

## Your Best Guarantee

**E**FFICIENCY is the basic quality built into every tool we make, and our trade mark and name are universally recognized by expert mechanics as a guarantee of the highest quality obtainable founded upon

PRACTICAL EXPERIENCE  
TECHNICAL KNOWLEDGE  
MODERN PLANT AND EQUIPMENT  
SCIENTIFIC METHODS

Many years of experience as designers and makers of High Grade Tools, and our excellent system of Jigs, Gauges, Tests, and inspection insures our ability to deliver Tools of Superior Quality at Fair Prices which will merit and hold the wide preference given Armstrong Tools by skilled workers.

## ARMSTRONG

Tool Holders  
Lathe Dogs  
"C" Clamps  
Ratchet Drills

Drop Forged  
Wrenches

Chrome Vanadium  
Wrenches

## ARMSTRONG BROS.

Pipe Cutters  
Chain Vises  
Hinged Vises

Stocks and Dies  
Chain Pipe Tong  
Pipe Wrenches

**ARMSTRONG BROS. TOOL CO.**

"The Tool Holder People"  
317-357 N. FRANCISCO AVE.

CHICAGO

U. S. A.

*It's Strong if it's Armstrong*

## ARMSTRONG TOOL HOLDERS



HIGH SPEED  
LATHE AND  
PLANNER TOOLS

CATALOG 24





## ARMSTRONG TOOL HOLDERS

**Complete, Economical and Efficient System of High Speed Lathe and Planer Tools**

Heavy loss in time and material is inseparable from the use of forged lathe shaper and planer tools, and this loss has been proportionately increased rather than reduced by the almost universal use of High Speed Steel which has greatly increased the "dead investment" in heavy forged tools, which in many cases are required for occasional use only, while the steel wasted in "stub ends," forging and grinding figures a loss many times greater than was formerly the case with forged tools made of carbon tool steel.

Armstrong Tool Holders are designed and proportioned on lines which our many years of experience and close study in this, our special field of work, have shown to be correct; they are drop forged from a special steel which combines stiffness and strength to a remarkable degree and are accurately machined, heat treated and hardened.

The set screws are made of treated alloy steel with hardened point and are practically unbreakable.

The cutters for Armstrong Tool Holders are of stock sizes and shapes which are readily obtainable, thus enabling the user to make his cutters from any steel he may prefer, and leaving him independent in choosing his source of supply.

When you decide to adopt the Armstrong System, don't stop when you have equipped a few of your small lathes or you will fail to reap the full advantage or to realize fully the economy, convenience and efficiency which a complete equipment will demonstrate.

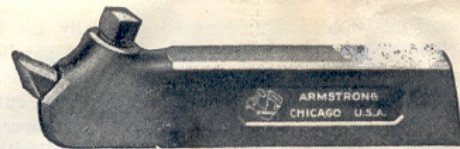
Remember, that for heavy duty we furnish proportionately larger and stronger tool holders and cutters, and the Armstrong principle is just as efficient and economical in the large tools as in the smaller sizes.

only ~~cost~~ <sup>cost</sup> the Armstrong System—Do it at Once.



## Armstrong Tool Holders

Patented



Straight Shank



Left Hand Offset



Right Hand Offset

### Price List

Complete with Wrench and One High Speed Cutter

No. Left Hand	No. Straight Shank	No. Right Hand	Size of Holder Inches	Size of Cutters Inches Square	Extra Cutter Bits High Speed Each	Price Each Complete
000-L	000-S	000-R	5/16 x 1/2 x 4	3/16	\$0.15	\$2.70
00-L	00-S	00-R	5/16 x 3/4 x 4 1/2	3/16	.15	2.70
0-L	0-S	0-R	3/8 x 7/8 x 5	1/4	.20	2.85
1-L	1-S	1-R	1/2 x 1 1/8 x 6	5/16	.35	3.25
2-L	2-S	2-R	5/8 x 1 3/8 x 7	3/8	.55	4.00
3-L	3-S	3-R	3/4 x 1 5/8 x 8	7/16	.90	5.40
4-L	4-S	4-R	7/8 x 1 3/4 x 9	1/2	1.30	6.90
5-L	5-S	5-R	1 x 2 x 11	5/8	2.35	9.75
6-L	6-S	6-R	1 1/4 x 2 1/4 x 13	3/4	3.85	18.50
7-L	7-S	7-R	1 1/2 x 2 1/2 x 16	7/8	5.85	22.50
750-L	750-S	750-R	1 5/8 x 2 3/4 x 18	1	8.35	33
800-L	800-S	800-R	1 3/4 x 3 x 20	1 1/8	7.90	35.50



### Armstrong Carbide Tool Holders

These Tool Holders are designed especially for holding carbide tipped cutters. The cutter is held parallel to the shank of the tool. They are made in two patterns, one to hold square cutters and the other to hold flat cutters. These Tool Holders are also well adapted for shaper and planer work, due to the cutter being held parallel with the shank. The Armstrong qualities of great strength, compactness and highest quality are of course found in these tools.



Each Tool Holder is boxed separately and price includes wrench but no cutter.

#### For Square Cutters

Left Hand No.	Straight Shank No.	Right Hand No.	Size of Holder	Size Cutter	Weight Each Lbs.	Price Each
T-0-L	T-0-S	T-0-R	3/8x1 1/16x6	1/4 sq.	1 1/4	\$ 3.20
T-1-L	T-1-S	T-1-R	1/2x1 1/4x7	5/16 sq.	2	3.60
T-2-L	T-2-S	T-2-R	5/8x1 1/2x8	3/8 sq.	3 1/4	4.50
T-3-L	T-3-S	T-3-R	3/4x1 3/4x9	1/2 sq.	5	6.00
T-4-L	T-4-S	T-4-R	7/8x1 1/2x10	1/2 sq.	7	7.60
T-5-L	T-5-S	T-5-R	1x2 1/8x12	5/8 sq.	10 1/2	10.80

