

**A TYPE FOR EVERY USE***SIMPLICITY**ACCURACY**DEPENDABILITY*

ZT 331-S



ZT 330-S

ALL ZEPHYR MICRO STOP COUNTERSINKS have the same basic design and adjustment features. All are precision machined and designed for continuous high speed, heavy duty operation without overheating.

**BASIC DESIGN**

ZT 330-SP



ZT 334-W



ZT 331-SP



ZT 338



ZT 341



ZT 339

### ADJUSTMENT

#### *Without TOOLS...*

Zephyr Micrometer Countersinks are made in several models and styles — All incorporate the same basic adjustment features and positive lock design, plus a secondary lock protection — Foot-pieces for all conditions are readily interchangeable, thus making all models truly universal in their application — Enclosed ball thrust bearings plus bronze radial bearing permit sustained high speed heavy duty operation without overheating.

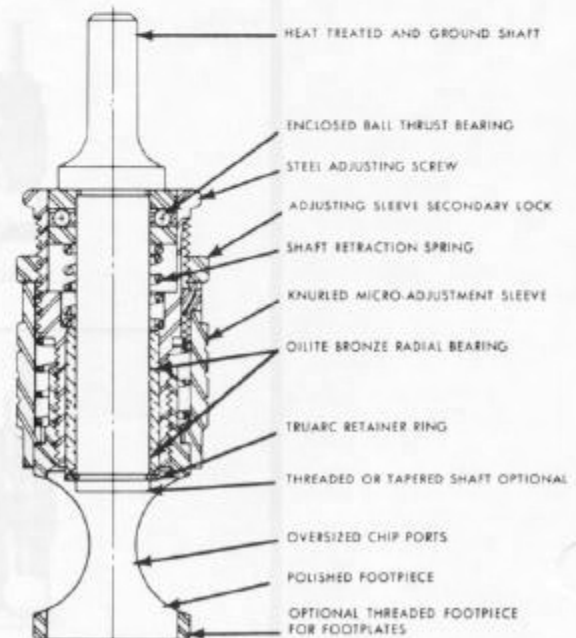
- 1** Knurled locking ring provides secondary locking, completely eliminating all possibility of inadvertent re-setting of primary adjustment.
- 2** Knurled adjusting sleeve with micrometer-type dial, calibrated in increments of .001" ... provides instant and positive setting to any cutter depth desired plus automatic locking.



**POSITIVE  
NON-SLIP  
LOCK**

### DESIGN FEATURES

- Positive non-slip locking, adjusts without tools
- Specific types and sizes for every purpose
- Micrometer dial type adjustment sleeve
- Spring loaded retractable type shaft
- Polished steel footpieces or optional screw-on nylon or steel footplate
- Heavy duty enclosed ball thrust bearing
- Oversize radial bronze bearing



**MODEL  
ZT330-S**



SHAFT TRAVEL ADJUSTMENT  $\frac{7}{32}$ "  
 $\frac{5}{16}$ "

**MODEL  
ZT331-SP**



SHAFT TRAVEL ADJUSTMENT  $\frac{1}{2}$ "  
1"

**MODEL  
ZT334-W**



SHAFT TRAVEL ADJUSTMENT  $\frac{1}{2}$ "  
1"



Style "S"



Style "W"



Style "Y"



Style "R"



Style "SP"



Style "WP"

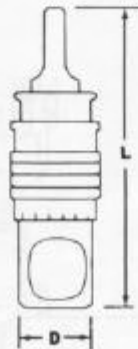


Style "X"



Style "Z"

The eight types of footpieces for each model will fill all needs. Footpiece styles "SP" and "WP" are available with either a hardened and polished steel footplate or a nylon screw on type protective footplate which helps to eliminate surface scratching. **Note:** Footpiece "R" available only with ZT330 model.



