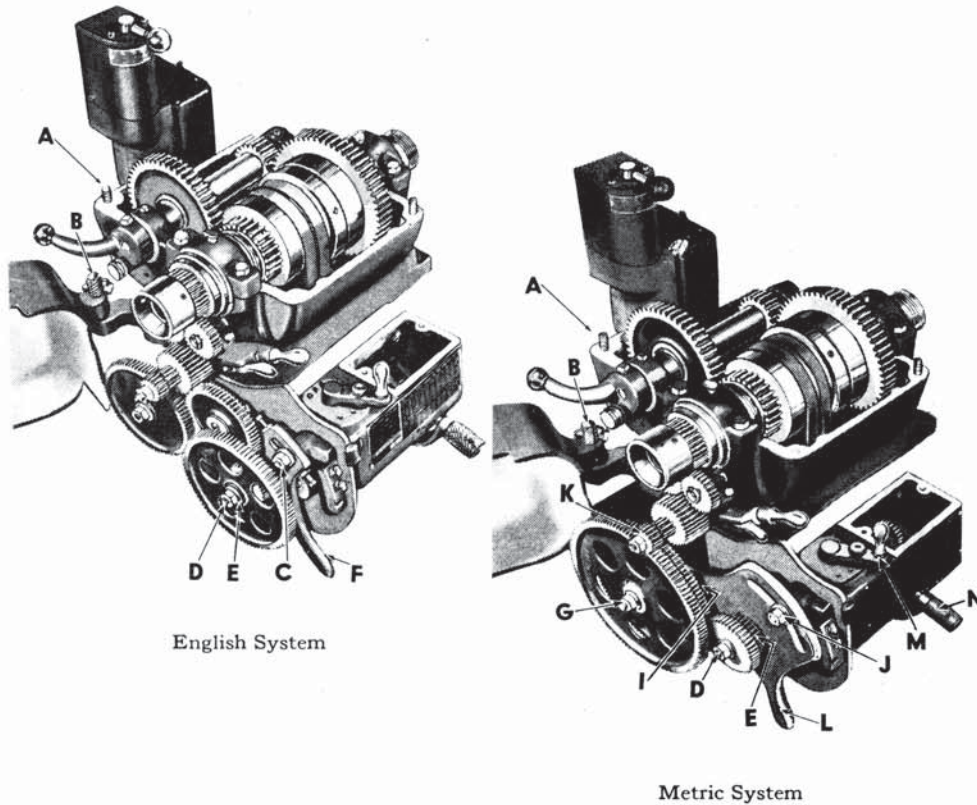


# SHELDON MACHINE CO. Inc.

## HOW TO USE METRIC TRANSPOSING ATTACHMENT



In order to enable the operator to cut threads of Metric specifications, each lathe is supplied with an attachment consisting of an auxiliary end gear quadrant plate, complete with two gears, 110 Tooth and 127 Tooth, and a set of 17 change gears. The change gears are necessary due to the fact that all Metric threads indicated on the Metric gear chart cannot be cut by use of the quick change gear box. The complete range of Metric threads is covered by a combination in the use of the gear box and the change gears.

To prepare the lathe for Metric thread cutting, proceed as follows:

1. Remove end gear guard by loosening thumb screw and lifting hinge pin (B).
2. Remove nut and washer (C) and also nut and washer (D).
3. Remove 96 tooth gear, spacer (E), and 32 tooth gear.
4. Remove end lever, complete with 80 tooth and 64 tooth gears intact (F).

5. Assemble Metric end lever and two gears. Note that the 127 tooth gear remains on the Metric end lever at all times but that the use of the 110 tooth gear or 80 tooth gear is dependent upon the thread to be cut. The attachment is generally furnished with the 110 tooth and the 127 tooth gears already assembled. If the thread required calls for use of this arrangement proceed to assemble the end lever by placing bolt (G) through slot so that the square head fits in channel on the back side of the slot. Then place sleeve (No. 8 see page 22) over bolt with the collar to the inside. Place the two gears over the sleeve, smallest gear to the inside, and fasten with washer and nut. If the 80 tooth compound gear is required, remove knurled nut (I), using the spanner wrench furnished with the equipment, then pull off the 110 tooth gear and replace with the 80 tooth gear, being sure to engage the keyway properly. Replace knurled nut and fasten securely.
6. Replace standard end lever with assembled Metric end lever and adjust mesh of gears by correctly positioning the square head bolt in the slot and by adjusting the position of end lever at (J).
7. Replace 32 tooth gear (E), as a spacer, and add 44 tooth or 80 tooth gear (depending upon thread to be cut). Replace nut and washer (D).

