

BREADBOARD COMPONENTS

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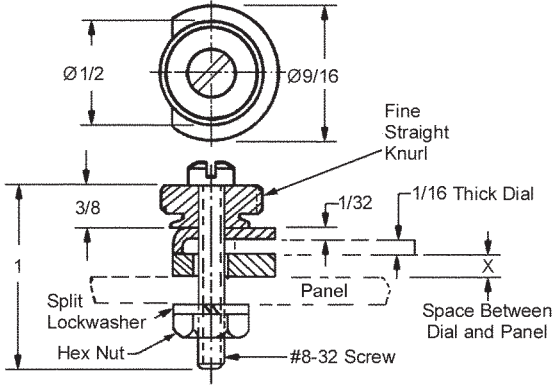
D

For metric options, please see our metric catalog.

DIAL CLAMP

MATERIAL

STAINLESS STEEL

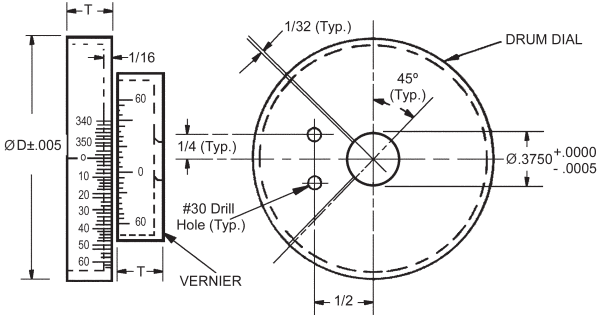


STOCK NO.	X
A16-1	1/16
A16-2	1/8

Supplied complete with all hardware.

DRUM DIALS

DIAMETER	TYPE	MATERIAL
1-1/2" TO 3"	SETS, DIALS OR VERNIERS	ALUMINUM BLACK ANODIZED



SET STOCK NO.	DIAL STOCK NO.	VERNIER STOCK NO.	D DIAL DIA.	T WIDTH	VERNIER READING	GRADUATIONS
A1-1*	A1-1-D	A1-1-V	1.490	3/8	12 MIN.	180 IN 2° STEPS
A1-2*	A1-2-D	A1-2-V	1.990	3/8	12 MIN.	180 IN 2° STEPS
A1-3	A1-3-D	A1-3-V	2.490	1/2	6 MIN.	360 IN 1° STEPS
A1-4	A1-4-D	A1-4-V	2.990	1/2	6 MIN.	360 IN 1° STEPS

* Dials and Verniers are numbered every 20°.

Engraving filled with white.

Range of Graduations - 0 to 360°

Available on request:

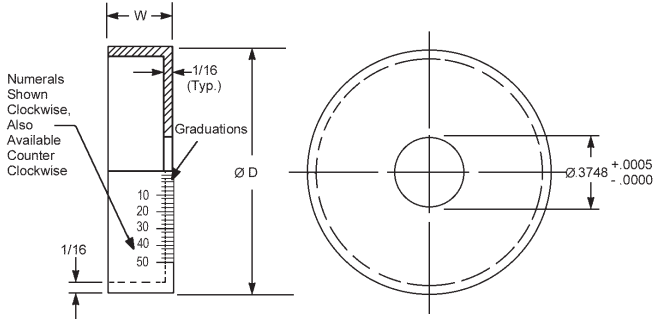
- Pin or Clamp Hubs assembled to drum
- Counter Clockwise numbering
- Special Engraving

For Pin and Clamp Hubs see index.



