SWISS PRECISION INSTRUMENTS, INC.™

your Partner in Precision™

NOGA SIMPLY SOPHISTICATED

DEBURRING KIT

See pg. 51 for details.

$165.00

82-536-4
(List $198.80)

SAVE 17%

ELECTRO-SPARK METAL ENGRAVING PEN

See pg. 43 for details.

$463.38

97-475-8
(List $565.10)

SAVE 18%

SPI

CYLINDER DIAL BORE GAGE SET

$179.93

25-363-3
(List $199.95)

NEW

SAVE 10%

See pg. 2 for details.

TOP QUALITY FORGED C-CLAMPS

See pg. 40 for details.

$12.70

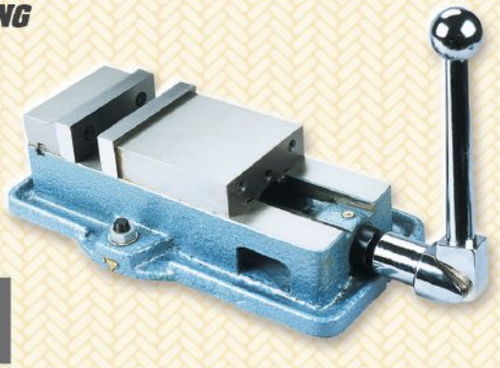
33-007-6
(List $18.15)

SAVE 30%

SHOP GRADE

PRECISION MILLING MACHINE VISES

See pg. 32 for details.



$193.05

76-565-1
(List $247.50)

SAVE 22%

WARNING: Products identified herein may expose you to chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. Before purchasing any product identified herein, please consult www.swissprec.com to review any product-specific warnings.

SPI® CYLINDER DIAL BORE GAGE SET

0.7" to 6" Measuring Range

$179.93
25-363-3
(List $199.95)

SAVE 10%

Set includes:
- 3 interchangeable measuring heads:
  0.7" - 1.4", 1.4" - 2" & 2" - 6"
- 3 sets of anvils with carbide contact points:
  0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4"
  1.4, 1.6, 1.8, 2"
  2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4"
- 2" extender
- 3 spacers/washers: 0.02, 0.05, 0.1"
- Travel Indicator
  Range: 0 - .25"
  Accuracy: 0.0003"
  Resolution: 0.0005"
  Reading: 0-25-0

- 0.7 - 6" bore gage accuracy: 0.001"
- Furnished in fitted case.
- 2 year warranty.

$79.94
25-364-1
(List $99.95)

SPI® IP54 DIGITAL ROTOR GAGE

NEW

- Range: 0 - 3"/75 mm
- Accuracy: ±0.0015"/.03 mm
- Repeatability: 0.001"/.01 mm
- Large display:
  - Inch: 0.0005"
  - Metric: 0.01 mm
  - Fraction: 1/64"
- ABS button.
- Zero button.
- Jaw depth: 3.5"
- Auto shut-off after 5 minutes.
- Battery: CR2032 included.
- Furnished in fitted case.
- D.O.T. regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.
- 2 year warranty.

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery (CR2032)	07-319-7	$2.55

SPI® IP54 DIGITAL WHEEL-ON ROTORGAGE

Measure Rotors without Removing the Wheels

$103.93
25-365-8
(List $129.95)

- Range: 0 - 3.2"/80 mm
- Accuracy: ±0.0015"/.03 mm
- Repeatability: 0.001"/.01 mm
- Large display:
  - Inch: 0.0005"
  - Metric: 0.01 mm
  - Fraction: 1/64"
- Measurable jaw depth: 1.10"
- Hold button.
- Auto shut-off after 5 minutes.
- Tips: stainless steel
- Battery: CR2032 included.
- Furnished in fitted case.
- D.O.T. regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.
- 2 year warranty.

