.5625	.086	.212	.106	.305	.084	.078	O-1	
6 M3.5	PSD-6F12-SN	.176	.5625	.110	.212	.106	.358	.104	.098	I-2	
8 M4	PSD-8F22-SN	.184	.5625	.118	.212	.106	.385	.112	.106	2-2	
10 M5	PSD-10F22-SN	.203	.5625	.137	.212	.106	.385	.131	.125	2-2	
M6	PSD-600F33-SN	.262	.8750	.152	.212	.106	.485	.140	.134	3-3	
1/4	PSD-25F33-SN	.285	.8750	.175	.212	.106	.597	.163	.157	3-3	

NOTES:

- REFER TO PUNCH DRAWING PSC-914-PAD, PSC-915-PAD, PSC-916-PAD, AND PSC-917-PAD FOR PUNCH POINT DIMENSIONS NOT SHOWN.
- HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
- CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
- DIMENSIONS ARE IN INCHES.
- PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
- USE STANDARD PHILLIPS RECESS PENETRATION GAGE AND LAST DIGIT OF DRIVE SIZE TO DETERMINE PEN VALUES. THESE VALUES ARE FOR THE PUNCH ONLY AND NOT THE SCREW.

SEE NOTE 5	
PUNCH PEN	DRIVE SIZE
.017	O-1
.019	I-2
.021	2-2
.020	3-3

REVISION REV: 2/24/03 REV: 10/20/06 REV: 12/3/11

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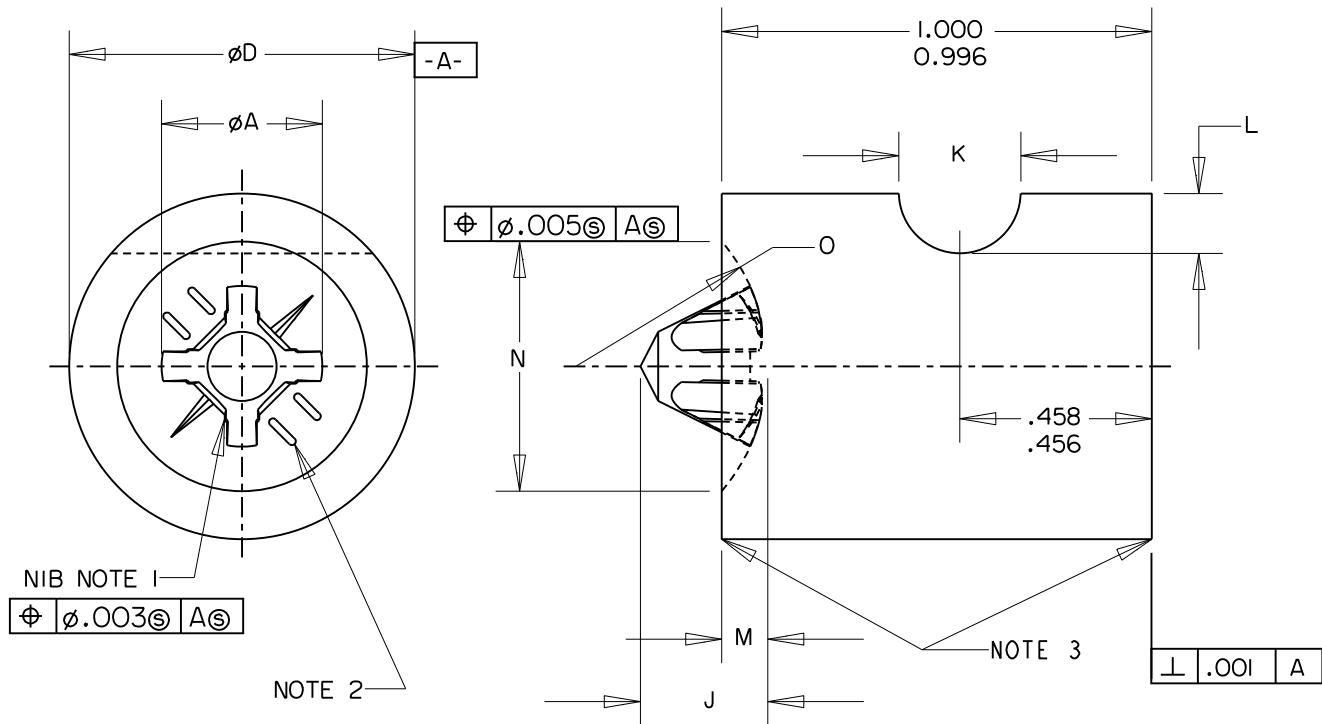
TITLE:  
PHILLIPS SQUARE-DRIV®  
FLAT HEAD PUNCH