DRUM DIALS

DIAMETER	MATERIAL
1" TO 3"	ALUMINUM BLACK ANODIZED



STOCK NO.	W WIDTH	D DIAL DIA.	DIRECTION OF NUMBERING	GRADUATIONS RANGE	NO. OF GRAD.S	STEPS IN DEGREES
A3-1 A3-2* A3-3	3/8	1 (.990)	BLANK CW CW	- 0 TO 360 0 TO 100	- 180 100	- 2° 3°-36'
A4-1 A4-2* A4-3 A4-4	3/8	1-1/2 (1.490)	BLANK CW CW CW	- 0 TO 360 0 TO 100 0 TO 60	- 180 100 60	- 2° 3°-36° 6°
A5-1 A5-2* A5-3 A5-4	3/8	2 (1.990)	BLANK CW CW CW	- 0 TO 360 0 TO 50 0 TO 25	- 180 50 25	- 2° 7°-12° 14°-24°
A6-1 A6-2 A6-3 A6-4	1/2	2-1/2 (2.490)	BLANK CW CW CCW	- 0 TO 360 0 TO 100 0 TO 360	- 360 100 360	- 1° 3°-36° 1°
A7-1 A7-2 A7-3* A7-4 A7-5	1/2	3 (2.990)	BLANK CW CW CW CCW	- 0 TO 360 0 TO 360 0 TO 100 0 TO 360	- 360 180 100 360	- 1° 2° 3°-36° 1°

* Dials are numbered every 20°.

Engraving filled with white.
Range of Graduations - 0 to 360°

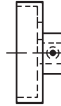
Available on request:

- Pin or Clamp Hubs assembled to drum
- Special Engraving

For Pin and Clamp Hubs see index.



CLAMP HUB

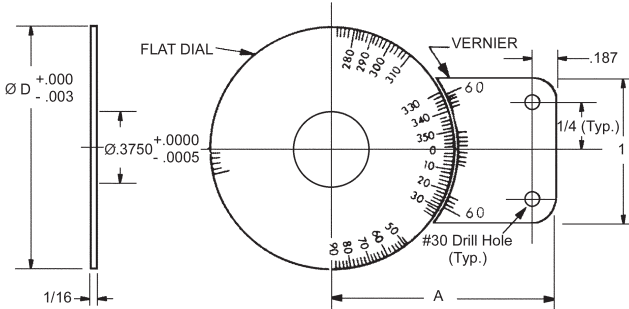


PIN HUB



FLAT DIALS

DIAMETER	TYPE	MATERIAL
1-1/2" TO 4"	SETS, DIALS OR VERNIERS	ALUMINUM BLACK ANODIZED



SET STOCK NO.	DIAL STOCK NO.	VERNIER STOCK NO.	A	D DIAL DIA.	VERNIER READING	GRADUATIONS
A2-1*	A2-1-D	A2-1-V	1.760	1-1/2	12 MIN.	180 IN 2° STEPS
A2-2*	A2-2-D	A2-2-V	2.010	2	12 MIN.	180 IN 2° STEPS
A2-3	A2-3-D	A2-3-V	2.510	3	6 MIN.	360 IN 1° STEPS
A2-4	A2-4-D	A2-4-V	3.010	4	6 MIN.	360 IN 1° STEPS

* Dials and Verniers are numbered every 20°.

Engraving filled with white.

Range of Graduations - 0 to 360°

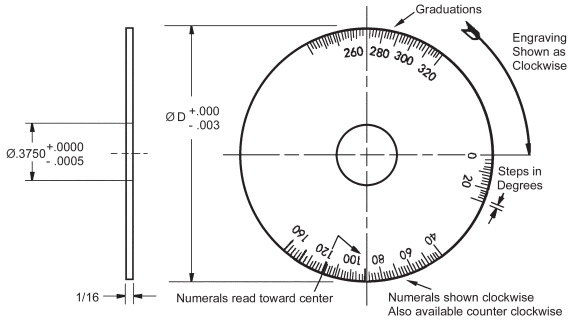
Available on request:

- Pin or Clamp Hubs assembled to drum
- Read at 12 o'clock
- Counter Clockwise numbering
- Special Engraving

For Pin and Clamp Hubs see index.

