RATCHET CYCLE
TIME NEEDED

DETAIL F
SCALE 8.000

RADIUS .003 MAX
SEE NOTE 7
ØH REF
ØN REF 2 PL
ØM REF 2 PL
ØC REF
45°
15°
15°
.060
.060

DETAIL B
SCALE 10.000

.900
.010
20°
.009
.005
R.008
R.010
R.006
45°
135° TYP 2 PL

TYP 3 PL
INSERT KEYWAYS
ØV
.004 Y
U
.1015
.0980
.004 Y B
.1285
.250
TYP 2 PL.
.004 Y X
135° TYP 2 PL.

ØHH
ØBA
ØBD
ØBC - BEFORE KNURL
ØBF
ØBE - BEFORE KNURL
SEE DETAIL E
SEE DETAIL C
.765 REF
.492
.157
.153
.061
.059
.055
EE
R.005
SEE DETAIL
.512
.510
P
.330
+.005
-.000
5 PLACES
1.634
.090
.080
D
E

A
Y
50°
ØK
ØU
OVER KEYS
ØJ
ØGG
ØF

ØS
SEE NOTE 7
ØH
ØM 2 PL
ØN 2 PL
ØC
.039
.031
R.024
.500 SEE NOTE 7
SEE DETAIL F
SEE DETAIL B
.523
.521
.421
.419
SECTION X-X
SEE DETAIL A
ØAB
.070
.064
SEE NOTE 8
.500
.498
ØA
ØB
.133
.125
5 PLACES
.181 REF
.031
Y
.005 A
.005 A

DETAIL E
SCALE 5.000
DIAMOND KNURL - MALE PROFILE
1mm PITCH - SEE NOTE 6
THIS KNURL IS TO BE PRODUCED
IN A SINGLE PASS.
ALSO SEE ALTERNATIVE METHOD.
R.008
8 PLACES
STRAIGHT KNURL
MALE PROFILE 1mm PITCH
SEE NOTE 6
R.008
3 PLACES

DETAIL C
SCALE 10.000
10°
.005 +.002 -.003
50°
.020 +.000 -.006

DETAIL A
SCALE 15.000
R.008
.022
.020
35°
5.0° - 10.0°
HTC-0200-X-XX
SHT 1 OF 2

DETAIL G
SCALE 15.000

W
MAJOR KEY
.004 A
YY No OF RATCHET
GROOVES
(SEE DETAIL C)
.004 B A

ALTERNATIVE DIAMOND KNURL METHOD
SCALE 5.000
DIAMOND KNURL - MALE PROFILE
1mm PITCH - SEE NOTE 6
THIS KNURL IS TO BE PRODUCED IN
TWO PASSES WITH SPACING AS SHOWN.
.020
.227
REF
.020
CENTRAL
.020

AA°
BB°
CC°
DD°
X
X
B
ØKK
UNDER KEYS
ZZ
APART
.055
.049
4 PLACES
MINOR KEYS

			ISS	DATE	C. NOTE	SIG
4	13/03/14	21658	NL			
4	03/01/14	21466	NL			
3	05/03/13	20788	NL			
2	15/01/13	20638	NL			
1	08/06/12	RN94656	NL			