It is now possible, by varying the gears on the stud and gear box, the inside compound gear, and the top lever of the gear box, to cut any Metric thread listed on the chart on the end of the gear guard. For example: to cut 2,000 Metric pitch threads:

1. Place the 32 tooth change gear on the stud (K)
2. Place the 44 tooth gear on the gear box shaft at (D)
3. Arrange the 127 tooth and the 110 tooth gear on the end lever (L)
4. Place top lever (M) in "B" position
5. Engage tumbler lever (N) in extreme left position

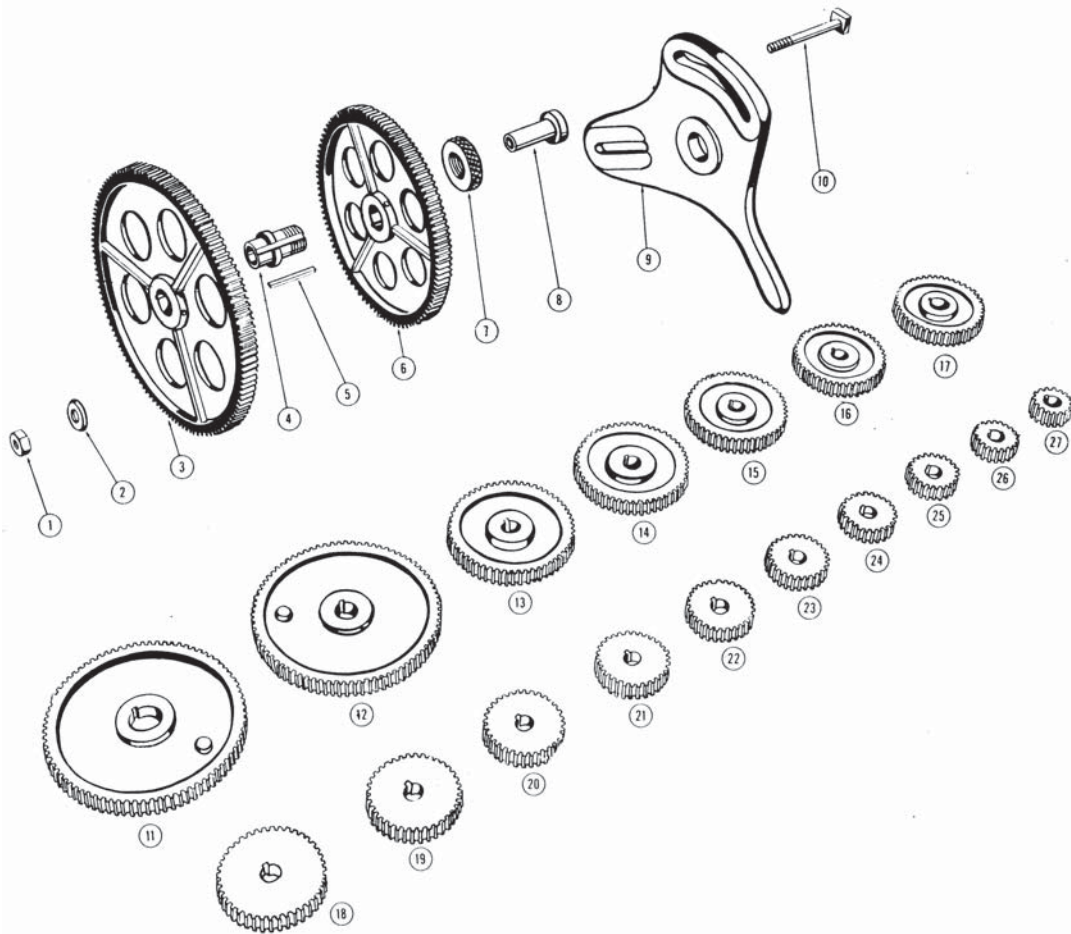
Engaging the half nut will now result in a cut of 2,000 mm. pitch thread. The automatic feed through the friction clutch would be .204 mm. per revolution of the spindle, and the cross feed would be .193 mm. per revolution of the spindle.