MODEL NO.	D	L	MAX. CUT DIA.	SHAFT THREAD
ZT330-S	.87	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-W	1.00	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-X	.87	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-Y	.87	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-Z	.87	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-R	.45	$3\frac{3}{16}$	$\frac{5}{16}$	$\frac{1}{4}$ -28
ZT330-SP	1.25	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT330-WP	1.25	$3\frac{3}{16}$	$\frac{3}{8}$	$\frac{1}{4}$ -28
ZT331-S	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-W	1.62	$5\frac{1}{16}$	$1\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-X	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-Y	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-Z	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-SP	1.13	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{8}$ -24
ZT331-WP	1.87	$5\frac{1}{16}$	$1\frac{3}{8}$	$\frac{3}{8}$ -24
ZT334-S	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{7}{16}$ -20
ZT334-W	1.75	$5\frac{1}{16}$	$1\frac{1}{2}$ "	$\frac{7}{16}$ -20
ZT334-X	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{7}{16}$ -20
ZT334-Y	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{7}{16}$ -20
ZT334-Z	1.11	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{7}{16}$ -20
ZT334-SP	1.37	$5\frac{1}{16}$	$\frac{3}{8}$	$\frac{7}{16}$ -20
ZT334-WP	2.00	$5\frac{1}{16}$	$1\frac{1}{2}$ "	$\frac{7}{16}$ -20

# ZEPHYR

## MICRO STOP COUNTERSINKS

Made to order, priced on application.

### BASIC DESIGN

- Precision manufactured for trouble-free operation.
- Completely interchangeable parts — low maintenance.
- Positive nonslip locking, adjusts without tools.
- Micrometer dial type adjustment sleeve.
- Spring loaded, retractable type shaft.
- Hardened and polished steel footpieces.
- Heavy duty enclosed ball thrust bearing.
- Oversize radial bronze bearing.



### MODEL ZT345-S



### NEW MIDGET MODEL

For close quarters operations

All Zephyr Micro Stop Countersinks have the same basic design and adjustment features. All are precision machined and designed for continuous high speed, heavy duty operation without overheating.

MODEL	D	L	CUTTER THREAD	MAX. CUTTER DIA.	CUTTER PART NO.
ZT345-S	.687	3 3/16"	1/4-28	7/16"	ZT150 ZT154 ZT164 ZT170
ZT345-SP	.687	3 3/16"	1/4-28	3/8"	ZT172 ZT184 ETC.

Also available as Model 345-SP with threaded footpiece and a hardened and polished, screw on type footplate.

SHAFT TRAVEL 7/32"

ADJUSTMENT 3/8"

### BASIC DESIGN

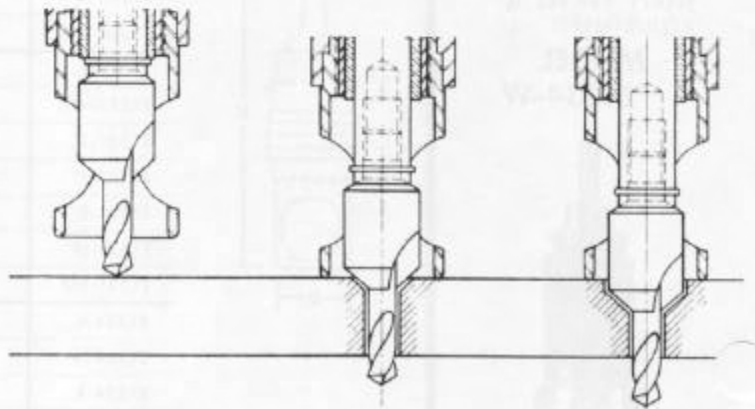
### SPECIAL 9/16" LONG STROKE UNIT

For use with ZT184 and ZT185 Cutters  
(See page B13)



ZT 338

Permits full retraction of Drill-countersink cutter  
Also permits full extension of Drill-countersink cutter



Other styles of footpieces such as illustrated on page B3 are also available for the ZT338 unit.

# ZEPHYR

## MICRO STOP COUNTERSINKS

### Special Purpose Tools

Made to order, priced on application.