DRAWN G.DILLING DATE 9/27/02 DRAWING NUMBER

CHECKED: G.DILLING DATE 10/01/02 PSC-982

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326 SHEET 1 OF 1

PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX®  
AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY



SCREW SIZE	PUNCH NO.	SEE NOTE 6										DRIVE SIZE
		+ .004 -.000	± .0005	+ .004 -.000	+ .001 -.000	+ .000 -.001	+ .002 -.000	+ .005 -.000	+ .005 -.000	PHILLIPS PEN GAGE	MAX.	MIN.
4 M3	PSD-4POI-SN	.138	.5625	.112	.212	.106	.031	.241	.248	.095	.089	O-1
6 M3.5	PSD-6PI2-SN	.169	.5625	.115	.212	.106	.037	.290	.301	.092	.086	I-2
8 M4	PSD-8P22-SN	.193	.5625	.141	.212	.106	.045	.346	.352	.117	.111	2-2
10 M5	PSD-10P22-SN	.215	.5625	.164	.212	.106	.054	.409	.413	.139	.133	2-2
1/4 M6	PSD-25P33-SN	.292	.8750	.202	.212	.106	.067	.519	.535	.166	.160	3-3

SEE NOTE 5		DRIVE SIZE
PUNCH PEN	MAX. MIN.	
.017	.005	O-1
.019	.007	I-2
.021	.009	2-2
.020	.008	3-3

NOTES:

1. REFER TO PUNCH DRAWING PSC-914-PAD, PSC-915-PAD, PSC-916-PAD, AND PSC-917-PAD FOR PUNCH POINT DIMENSIONS NOT SHOWN.
2. HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
3. CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
4. DIMENSIONS ARE IN INCHES.
5. PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
6. USE STANDARD PHILLIPS RECESS PENETRATION GAGE AND LAST DIGIT OF DRIVE SIZE TO DETERMINE PEN VALUES. THESE VALUES ARE FOR THE PUNCH ONLY AND NOT THE SCREW.