TRANSPOSING GEAR CHART FOR CUTTING METRIC THREADS WITH STANDARD ENGLISH LEAD SCREW FULL QUICK CHANGE GEAR BOX PARTLY USED.									
GEAR ON STUD	COMP. GEAR	GEAR ON BOX	PITCHES IN M/M WITH TOP LEVER POSITIONS			AUTOMATIC FEEDS THROUGH FRICTION CLUTCH IN M/M PER REVOLUTION OF HEADSTOCK SPINDLE			
			A	B	C	LONG FEEDS		CROSS FEEDS	
						A	B	A	B
56	127/110	44	7.000	3.500	1.750				
52	"	"	6.500	3.250	1.625				
48	"	"	6.000	3.000	1.500				
44	"	"	5.500	2.750	1.375				
40	"	"	5.000	2.500	1.250				
36	"	"	4.500	2.250	1.125	0.458	0.229	0.428	0.214
32	"	"	4.000	2.000	1.000	0.408	0.204	0.385	0.193
30	127/80	80	1.500	0.750	0.375	0.153	0.077	0.143	0.072
28	"	"	1.400	0.700	0.350	0.143	0.072	0.133	0.067
26	"	"	1.300	0.650	0.325	0.133	0.066	0.124	0.062
24	"	"	1.200	0.600	0.300	0.123	0.061	0.114	0.057
22	"	"	1.100	0.550	0.275	0.114	0.057	0.105	0.053
20	"	"	1.000	0.500	0.250	0.105	0.053	0.095	0.048
18	"	"	0.900	0.450	0.225	0.095	0.048	0.086	0.043
16	"	"	0.800	0.400	0.200	0.076	0.039	0.076	0.039

**SHELDON MACHINE CO. INC.**  
CHICAGO, ILL. U. S. A.

STUD GEAR FOR METRIC THREADS  
STUD GEAR FOR ENGLISH THREADS  
FULL QUICK CHANGE GEAR BOX FOR ENGLISH THRD'S  
TOP LEVER  
GEAR ON BOX  
COMPOUND GEAR  
END LEVER  
ENGAGE TUMBLER IN EXTREME LEFT  
WHEN REMOVING END LEVER LEAVE 32T. GEAR AND WASHER IN PLACE AS SPACER

# METRIC ATTACHMENT No. SMQ



## METRIC ATTACHMENT No. SMQ

Ref. No.	Part No.	Description	Quantity
1	A-102	Heavy Hex. Full Nut, 3/8-16 N.C.	1
2	K-93	Washer	1
3	LP-519X	Metric Change Gear, 127 Tooth	1
4	S-44	Threaded Bushing for Metric End Lever	1
5	S-47	Key for Threaded Bushing	1
6	S-19X	Metric Change Gear, 110 Tooth	1
7	S-46	Nut for Threaded Bushing	1
8	S-45	Flanged Bushing for Metric End Lever	1
9	S-655	End Lever for Metric Threads	1
10	S-27	Square Head Screw for Metric End Lever	1
11	S-20X	Metric Change Gear, on Box, 80 Tooth	1
12	K-92X	Standard Change Gear, 80 Tooth	1
13	K-175	Standard Change Gear, 56 Tooth	1
14	K-174	Standard Change Gear, 52 Tooth	1
15	K-173	Standard Change Gear, 48 Tooth	1
16	K-171	Standard Change Gear, 44 Tooth	1
17	S-18	Metric Change Gear, on Box, 44 Tooth	1
18	K-170	Standard Change Gear, 40 Tooth	1
19	K-169	Standard Change Gear, 36 Tooth	1
20	K-168	Standard Change Gear, 32 Tooth	1
21	LP-513	Metric Change Gear, 30 Tooth	1
22	LP-512	Metric Change Gear, 28 Tooth	1
23	S-17	Metric Change Gear, 26 Tooth	1
24	LP-510	Metric Change Gear, 24 Tooth	1
25	S-16	Metric Change Gear, 22 Tooth	1
26	LP-508	Metric Change Gear, 20 Tooth	1
27	LP-507	Metric Change Gear, 18 Tooth	1

# SHELDON MACHINE CO. Inc.

*Manufacturers of Sheldon Precision Lathes • Milling Machines • Shapers*

**4258 N. KNOX AVENUE • CHICAGO 41, ILLINOIS, U. S. A.**  
 TELEPHONE: MULBERRY 1970 • CABLE ADDRESS: SHELDONCO