#### BASIC DESIGN

ALL ZEPHYR MICRO STOP COUNTERSINKS have the same basic design and adjustment features. All are precision machined and designed for continuous high speed, heavy duty operation without overheating.



#### EXTENDED FOOTPIECE TYPE

##### MODEL ZT284

MODEL #	CUTTER THREAD	MAX. CUTTER DIA.	B	C
ZT284-A	10-32	.250	.275	.375
ZT284-B	1/4-28	.300	.325	.425
ZT284-C	1/4-28	.375	.400	.500
ZT284-D	1/4-28	.562	.656	.750

MODEL #	INTEGRAL PILOT CUTTERS				
	78°	82°	100°	110°	115°
ZT284-A	ZT285-15	ZT285-16	ZT285-17	ZT285-18	ZT285-19
ZT284-B	ZT286-15	ZT286-16	ZT286-17	ZT286-18	ZT286-19
ZT284-C	ZT154-20	ZT154-21	ZT154-22	ZT154-23	ZT154-24
ZT284-D	ZT154-25	ZT154-26	ZT154-28	ZT154-28	ZT154-29

When ordering Cutters please specify Dash Number and Pilot Diameter  
Example: ZT285-17-1/8

Precision manufactured for trouble-free operation.  
Completely interchangeable parts — low maintenance.  
Positive nonslip locking, adjusts without tools.  
Micrometer dial type adjustment sleeve.  
Spring loaded, retractable type shaft.  
Hardened and polished steel footpieces.  
Heavy duty enclosed ball thrust bearing.  
Oversize radial bronze bearing.

# ZEPHYR

## MICRO STOP COUNTERSINKS

SPECIAL PURPOSE TOOLS

Made to order, priced on application.

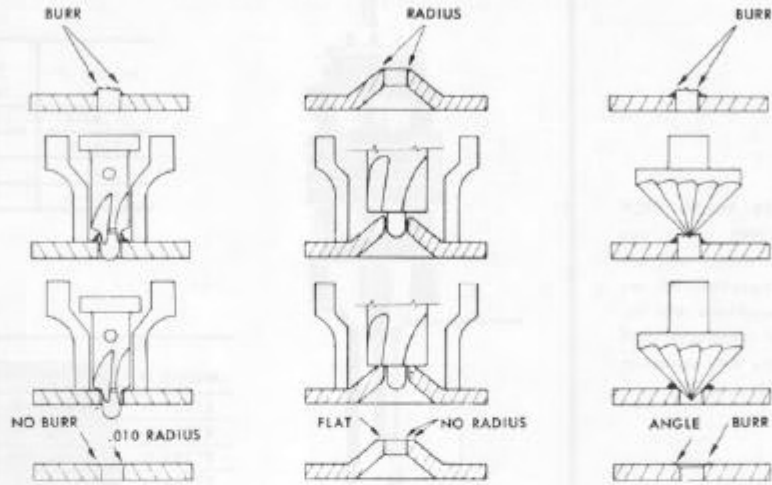
### MODEL ZT339



SHAFT TRAVEL =  $\frac{1}{32}$ "  
ADJUSTMENT =  $\frac{5}{16}$ "

### PRECISION DEBURRING OR SPOTFACING

For use with ZT400 and ZT403 Cutters.

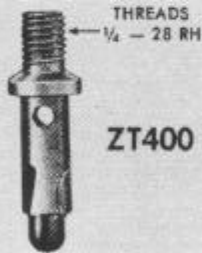


Using ZT339 with ZT400

Using ZT339 with ZT403

Rosette Method

Solves the problems of sheet cracking when dimpling titaniums and other exotic materials. Accurately controls the depth of cut and radius with positive non-slip lock.