#### For Flat Cutters

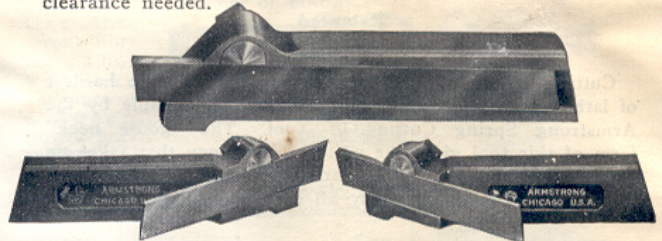
Left Hand No.	Straight Shank No.	Right Hand No.	Size of Holder	Size Cutter	Weight Each Lbs.	Price Each
FT-0-L	FT-0-S	FT-0-R	3/8x1 1/16x6	1/4 x 3/8	1 1/4	\$ 3.80
FT-1-L	FT-1-S	FT-1-R	1/2x1 1/4x7	5/16 x 1/16	2	4.40
FT-2-L	FT-2-S	FT-2-R	5/8x1 1/2x8	3/8 x 1/2	3 1/4	5.40
FT-3-L	FT-3-S	FT-3-R	3/4x1 3/4x9	1/2 x 9/16	5	7.20
FT-4-L	FT-4-S	FT-4-R	7/8x1 1/2x10	1/2 x 3/4	7	9.20
FT-5-L	FT-5-S	FT-5-R	1x2 1/8x12	5/8 x 3/8	10 1/2	12.90

Note—Carbide Tool Holders are furnished without cutters on page 19.



### Armstrong Cutting-Off Tools

Always ready to use—Combines stiffness with just the clearance needed.



Left Hand Off-Set

Right Hand Off-Set

Price includes Wrench and One High Speed Cutter.

Left Hand Off-Set No.	Straight Shank No.	Right Hand Off-Set No.	Size of Holder Inches	Size of Cutter, Inches	Extra Cutters, Each	Price Each Complete
29-L	19	29-R	5/16x 3/4	3/8x 1/2	\$0.60	\$2.85
30-L	20	30-R	3/8x 7/8	3/8x 5/8	.65	3.00
31-L	21	31-R	1/2x1 1/8	1/2x 3/4	.90	3.60
32-L	22	32-R	5/8x1 3/8	1/2x 7/8	1.30	4.50
33-L	23	33-R	3/4x1 5/8	3/4x1	2.15	6.00
34-L	24	34-R	7/8x1 3/4	5/16x1 1/8	2.90	7.50
35-L	25	35-R	1 x 2	1/4x1 1/4	4.00	9.75
36-L	26	36-R	1 1/4x2 1/4	1/4x1 3/8	4.65	11.65

In ordering cutters, state whether same are for use in straight, right or left hand tool.

### Armstrong Side Tools



Left Hand Off-Set

Right Hand Off-Set

Price includes Wrench and One High Speed Cutter

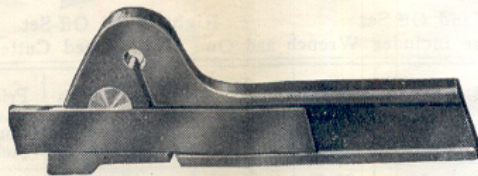
Offset		Straight		Size of Shank Inches	Extra Cutters Each	Price Each Complete
No. Left Hand	No. Right Hand	No. Left Hand	No. Right Hand			
69-L	69-R	79-L	79-R	5/16x 3/4	\$0.60	\$2.85
70-L	70-R	80-L	80-R	3/8x 7/8	.90	3.40
71-L	71-R	81-L	81-R	1/2x1 1/8	1.40	4.35
72-L	72-R	82-L	82-R	5/8x1 3/8	2.30	6.00
73-L	73-R	83-L	83-R	3/4x1 5/8	3.40	7.85
74-L	74-R	84-L	84-R	7/8x1 3/4	5.00	10.65
75-L	75-R	85-L	85-R	1 x 2	6.00	12.75
76-L	76-R	86-L	86-R	1 1/4x2 1/4	7.90	16.50



### Armstrong Spring Cutting-Off Tool

Patented

Cutting off in a lathe, always regarded as the hardest of lathe work, has been made comparatively simple by the Armstrong Spring Cutting-Off Tool. The "goose neck" form of this tool gives the cutter a resiliency that takes up any chatter and keeps the work from climbing up on the tool—the cause of practically all cutting-off tool breakage.



Straight Shank



Right Hand Offset

Each tool is boxed separately and price includes Wrench and one High Speed Cutter.

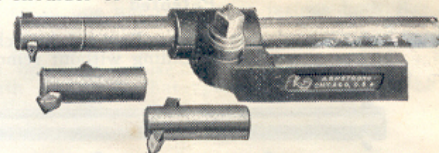
No. Left Hand Offset	No. Straight	No. Right Hand Offset	Size of Shank Inches	Size of Cutter Inches	Extra Cutters High Speed Each	Price Each Complete
S-30L	S-20	S-30R	3/8x 7/8	3/16x 5/8	\$0.65	\$4.50
S-31L	S-21	S-31R	1/2x1 1/8	1/8x 3/4	.90	5.40
S-32L	S-22	S-32R	5/8x1 3/8	1/8x 7/8	1.30	6.75
S-33L	S-23	S-33R	3/4x1 3/8	3/16x1	2.15	9.00



### Armstrong Boring Tools

Require no forging or tempering and very little grinding. They are always ready for use, are very stiff and will bore close up to a shoulder or bottom.

One Armstrong Boring Tool will take the place of a dozen forged boring tools.



Price includes Holder and Bar, 90°, 45° and 30° End Caps, three High Speed Cutters and Double Head Wrench.