ENGRAVED FLAT DISKS

DIAMETER	MATERIAL
1-1/2" TO 4"	ALUMINUM BLACK ANODIZED



STOCK NO.	D DIAL DIA.	DIRECTION OF NUMBERING	GRADUATIONS RANGE	NO. OF GRAD.S	STEPS IN DEGREES
A8-1	1-1/2	BLANK	-	-	-
A8-2*		CW	0 TO 360	180	2°
A8-3		CW	0 TO 100	100	3°-36'
A8-4		CW	0 TO 50	50	7°-12'
A8-5		CW	0 TO 10	10	36°
A9-1	2	BLANK	-	-	-
A9-2*		CW	0 TO 360	180	2°
A9-3*		CCW	0 TO 360	180	2°
A9-4		CW	0 TO 100	100	3°-36'
A9-5		CCW	0 TO 100	100	3°-36'
A9-6		CW	0 TO 72	72	5°
A9-7		CW	0 TO 60	60	6°
A9-8		CW	0 TO 50	50	7°-12'
A10-1	3	BLANK	-	-	-
A10-2		CW	0 TO 360	360	1°
A10-3*		CW	0 TO 360	180	2°
A10-4		CW	0 TO 200	200	1°-48'
A10-5		CW	0 TO 120	120	3°
A10-6		CW	0 TO 100	100	3°-36'
A10-7		CW	0 TO 72	72	5°
A10-8		CCW	0 TO 360	360	1°
A10-9		CCW	0 TO 100	100	3°-36'
A11-1	4	BLANK	-	-	-
A11-2		CW	0 TO 360	360	1°
A11-3*		CW	0 TO 360	180	2°
A11-4		CW	0 TO 200	200	1°-48'
A11-5		CW	0 TO 100	100	3°-36'
A11-6		CW	0 TO 1000	500	43°-12'
A11-7		CCW	0 TO 360	360	1°
A11-8*		CCW	0 TO 360	180	2°

* Dials are numbered every 20°.

Engraving filled with white.
Range of Graduations - 0 to 360°

Available on request:

- Pin or Clamp Hubs assembled to drum
- Special Engraving

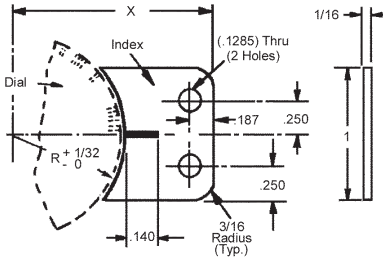
For Pin and Clamp Hubs see index.



FLAT DIAL INDEX

MATERIAL

ALUMINUM BLACK ANODIZED



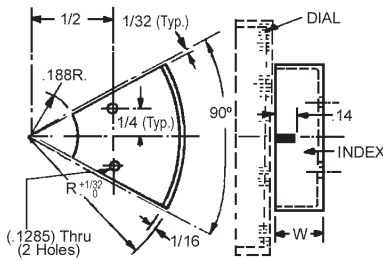
STOCK NO.	X	R
A13-1	1-3/4	.750
A13-2	2	1.000
A13-3	2-1/2	1.500
A13-4	3	2.000