THREADS  $\frac{1}{4}$  - 28 RH

ZT400

#### DEBURRING TOOLS

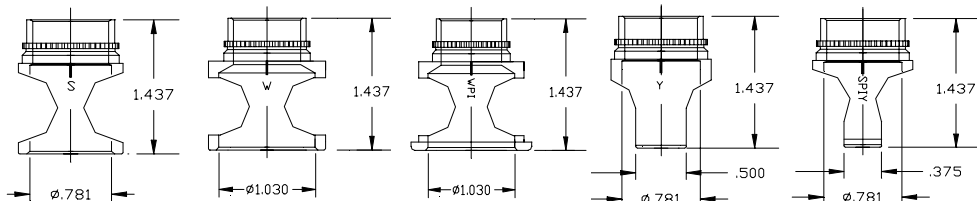
#### SPOTFACING TOOLS

DEBURRING TOOLS				SPOTFACING TOOLS									
CUTTER		FOOTPIECE		CUTTER		PILOT		FOOTPIECE					
TOOL NO.	D <sub>1</sub>	D	PART NUMBER	D <sub>1</sub>	D	TOOL NO.	D <sub>1</sub>	D	PART NUMBER	D <sub>1</sub>	D		
ZT400-00	.054	.167	ZT339010	.173	.296	ZT403-3	.078	.160	ZT309- $\frac{3}{32}$	.092	ZT339031	.219	.335
ZT400-0	.069	.167	ZT339010	.173	.296	ZT403-4	.078	.210	ZT309- $\frac{1}{8}$	.123	ZT339032	.266	.390
ZT400-1	.097	.167	ZT339010	.173	.296	ZT403-5	.125	.315	ZT309- $\frac{1}{16}$	.154	ZT339033	.375	.500
ZT400-3	.127	.198	ZT339011	.204	.327	ZT403-5	.125	.315	ZT309- $\frac{1}{8}$	.164	ZT339033	.375	.500
ZT400-5	.158	.230	ZT339012	.236	.359	ZT403-6	.125	.360	ZT309- $\frac{3}{16}$	.187	ZT339034	.422	.550
ZT400-7	.172	.240	ZT339013	.246	.369	ZT403-6	.125	.360	ZT309- $\frac{1}{4}$	.248	ZT339035	.547	.672
ZT400-9	.190	.260	ZT339014	.266	.389	ZT403-6	.125	.360	ZT309- $\frac{3}{8}$	.310	ZT339035	.547	.672
ZT400-11	.227	.295	ZT339015	.301	.424								
ZT400-13	.249	.319	ZT339016	.325	.448								
ZT400-15	.280	.348	ZT339017	.354	.477								
ZT400-17	.311	.382	ZT339018	.388	.512								
ZT400-21	.135	.205	ZT339021	.211	.336								
ZT400-23	.151	.221	ZT339023	.227	.352								
ZT400-25	.204	.274	ZT339025	.280	.405								

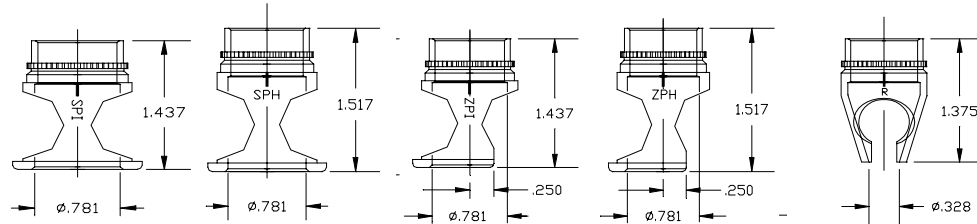
# ZT680 Series Microstop Countersink Cage

## Product Data Sheet

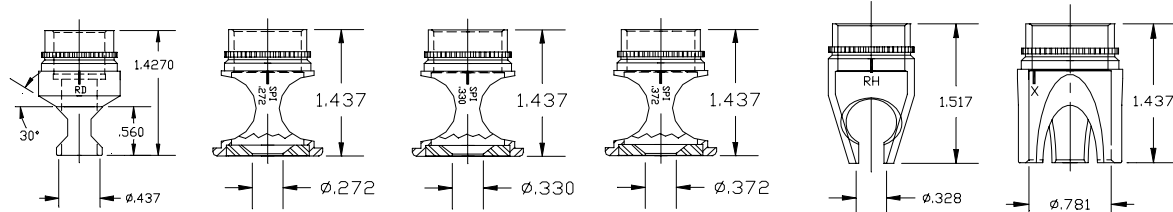
**ZT680 Footpiece Style Chart** (To the part numbers below add the shaft style, QC = Quick Change, TF = 1/4" Round w/Three Flats, no suffix = 1/4" Round)