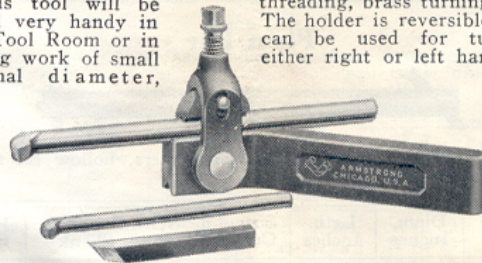
No.	Size Shank Inches	Diam. Bar Inch	Size Cutter Inch Sq.	Extra High Speed Bits, Each		Price Each Complete
				90°	45° & 30°	
00B	5/16x 3/4	1/2	5/16	\$0.10	\$0.10	\$4.90
8	3/8x 7/8	5/16	5/16	.10	.10	4.90
9	1/2x1 1/8	3/4	1/4	.12	.18	5.80
10	5/8x1 3/8	15/16	5/16	.24	.30	7.65
11	3/4x1 5/8	1 1/8	3/8	.40	.50	10.85
12	7/8x1 3/4	1 5/8	1/2	.55	.75	16.00
13	1 x 2	1 1/2	1/2	.80	1.00	22.50

### Armstrong Boring Tool Holder

Patented

This tool will be found very handy in the Tool Room or in boring work of small internal diameter,

threading, brass turning, etc. The holder is reversible, and can be used for turning either right or left hand.



Price includes Holder, Wrench, two High Speed Boring Bars and one High Speed Cutter.

No.	Size of Shank Inches	Size of Bars Furnished Diam. In.	Size of Square Cutter Inches	Price Each Complete
15	3/8x 3/4	1/8 and 1/4	1/4	\$4.15
16	1/2x1	5/16 and 5/16	5/16	5.25
17	5/8x1 1/4	1/4 and 3/8	3/8	6.75
18	3/4x1 1/2	5/16 and 7/16	7/16	8.65



### Armstrong Boring Bars

#### End Cap Pattern

Patented

The End Caps of this Boring Bar are interchangeable for boring, facing or internal threading without removing the bar from the holder.



Furnished complete with 90°, 45° and 30° End Caps, three High Speed Cutters, Double Head Wrench and Bushing.

No.	Diam. Inches	Lgth. Inches	Size of Cutter	With Bushing to Fit Shank	Price Each
<b>0B</b>	1/2	8	3/16	No. 8, 9 or 10	\$3.00
<b>08</b>	9/16	9	3/16	No. 9, 10 or 11	3.00
<b>09</b>	3/4	11	1/4	No. 10, 11 or 12	3.75
<b>010</b>	15/16	13	3/16	No. 11, 12 or 13	5.40
<b>011</b>	1 1/8	16	3/8	No. 12 or 13	7.50
<b>012</b>	1 5/16	18	7/16	No. 13	10.50
<b>013</b>	1 1/2	23	1/2	Without Bushing	13.50
<b>014</b>	1 13/16	28	5/8	Without Bushing	19.50
<b>015</b>	2 1/4	34	3/4	Without Bushing	34.50

#### Plain Bar



Price includes two High Speed Cutters, hollow set screw Wrench and Bushing.

No.	Diam. Inches	Lgth. Inches	Size of Cutter	With Bushing to Fit Shank	Price Each
<b>0B-X</b>	1/2	8	3/16	No. 8, 9 or 10	\$2.40
<b>08-X</b>	9/16	9	3/16	No. 9, 10 or 11	2.40
<b>09-X</b>	3/4	11	1/4	No. 10, 11 or 12	2.95
<b>010-X</b>	15/16	13	3/16	No. 11, 12 or 13	4.25
<b>011-X</b>	1 1/8	16	3/8	No. 12 or 13	6.25
<b>012-X</b>	1 5/16	18	7/16	No. 13	9.00
<b>013-X</b>	1 1/2	23	1/2	Without Bushing	11.75
<b>014-X</b>	1 13/16	28	5/8	Without Bushing	17.50
<b>015-X</b>	2 1/4	34	3/4	Without Bushing	31.00

NOTE—In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.



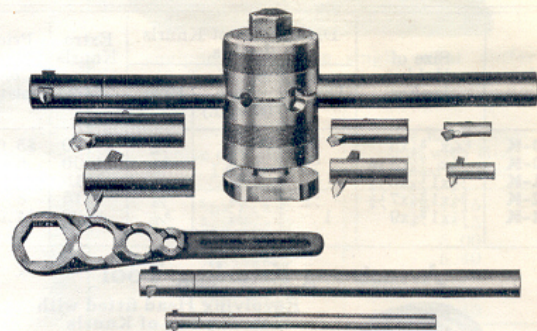
### Armstrong 3-Bar Boring Tool

Patented

The many points of advantage of this lathe attachment will be appreciated by practical machinists.

A slight turn of one nut releases or fastens both Bar and Holder.

Bars can be changed as needed almost instantly, thus allowing the operator to use the stiffest bar possible for each job, with the result that speeds and feeds can be increased and time saved.



#### Price List

The set comprises the Holder and three Armstrong Patent Boring Bars with 90°, 45° and 30° end caps, nine High Speed Cutters and Armstrong Combination Wrench.

No.	Diameter Bars Inches	Length of Bars Inches	Size Cutters Inches Square	For Lathes Swing Inches	Price Each Complete
<b>0-BB</b>	3/8, 1/2, 3/4	7, 8, 11	* 3/16, 1/4	8 to 10	\$14.00
<b>1-B</b>	1/2, 3/4, 1 1/8	8, 11, 16	3/16, 1/4, 3/8	12 to 16	22.50
<b>2-B</b>	9/16, 15/16, 1 1/16	9, 13, 18	5/16, 3/8, 7/16	18 to 18	30.00
<b>3-B</b>	3/4, 1 1/8, 1 1/2	11, 16, 23	1/4, 3/8, 1/2	20 to 22	52.50
<b>4-B</b>	15/16, 1 5/16, 1 13/16	13, 18, 28	5/16, 3/8, 1/2	24 to 32	75.00

\* 3/8" Bar is solid.

Note—Bolt Head and Bottom part of Holder are made of ample size to allow for fitting, which is necessary on account of the great variation in height of centers above slide rest and difference in sizes of T slots.

Fitting—An extra charge of \$2.00 net will be made for tools Nos. 1-B up when ordered fitted to special dimensions.

Fitting charge for No. 0-BB \$0.75 net extra.