DRUM DIAL INDEX

MATERIAL

ALUMINUM BLACK ANODIZED

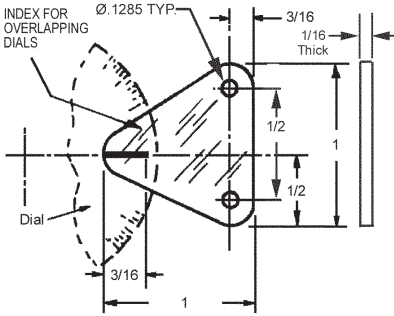


STOCK NO.	X	R
A14-1	.745	.375
A14-2	.995	.375
A14-3	1.245	.500
A14-4	1.495	.500

ENGRAVED INDEX

MATERIAL

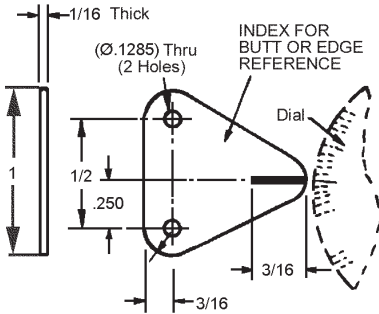
PLEXIGLASS



STOCK NO.	MATERIAL & FINISH
A12-1	PLEXIGLASS (CLEAR) MIL-P-5425

MATERIAL

ALUMINUM BLACK ANODIZED

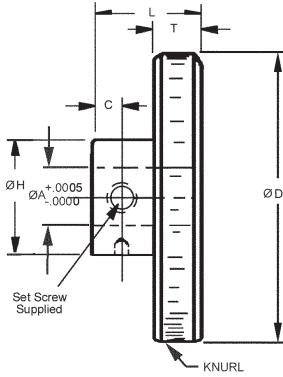


STOCK NO.	MATERIAL & FINISH
A12-2	24 ST. ALUMINUM, BLACK ANODIZED

KNURLED HANDWHEELS

MATERIAL

303 STAINLESS STEEL



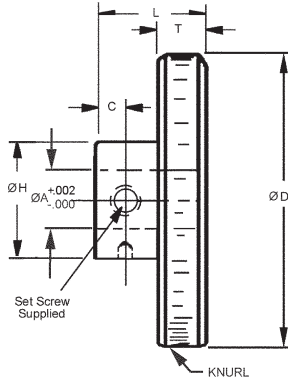
STOCK NO.	ØA	ØD	ØH	T	L	C
CN1-1 CN1-2 CN1-3	.1248 (1/8)	1 1-1/2 2	5/16	3/16	.375	.09
CN1-4 CN1-5 CN1-6	.1873 (3/16)	1 1-1/2 2	3/8	3/16	.406	.11
CN1-7 CN1-8 CN1-9	.2498 (1/4)	1 1-1/2 2	1/2	3/16	.437	.12
CN1-10 CN1-11 CN1-12	.3123 (5/16)	1 1-1/2 2	1/2	3/16	.437	.12
CN1-13 CN1-14 CN1-15	.3748 (3/8)	2 2-1/2 3	3/4	3/8	.875	.25
CN1-16 CN1-17 CN1-18	.4998 (1/2)	2-1/2 3 4	1	3/8	.875	.25



KNURLED HANDWHEELS

MATERIAL

ALUMINUM BLACK ANODIZED

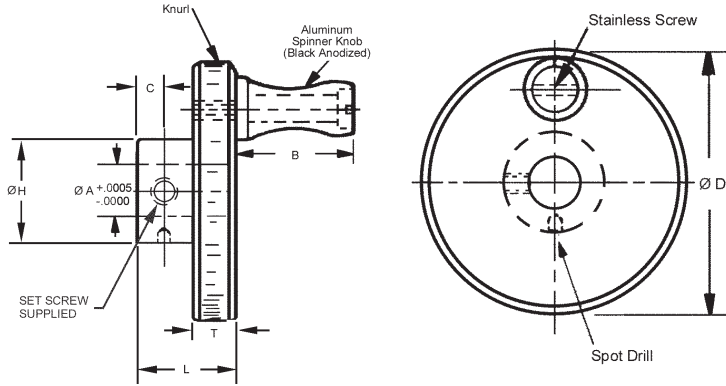


STOCK NO.	ØA	ØD	ØH	T	L	C
CN11-1	.125	1-1/8	5/8	3/16	7/16	1/8
CN11-2	(1/8)	1-5/8	5/8	3/16	7/16	1/8
CN11-3	.187	1-1/8	5/8	3/16	7/16	1/8
CN11-4	(3/16)	2-1/8	5/8	3/16	7/16	1/8
CN11-5	.250	1-5/8	5/8	3/16	7/16	1/8
CN11-6	(1/4)	2-1/8	5/8	3/16	7/16	1/8
CN11-7	.375	1-5/8	1	1/2	3/4	1/8
CN11-8	(3/8)	2-5/8	1	1/2	3/4	1/8
CN11-9	.500	2-5/8	1	1/2	3/4	1/8
CN11-10	(1/2)	3-1/2	1	1/2	3/4	1/8