**Style - S** P/N: ZT680-S(-)  
**Style - W** P/N: ZT680-W(-)  
**Style - WPI** P/N: ZT680-WPI(-)  
**Style - Y** P/N: ZT680-Y(-)  
**Style - SPIY** P/N: ZT680-SPIY(-)



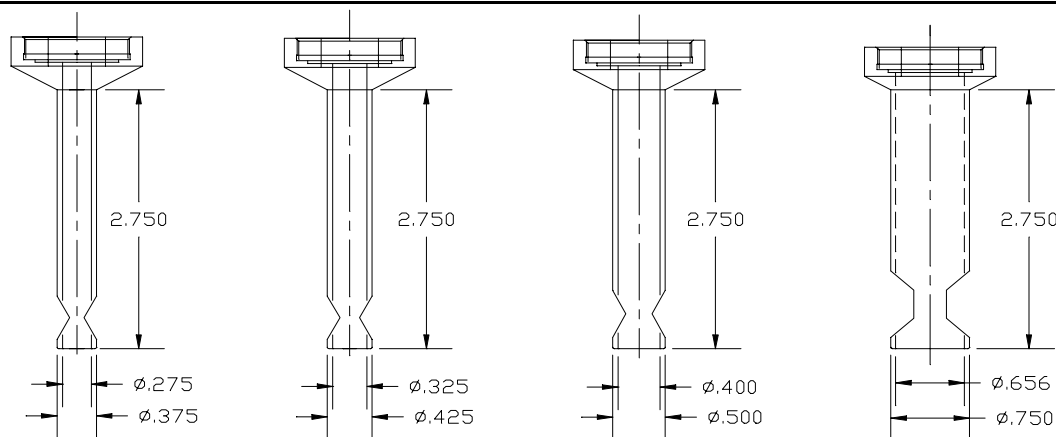
**Style - SPIS** P/N: ZT680-SPIS(-)  
**Style - SPH** P/N: ZT680-SPH(-)  
**Style - ZPI** P/N: ZT680-ZPI(-)  
**Style - ZPH** P/N: ZT680-ZPH(-)  
**Style - R** P/N: ZT680-R(-)



**Style - RD** P/N: ZT680-RD(-)  
**Style - SPI w/Chip Guard** P/N: ZT680-SPI272(-)  
**Style - SPI w/Chip Guard** P/N: ZT680-SPI328(-)  
**Style - SPI w/Chip Guard** P/N: ZT680-SPI372(-)  
**Style - RH** P/N: ZT680-RH(-)  
**Style - X** P/N: ZT680-X(-)

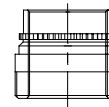


### ZT680 Extended Nose Footpiece Style Chart



**Style - A** P/N: ZT680-A(-) Ref: ZT680065 Shaft 10-32 Internal Thread  
**Style - B** P/N: ZT680-B(-) Ref: ZT680066 Shaft 1/4-28 Internal Thread  
**Style - C** P/N: ZT680-C(-) Ref: ZT680067 Shaft 1/4-28 Internal Thread  
**Style - D** P/N: ZT680-D(-) Ref: ZT680068 Shaft 1/4-28 Internal Thread  
**Adapter** P/N: ZT680060

Note: The ZT680060 adapter and the appropriate extended shaft are included on all extended nose cage assemblies. Should you wish to convert a standard ZT680 cage to an extended nose model, you will need to order the required nose-piece, the adapter and the appropriate extended shaft separately.