### Armstrong Knurling Tool

Patented

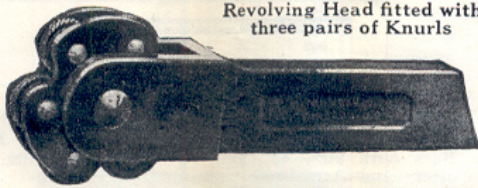
This Knurling Tool is self centering with ample bearing to resist the severe strains of both end and side thrust.



No.	Size of Holder Inches	Dimensions of Knurls Inches			Extra Knurls per Pair	Price Each Complete
		Diam.	Face (Stand.)	Hole		
00-K	$\frac{5}{16} \times \frac{3}{4} \times 5$	$\frac{5}{8}$	$\frac{5}{16}$	$\frac{7}{32}$	\$1.00	\$5.65
0-K	$\frac{3}{8} \times \frac{1}{2} \times 5 \frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{16}$	$\frac{7}{32}$	1.00	6.00
1-K	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	1.15	6.75
2-K	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	1.15	8.00
4-K	$\frac{7}{8} \times 1 \frac{3}{4} \times 9$	1	$\frac{1}{4}$	$\frac{5}{16}$	2.00	14.00

### Armstrong Knurling Tool

Revolving Head fitted with three pairs of Knurls



No.	Size of Holder Inches	Dimensions of Knurls Inches			Extra Knurls per Pair	Price Each Complete
		Diam.	Face (Stand.)	Hole		
3-K-00	$\frac{5}{16} \times \frac{3}{4} \times 5$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	\$1.00	\$7.50
3-K-0	$\frac{3}{8} \times \frac{1}{2} \times 5 \frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	1.00	8.00
3-K-1	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	1.15	9.00
3-K-2	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	1.15	10.50

Illustration shows full size Diamond Knurling. Pitch = number of teeth per linear inch.



Coarse 14 Pitch  
Medium 21 Pitch  
Fine 33 Pitch

Note—Knurls can be furnished coarse, medium and fine in either Straight line or Diamond pattern. Medium Diamond Knurls will be sent with tool when not otherwise specified.



### Armstrong Threading Tools

Patented

Simplicity, Strength and Permanence of Adjustment are Prominent Features of this Tool.



Each tool is equipped with one single point cutter V, U. S. or Whitworth St'd and a drop forged wrench.

No.	Size of Holder, Inches	Price Each Complete with High Speed Cutter
00T	$\frac{5}{16} \times \frac{3}{4} \times 5$	\$ 4.15
50	$\frac{3}{8} \times \frac{1}{2} \times 5$	4.15
51	$\frac{1}{2} \times 1 \frac{1}{8} \times 6$	5.00
52	$\frac{5}{8} \times 1 \frac{3}{8} \times 7$	6.40
53	$\frac{3}{4} \times 1 \frac{5}{8} \times 8$	8.25
54	$\frac{7}{8} \times 1 \frac{3}{4} \times 9$	9.75
55	1 x2 x10	12.40

### Armstrong Spring Threading Tool

Patented



Price includes Wrench and One High Speed Cutter

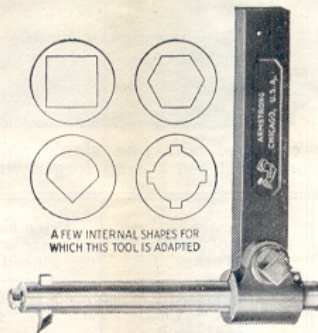
No.	Size of Holder Inches	Size Cutter Inches Square	Extra Cutters High Speed Each	Price Each Complete	No.
S-50	$\frac{3}{8} \times \frac{1}{2} \times 5 \frac{1}{2}$	$\frac{3}{16}$	\$0.35	\$4.15	S-50
S-51	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{1}{4}$	.45	5.00	S-51
S-52	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{5}{16}$	.55	6.40	S-52
S-53	$\frac{3}{4} \times 1 \frac{5}{8} \times 8 \frac{1}{2}$	$\frac{3}{8}$	.70	8.25	S-53



### Armstrong Extension Shaper Tool

Patented

This is an extremely rigid and convenient tool, well adapted for cutting internal key ways, or for any kind of work on the Shaper in which extra clearance is needed.



A FEW INTERNAL SHAPES FOR WHICH THIS TOOL IS ADAPTED

Price List—Complete with Holder and one Bar, one High Speed Cutter and Wrench

No.	Size Shank Inches	Size Bar Inches	Size Cutter Inch Square	Extra Cutter Bits Each High Speed	Price Each Complete
47	1/2 x 1 1/8	3/4 x 10	5/16	\$0.24	\$4.50
48	5/8 x 1 3/8	15/16 x 12	3/8	.40	5.65
49	3/4 x 1 5/8	1 1/8 x 14	7/16	.55	8.00

Extra Bars and Bushings—Price includes Bar, one Bushing, a High Speed Cutter and Wrench

Dimensions of Bar		Size of Cutter In. Sq.	With Bushing to Fit Shank Number	Extra Cutter Bits Each High Speed	Price Each
Diam. Inches	Length Inches				
1/2	7 1/2	3/16	47, 48 or 49	\$0.10	\$2.85
5/8	8 1/2	1/4	47, 48 or 49	.12	3.00
3/4	10	5/16	48 or 49	.24	3.30
15/16	12	3/8	49	.40	3.75
1 1/8	14	7/16	Without Bushing	.55	3.75

Note—In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.

### Armstrong Planer and Shaper Tools

Patented

This tool has fewer parts than any other on the market consequently it is stronger, simpler and at the same time is adapted for use at any angle, right or left hand. Costs less than a High Speed Forged Tool. Effectively it equals a dozen.