REVISION REV: 2/24/03 REV 10/20/06 REV 12/13/11

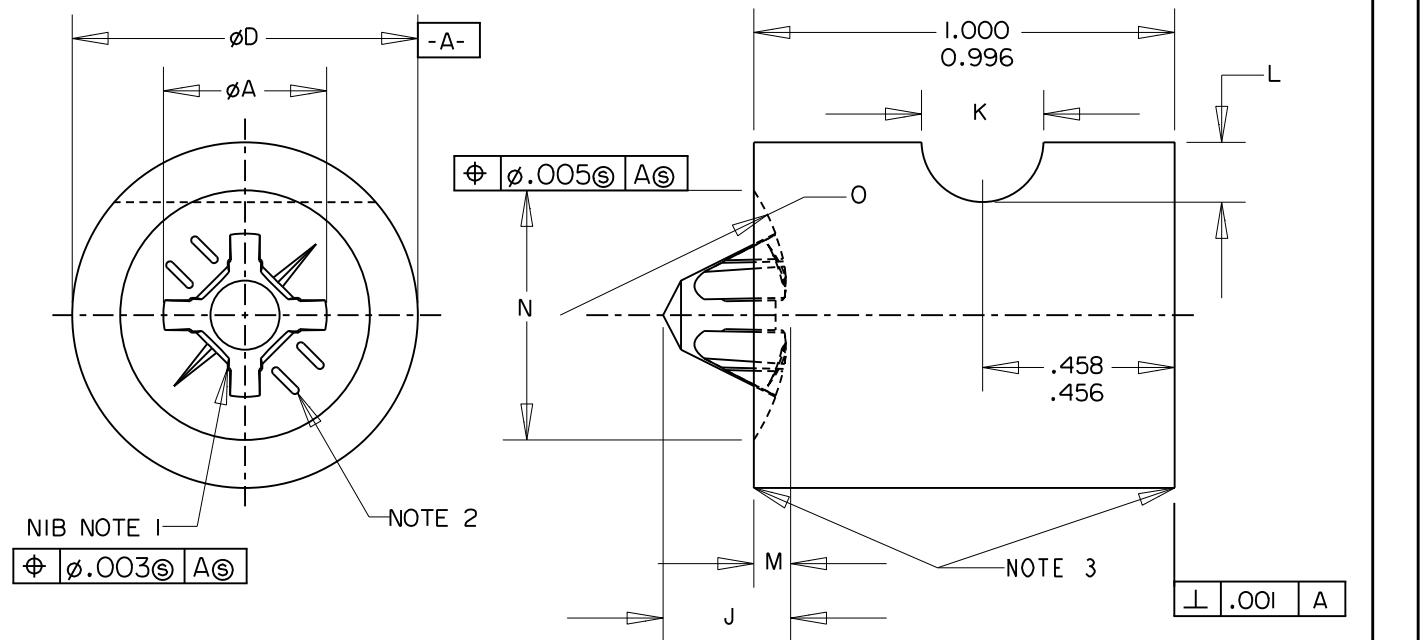
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TITLE:  
PHILLIPS SQUARE-DRIV®  
PAN HEAD PUNCH

DRAWN G.DILLING	DATE 10/01/02	DRAWING NUMBER PSC-983
CHECKED: G.DILLING	DATE 10/01/02	SHEET 1 OF 1

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

PHILLIPS® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX®  
AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY



SCREW SIZE	PUNCH NO.	SEE NOTE 6											
		+.004 -.000	$\pm .0005$	+.004 -.000	+.001 -.000	.000 -.001	+.002 -.000	.005 -.000	.005 -.000	MAX.	MIN.	DRIVE SIZE	
4	PSD-4V01-SN	.135	.5625	.108	.212	.106	.026	.221	.248	.092	.086	O-1	
M3	PSD-300V01-SN	.141	.5625	.116	.212	.106	.034	.243	.236	.098	.092	O-1	
6	PSD-6V12-SN	.192	.5625	.142	.212	.106	.036	.286	.301	.115	.109	I-2	
M3.5	PSD-350V12-SN	.194	.5625	.142	.212	.106	.040	.318	.335	.117	.111	I-2	
8	PSD-8V22-SN	.204	.5625	.154	.212	.106	.040	.326	.352	.128	.122	2-2	
M4	PSD-400V22-SN	.219	.5625	.170	.212	.106	.048	.365	.374	.143	.137	2-2	
10	PSD-10V22-SN	.228	.5625	.178	.212	.106	.046	.379	.413	.151	.145	2-2	
M5	PSD-500V22-SN	.237	.5625	.191	.212	.106	.059	.404	.374	.160	.154	2-2	
1/4	PSD-25V33-SN	.316	.8750	.231	.212	.106	.062	.500	.535	.191	.185	3-3	
M6	PSD-600V33-SN	.299	.8750	.214	.212	.106	.069	.491	.472	.173	.167	3-3	

