50 years Anniversary

taco®

Self-Opening Die-Heads

Model SDG (Stationary type)

For High Precision Snap Threading

For use with STYLE 'D' GEOMETRIC CHASERS

www.newmantools.com. 1-800-465-1384

Self-Opening Die-Heads

STYLE 'D' STATIONARY

Model SDG (Stationary)

For High Precision Snap Threading

- Most economical thread cutting tool of simple design.
- Achieve mass production with uniform high accuracy.
- For use on automatic and semi - automatic machines - excellent for turret lathes, capstans and screw machines.
- Most suitable for cutting right and left hand - fine, course and pipe threads.
- Easy to Operate.
- Rugged construction - long service life.
- Heavy duty - pull-off trip.

TACO self-opening die heads are heavy-duty and are made with high precision and all parts are hardened and ground. The head can be mounted on turret lathe, screw machine or automat and semi-automat for cutting right and left hand as well as fine, course and pipe threads. All TACO die heads have a fine adjustment screw which enable setting of chasers to cut over - or undersize.

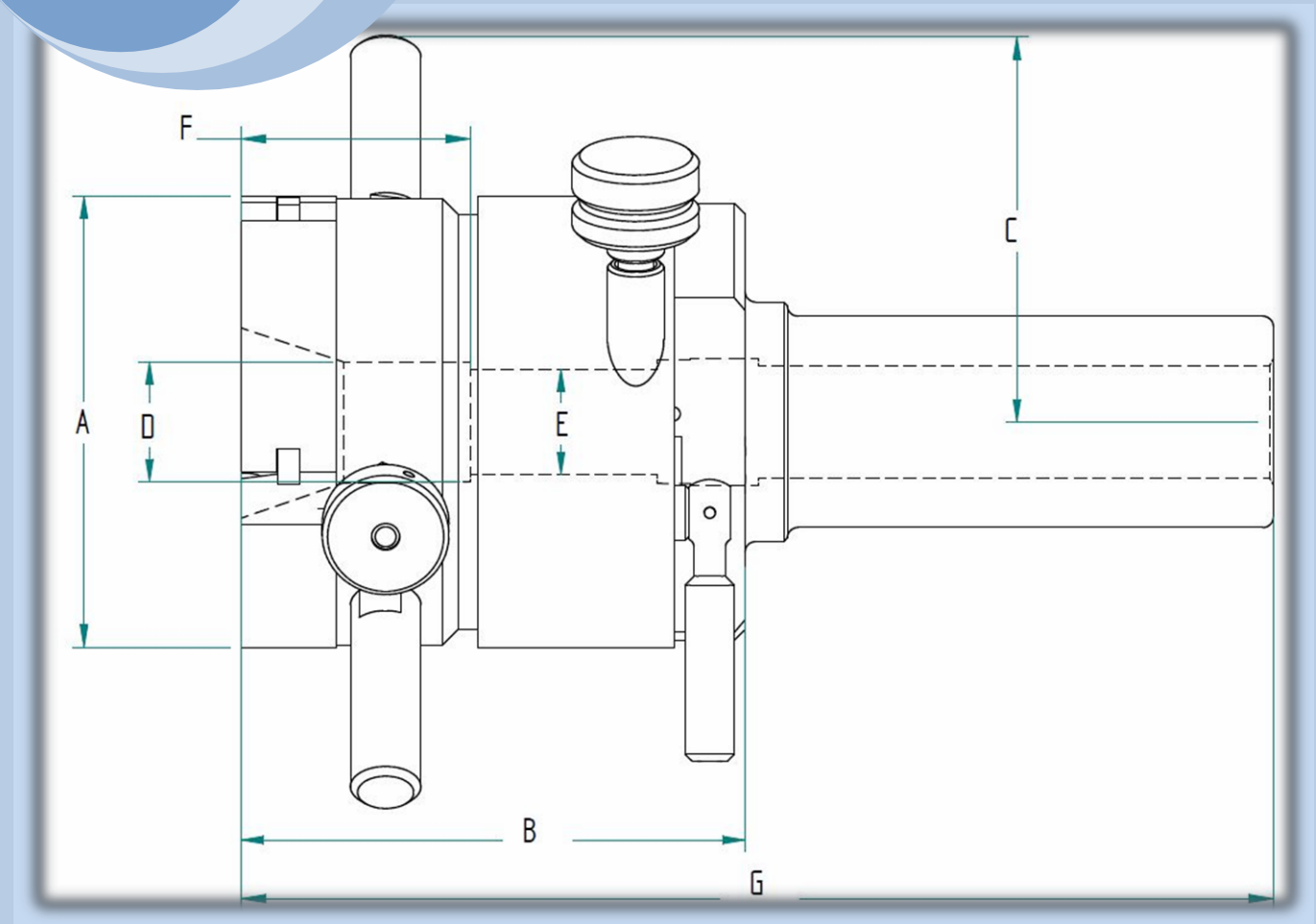
TACO dia heads are most suitable for heavy duty work and mass production. They open automatically when the selected thread length reaches, eliminating the necessity of reversal of the direction of working spindle.