### Boeing To Zephyr Cross Reference Chart

Boeing No.	Zephyr Part No.	Boeing No.	Zephyr Part No.	Boeing No.	Zephyr Part No.
B3-1636-0405	ZT680-SPH-QC	B3-1636-0355	ZT680-R-QC	B3-1636-1200	ZT680-ZPI-QC
B3-1636-0165	ZT680-SPH-TF	B3-1636-0305	ZT680-R-TF	C0-0547-0080	ZT680-SPIY-QC
B3-1636-0505	ZT680-ZPH-QC	B3-1636-1000	ZT680-SPI-QC		
B3-1636-0555	ZT680-ZPH-TF	B3-1636-1100	ZT680-SPI-TF		



**ZEPHYR<sup>®</sup> Manufacturing Co., Inc.**  
 201 Hindry Avenue  
 Inglewood, CA 90301-1519  
 310-410-4907 Tel • 310-410-2913 Fax  
 zephyr@zephyrtool.com  
 http://www.zephyrtool.com

# ZT680 Series Microstop Countersink Cage Product Data Sheet

## How To Select The Proper Model Number

To select the proper ZT680 model number you only need to know two (2) things, the footpiece style and the drive shaft style. The information below will help you determined both.

ZT680 - ( ) - ( )

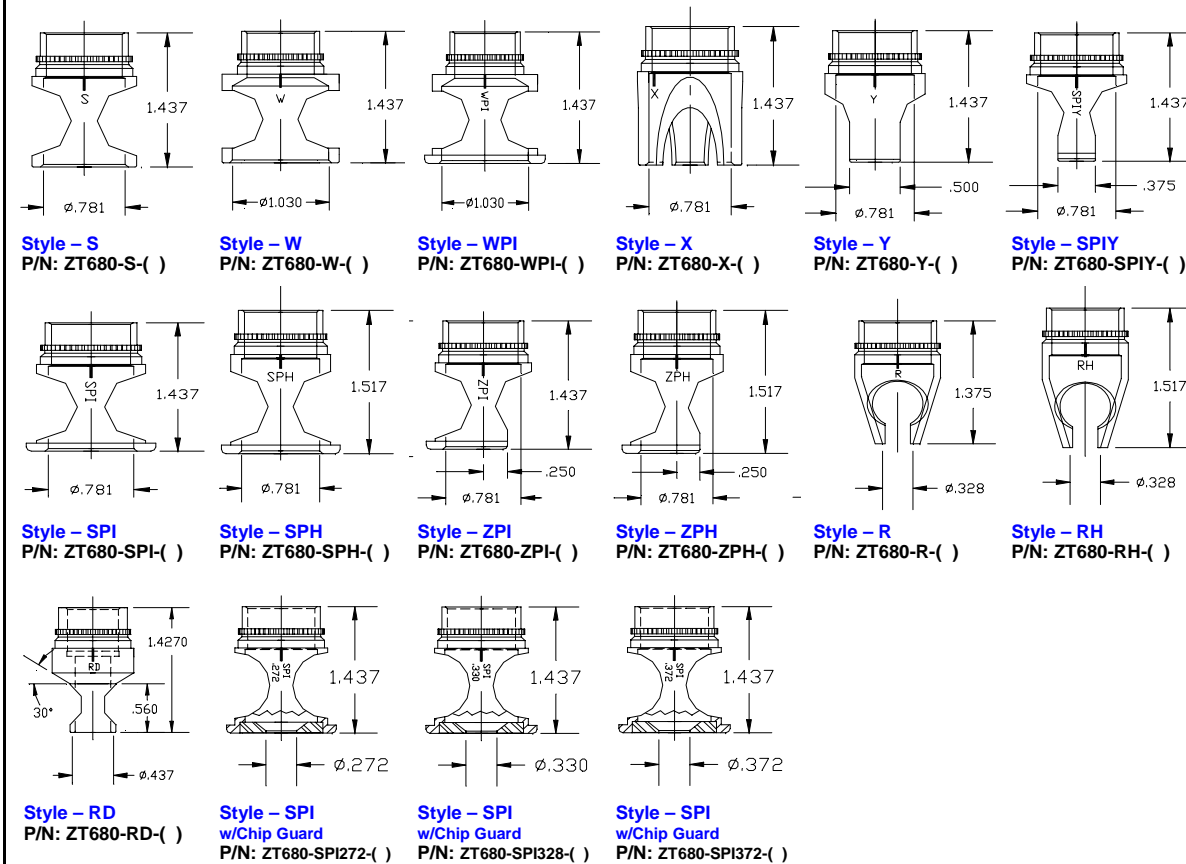
Shaft Styles: "QC" Quick Change, "TF" 1/4" Three Flats, No Suffix 1/4" Round  
Footpiece Styles: (see footpiece chart below)  
ZEPHYR TOOL: Heavy Duty High Speed Microstop Cage



