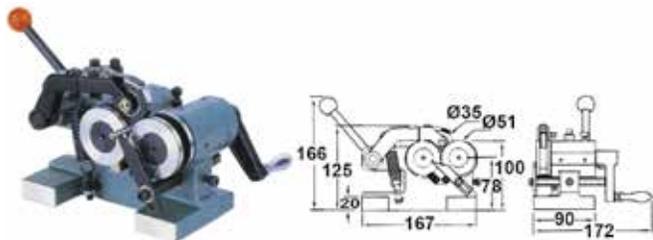


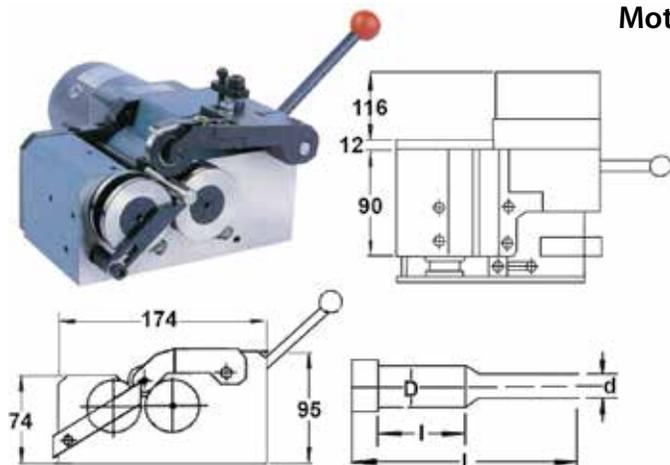
Centerless Punch Grinders



- High accuracy
- Centerless - no alignment necessary
- Rollers accept 0.06" – 1" diameters

Model	Weight	Code
PGA	5.5 kg	302470

Motorized



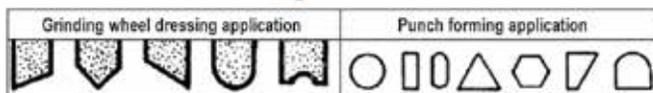
- Motor 110V, 25 watts
- Roller speed: 130 RPM
- D: 1.5-25mm
- d: 0.5-25mm
- L: maximum 120mm
- l: minimum 22mm

Model	Weight	Code
PGAM	11.5 kg	302471

Punch Formers

Tangential Style

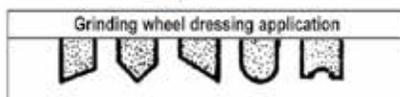
Double Offset



- Maximum diameter of workpiece: 32mm (1-1/4")
- V-Block: 30mm (1-3/16")
- Tangential travel: 20mm (25/32") either side of center
- V-Block adjusting system: rack and pinion
- Center height at 80mm (or 3-1/2")
- Indexing div: 24 (every 15°) ±10 seconds
- Angle setting: by sine system - gage blocks
- Roundness: 0.002mm (0.0001")
- Parallelism: within 0.005mm/50mm (0.0002 in 2")
- Squareness: within 0.005mm/50mm (0.0002 in 2")
- Construction: hardened tool steel throughout for long and accurate life
- Weight: 10 kgs (22 lbs.)

Code
875440

Single Offset

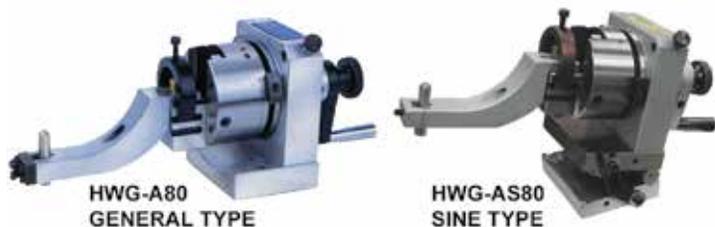


- Concentricity: within 0.003mm (0.0001")
- 24 index divisions (increments DF15°) within ±10 seconds
- Capacity: 32mm (1-1/4"), 90° V-blocks
- 30mm (1-1/8") through center hole
- Squareness and parallelism to within ±0.003 mm (±0.0001")
- Weight: 7.7 kg (17 lbs)

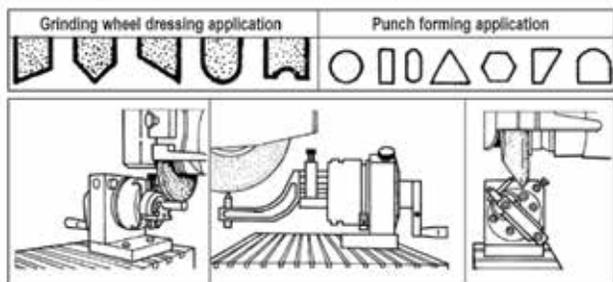
Code
865415

High Precision Punch Formers

Tangential Style – 1-1/4" Capacity



- Maximum diameter of workpiece: 1-1/4"
- Indexing ± 10 seconds: 24 (15°)
- Parallelism: 0.0001"
- Squareness: 0.0001"