The chasers numbered 1 to 4 guided by a keyway are inserted into four corresponding spring loaded slots in the head. By turning the cam ring and with drawing the locking bolt the chasers are kept in position. The closing of the head is then effected by turning the handle, attached to the front part, anti-clockwise until the locking bolt springs into the prepared position. The loading of the cam ring takes place at an angle of 25°.

TACO die heads, shown in the table below, are normally supplied with a straight shank. The shank is held in position by three screws, and therefore head with any form of flanged shank, such as Morse Taper or other, can be supplied to suit the requirement.

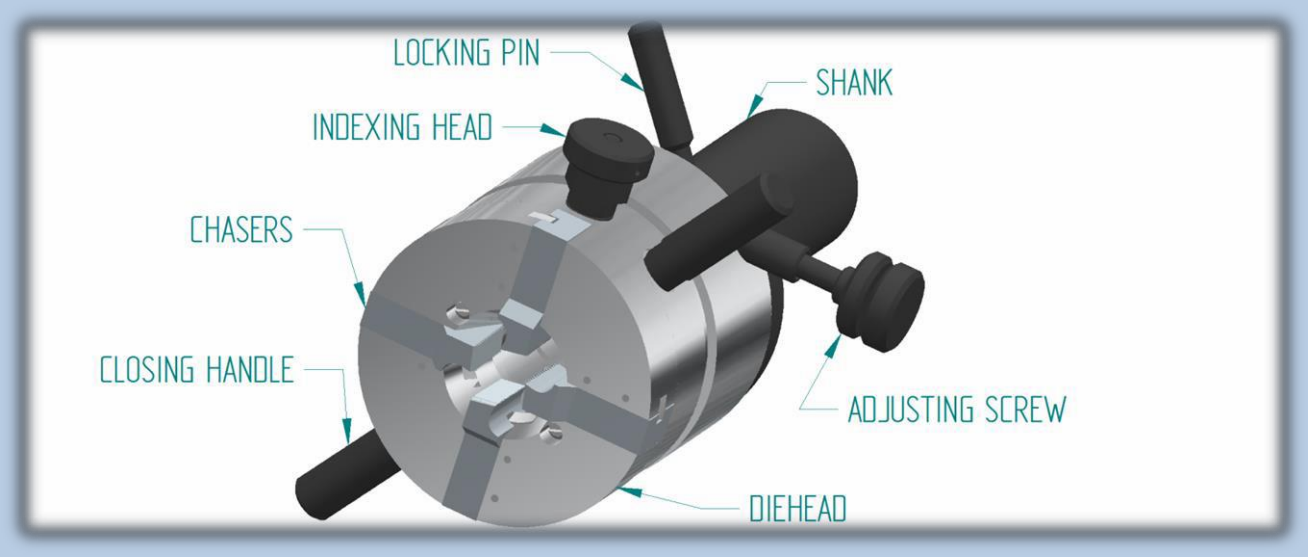
Model	Capacity			Shank	Bore
	Withworth & American inch	Metric & S. I. mm			
SDG-1	3/32-5/16	2-8		5/8"	3/8"
				3/4"	3/8"
				1"	3/8"
SDG-2	3/16-9/16	4-14	1/8-1/4	5/8"	3/8"
				3/4"	9/16"
				1"	5/8"
				30mm	5/8"
SDG-3	1/4-3/4	6-18	1/8-1/2	3/4"	9/16"
				1"	9/16"
				1.5"	24mm
				40mm	24mm
SDG-4	3/8-1	10-24	1/8-3/4	1"	9/16"
				1.5"	1-1/16"
				40mm	1-1/16"
SDG-5	1/2-1 1/4	12-30	1/4-1	1.5"	1-1/16"
				2-1/8"	1-3/8"
				60mm	1-3/8"

Note: Die-heads are supplied without chaser sets.