KNURLED HAND CRANKS

MATERIAL

303 STAINLESS STEEL

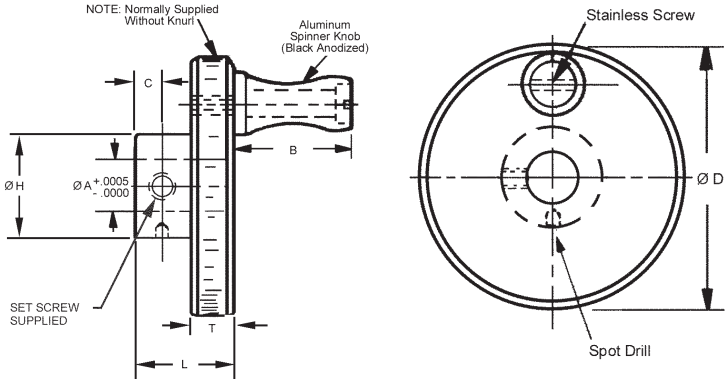


STOCK NO.	ØA	ØD	ØH	T	L	C	B
CN2-1	.1248	1					
CN2-2	(1/8)	1-1/2	5/16	3/16	.375	.09	3/4
CN2-3		2					
CN2-4	.1873	1					
CN2-5	(3/16)	1-1/2	3/8	3/16	.406	.11	3/4
CN2-6		2					
CN2-7	.2498	1					
CN2-8	(1/4)	1-1/2	1/2	3/16	.437	.12	3/4
CN2-9		2					
CN2-10	.3123	1					
CN2-11	(5/16)	1-1/2	1/2	3/16	.437	.12	3/4
CN2-12		2					
CN2-13	.3748	2					
CN2-14	(3/8)	2-1/2	3/4	3/8	.875	.25	31/32
CN2-15		3					
CN2-16	.4998	2-1/2					
CN2-17	(1/2)	3	1	3/8	.875	.25	31/32
CN2-18		4					

HAND CRANKS

MATERIAL

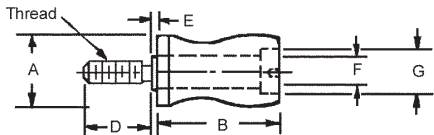
ALUMINUM BLACK ANODIZED



STOCK NO.	$\varnothing A$	$\varnothing D$	$\varnothing H$	T	L	B	C
CN12-1	.125	1-1/8	5/8	3/16	7/16	3/4	1/8
CN12-2	(1/8)	1-5/8	5/8	3/16	7/16	3/4	1/8
CN12-3	.187	1-1/8	5/8	3/16	7/16	3/4	1/8
CN12-4	(3/16)	2-1/8	5/8	3/16	7/16	3/4	1/8
CN12-5	.250	1-5/8	5/8	3/16	7/16	3/4	1/8
CN12-6	(1/4)	2-1/8	5/8	3/16	7/16	3/4	1/8
CN12-7	.375	1-5/8	1	1/2	3/4	3/4	1/8
CN12-8	(3/8)	2-5/8	1	1/2	3/4	31/32	1/8
CN12-9	.500	2-5/8	1	1/2	3/4	31/32	1/8
CN12-10	(1/2)	3-1/2	1	1/2	3/4	31/32	1/8

KNOBS

TYPE	MATERIAL
SPINNER KNOB AND SCREW	ALUMINUM BLACK ANODIZED WITH 303 STAINLESS STEEL SCREW

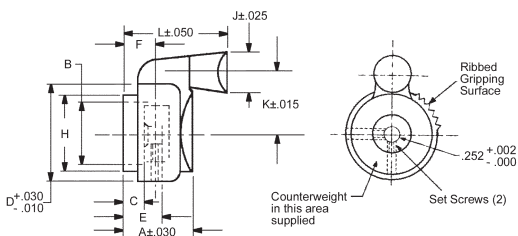


STOCK NO.	A	B	THREAD	D	E	F	G
CN8-1	1/2	3/4	#8-32	3/16	1/64	3/16	5/16
CN8-2	11/16	31/32	1/4-20	7/16	1/64	5/16	1/2
CN8-3	15/16	1-1/4	3/8-16	5/8	11/32	1/2	3/4



TYPE	MATERIAL
SPINNER KNOB WITH RIBBED GRIPPING SURFACE	THERMOPLASTIC BLACK MATTE FINISH WITH ALUMINUM INSERTS

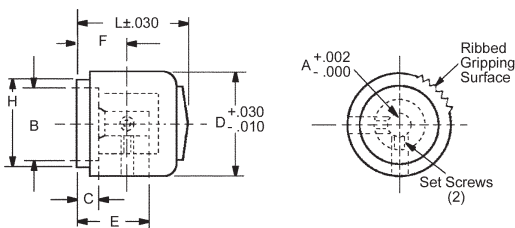
D



Meets MIL-K-3926 B and MS91528J

STOCK NO.	MS PART NO. 91528J	D	NUT CLEARANCE B MIN.	C MIN.	F MAX.	SHAFT HOLE DEPTH E MIN.	A	H MAX.	L	J	K	SET SCREW
CN5-22	-3S2B	1.250	.685	.250	.427	.605	.850	1.185	1.350	.580	.800	#8-32
CN5-23	-4S2B	1.750	.685	.320	.489	.740	1.070	1.690	1.758	.780	1.094	#8-32