SAVE up to 20%

Ground Ship ONLY

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery (CR2032)	07-319-7	$2.55

$177.24
25-366-6
(List $196.95)

NEW

SAVE up to 10%

SPI® IP54 DIGITAL BRAKE DRUM GAGE

- Range: 4 - 20"/100 - 500 mm
- Accuracy: ±0.003"/.07 mm
- Repeatability: 0.002"/.05 mm
- Large display:
  - Inch: 0.0005"
  - Metric: 0.01 mm
  - Fraction: 1/64"
- 4" drum preset button.
- 1" & 1.5" depth preset pins.
- Hold button.
- Battery: CR2032 included.
- Furnished in fitted case.

- D.O.T. regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.
- 2 year warranty.

Ground Ship ONLY

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery (CR2032)	07-319-7	$2.55

SPI® Classic CENTER SCOPE

- Straight shank 1/2" dia. Eye piece angle 60°.
- 45X magnification for optical position accuracy of 0.0001".
- Field of view: 0.100" dia. Focal length: 5/8".
- Single dash line reticle for easy observation of the work reference line.
- Optional Edge Block to locate the edge of any workpiece to the spindle axis, and optional V-Block Gage for precision centering of a v-block to the spindle for cross axis boring.

DESCRIPTION	PART NO.	PRICE
Center Scope in Fitted Case	40-120-8	$495.85
Edge Block	40-121-6	84.30
V-Block Gage	40-122-4	66.95

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

20-845-4

20-846-2

20-847-0

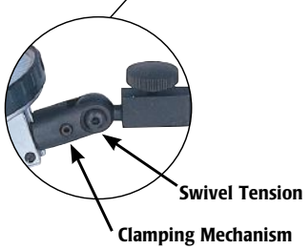
20-848-8

DUAL ACTION INDICATOR SWIVELS

MADE IN USA

- Swivel tension and clamping mechanism adjust independently.
- Various stem sizes available to fit most standard tooling.
- Incredibly smooth swivel action using high strength engineered polymer bearings.
- Fits standard dovetail-style test indicators.
- Swivels over 240°.
- Hardened stem and dovetail pin.
- Durable corrosion-resistant coating.

DESCRIPTION	PART NO.	PRICE
8 mm Indicator Swivel	20-844-7	$28.25
5/32" Indicator Swivel	20-845-4	28.25
7/32" Indicator Swivel	20-846-2	28.25
3/8" Indicator Swivel	20-847-0	28.25
3/8" x 2" Indicator Swivel	20-848-8	28.25



SPI® Classic

Swiss Made

IP54 DIGITAL TIRE TREAD GAGE

NEW

- Range: 0 - 1"/25 mm
- Large display:
  - Inch: 0.0005"
  - Metric: 0.01 mm
  - Fraction: 1/32"
- Accuracy: 0.0015"
- Spring loaded movement.
- Hold reading function.
- Auto shut-off after 5 minutes.
- Rod dia.: 3/32"
- Base: 2" L x 1/4" W
- Battery: CR2032 included.
- Plastic pouch included.
- D.O.T. regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.
- 2 year warranty.

$30.54
25-367-4
(List $35.95)

Ground Ship ONLY

SAVE up to 15%

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery (CR2032)	07-319-7	$2.55

UNIVERSAL DIGITAL DEPTH GAGES

Double Prismatic Frame — Double V Guide

- Direct inch/metric conversion
- PRESET Switch (up to two arbitrary orgins can be set).
- ZERO/ABS Switch (switches between incremental and absolute modes).
- Data output interface.
- Operates on one 1.5 volt Silver oxide battery, included. 1 yr. battery life.
- Quick-locks on the base for fast and positive mounting of extention measuring bridges.
- Includes 4 interchangeable measuring probes to solve virtually all problems inherent with groove and slot — depth — cross hole — and special application measurements.
- Extension bridges to increase range of base.
- 30-220-8 includes 15.75" bridge.
  30-221-6 includes 23.60" bridge.
- Furnished in fitted case.

DEPTH RANGE	BASE	READING	OVERALL ACCURACY	PART NUMBER	PRICE
8"	6.3"	0.0005"/0.01mm	0.0015"	30-220-8	$2,893.80
16"	6.3"	0.0005/0.01mm	0.002"	30-221-6	3,135.35

NOGA SIMPLY SOPHISTICATED

DIAL GAGE HOLDERS

SAVE up to 15%

- Holds test indicators on stem and dovetail.
- Unique central locking.
- D.O.T. Regulated. Shipped via ground freight only.