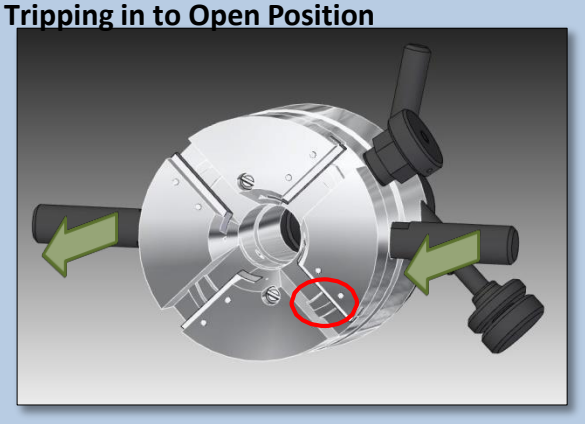


MODEL	A (inch)	B	C	Max (D)	Max (E)	F	OAL (G)	SHANK	BORE	Weight (lbs.)
SDG-1	1.771	2.106	1.890	0.492	0.394	0.945	3.740	5/8"	3/8"	1.36
								3/4"	3/8"	1.41
								1"	3/8"	
SDG-2	2.519	2.560	2.362	0.669	0.591	1.280	5.651	5/8"	3/8"	4.52
								3/4"	9/16”	4.63
								1"	5/8”	4.85
								30mm	5/8"	
SDG-3	3.228	3.474	3.248	0.984	0.846	1.811	6.840	3/4"	9/16”	7.88
								1"	9/16”	8.16
								1.5"	24mm	
								40mm	24mm	
SDG-4	3.799	3.730	3.523	1.299	1.053	1.969	7.411	1"	9/16”	11.41
								1.5"	1-1/16”	11.63
								40mm	1-1/16”	
SDG-5	4.921	4.370	4.429	1.614	1.339	1.654	8.445	1.5"	1-1/16”	23.20
								2-1/8"	1-3/8"	23.59
								60mm	1-3/8”	

https://www.youtube.com/watch?v=5A8Gq1aJZN0

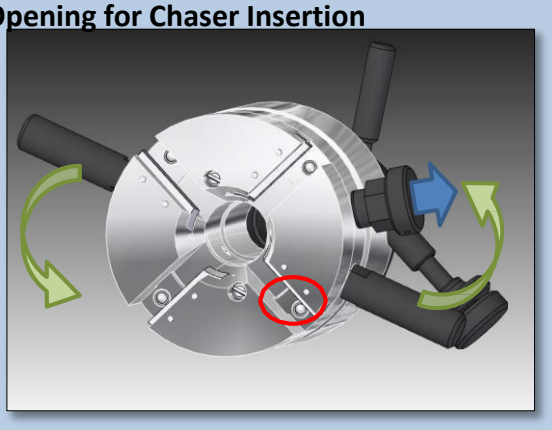


1. **Tripping in to Open Position**



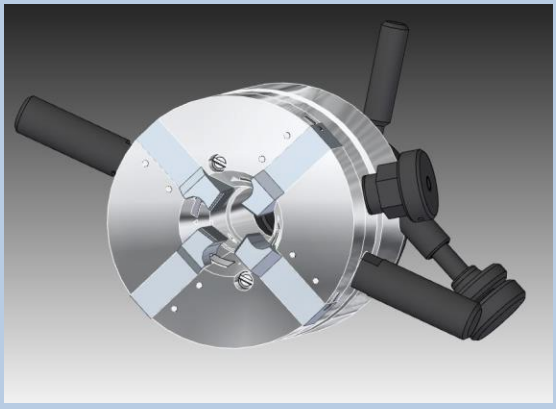
When you first receive the die-head, it will be in the locked position (i.e. oil nipple not visible as indicated above). Pull front part of the Die head forward with the closing handles until the locking pin clears, allowing the cam to rotate into the open position.

2. **Opening for Chaser Insertion**



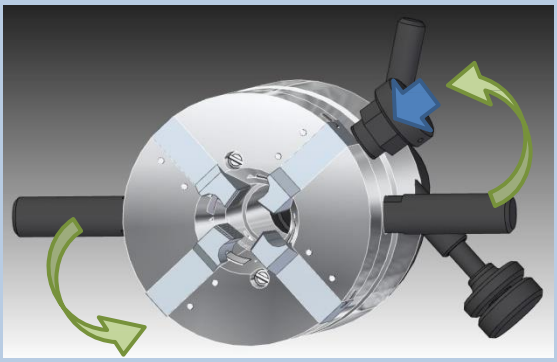
Once the die head is tripped open, relieve the pressure from the cam spring by rotating the closing handles in the counter-clockwise position and then pulling the indexing head outward. The cam will rotate into the fully-open position, ready to accept the chasers.

3. INSERTING CHASERS



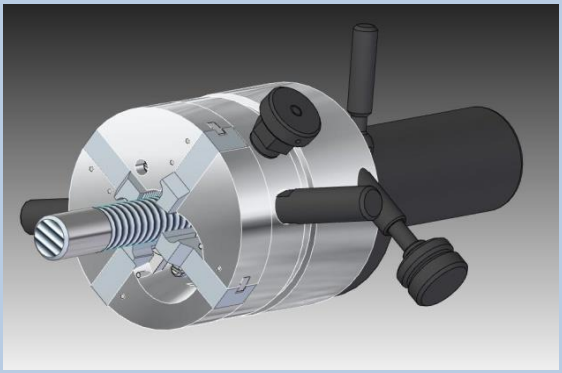
Insert each chaser into its corresponding numbered slot (1:1, 2:2, etc.).