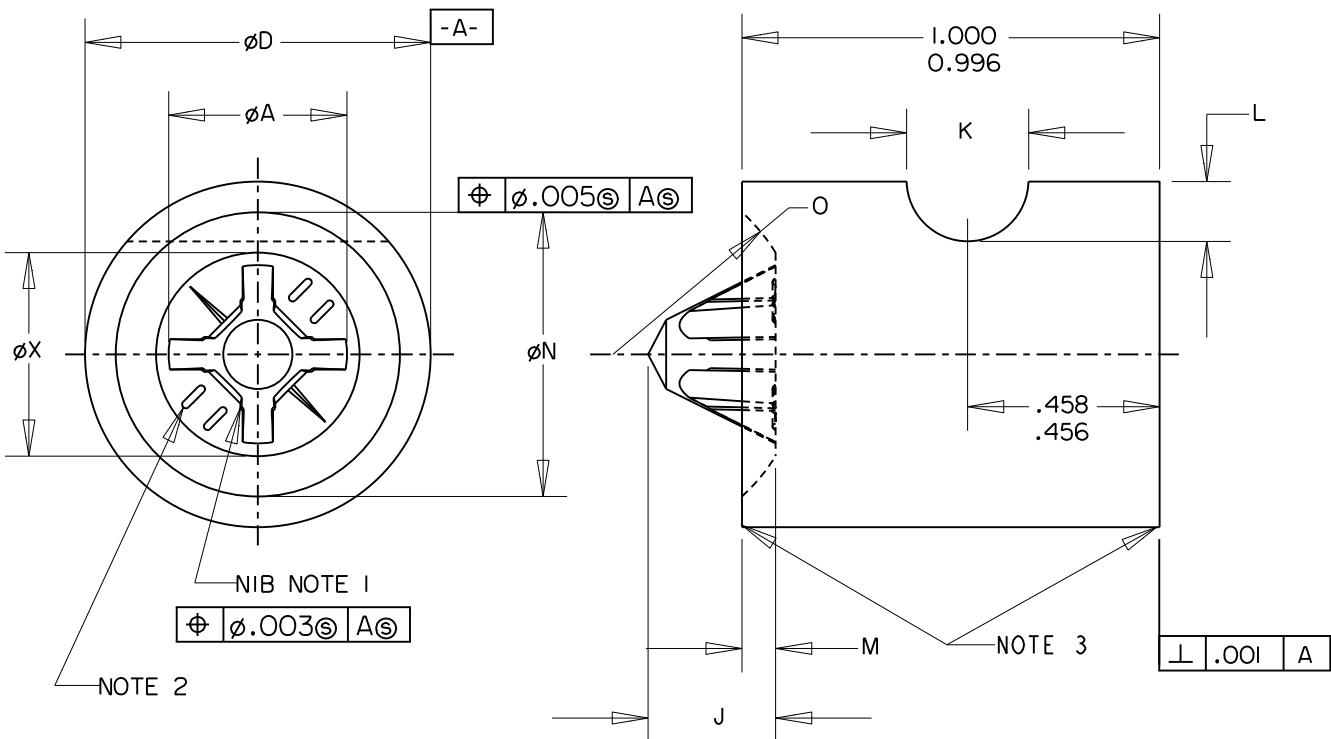
SEE NOTE 5		
PUNCH PEN	MAX.	DRIVE SIZE
.017	.005	O-1
.019	.007	I-2
.021	.009	2-2
.020	.008	3-3

NOTES:

- REFER TO PUNCH DRAWING PSC-914-PAD, PSC-915-PAD, PSC-916-PAD, AND PSC-917-PAD FOR PUNCH POINT DIMENSIONS NOT SHOWN.
- HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
- CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
- DIMENSIONS ARE IN INCHES.
- PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
- USE STANDARD PHILLIPS RECESS PENETRATION GAGE AND LAST DIGIT OF DRIVE SIZE TO DETERMINE PEN VALUES. THESE VALUES ARE FOR THE PUNCH ONLY AND NOT THE SCREW.