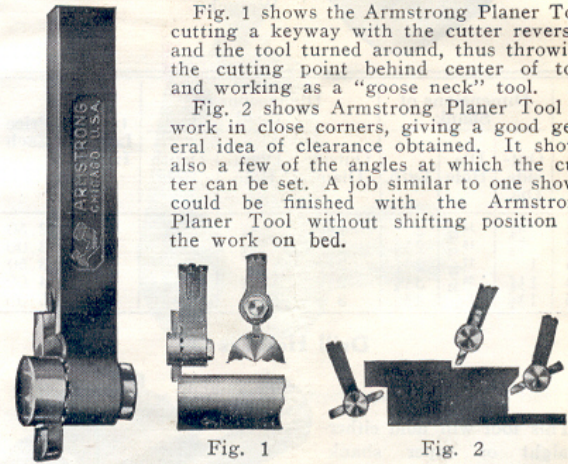


Fig. 1

Fig. 2

#### Price List

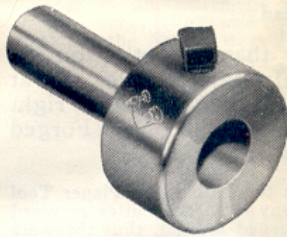
Complete with Wrench and One High Speed Cutter

No.	Size of Holder Inches	Size of Cutter Inches	Extra Cutter Bits High Speed	Price Complete
40*	1/2 x 1 x 6	1/4 x 3/8	\$0.35	\$4.65
401*	5/8 x 1 1/4 x 8 1/2	5/16 x 1/16	.55	6.00
41*	3/4 x 1 1/2 x 10	3/8 x 1/2	.80	7.85
42	1 1/8 x 1 3/4 x 13	1/2 x 3/4	1.95	12.40
43	1 3/8 x 2 x 16	5/8 x 7/8	3.35	21.75
44	1 7/8 x 2 1/4 x 19	3/4 x 1	5.00	39.00
45	2 1/8 x 2 3/4 x 22	7/8 x 1 1/8	8.20	57.00

\* Shaper sizes.



### Armstrong Tool Holders For Screw Machines and Turret Lathes



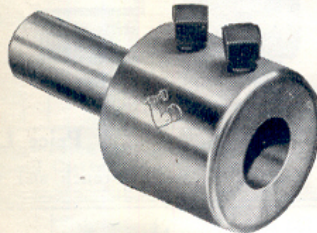
#### Plain Drill Holders

This tool is used for holding drills, reamers, counterbores, hollow mills and flat cutters. Price includes Wrench.

No.	Dimensions of Shank			Dimensions of Head			Ex-treme Length Inches	Price Each
	Out-side Dia.	Dia. Hole	Lgth.	Outside Diam.	Diam. Hole	Depth Hole		
601	3/4	13/32	2	1 3/4	3/4	3/4	3	\$2.50
602	7/8	15/32	2 3/8	2	7/8	7/8	3 1/2	3.00
603	1	17/32	2 3/4	2 1/4	1	1	4	3.50
604	1 1/4	25/32	3 1/2	2 7/8	1 1/4	1 1/4	5 1/8	4.00
605	1 1/2	1 1/32	4 3/8	3	1 1/2	1 1/2	6 1/4	5.00

#### Drill Holders

This tool will hold either straight or taper shank drills. Bushing hole is extra deep for a rigid hold on the drill. Price includes Wrench.



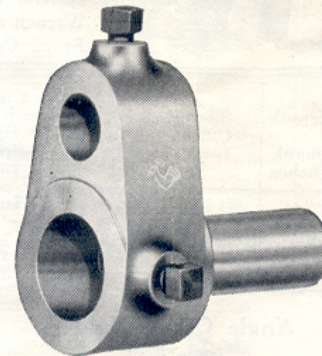
No.	Dimension of Shank Inches			Dimensions of Head Inches			Ex-trem Length Inches	Price Each
	Out-side Dia.	Dia. Hole	Lgth.	Outside Diam.	Diam. Hole	Depth Hole		
611	3/4	13/32	2 1/8	1 3/4	3/4	1 1/2	3 7/8	\$3.25
612	7/8	15/32	2 1/4	2	7/8	1 3/4	4 1/4	3.75
613	1	17/32	2 3/8	2 1/4	1	1 13/16	4 1/2	4.50
614	1 1/4	25/32	3	2 7/8	1 1/4	2 1/8	5 1/2	5.00
615	1 1/2	1 1/32	3 5/8	3	1 1/2	2 3/8	6 1/2	6.25



### Armstrong Tool Holders For Screw Machines and Turret Lathes

#### Plain Turners

This tool is designed to combine a single cutter turning set up with drilling and boring operations. The top takes Cutter Holders (shown on pages 16 and 17), while the center tool bushing hole locates drills, boring bars and other similar tools.



These tools are drop forged from special steel. Price includes Wrench.

No.	Dimensions of Shank Inches			Dimensions of Head Inches			Ex-treme Lgth. Inches	Price Each
	Out-side Dia.	Dia. Hole	Lgth.	Dia. Top Hole	Dia. Center Hole	Depth Center Hole		
621	7/8	1/2	2 1/2	3/4	3/4	1 1/8	3 7/8	\$6.50
622	1	5/8	3	7/8	1 1/4	1 1/8	4 1/2	7.50
623	1 1/4	3/4	3 1/4	1	1 5/8	1 3/8	5 1/8	9.50
624	1 1/2	7/8	3 5/8	1 1/4	1 5/8	1 3/8	5 1/2	12.50
625	1 3/4	1	3 7/8	1 1/2	1 3/4	1 1/2	5 3/4	15.00

Note—For Boring Bars see page 8.

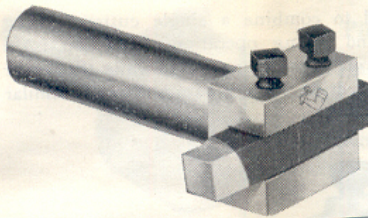




### Armstrong Tool Holders

For Screw Machines and Turret Lathes

#### Straight Cutter Holders

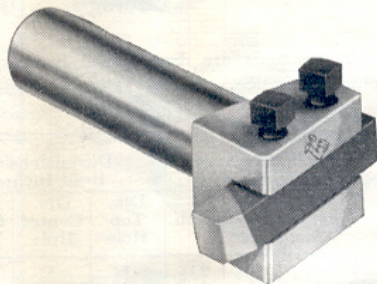


This tool is used for turning, facing, chamfering, boring and similar work. The tool slot will take either square or flat cutters. Price includes Wrench and One High Speed Cutter.