Model	Type	Center Height (Inch)	Weight (lbs)	Code
HWG-A80	General	3.15	18	875510
HWG-AS80	Sine	4.49	25	875511

ER Collet Style Punch Formers

ER32 – 1/8" to 3/4" Capacity

NOTE: Collets not included

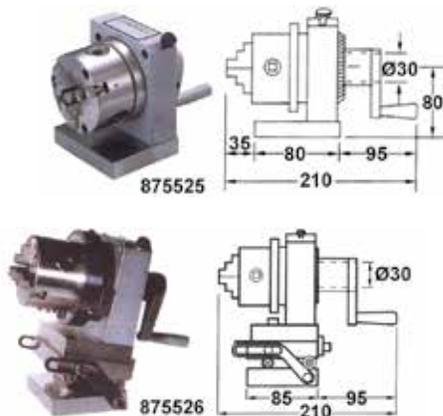


- Indexing ± 10 seconds: 24 (15°)
- Through hole: 3/4"
- Parallelism: 0.0001"
- Squareness: 0.0001"

Diameter Range (Inch)	Center Height (Inch)	Weight (lbs)	Code
0.04 - 0.78	3.15	15	875520
0.04 - 0.78	4.49	21	875521

Chuck Style Punch Formers

2" Capacity



- Maximum diameter of workpiece: 2"
- Indexing ± 10 seconds: 24 (15°)
- Through hole: 3/4"
- Parallelism: 0.0001"
- Squareness: 0.0001"

Center Height (Inch)	Weight (lbs)	Code
3.15	18	875525
4.49	25	875526

Drive Pin Punches



- Made from tool steel
- Uniformly heat treated
- Knurled body for easy gripping
- Ground point

Set of 4 consists of:
1/8", 5/32", 3/16" and 1/4"
Other sets include all sizes in series

Size (Inch)	4" Long	6" Long	8" Long
	Code	Code	Code
1/16	460001	460011	—
3/32	460002	460012	—
1/8	460003	460013	—
5/32	460004	460014	—
3/16	460005	460015	460025
7/32	460006	460016	460026
1/4	460007	460017	460027
5/16	460008	460018	460028
3/8	—	—	460029
Sets	460010 (4)	460020 (8)	460030 (5)

Long Drive Pin Punch Set



- Tool steel with black oxide finish and hardened on both ends
- Knurled finger grip
- Length: 8" (drive pin section: 3-1/2")

Sizes Included (Inch)	INSIZE No.	Code
5 Pieces Point Sizes 1/8, 3/16, 1/4, 5/16, and 3/8	7253	283975

Drive Pin Punch Set



- Tool steel with black oxide finish and hardened on both ends
- Knurled finger grip
- Length: 4"

Sizes Included (Inch)	INSIZE No.	Code
8 Pieces Point Sizes 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, and 5/16	7252	283976

Center Punches



- Center punches are made of hardened and tempered tool steel
- Round shank, knurled grip

Size (Inch)	Body Diameter (Inch)	Length (Inch)	Code
1/16	1/4	3	460031
5/64	5/16	4	460032
3/32	5/16	4	460033
9/64	3/8	4	460034
5/32	7/16	4	460035
Set (5)	-	-	460040

Automatic Center Punches

Light Duty



- Pressure can be varied from 5 lbs. to approximately 30 lbs. simply by rotating knurled head
- Used for marking light dotting to heavy punching

Heavy Duty



- Fully automatic single hand operation
- Adjustable from very light to extra heavy markings
- Used for marking, punching, staking and riveting
- Replaceable point is made from hardened alloy steel
- Individually packed in vinyl pouch

Length (Inch)	Code
5	460051

Length (Inch)	Diameter (Inch)	Code
5-1/2	5/8	460050

Pin Punch & Center Punch Sets



- Eight pieces per set
- 4" length
- Well proportioned for comfort
- Hardened and tempered
- Knurled finger grip for ease of use

Pin Punch Set

Sizes Included Inch (mm)	Code
1/16 (1.5), 3/32 (2.5), 1/8 (3), 5/32 (4), 3/16 (5), 7/32 (5.5), 1/4 (6), and 5/16 (8)	460041

Center Punch Set

Sizes Included Inch (mm)	Code
1/16 (1.5), 5/64 (2), 3/32 (2.5), 1/8 (3), 9/64 (3.5), 5/32 (4), 3/16 (5), and 7/32 (5.5)	460042