4. CLOSING THE HEADS



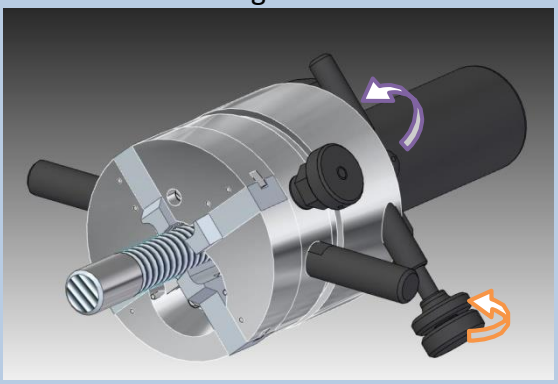
Once all the chasers are in the die-head, slightly rotate the closing handles counter-clockwise until the indexing head snaps back in and the head locks in the cutting position.

5. USE OF SETTING GAGE



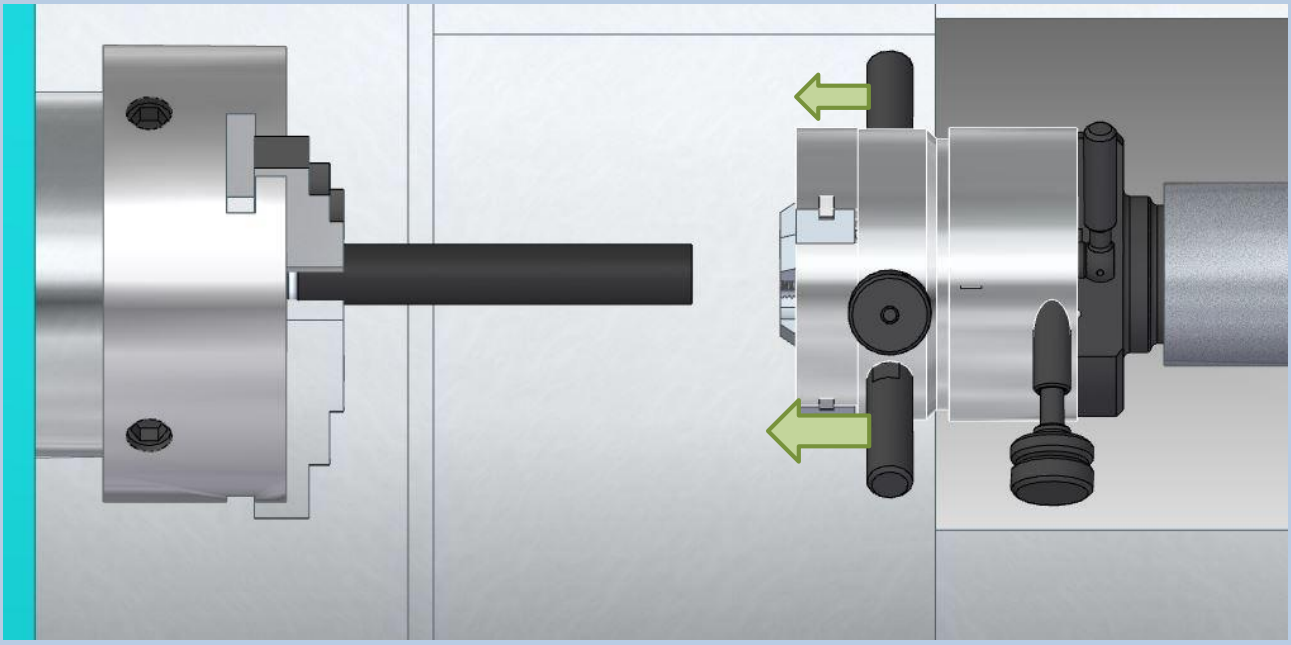
Use a thread gage to set your thread size. Care should be taken not to force the chasers into the setting gage. Additional minor adjustments may be necessary to get correct size.