REVISION REV: 2/24/03 REV 10/20/06 REV 12/13/01

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DRAWN G.DILLING		DATE 10/01/02	DRAWING NUMBER PSC-984	
CHECKED: G.DILLING		DATE 10/02/02	SHEET 1 OF 1	
PHILLIPS SCREW CO., 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A. PHONE: 774-396-6190 FAX: 508-966-2326				
PHILLIPS <sup>®</sup> PHILLIPS <sup>®</sup> POZIDRIV <sup>®</sup> ACR <sup>®</sup> POZISQUARE <sup>®</sup> PHILLIPS SQUARE-DRIV <sup>®</sup> TORQ-SET <sup>®</sup> TRI-WING <sup>®</sup> MORTORQ <sup>®</sup> HEXSTIX <sup>®</sup> AND POZILOCK <sup>®</sup> ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY				



SCREW SIZE	PUNCH NO.	SEE NOTE 6											
		+.004 -.000	±.0005	+.004 -.000	+.001 -.000	+.000 -.001	+.002 -.000	+.005 -.000	+.005 -.000	REF.	PHILLIPS PEN GAGE	MAX.	MIN.
6 M3.5	PSD-6TI2-SN	.170	.5625	.104	.212	.106	.066	.321	.181	.205	.102	.096	I-2
8 M4	PSD-8T22-SN	.197	.5625	.131	.212	.106	.080	.384	.220	.230	.125	.119	2-2
10 M5	PSD-10T22-SN	.214	.8750	.148	.212	.106	.089	.448	.269	.250	.142	.136	2-2
1/4 M6	PSD-25T33-SN	.296	.8750	.186	.212	.106	.128	.573	.321	.340	.174	.168	3-3

NOTES:

- REFER TO PUNCH DRAWING PSC-915-PAD, PSC-916-PAD, AND PSC-917-PAD FOR PUNCH POINT DIMENSIONS NOT SHOWN.
- HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
- CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
- DIMENSIONS ARE IN INCHES.
- PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
- USE STANDARD PHILLIPS RECESS PENETRATION GAGE AND LAST DIGIT OF DRIVE SIZE TO DETERMINE PEN VALUES. THESE VALUES ARE FOR THE PUNCH ONLY AND NOT THE SCREW.

SEE NOTE 5		
PUNCH PEN	MAX.	DRIVE SIZE
.019	.007	I-2
.021	.009	2-2
.020	.008	3-3

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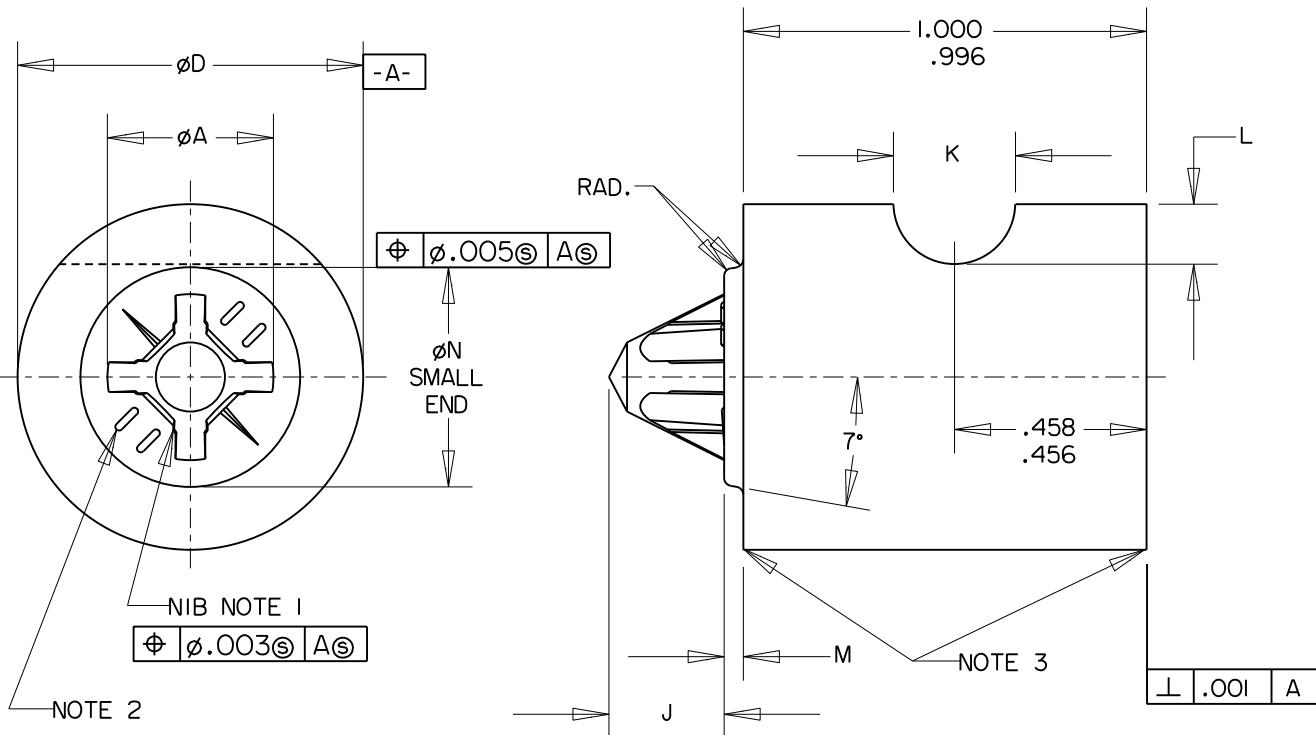
TITLE:  
PHILLIPS SQUARE-DRIV®  
TRUSS HEAD PUNCH