Surface Scriber Blocks



- Hardened steel base is ground and polished
- V-groove in base for cylindrical work
- Fine adjustment of spindle to any angle above or below base

Base (Inch)	Rod Length (Inch)	Code
2-3/16 x 1-5/8 x 3/4	7	460081
3-1/8 x 2-1/2 x 1	12	460082

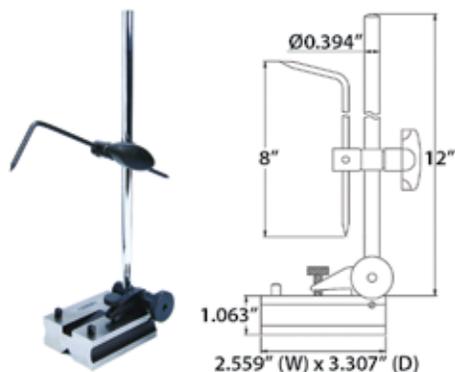
Pocket Scriber



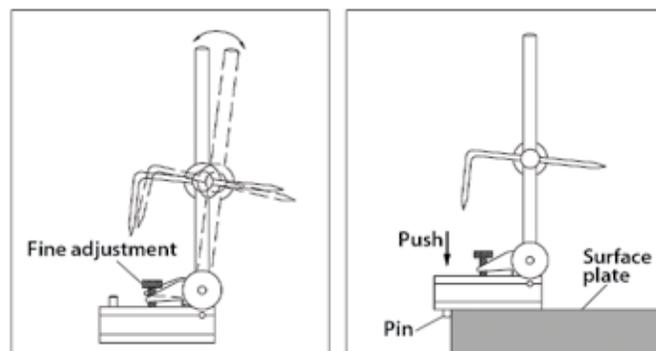
- Hardened steel point is reversible for protection when not in use
- Overall length: 89mm – 3-1/2"

Code
460070

Surface Scriber Block



- Grooved bottom for cylinder
- Two pins to be set against the edge of the surface plate

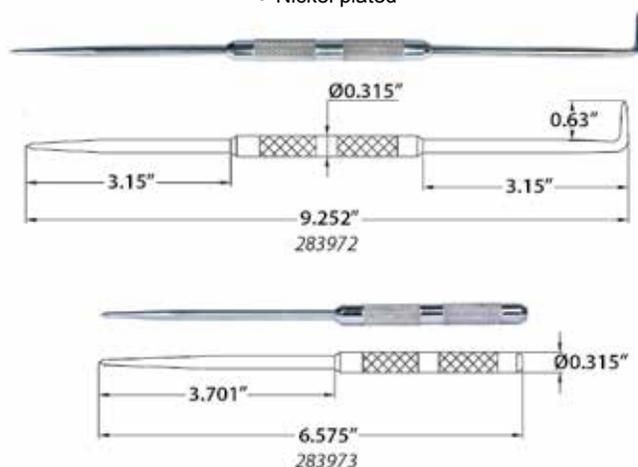


Base (Inch)	INSIZE No.	Code
1.063 x 2.559 x 3.307	6990-300A	283971

Machinist's Scribes



- Nickel plated



Tip Style	INSIZE No.	Code
Hardened tips	7230	283972
Hardened tip	7231	283973

Machinist's Scribes



Tip Style	Code
4-1/2	460061
7-1/2	460062
7-1/2	460063
7-1/2	460064
7	460065
4	460066
6-3/4	460067
10	460068

Machinist's Tool Set



Description	Individual Code	3-Piece Set Code
	Scriber	455501
Center punch	455502	
Magnetic pick-up	455503	

Transfer Punch Sets

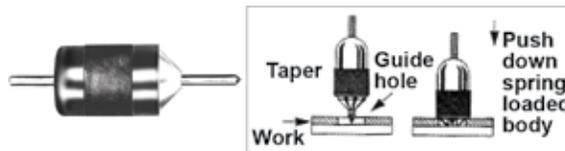


- Overall length: 4-7/8"
- Inch sizes: 3/32" to 1/2" (plus 17/32") and 1/2" to 1" by 64ths
- Letter sizes: A to Z
- Wire Gage sizes: 1 to 60
- Metric sizes: 1mm to 13mm by 0.5mm
- All sets in metal indexed storage case

Individual punches also available

Description	Code
28 punches - 3/32" to 1/2" by 64ths, plus 17/32"	415090
26 punches - Letter Sizes A-Z	415093
60 punches - Wire Gage Sizes 1-60	415096
33 punches - 1/2" to 1" by 64ths	415099
25 punches - 1mm to 13mm by 0.5mm	415100