6. ADJUSTING Locking Pin Handle for Rough and Final Cut settings



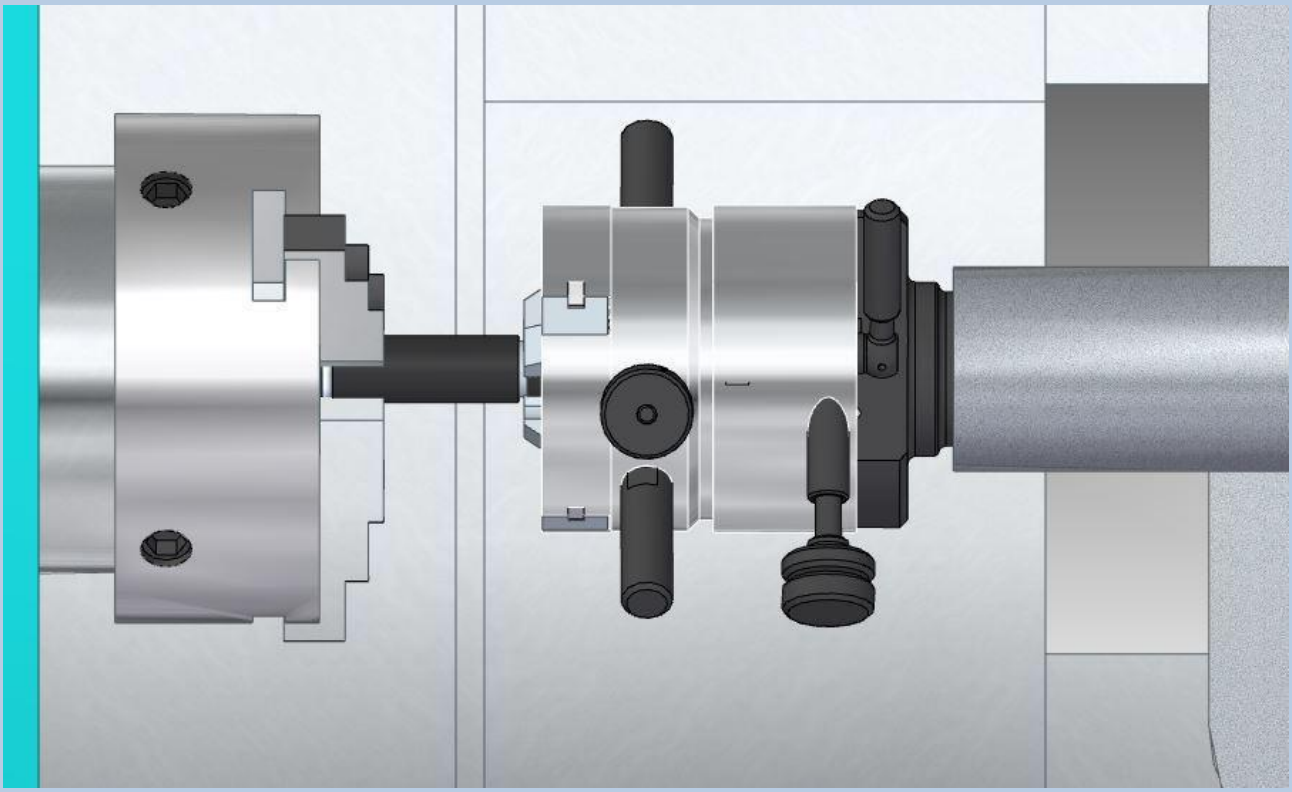
Turn the locking pin Handle to the finishing or Plus position (away from the adjusting screw). Move the opposed adjusting screw until the desired thread size is obtained. A double nut is given on the adjusting screw; be sure to lock the nut towards the die head before cutting a thread. It is advisable to keep the locking pin to the roughing or 'Minus' position for the first cut. Under no circumstances must the locking pin handle be left in any intermediate position when a die head is in use.

7. DIE HEAD IN OPEN POSITION



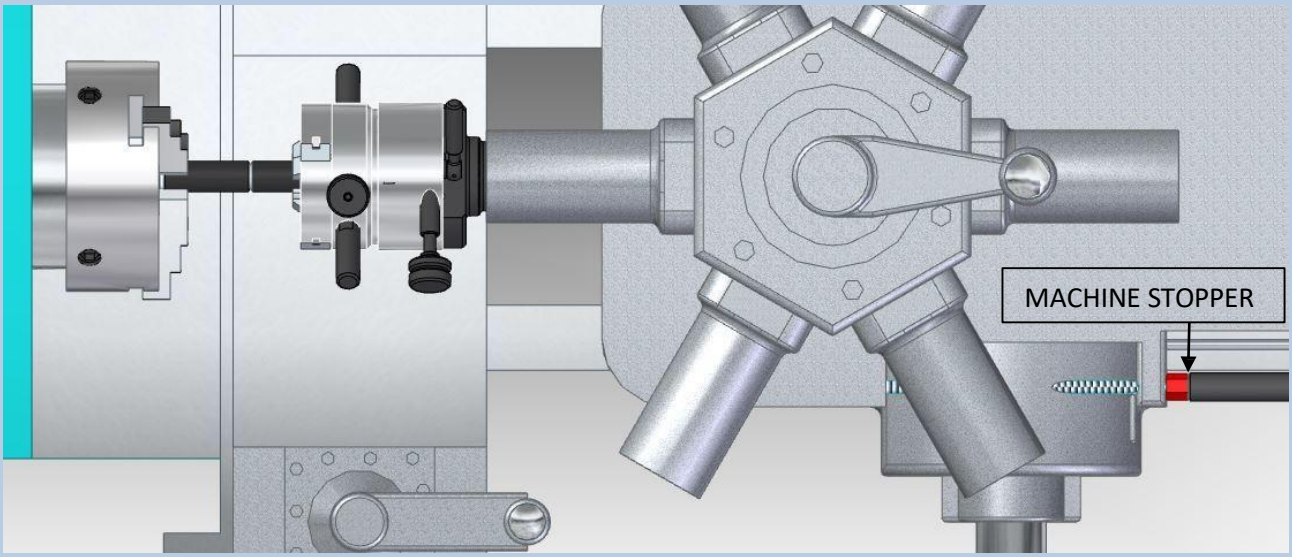
Pull the front part with the closing handles (as in Step 1) allowing the cam to rotate into open position. This will allow you to move the die-head over the work piece and determine your stopper position.