No.	Diameter of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches	Cutter Bits High Speed Each	Price Each
631	3/4	2 1/2	1/4 x 1/4 x 1 3/4	3 1/8	\$0.18	\$4.00
632	7/8	3 1/4	3/8 x 3/8 x 2 5/8	4	.50	4.75
633	1	4	1/2 x 1/2 x 3 1/4	4 7/8	1.00	5.50
634	1 1/4	4 3/4	5/8 x 5/8 x 4	5 7/8	1.80	6.50
635	1 1/2	5 1/2	3/4 x 3/4 x 5	6 3/4	3.40	7.50

#### Angle Cutter Holders

In this tool, the cutter is held at an angle of 15° which provides clearance necessary for turning close to a shoulder or chuck. Price includes Wrench and One High Speed Cutter.



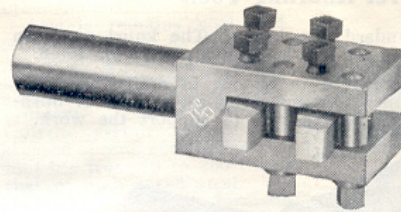
No.	Diameter of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches	Cutter Bits High Speed Each	Price Each
641	3/4	2 1/2	1/4 x 1/4 x 1 3/4	3 1/4	\$0.18	\$4.00
642	7/8	3 1/4	3/8 x 3/8 x 2 5/8	4 1/4	.50	4.75
643	1	4	1/2 x 1/2 x 3 1/4	5 1/4	1.00	5.50
644	1 1/4	4 3/4	5/8 x 5/8 x 4	6 1/4	1.80	6.50
645	1 1/2	5 1/2	3/4 x 3/4 x 5	7 3/4	3.40	7.50



### Armstrong Tool Holders

For Screw Machines and Turret Lathes

#### Multiple Cutter Holders

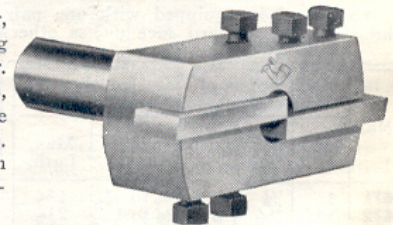


This tool is used for turning or boring two diameters and for combining facing or chamfering with turning or boring operations. Price includes Wrench and Two High Speed Cutters.

No.	Diam. of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches	Cutter Bits High Speed Each	Price Each
651	3/4	2 1/2	1/4 x 1/4 x 1 3/4	4 5/8	\$0.18	\$4.50
652	7/8	3 1/4	3/8 x 3/8 x 2 5/8	5 5/8	.50	5.25
653	1	3 1/4	1/2 x 1/2 x 3 1/4	6 1/4	1.00	6.25
654	1 1/4	3 1/2	5/8 x 5/8 x 4	7 1/8	1.80	7.25
655	1 1/2	4 1/2	3/4 x 3/4 x 5	8 7/8	3.40	8.25

#### Facing Tools

Used for grooving, recessing, face-forming and counterboring. Drills, counterbores, pilots, etc., can be held in the center hole. Price includes Wrench and Two Speed Cutters.



No.	Dimensions of Shank, Inches			Dimensions of Head, Inches			Ex-treme Lgth. Inches	Extra Cutter Bits High Speed Each	Price Each
	Out-side Dia.	Dia. Hole	Lgth.	Wdth	Size of Cutter Bit	Dia. Center Hole			
661	3/4	25/64	1 7/8	2 3/4	1/4 x 3/8	5/8	3 1/4	\$0.35	\$ 8.00
662	7/8	29/64	2 3/16	3 1/4	1/4 x 3/8	5/8	4	.35	10.00
663	1	17/32	2 1/4	4	3/8 x 1/2	3/4	4	.55	12.50
664	1 1/4	21/32	2 15/32	4 3/4	5/8 x 1/2	7/8	5 1/2	.80	15.50
665	1 1/2	29/32	3 3/4	5	3/8 x 1/2	7/8	5 1/2	.80	18.00



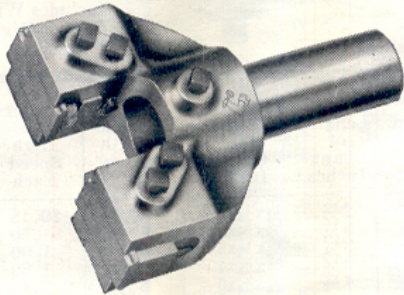
### Armstrong Tool Holders

For Screw Machines and Turret Lathes

#### Turret Knurling Tools

This tool holds standard size knurls. The knurl pins can easily be removed to insert knurls of any pattern or pitch.

The cross-slides are moved in or out to desired capacity and are locked at proper adjustment by set screws. A bushing may be used in the center hole to support the work.



These tools are drop forged from special steel. Either diamond or straight line pattern knurls can be furnished in coarse, medium or fine pitch. (See Page 10.)

Each tool is equipped with one pair of medium diamond knurls with standard face unless otherwise specified.

No.	Dimensions of Shank—Inches			Knurling Capacity Inches		Max. Wdth. Head Inches	Ex-treme Lgth. Inches	Price Each
	Dia.	Dia. Hole	Lgth.	Diam.	Max. Lgth.			
671	1	3/16	2 1/2	1/8 to 3/4	1 5/8	3 1/2	4 13/16	\$20.00
672	1 1/4	2 1/32	3	1/8 to 1	2 1/2	4 3/4	6 1/8	30.00
673	1 1/2	1 3/32	3 3/8	1/4 to 1 1/2	3 1/4	6 1/4	7 11/16	40.00
674	1 3/4	2 3/32	3 3/8	1/2 to 2	4	7 3/8	8 7/8	50.00

#### Extra Knurls

For Knurling Tool No.	Diameter	Standard Face Width	Full Face Width	Hole Diameter	Thick-ness	Price Per Pair
671, 672	5/8	3/16	3/8	7/32	3/16	\$1.00
673, 674	3/4	1/4	3/8	1/4	3/8	1.15

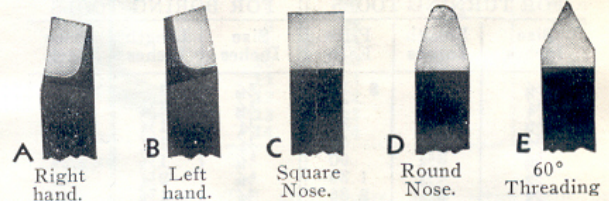


### Armide Cutters

Armide is an improved Carbide Cutting Metal. It approaches the diamond in hardness and will machine chilled cast iron, hard and tough steels, hard rubber, bakelite and other materials.