TYPE	MATERIAL
ROUND KNOB	ALUMINUM BLACK ANODIZED WITH 303 STAINLESS STEEL SCREW



Meets MIL-K-3926 B and MS91528J

STOCK NO.	MS PART NO. 91528J	A	D	NUT CLEARANCE B MIN.	C MIN.	F MAX.	E MIN.	L	H MAX.	SET SCREW
CN5-14	-0D1B	.127	.500	.300	.177	.325	.560	.655	.460	#4-40
CN5-15	-1D2B	.252	.700	.485	.188	.369	.568	.782	.680	#4-40
CN5-16	-2D2B	.252	.900	.640	.320	.484	.730	1.010	.845	#8-32
CN5-17	-3D2B	.252	1.250	.750	.250	.427	.605	.850	1.185	#8-32

SYNCRO MOUNT CLAMPS

SHAFTS	MATERIAL
1/8" TO 1/4"	416 STAINLESS STEEL HEAT TREATED - ROCKWELL C28-32 (CAST)

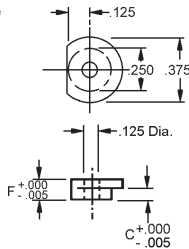
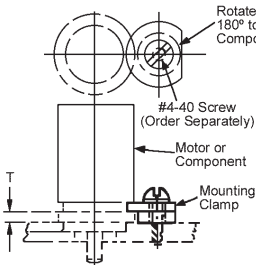
STOCK NO.	T	C	F
SM-11	.062	.052	.100
SM-12	.093	.081	.131
SM-13	.125	.109	.160
SM-14	.250	.238	.288
SM-15	.072	.063	.113
SM-16	.125	.112	.162
SM-17	.156	.143	.193
SM-18	.225	.213	.263

SHAFTS	MATERIAL
1/8" TO 1/4"	303 STAINLESS STEEL

STOCK NO.	T	C	F
SM-1	.062	.052	.100
SM-2	.093	.081	.131
SM-3	.125	.109	.160
SM-4	.250	.238	.288
SM-5	.072	.063	.113
SM-6	.125	.112	.162
SM-7	.156	.143	.193
SM-8	.225	.213	.263

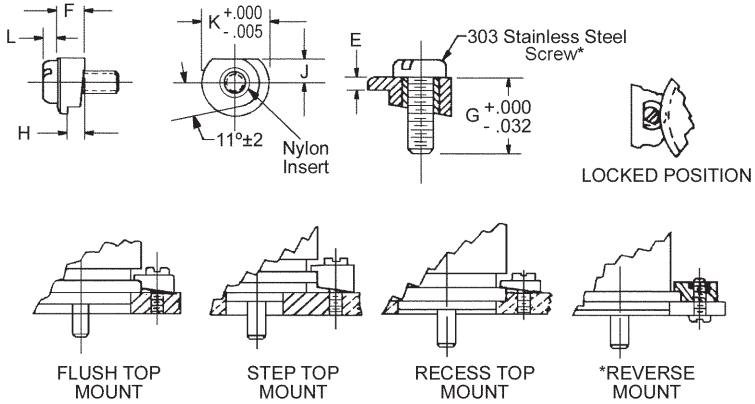
SHAFTS	MATERIAL
1/8" TO 1/4"	2024-T4 ALUMINUM