8. POSITIONING THE DIE HEAD



Move the die head forward in the open position, till your desired cutting length.

9. SETTING EXTERNAL STOP ON THE MACHINE



Using the machine wheel, move back the die head according to the die head model. When the advance of the turret has been stopped, by hitting a stop set on the machine, the forward motion of the back part (or shank) also ceases. However, the die head is not unlocked at this point and the front part of the die head advances still further, due to the continued cutting action of the chasers, until the locking pin disengages from the segment in the cam. Chart given below;

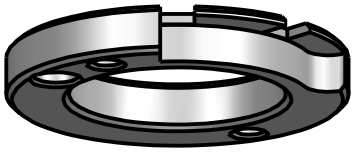
Model	Move back distance
SDG-1	3.50 mm or 0.138"
SDG-2	4.50 mm or 0.178"
SDG-3	5.00 mm or 0.197"
SDG-4	5.00 mm or 0.197"
SDG-5	5.50 mm or 0.217"

Roughing & Finishing Cuts --
On coarse pitch or multiple threads, or threads demanding unusual finish, this attachment makes possible the use of two cuts without adjusting the die head.

It is advisable to start with low speed, gradually increasing the same until the best cutting results are obtained. The chasers should not be forced on to the work, as this may result in damage to the cutting edges. A gentle pressure should be applied until the chasers 'bite'. The pressure should then be maintained as the die head travels along the work piece; however, allowance should be made for any drag caused by the weight of the turret or saddle on which the die head is mounted. Care should be taken that the work piece has the correct diameter or is slightly oversize (max. about 0.001" or 0.02 mm).