Armide remains cool and securely brazed at all times. Its edge stays smooth and clean, for Armide will not alloy with steel or iron. On ordinary operations Armide Cutters permit greatly increased speeds and extend the tool life from 10 to 200 times that of high speed steel.

Armide Cutters are furnished in five standard forms, ground and ready for use. All forms shown are available on either "flat" or "square" bodies. For Tool Holders, see Page 4.



Shape of* Cutter Body	Size Inches	Shape of* Cutter Body	Size Inches	Length	Price Each
FLATS	1/4 x 3/8	SQUARES	1/4	1 3/4	\$ 9.00
	3/16 x 1/2		3/16	2 1/4	10.50
	3/8 x 1/2		3/8	2 1/2	11.50
	1/2 x 3/4		1/2	3	12.50
	3/4 x 1/2		3/4	3 1/2	14.50
			5/8	4	18.50

\*Be sure and specify by letter form of cutter desired, also whether square or flat. Square bodied cutters will be shipped unless flat is specified.

### Armide Tool Sets

These Sets consist of four and five Armide Cutters as listed with Carbide Tool Holder and Wrench. Furnished complete in a specially made shop case.

Set No.	Size of Tool Shanks, In.	Size of Cutters, Inches	Cutter Shapes, Included	Price, Set Complete
1	1/2 x 1 1/4 x 7	3/8 x 3/8	A, B, C, D	\$45.00
1-A	1/2 x 1 1/4 x 7	3/8 sq.	A, B, C, D	45.00
2	3/4 x 1 1/2 x 8	3/8 x 1/2	A, B, C, D, E	60.00
2-A	3/4 x 1 1/2 x 8	3/8 sq.	A, B, C, D, E	60.00



### Armstrong High Speed Steel Bits Cutter Lengths—Hardened

Require grinding only to make them ready for use  
in Armstrong Tool Holders



#### Squares for Turning and Boring Tools

FOR TURNING TOOLS			FOR BORING TOOLS		
Size Inches	Length Inches	Price Each	Size Inches	Length Inches	Price Each
$\frac{3}{16}$	1 $\frac{3}{4}$	\$ .15	$\frac{3}{16}$	1	\$0.10
$\frac{1}{4}$	2 $\frac{1}{8}$	.20	$\frac{5}{16}$	1 $\frac{1}{4}$	.10
$\frac{5}{16}$	2 $\frac{3}{8}$	.35	$\frac{1}{4}$	1 $\frac{1}{4}$	.12
$\frac{3}{8}$	3 $\frac{1}{4}$	.55	$\frac{1}{4}$	1 $\frac{3}{4}$	.18
$\frac{7}{16}$	3 $\frac{3}{4}$	.90	$\frac{5}{16}$	1 $\frac{1}{2}$	.24
$\frac{1}{2}$	4 $\frac{1}{4}$	1.30	$\frac{3}{8}$	2 $\frac{1}{4}$	.30
$\frac{5}{8}$	5	2.35	$\frac{3}{8}$	1 $\frac{7}{8}$	.40
$\frac{3}{4}$	5 $\frac{3}{4}$	3.85	$\frac{3}{8}$	2 $\frac{5}{8}$	.50
$\frac{7}{8}$	6 $\frac{1}{2}$	5.85	$\frac{1}{2}$	2 $\frac{1}{8}$	.55
1	7 $\frac{1}{4}$	8.35	$\frac{1}{2}$	2 $\frac{7}{8}$	.75
1 $\frac{1}{2}$	8	11.35	$\frac{1}{2}$	2 $\frac{3}{8}$	.80
			$\frac{1}{2}$	3 $\frac{1}{4}$	1.00
			$\frac{5}{8}$	2 $\frac{3}{4}$	1.40
			$\frac{5}{8}$	4	1.80
			$\frac{3}{4}$	3 $\frac{1}{8}$	2.75
			$\frac{3}{4}$	5	3.40



#### Flats for Planer and Slotter Tools

FOR PLANER TOOLS			FOR SLOTTER AND GANG PLANER TOOLS		
Size Inches	Length Inches	Price Each	Size Inches	Length Inches	Price Each
$\frac{1}{4}$ x $\frac{3}{8}$	2 $\frac{1}{2}$	\$0.35	$\frac{7}{16}$ x $\frac{9}{16}$	3 $\frac{1}{4}$	\$1.20
$\frac{5}{16}$ x $\frac{1}{16}$	3	.55	$\frac{1}{2}$ x $\frac{11}{16}$	3 $\frac{3}{4}$	1.60
$\frac{3}{8}$ x $\frac{1}{2}$	3 $\frac{1}{2}$	.80	$\frac{9}{16}$ x $\frac{3}{4}$	4 $\frac{1}{4}$	2.20
$\frac{1}{2}$ x $\frac{3}{4}$	4 $\frac{1}{4}$	1.95	$\frac{5}{8}$ x $\frac{7}{8}$	5	3.35
$\frac{5}{8}$ x $\frac{7}{8}$	5	3.35	$\frac{3}{4}$ x 1	5 $\frac{3}{4}$	5.00
$\frac{3}{4}$ x 1	6	5.00	$\frac{3}{8}$ x $\frac{1}{2}$	3	.70
$\frac{7}{8}$ x 1 $\frac{1}{8}$	7	8.20	$\frac{1}{2}$ x $\frac{11}{16}$	3 $\frac{1}{2}$	1.50
			$\frac{5}{8}$ x $\frac{7}{8}$	4	2.55