STEM	MAG. PULL (LBS.)	POST LENGTH MAIN	POST LENGTH SUB	PART NUMBER	LIST	SALE
3/8"	72	2.2"	2.0"	82-465-6	$87.35	$78.61
3/8"	72	2.2"	2.0"	82-458-1*†	147.85	125.67
Repl. 3/8" Clamp				82-458-1	147.85	125.67

* Fine Adjustment.
† 5 axis three dimensional, especially suited for test indicators. Assembly swivels on base a full 360°.

Ground Ship ONLY

SAVE up to 15%

SPI® Classic
STANDARD DIAL INDICATORS

20-703-5

- Supplied with tolerance pointers.
- Revolution counter.
- Rigid, forged brass housing.
- Tungsten carbide contact point, 4-48 thread.
- 3/8" dia. mounting stem.
- Flat and lug back included.
- Conforms to ASME B89.1.10M-2001.
- Certificate of calibration traceable to NPL included.
- Furnished in fitted case.
- AGD Group 2.

Certified
Right Out of the Box!

RANGE	DIA.	DIAL READING	GRADUATION	PART NO.	LIST	SALE
0.250"	1 1/2"	0-50-0	0.001"	14-653-0†	$67.45	$59.35
0.250"	1 1/2"	1-100	0.001"	14-654-8†	67.45	59.35
0.200"	2 1/4"	0-100 & 0-50-0	0.0001"	20-701-9*	102.90	92.61
0.500"	2 1/4"	0-50 & 0-25-0	0.0005"	20-704-3	55.90	50.31
0.500"	2 1/4"	0-100 & 0-50-0	0.001"	20-700-1	51.25	43.56
1.000"	2 1/4"	0-100 & 0-50-0	0.001"	20-703-5	50.15	44.13
Steel Ball Contact Point				20-361-2	4.90	4.16

† AGD Group 1. * Flat back only.

TECLOCK®
DIAL INDICATORS

26-306-1 26-307-9

- Thread size: #4-48, metric 2.5 x .045.
- Meets or exceeds Federal specifications.
- Easy reading dial with crisp graduations.
- Interchangeable hardened chrome point.
- Hard satin-chrome finish.
- Hard chrome plated stem, precision ground and tapped.

Inch Graduations

MEASURING RANGE	DIAL READING	GRADUATION	DIAL DIA.	AGD	REVOLUTION COUNTER	DIAL COLOR	BACK TYPE	PART NUMBER	PRICE
0.050"	0-10	0.0001"	2 13/64"	2	Yes	White	Lug	26-300-4	$165.05
0.250"	0-100	0.001"	1 17/32"	1	No	White	Lug	26-301-2	117.85
0.250"	0-100	0.001"	2 11/64"	2	No	White	Lug	26-302-0	99.05
0.250"	0-50-0	0.001"	2 11/64"	2	No	White	Flat	26-303-8	99.05
0.500"	0-50-0	0.001"	2 11/64"	2	Yes	White	Lug	26-304-6	94.30
0.500"	0-100	0.001"	2 11/64"	2	Yes	White	Lug	26-305-3	94.30
1.000"	0-100	0.001"	2 11/64"	2	Yes	White	Lug	26-306-1	82.55
1.000"	0-100	0.001"	2 11/64"	2	Yes	Black	Lug	26-307-9	82.55
1.000"	0-50-0	0.001"	2 11/64"	2	Yes	White	Lug	26-308-7	102.55

Metric Graduations

MEAS. RANGE (MM)	DIAL READING	GRAD. (MM)	DIAL DIA.	AGD	REVOLUTION COUNTER	DIAL COLOR	BACK TYPE	PART NUMBER	PRICE
1.0	0-100-0	0.001	2 13/64"	2	Yes	White	Lug	26-311-1	$165.05
10.0	0-100	0.01	2 11/64"	2	Yes	White	Lug	26-312-9	104.95
25.0	0-100	0.01	2 11/64"	2	Yes	White	Lug	26-313-7	104.95
Aluminum Flatback for AGD Group 2 Indicators								24-312-1 †	17.95