TROUBLESHOOTING & REMEDIES

PROBLEM	POSSIBLE CAUSE	REMEDY
Head fails to open.	Die head clogged with chips. Broken opening spring. Try pull-off by hand with the die head closed. Chasers edges too sharp, etching proud. Chasers incorrectly ground. Chasers faulty.	Clean off. Replace. Loosen the return spring/ Broken return spring. Stone off. Regrind. Replace.
No thread produced.	Chasers incorrectly fitted. Chasers faulty/mixed set.	Check/refit . Replace.
Variation in thread diameter.	Wear on the locking pin. Chaser incorrectly ground.	Replace. Regrind.
Tapered threads.	Wear on the locking pin. Chaser incorrectly ground. Wear in die head body.	Replace. Regrind. Send for repairing.
Poor thread quality.	Chasers wrong grades. Chasers incorrectly ground. Misalignment head/machine. Wear in diehead. Material is too tough.	Replace. Regrind. Check. Recondition. Inquire for better quality chasers.
Die head opens prematurely or will not remain closed.	Examine whether locking pin & segment are worn or have chipped edges. Weaken/broken return springs. Damaged return spring screws.	Replace. Replace. Replace.
Clogging with chips.	Worn out chasers. Threading soft clinging materials such as very mild steel & copper.	Replace. Use neat oil instead of cutting compound/ if the cutting lubricant can be introduced at the back of die head this helps to wash the chips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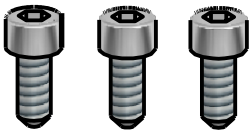
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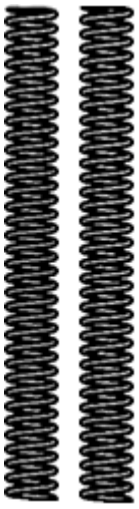
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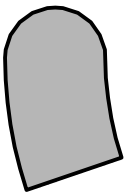
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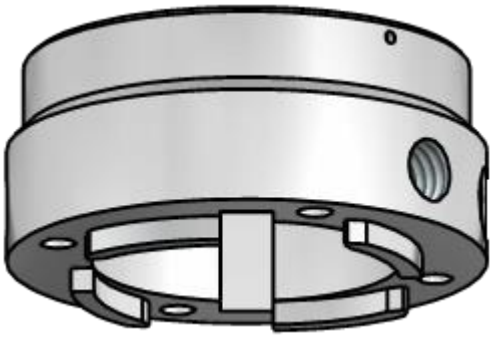
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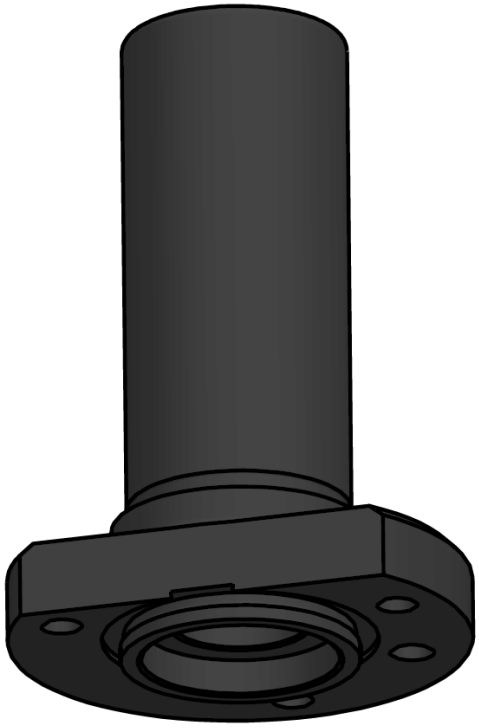
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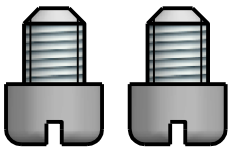
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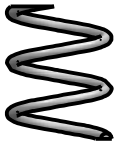
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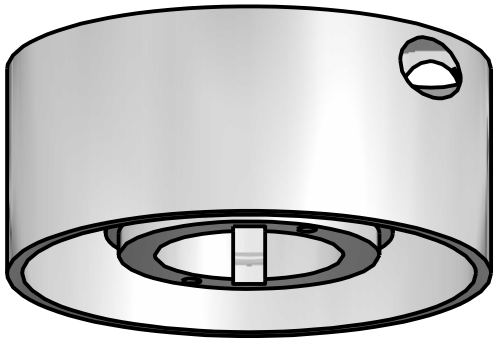
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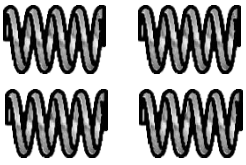
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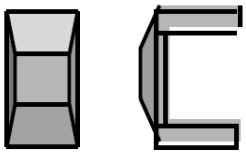
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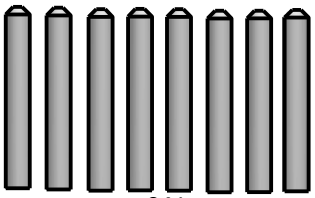
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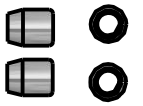
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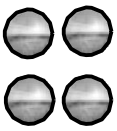
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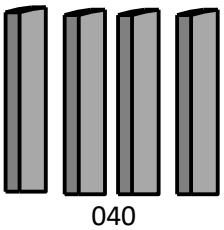
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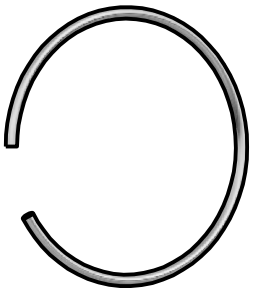
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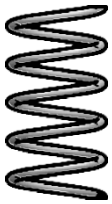
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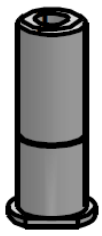
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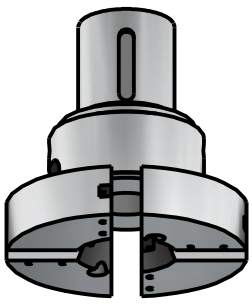
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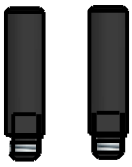
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Qty.	Part No.	Description	Qty.	Part No.	Description
1	001 G	Body	2	022	Return spring
1	002 G	Cam	2	023	Opening spring
1	003	Shank	1	024	Adjusting spring
1	004	Flange	1	025	Locking ring
3	005	Allen screw	1	026	Screw for flange
1	006	Guide pin for shank	2	027	Pad for opening spring
1	007	Adjusting ring	1	033	Segment
1	008	Safety bush	1	034	Segment Pin
2	010	Handle	1	035	Indexing Pin
1	011	Locking pin	1	036	Indexing Sleeve
1	012	Sleeve for locking pin	1	037	Indexing Head
1	013	Sleeve spring	1	038	Pin for Indexing Head
1	014	Locking pin handle	1	039	Indexing Spring
1	015	Pin for handle	4	040	Chaser Key
1	016	Adjusting screw	8	041	Pin for Casher Key
1	017	Threaded bushing	4	042	Pressure Nipple Spring
1	018	Lock nut	4	043	Ball
1	019	Pin for threaded bushing	4	044	Pressure Nipple
2	020	Key for body	4	045	Cam Screw
2	021	Return spring screw	2	046	Screw for Body

CUTTING SPEED

The cutting speed depends on:

- The hardness and machinability of the material
- The type and pitch of thread
- The required finish and accuracy of the thread, and the coolant.