STOCK NO.	T	C	F
SM-1-A	.062	.052	.100
SM-2-A	.093	.081	.131
SM-3-A	.125	.109	.160
SM-4-A	.250	.238	.288



SYNCRO MOUNT CLAMPS

MOUNT STYLES	MATERIAL
TOP AND REVERSE	316 STAINLESS STEEL (SINTERED) WITH NYLON INSERTS



STOCK NO.	MOUNT STYLE	+.003 H	REF J	+.003 E	REF F	G	SCREW SIZE	+.000 -.005 K	L MAX	BOLT CIRCLE FOR CLEATS
										USE THE LARGER OF THE FOLLOWING TWO BOLT CIRCLES
SQ-1 SQ-2 SQ-3 SQ-4 SQ-5	TOP	.031 .047 .062 .093 .125	.091	.040 .040 .040 .040 .040	.071 .087 .102 .133 .165	1/4 1/4 1/4 5/16 5/16	#2-56	.265	.053	ADD .192" TO MAX FLANGE DIA., OR ADD .275" TO MAX GROOVE BASE DIA.
SQ-6 SQ-7 SQ-8 SQ-9 SQ-10 SQ-11 SQ-12 SQ-13 SQ-14 SQ-15 SQ-16 SQ-17	TOP	.031 .062 .062 .062 .078 .093 .093 .093 .125 .156 .225 .250	.125	.040 .040 .050 .063 .063 .040 .050 .063 .050 .040 .063 .063	.071 .102 .112 .125 .141 .133 .143 .156 .175 .196 .288 .312	5/16 5/16 3/8 3/8 3/8 3/8 3/8 3/8 3/8 7/16 5/8	#4-40	.390	.068	ADD .270" TO MAX FLANGE DIA., OR ADD .400" TO MAX GROOVE BASE DIA.
SQ-18	TOP	.250 +.005	.187	.187 +.005	.437	7/8	#10-32	.625 +.000	.110	ADD .406" TO MAX FLANGE DIA., OR ADD .630" TO MAX GROOVE BASE DIA.
SQ-19 SQ-20 SQ-26	REVERSE	.062 .093 .125	.125	.063 .063 .063	.125 .156 .187	- - -	*#4-40	.390	- - -	ADD .270" TO MAX FLANGE DIA., OR ADD .400" TO GROOVE BASE DIA.

- Quick Releasing
- Faster Nulling of Clamped Component
- Self Locking

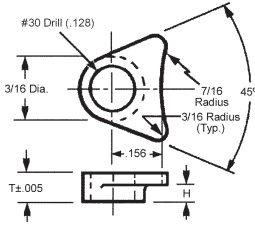
Meets ASTM B525 Clamp and ASTM B4066 Insert

* 303 Stainless Steel slotted pan head screw supplied (except reverse mount).

Phillips pan head screw (MIL Standard) available on request

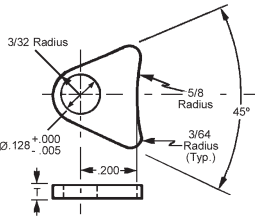
SYNCRO MOUNT CLAMPS

SHAFTS	MATERIAL
1/8" TO 1/4"	303 STAINLESS STEEL AND ALUMINUM



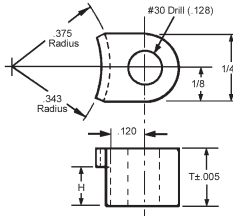
303 STAINLESS STEEL STOCK NO.	ALUMINUM STOCK NO.	H	T
SM-20	SM-20-A	.047	.093
SM-21	SM-21-A	.110	.156
SM-22	SM-22-A	.210	.272

SHAFTS	MATERIAL
1/8" TO 1/4"	302 STAINLESS STEEL AND ALUMINUM



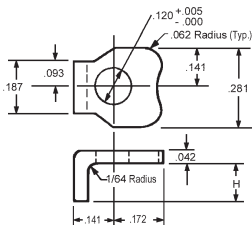
302 STAINLESS STEEL STOCK NO.	ALUMINUM STOCK NO.	T
SM-23	SM-23-A	.040

SHAFTS	MATERIAL
1/8" TO 1/4"	303 STAINLESS STEEL AND ALUMINUM



303 STAINLESS STEEL STOCK NO.	ALUMINUM STOCK NO.	H	T
SM-24	SM-24-A	.020	.065
SM-25	SM-25-A	.050	.095
SM-26	SM-26-A	.115	.160
SM-27	SM-27-A	.175	.220