Except for 26-301-2

SAVE 11%

SPI® Classic
KAFER DIAL INDICATORS

...Up to 4" Range

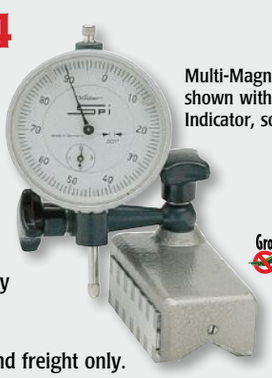
20-781-1 20-782-9

- With mfg. test certificate.
- Extreme accuracy.
- Continuous dial.
- Uniform pressure over full range of travel.
- Jeweled bearings.
- Adjustable bezel for quick zero settings.
- Stem diameter: 3/8"/metric 8 mm.
- C.L. stem to C.L. lug hole 3/4".
- Lug mount included.
- Flat back optional.
- #4-48 thread — Metric 2.5 x 0.45 mm.

GRADUATION	BEZEL DIA.	RANGE	READING	PART NUMBER	LIST	SALE
0.001"	2 1/4"	1.125"	0 - 100	20-781-1	$182.65	$162.55
0.001"	2 1/4"	2.000"	0 - 100	20-782-9	227.70	202.65
0.001"	2 1/4"	4.000"	0 - 100	20-783-7	440.70	392.22
0.0005"	2 1/4"	2.000"	0 - 50	20-788-6	258.20	229.79
0,01 mm	60 mm	30 mm	0 - 100	21-781-0	152.20	135.45

Made in Germany

$167.94
20-756-3
(List $188.70)


Multi-Magnetic Base shown with Travel Indicator, sold separately

MULTI-MAGNETIC BASE

- For quick set-ups on machines.
- 2 1/4" permanent magnet surface includes 120° "V" holder with 1/4" depth.
- Swivel mount adjustable horizontally and vertically with 360° rotation.
- 2 3/4" L x 1 3/8"W x 2 3/8" H
- D.O.T. Regulated. Shipped via ground freight only.

Ground Ship ONLY

SAVE up to 25%

SPI®
IP54 ABSOLUTE DIGITAL INDICATOR PROBES

20-187-1

Ground Ship ONLY

- Inch/metric conversion.
- On/Off switch.
- Preset button.
- Origin button: to set origin at any point.
- Travel reverse.
- SPC/USB data output.
- Thread size: #4-48
- Stem dia.: 3/8"
- Removable lugback included.
- Attachable finger lift included.
- Repeatability: 0.00005"/0.001mm
- Resolution: 0.00005"/0.001mm
- Battery: CR1632 for long life.
- Furnished in fitted case.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

RANGE	ACCURACY	PART NO.	LIST	SALE
0 - .5"/0 - 12.7 mm	±0.0002"/0.005 mm	20-186-3	$126.60	$107.61
0 - 1"/0 - 25 mm	±0.0002"/0.005 mm	20-187-1	141.85	127.66
0 - 2"/0 - 50.8 mm	±0.0003"/0.008 mm	20-188-9	175.40	157.86
0 - 4"/0 - 101.6 mm	±0.0003"/0.008 mm	20-189-7	228.80	205.92
SPC/USB Interface & Cable		11-967-7	123.45	92.58
Wireless Data Output		17-599-2	121.80	97.44

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SPI® Classic
LOGIC ALG & LOGIC IQ DIGITAL INDICATORS

ALG Indicators

Logic ALG
21-008-8

MADE IN USA

- Numeric display.
- Analog visual display.
- Incremental measuring mode.
- Measuring system in English or metric.
- Travel reverse.
- Auto off.
- Floating zero.
- Rotating bezel.
- #4-48 thread.
- Internal and external serial numbers.
- T.I.R. measuring with low and high storage recall
- Power with batteries (CR 2450 2 ea.) included.
- Additional power options through AC jack or data output.
- Programmable lock combination.
- User tolerance settings (high and low).
- Up to 4 user changeable resolutions.
- Inch/Metric display conversion.
- Large LCD display.
- Maximum reading hold.
- Display/Freeze reading hold.
- Minimum reading hold.
- Absolute/Preset measuring mode.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

Logic IQ
21-025-2

Ground Ship ONLY

IQ Indicators

IQ models include all features of the ALG series (except analog display), plus the additional features:

- 3 programmable presets.
- 3 programmable ratios.
- Extra large number display.