It is advisable to start with a low speed, gradually increasing if until the best cutting results are obtained.

Approximate cutting Speeds in ft./min & m/min

Material	Chasers made of high speed steel	
	In ft./min	in m/min
Steel, low carbon content	15 – 45	5 – 15
Steel, medium carbon content	9 – 24	3 – 8
Steel, high carbon content	6 – 12	2 – 4
Aluminum, copper	15 – 60	5 – 20
Brass, gun metal	According to quality	

CHASERS FOR GEOMETRIC 'MODEL-SDG' DIE HEADS

RECOMMENDED CUTTING FACE ANGLES

MATERIAL		STRAIGHT THREADS	TAPERED THREADS
	Cast	15° Radial Hook	10° Radial Hook
	Die Cast	15° Radial Hook	10° Radial Hook
	Bronze Cast	10° Hook	5° Hook
	Rod	15° Radial Hook	10° Radial Hook
	Stamping	15° Radial Hook	10° Radial Hook
Bakelite		5° Snub	5° Snub
Beryllium		15° Hook	10° Hook
BRASS	Bar	5° Hook	Straight
	Cast	5° Snub	5° Snub
	Forging	10° Hook	5° Hook
	Red	10° Hook	5° Hook
	Stamping	10° Hook	5° Hook
	Tubing	10° Hook	5° Hook
	Naval	10° Hook	5° Hook
	Yellow	5° Hook	Straight
BRONZE	Bar	10° Hook	5° Hook
	Cast	Straight	Straight
	Cast Aluminum	10° Hook	5° Hook
	Manganese	10° Hook	5° Hook
	Naval	10° Hook	5° Hook
	Phosphor	10° Hook	5° Hook
	Silicone	5° Hook	Straight
	Tubing	10° Hook	5° Hook
Celluloid		Straight	Straight
Copper		15° Radial Lip Hook	10° Radial Hook
Delron		Straight	Straight
Drill Rod		10° Hook	10° Hook
Everdur		10° Hook	5° Hook
Fiberglas		5° Hook	5° Hook
Fiber		5° Snub	5° Snub
Formica		5° Hook	
Hastalloy		15° Hook	10° Hook
Inconel		15° Hook	10° Hook
Invar		15° Hook	10° Hook
IRON	Black Pipe	10° Hook	5° Hook
	Caste	Straight	Straight
	Ductile	Straight	Straight
	Gray	Straight	Straight
	Malleable	10° Hook	5° Hook
	Wrought	10° Hook	5° Hook
Magnesium		15° Radial Hook	10° Radial Hook
Manganese		15° Hook	10° Hook
Monel Metal		10° Hook	5° Hook

MATERIAL		STRAIGHT THREADS	TAPERED THREADS
Nickel		15° Hook	10° Hook
Nylon		5° Hook	5° Hook
Plastic		5° Hook	5° Hook
Polypropylene		5° Hook	5° Hook
Rubber		5° Snub	5° Snub
STEEL	12L14 & 12L17 A-36	10° Hook 15° Hook	5° Hook 10° Hook
	Bessemer Screw	10° Hook	5° Hook
	Bolt, grade 2 & 3 Bolt, grade 5 & 8	10° Hook 15° Hook	5° Hook 10° Hook
	Cast	10° Hook	5° Hook
	Carbon - SAE 1010-1035 - SAE 1112-X1340 - SAE 1040-1095	 10° Hook 10° Hook 15° Hook	 5° Hook 5° Hook 10° Hook
	Chrome - SAE 5120-52100	15° Hook	10° Hook
	Chrome Vanadium - SAE 6115-6195	15° Hook	10° Hook
	Forged	15° Hook	10° Hook
	Leaded	10° Hook	5° Hook
	Manganese - SAE T1330-T1350	15° Hook	10° Hook
	Molybdenum - SAE 4130-4820	15° Hook	10° Hook
	Nickel - SAE 2015-2515	15° Hook	10° Hook
	Ni-Chrome - SAE 3115-3450	15° Hook	10° Hook
	Nitralloy	15° Hook	10° Hook
	Rolled (Hot & Cold)	10° Hook	5° Hook
	Semi-Casting	Straight	Straight
	Stainless - 300 Series - 400 Series	 15° Hook 10° Hook	 15° Hook 10° Hook
	Stamping	15° Hook	5° Hook
	Stress & Fatigue Proof	10° Hook	10° Hook
	Stress Proof 8620	15° Hook	10° Hook
	Tool	15° Hook	10° Hook
	Tubing	10° Hook	5° Hook
Titanium		15° Hook	15° Hook
Teflon		5° Hook	5° Hook
Zinc Die cast		15° Radial Hook	10° Radial Hook