SHAFTS	MATERIAL
1/8" TO 1/4"	302 STAINLESS STEEL

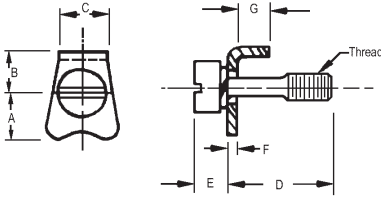


302 STAINLESS STEEL STOCK NO.	H.
SM-28	FLAT
SM-29	.047
SM-30	.078
SM-31	.110
SM-32	.142



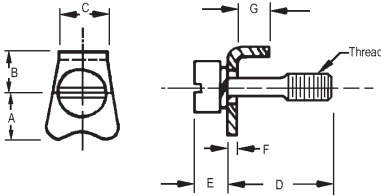
SYNCRO MOUNT CLAMPS

THREAD	MATERIAL
#2-56, #4-40 AND #6-32	303 STAINLESS STEEL SCREW 302 STAINLESS STEEL CLAMP & LOCKWASHER



STOCK NO.	COMPONENT SIZE	THREAD	A	B	C	D	E	F	G
SQ-27	08 & 10	#2-56	.150	.080	.125	.192	.093	.028	.070
SQ-28	11, 15 & 18	#4-40	.172	.110	.187	.289	.113	.032	.093
SQ-29	23	#6-32	.250	.156	.250	.475	.138	.062	.255

THREAD	MATERIAL
#2-64, #4-48 AND #6-40	303 STAINLESS STEEL SCREW 302 STAINLESS STEEL CLAMP & LOCKWASHER

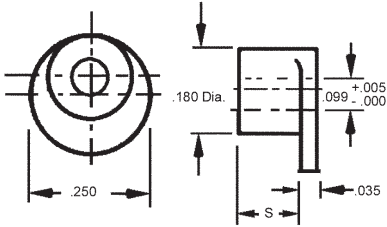


STOCK NO.	COMPONENT SIZE	THREAD	A	B	C	D	E	F	G
SQ-30	08 & 10	#2-64	.150	.080	.125	.192	.093	.028	.070
SQ-31	11, 15 & 18	#4-48	.172	.110	.187	.289	.113	.032	.093
SQ-32	23	#6-40	.250	.156	.250	.475	.138	.062	.255

SYNCRO MOUNT CLAMPS

MATERIAL

303 STAINLESS STEEL

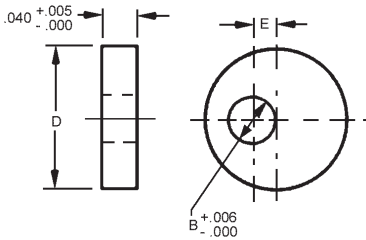


STOCK NO.	S
SM-47	.057
SM-48	.088
SM-48	.104
SM-50	.117



MATERIAL

303 STAINLESS STEEL AND ALUMINUM

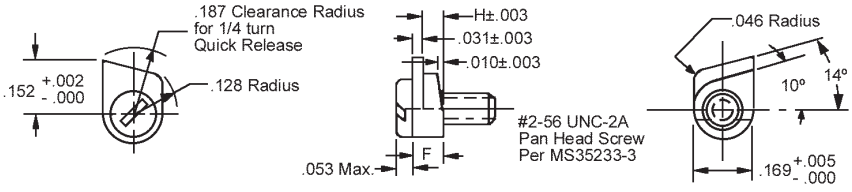


303 STAINLESS STEEL STOCK NO.	ALUMINUM STOCK NO.	E	D	B
SM-43	SM-43-A	.011	.187	.103
SM-44	SM-44-A	.031	.250	.127
SM-45	SM-45-A	.062	.310	.127
SM-46	SM-46-A	.062	.370	.127

MINIATURE SYNCRO MOUNT CLAMPS

MATERIAL

316 STAINLESS STEEL (SINTERED) WITH NYLON INSERT



STOCK NO.	COMP. SIZE	MOUNT STYLE	H	F
SQ-21	5, 8, 10	TOP	.031	.062
SQ-22	5	TOP	.047	.078
SQ-23	8, 10	TOP	.062	.093

- Quick Releasing
- Self Locking

D