### Armstrong Drop Forged Steel Lathe Dogs

Bent or Straight Tail—Single Screw



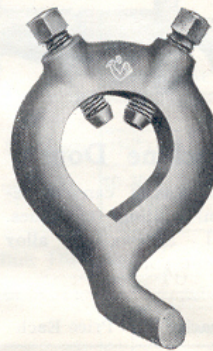
Bent Tail

No. Bent Tail	No. Straight Tail	Capacity Inches	Price Each
1	21	$\frac{3}{8}$	\$1.00
2	22	$\frac{1}{2}$	1.10
3	23	$\frac{3}{4}$	1.20
4	24	1	1.40
5	25	1 $\frac{1}{4}$	1.70
6	26	1 $\frac{1}{2}$	2.00
7	27	1 $\frac{3}{4}$	2.40
8	28	2	2.80
9	29	2 $\frac{1}{2}$	3.60
10	30	3	4.60
11	31	3 $\frac{1}{2}$	6.00
12	32	4	9.00
13	33	5	16.00
14	34	6	24.00

Dogs with Bent Tail and square head screw will be shipped unless otherwise specified. Safety headless screws are optional.

### Heavy Duty Lathe Dogs

Bent or Straight Tail,  
Double Screw



No. Bent Tail	No. Straight Tail	Capacity Inches	Price Each
	128	2	\$ 5.50
	129	2 $\frac{1}{2}$	7.00
	130	3	9.00
	131	3 $\frac{1}{2}$	12.00
112	132	4	16.00
113	133	5	24.00
114	134	6	34.00
	135	7	46.00
	136	8	56.00

#### Dogs with Hollow Set Screws

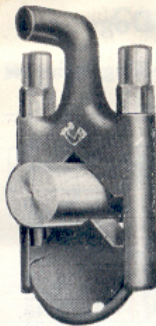
Lathe Dogs with Hollow Headless Set Screws can be furnished at same prices as above (Wrench extra); but Dogs with regular Square Head Screws will always be shipped when not otherwise specified.



### Armstrong Safety Clamp Dog

Patented

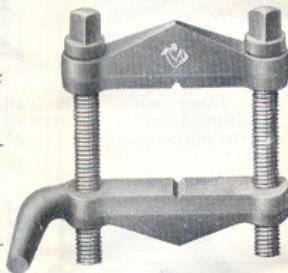
Will accommodate itself readily to work of any shape and will hold it securely and squarely, being especially adapted for use on finished work which would be liable to be damaged by the set screw of a common lathe dog. It possesses a wide range of adjustments and is well balanced.



No.	Capacity	Price Each
1-U	1/8 to 5/8 in.	\$ 2.40
2-U	3/8 to 1 in.	3.00
3-U	5/8 to 1 1/2 in.	4.00
4-U	3/8 to 2 in.	5.50
5-U	1 1/4 to 3 in.	8.00
6-U	1 3/4 to 4 in.	12.00
7-U	2 1/2 to 5 in.	16.00

### Drop Forged Clamp Dog

No.	Capacity	Price Each
11	1 3/4 in. bet. screws	\$3.00
12	2 1/4 in. bet. screws	4.00
13	2 3/4 in. bet. screws	5.00
14	3 1/2 in. bet. screws	7.00



### Milling Machine Dogs

For use on taper work carried between centers on milling machines. Drop forged steel. Screws are alloy steel, hardened on the point.

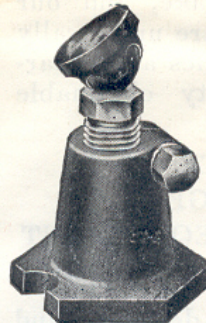


No.	Capacity	Price Each
42	1/2	\$1.10
43	3/4	1.20
44	1	1.40
45	1 1/4	1.70
46	1 1/2	2.00
47	1 3/4	2.40
48	2	2.80



### Armstrong Planer Jacks

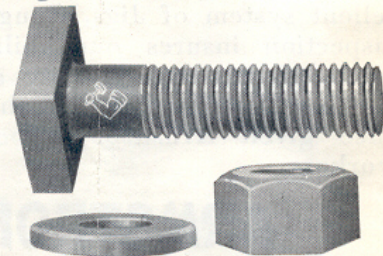
These Jacks will be found very strong and convenient for leveling work on the Planer and Milling Machine. They save much time lost hunting up blocking and will soon repay their cost.



No.	Height, Inches	Price Each
1	2 3/4 - 3 3/4	\$1.90
2	3 3/4 - 5 1/4	3.00
3	5 1/4 - 7 1/2	4.50
4	7 1/2 - 12	8.65

### Armstrong "T" Slot Bolts

Bolts will be furnished without nuts or washers unless specified. Thread is U. S. Standard.



Price Each Without Nut or Washer

Bolt Diam.	Length									
	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"
1/2"	\$0.30	\$0.30	\$0.30	\$0.35	\$0.38	\$0.40	\$0.45	\$0.47	\$0.50	\$0.55
5/8"	.35	.35	.35	.45	.55	.60	.65	.70	.75	.80
3/4"	.70	.70	.75	.75	.80	.85	.90	.95	1.00	1.05
Bolt Diameter...	1/2"		5/8"				3/4"			
Size of Head...	7/8" sq. x 1/4"		1 1/16" sq. x 5/16"				1 3/16" sq. x 3/16"			

Price, Nuts and Washers

Bolt Diam.	Thickness		Outside Diam.		Price Each	
	Nut	Washer	Nut	Washer	Nut	Washer
1/2"	5/8"	3/16"	7/8"	1"	\$0.08	\$0.06
5/8"	3/4"	1/4"	1 1/16"	1 1/4"	.14	.07
3/4"	7/8"	1/4"	1 1/4"	1 1/2"	.18	.08