Universal Transfer Punches & Aligners

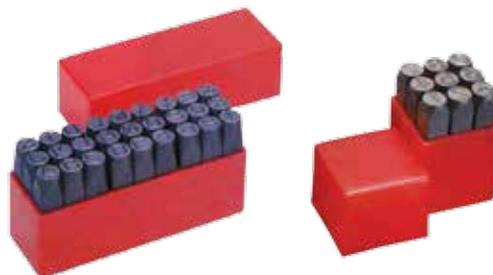


- Precision ground and spring loaded
- All parts made from steel and hardened
- Replaces different size transfer punches
- Centers top of 1/4" to 3/4" holes
- Perfect hole center alignment assured

Description	Weight (lbs)	Code
3/16" diameter, 3-1/8" long for 1/4" - 3/4" hole	0.26	604130
3/16" diameter, 4-1/8" long for 1/4" - 1-1/16" hole	0.46	604131

Steel Stamps

Letters & Numbers



Size (Inch)	Letter Stamps				Number Stamps			
	Straight Stamps		Reverse Stamps		Straight Stamps		Reverse Stamps	
	Stamp	Code	Stamp	Code	Stamp	Code	Stamp	Code
1/16	LP/1-16	416101	LP/R 1-16	416111	NP/1-16	416121	NP/R 1-16	416131
3/32	LP/3-32	416102	LP/R 3-32	416112	NP/3-32	416122	NP/R 3-32	416132
1/8	LP/1-8	416103	LP/R 1-8	416113	NP/1-8	416123	NP/R 1-8	416133
5/32	LP/5-32	416104	LP/R 5-32	416114	NP/5-32	416124	NP/R 5-32	416134
3/16	LP/3-16	416105	LP/R 3-16	416115	NP/3-16	416125	NP/R 3-16	416135
1/4	LP/1-4	416106	LP/R 1-4	416116	NP/1-4	416126	NP/R 1-4	416136

Interchangeable Steel Stamp Sets

- For hand or machine use
- Made from special tool steel
- A fast easy solution for multi-character marking - in a simple stroke you can indent a series of letters and numbers on a product or nameplate
- Each character is hardened and tempered to 59-61 Rockwell C and nickel finished to resist rust
- Set includes a type holder with a complete selection of letters, numbers, dash, slash, amok, period, comma, ampersand and spacers
- Supplied in storage case

112 Pieces



112-PIECE SET INCLUDES THESE STAMPS:

A	A	A	B	B	C	C	D	D	E
E	E	E	F	F	G	G	H	H	I
I	I	J	J	K	K	L	L	L	M
M	N	N	N	O	O	O	P	P	Q
R	R	R	S	S	S	T	T	U	U
U	V	W	W	X	X	Y	Z	&	/
/	-	-	.	.	.	1	1	1	1
1	2	2	2	2	3	3	3	4	4
4	4	5	5	5	6	6	6	7	7
7	8	8	8	9	9	9	0	0	0

Size (Inch)	Code
1/16	604140
3/32	604141
1/8	604142
3/16	604143
1/4	604144
3/8	604145

Machinist's Jack



- For use on drill presses, shapers, milling machines, planers, or any place where leveling is necessary
- Has a lifting capacity of approximately 1000 lbs
- Base is made of a heavy casting with adjustable steel screw and tilting swivel head, with lock nut for permanent positioning
- 3" high when closed and 4" high when fully extended

Code

416160

Punch & Die Set

- Cuts rubber, plastic, brass or steel up to 0.025" thick
- Clear plexiglas top lets you see where you are punching for greater accuracy
- Heat treated tool steel base
- Compact in size: 3-9/16" x 3-1/16"
- Weighs 2 lbs., 4 oz.



Sizes Included (Inch)

1/8", 3/16", 1/4", 5/16", 3/8",
7/16", 1/2", 5/8", and 3/4"

Code

455500

Pin Hand Chucks



Length (Inch)	Capacity (Inch)	Code
3	0 - 0.040	460181
3-1/2	0.030 - 0.062	460182
3-3/4	0.050 - 0.125	460183
4-1/8	0.115 - 0.187	460184
SET: 4 Pieces: 0 - 0.187" capacity		460185

Pin Chucks



- Designed to hold small drills in drill presses
- Supplied with three interchangeable hardened collets

Length (Inch)	Capacity (Inch)	Code
2-1/2	0 - 3/32	460188

Double End Pin Chuck



- Each end with a double end collet which can be reversed to desired size
- Nickel plated body made of tube to permit use of long wire or rods

Length (Inch)	Capacity (Inch)	Code
2-1/2	0 - 3/32	460186

Master Pin Chuck



- Hand drill and pin vise with swivel head
- With two double end collets
- Capacity: 0 to 0.125"

Code
460187