DRAWN G.DILLING	DATE 9/27/02	DRAWING NUMBER PSC-985
CHECKED: G.DILLING	DATE 10/03/02	SHEET 1 OF 1

PHILLIPS SCREW CO. 155 FARM STREET, BELLINGHAM, MA 02019 U.S.A.  
PHONE: 774-396-6190 FAX: 508-966-2326

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REVISION REV: 2/24/03 REV 10/20/06 REV 12/13/11



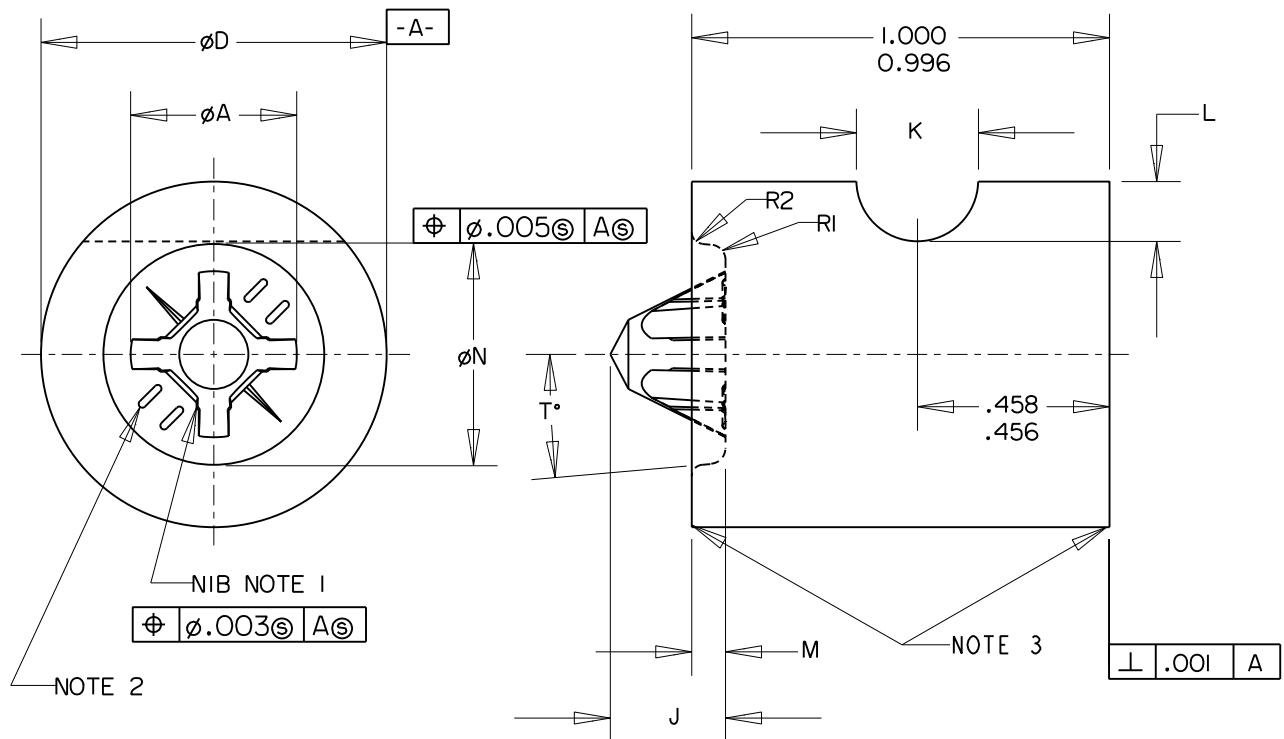
SEE NOTE 6											
SCREW SIZE	PUNCH NO.	+.004 -.000	±.0005	+.004 -.000	+.001 -.000	+.000 -.001	+.002 -.000	+.005 -.000	PHILLIPS PEN GAGE		DRIVE SIZE
									MAX.	MIN.	
8	PSD-8SH22-SN	.194	.5625	.128	.212	.106	.031	.300	.122	.118	2-2