ITEM
No
PART No
TECHNICAL DESCRIPTION
No
OFF

DRAWING No
HTC-0200-X-XX
SHT 1 OF 2
PROJECTION
DO NOT SCALE PRINT

Production

DRAWING No HTC-0200-X-XX SHT 2 OF 2 PROJECTION

Main Dimension Table

Part Number	A ±.001	AB ±.002	B +.000/-.003	BA ±.005	BC ±.004	BD ±.004	BE ±.004	BF ±.004	C ±.001	D +.003/-.001	E ±.002	EE ±.005	F ±.003	GG ±.0025	H SEE NOTE 7	HH ±.0015	J ±.0025	K +.000/-.005	KK +.000/-.005	M ±.0015	N ±.0015	P ±.002	S ±.005	U ±.003	V ±.0015	W ±.003	YY No.OF RATCHET TEETH	ZZ RATCHET TEETH DEGREES APART
HTC-0200-X-08	.294	.332	.300	.768	.673	.736	.461	.476	.349	.105	.077	.039	.709	.6345	-	.5810	.4575	.405	.405	.389	.373	.753	.501	.447	.326	.084	18	20.000°
HTC-0200-X-10	.392	-	.432	.846	.709	.772	.587	.603	.446	.093	.065	.039	.838	.7595	.503	.7100	.5775	.526	.526	.486	.470	.753	.622	.567	.423	.084	18	20.000°
HTC-0200-X-12	.562	-	.602	.925	.803	.866	.704	.719	.615	.093	.065	.039	1.052	.9240	-	.9240	.7475	.696	.696	.651	.635	.753	.739	.737	.593	.084	24	15.000°
HTC-0200-X-14	.631	-	.671	1.102	.965	1.028	.829	.844	.706	.093	.065	.039	1.119	1.0405	.744	.9910	.8175	.765	.765	.742	.726	.753	.847	.807	.662	.084	24	15.000°
HTC-0200-X-16	.760	-	.798	1.200	1.063	1.126	.954	.969	.833	.093	.065	.039	1.239	1.1665	.869	1.1110	.9435	.892	.892	.869	.853	.753	.985	.933	.789	.115	30	12.000°
HTC-0200-X-18	.864	-	.903	1.248	1.110	1.173	1.009	1.025	.928	.093	.065	.039	1.341	1.2595	-	1.2130	1.0495	.998	.998	.949	.933	.753	1.033	1.039	.895	.115	30	12.000°
HTC-0200-X-20	.989	-	1.029	1.398	1.260	1.323	1.135	1.150	1.053	.093	.065	.045	1.490	1.3845	-	1.3620	1.1735	1.123	1.123	1.078	1.062	.747	1.160	1.163	1.020	.115	36	10.000°
HTC-0200-X-22	1.114	-	1.154	1.520	1.382	1.445	1.260	1.276	1.178	.093	.065	.045	1.609	1.4920	-	1.4810	1.2995	1.248	1.248	1.198	1.183	.747	1.285	1.289	1.145	.115	36	10.000°
HTC-0200-X-24	1.233	-	1.279	1.654	1.594	1.657	1.385	1.400	1.310	.093	.065	.048	1.732	1.6315	-	1.6040	1.4235	1.373	1.373	1.331	1.315	.744	1.402	1.413	1.262	.115	42	8.570°
HTC-0200-X-28	1.481	-	1.529	1.909	1.772	1.835	1.635	1.650	1.559	.093	.065	.048	2.048	1.9220	-	1.9200	1.6775	1.623	1.623	1.580	1.564	.744	1.726	1.663	1.512	.115	48	7.500°

ALTERNATE SHELL KEY POSITIONS

SHELL SIZE	POLARIZATION	AA° BASIC	BB° BASIC	CC° BASIC	DD° BASIC
8 & 10	NORMAL	105	140	215	265
	6	102	132	248	320
	7	80	118	230	312
	8	35	140	205	275
	9	64	155	234	304
10 ONLY	Y	25	115	220	270
12 THRU 28	NORMAL	105	140	215	265
	6	18	149	192	259
	7	92	152	222	342
	8	84	152	204	334
	9	24	135	199	240
	Y	98	152	268	338

NEED CYCLE TIME FOR THIS BATCH

Drawing reference dimensions: ØBA REF, ØBD REF, ØBF REF, ØBE REF - BEFORE KNURL, ØBC REF, ØS REF, ØHH REF, ØF REF, .765 REF, 1.634 REF, SCALE 6.000, BEFORE KNURL, SCALE 6.000

PART NUMBER INFORMATION

HTC - 0200 - X - XX

STYLE / PART No — SHELL SIZE — KEY ORIENTATION

NOTES

MATERIAL: TITANIUM TO SPEC. ASTM B348 GRADE 2.

1) REMOVE ALL BURRS AND SHARP EDGES .005 MAX.
2) ALL CORNERS AND FILLETS R.005" MAX UNLESS OTHERWISE STATED.
3) SURFACE FINISH NOT TO EXCEED N7 UNLESS OTHERWISE SPECIFIED.
4) FOR THREAD DIMENSIONS SEE 9717 - 94 NO PLATE.
5) CHAMFER FIRST AND LAST THREAD 45 DEGREES TO MINOR DIA.
   UNLESS OTHERWISE SPECIFIED ALL HOLES, SLOTS AND DIAMETERS SHALL
   BE PARALLEL AND CONCENTRIC WITHIN .003" T.I.R.
6) STRAIGHT KNURL DIAMETER Ø BC & DIAMOND KNURL ØBE TO BE 1mm PITCH TO BS1759.
   KNURL TO BE A SINGLE PASS TOOL, MALE PROFILE.
   NOTE KNURL NOT SHOWN TO SCALE
7) THIS FEATURE IS TO BE USED ON SIZES 10, 14 AND 16 ONLY.
   IT MAY BE OMITTED FOR ALL OTHER SIZES.
8) FEATURE REQUIRED BY SIZE 8 ONLY
9) NO WITNESS MARKS ON DIAMETER K PERMITTED, K AND KK CAN DIFFER
10) WITH IN THE APPLICABLE TOLERANCE TO PREVENT MARKS ON DIAMETER K

AMPHENOL STANDARD A2 DRAWING BLANK ISSUE 2