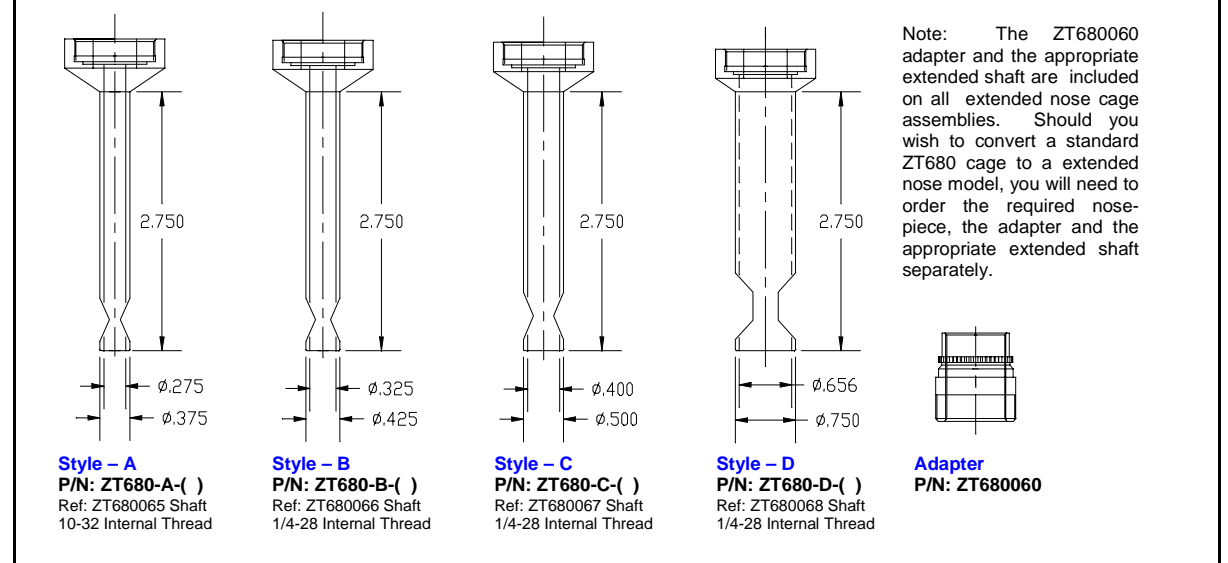
ZEPHYR® Manufacturing Co., Inc.  
201 Hindry Avenue  
Inglewood, CA 90301-1519  
310-410-4907 Tel • 310-410-2913 Fax  
zephyr@zephyrtool.com  
http://www.zephyrtool.com



## ZT680 Footpiece Style Chart (To the part numbers below add the shaft style, QC, TF or no suffix.)



## ZT680 Extended Nose Footpiece Style Chart



## Boeing To Zephyr Cross Reference Chart

Boeing No.	Zephyr Part No.	Boeing No.	Zephyr Part No.	Boeing No.	Zephyr Part No.
B3-1636-0405	ZT680-SPH-QC	B3-1636-0355	ZT680-R-QC	B3-1636-1200	ZT680-ZPI-QC
B3-1636-0165	ZT680-SPH-TF	B3-1636-0305	ZT680-R-TF	C0-0547-0080	ZT680-SPIY-QC
B3-1636-0505	ZT680-ZPH-QC	B3-1636-1000	ZT680-SPI-QC		
B3-1636-0555	ZT680-ZPH-TF	B3-1636-1100	ZT680-SPI-TF		