SEE NOTE 5		
PUNCH PEN		DRIVE SIZE
MAX.	MIN.	
.017	.005	0-1
.019	.007	I-2
.021	.009	2-2
.020	.008	3-3

NOTES:

- REFER TO PUNCH DRAWING PSC-916-PAD.  
FOR PUNCH POINT DIMENSIONS NOT SHOWN.
- HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
- CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
- DIMENSIONS ARE IN INCHES.
- PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
- USE STANDARD PHILLIPS RECESS PENETRATION GAGE AND LAST DIGIT OF DRIVE SIZE TO DETERMINE PEN VALUES. THESE VALUES ARE FOR THE PUNCH ONLY AND NOT THE SCREW.

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PHILLIPS II® PHILLIPS® POZIDRIV® ACR® POZISQUARE® PHILLIPS SQUARE-DRIV® TORQ-SET® TRI-WING® MORTORQ® HEXSTIX® AND POZILOCK® ARE REGISTERED TRADEMARKS OF THE PHILLIPS SCREW COMPANY				



SEE NOTE 6

SCREW SIZE	PUNCH NO.	$+.004$ $-.000$	$\pm .0005$	$+.004$ $-.000$	$+.001$ $-.000$	$+.000$ $-.001$	$+.002$ $-.000$	$+.005$ $-.000$	T ANGL	RI	R2	PHILLIPS PEN GAGE	DRIVE SIZE	
		$\phi A$	$\phi D$	J	K	L	M	$\phi N$				MAX.	MIN.	
8	PSD-8PW22-SN	.194	.5625	.128	.212	.106	.060	.323	$10^\circ$	.030	.020	.122	.118	2-2
10	PSD-10PW22-SN	.224	.8750	.158	.212	.106	.071	.381	$5^\circ$	.038	.025	.152	.148	2-2

SEE NOTE 5

PUNCH PEN	DRIVE SIZE
MAX.	MIN.
.017	.005
.019	.007
.021	.009
.020	.008

NOTES:

- REFER TO PUNCH DRAWING PSC-916-PAD.  
FOR PUNCH POINT DIMENSIONS NOT SHOWN.
- HEAD MARKINGS PER PSC-963, UNLESS OTHERWISE SPECIFIED.
- CHAMFER TO SUIT CUSTOMER OR COMPANY SPECIFICATIONS.
- DIMENSIONS ARE IN INCHES.
- PUNCH PENETRATION VALUES DERIVE FROM USING GAGES "PSC-959 THRU PSC-962".
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REVISION	REV: 2/27/03	REV: 1/5/04	REV: 1/28/04	REV: 1/28/06	REV: 1/2/13/II
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TITLE: PHILLIPS SQUARE-DRIV®  
FLAT TOP PAN HEAD PUNCH SPECIALS

DRAWN G.DILLING	DATE 2/24/03	DRAWING NUMBER
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PSC-988

SHEET 1 OF 1

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