# ZT673/ZT674

## High Speed Super Microstop Cage

The ZT673/ZT674 series microstop cages have been designed for continuous operation at any speed up to 6000 rpm in the most demanding applications. This make them well suited for metallic, graphite and composite materials used in the airframe industry today. The ZT673/ZT674 series cages offer .0005" depth adjustment and are available with a full range of footpieces. Quality standards have been held to insure the highest levels of accuracy and performance.

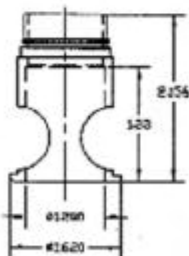
### Features include:

- Heavy duty
- Full ball bearing design supports all radial and thrust loads at speeds up to 6000 rpm.
- .0005" incremental depth adjustment.
- Fail safe positive stop design insures accurate repeatability and eliminates any possibility of work piece damage.
- 1" to 2" cutter capacity range/
- Drive shafts are available with 3/8" round (no suffix), 3/8" round with three flats (-TF) recommended.
- 7/16" shaft travel.
- The internal thread for the ZT673 series is 3/8"-24 and for the ZT674 series it is 7/16"-20.
- Improved thrust system, significantly increases the run time between adjustments and product life.

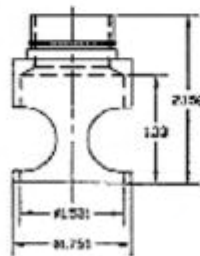


ZT673-WWPH-TF

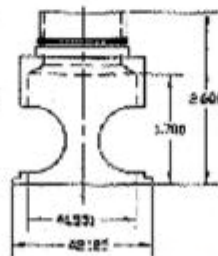
Model Number	Shaft Thread	Footpiece OD	Footpiece ID	Overall Length	Cutter Capacity
ZT673-SPI-TF	3/8-24	1.620	1.280	5.07	1.250
ZT673-W-TF	3/8-24	1.750	1.531	5.07	1.500
ZT673-WPH-TF	3/8-24	2.125	1.531	5.07	1.500
ZT673-WWPH-TF	3/8-24	2.500	2.010	5.07	2.000
ZT674-SPI-TF	7/16-20	1.620	1.280	5.07	1.250
ZT674-W-TF	7/16-20	1.750	1.531	5.07	1.500
ZT674-WPH-TF	7/16-20	2.125	1.531	5.07	1.500
ZT674-WWPH-TF	7/16-20	2.500	2.010	5.07	2.000
ZT674-X-TF	7/16-20	1.620	2.280	5.07	1.250



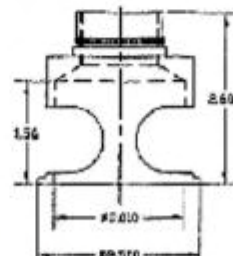
P/N ZT67304  
STYLE "SPI" INTEGRAL  
FLANGED FOOTPIECE  
-STANDARD LENGTH



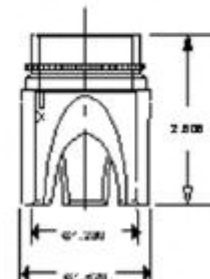
P/N ZT67305  
STYLE "W" WIDE  
FOOTPIECE  
-STANDARD LENGTH



P/N ZT67302  
STYLE "WPH" WIDE  
INTEGRAL FLANGED FOOTPIECE  
-SPECIAL LENGTH FOR 8020S



P/N ZT67303  
STYLE "WWPH" EXTRA WIDE  
INTEGRAL FLANGED FOOTPIECE  
-SPECIAL LENGTH FOR 8020S



P/N ZT67401  
STYLE "A" INTEGRAL FLANGED  
FOOTPIECE  
-STANDARD LENGTH