RANGE	RESOLUTION	LOGIC ALG PART NO.	PRICE	LOGIC IQ PART NO.	PRICE
0.250"/6.35 mm	0.0001"/0.002 mm	21-001-3	$468.00	21-021-1	$468.00
0.250"/6.35 mm	0.00005"/0.001 mm	21-002-1	480.50	21-022-9	480.50
0.600"/15.2 mm	0.0005"/0.01 mm	21-003-9	468.00	21-023-7	468.00
0.600"/15.2 mm	0.0001"/0.002 mm	21-004-7	480.50	21-024-5	480.50
0.600"/15.2 mm	0.00005"/0.001 mm	21-005-4	530.40	21-025-2	530.40
1.00"/25.4 mm	0.0005"/0.01 mm	21-006-2	480.50	21-026-0	480.50
1.00"/25.4 mm	0.0001"/0.002 mm	21-007-0	493.00	21-027-8	493.00
1.00"/25.4 mm	0.00005"/0.001 mm	21-008-8	555.40	21-028-6	555.40
2.00"/50.8 mm	0.001"/0.02 mm	21-009-6	842.40	21-029-4	842.40
2.00"/50.8 mm	0.0005"/0.01 mm	21-010-4	854.90	21-030-2	854.90
2.00"/50.8 mm	0.0001"/0.002 mm	21-011-2	867.40	21-031-0	867.40
4.00"/101.6 mm	0.001"/0.02 mm	21-012-0	1,241.80	21-032-8	1,241.80
4.00"/101.6 mm	0.0005"/0.01 mm	21-013-8	1,291.70	21-033-6	1,291.70
4.00"/101.6 mm	0.0001"/0.002 mm	21-014-6	1,342.00	21-034-4	1,341.60

DESCRIPTION	PART NO.	PRICE
AC Adapter 110V	20-080-8	$45.80
AC Adapter 220V	21-080-7	62.70
Contact Point	06-274-5	5.55
Battery (2 Req.)	07-029-2	4.90

SPI®
DIGITAL ANALOG INDICATORS

SAVE up to 15%

21-800-8

Ground Ship ONLY

- Inch/metric conversion.
- Change of measuring direction
- Preset & tolerance function.
- 330° screen rotation.
- SPC/USB data output.
- Thread size: #4-48
- Stem dia.: 3/8"
- Lug & flat back included.
- Resolution: 0.0001"/0.0025mm
- Repeatability: 0.0001"/0.0025mm
- Auto shut off after 120 minutes.
- Battery: CR 2032 included.
- Furnished in fitted case.
- Short Form Certification of Calibration included.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments
- 2 year warranty.

RANGE	ACCURACY	PART NO.	LIST	SALE
0 - .25"/6.35 mm	±0.0003"/0.008 mm	21-798-4	$164.95	$140.20
0 - .5"/12.70 mm	±0.0003"/0.008 mm	21-799-2	170.85	145.22
0 - 1"/25.4 mm	±0.0006"/0.015 mm	21-800-8	182.90	155.46
SPC/USB Interface & Cable		15-807-1	89.30	78.58
Repl. Battery		07-319-7	2.55	–

Indicator sold separately

Ground Ship ONLY

MAGNETIC BASES

with Direct Mount Backs

- Permanent powerful magnet.
- Size 2 1/4" dia. 9/16" thickness.
- Direct mount of dial Indicators AGD. Group 2.
- Indicators sold separately.
- D.O.T. Regulated. Shipped via ground freight only.

A.G.D. Group 2 • 2 1/4" dia. Dial

FOR INDICATORS	PART NO.	LIST	SALE
SPI Deluxe (Inch)	20-821-5	$42.40	$37.31
SPI Deluxe (Metric)	20-822-3	42.40	37.31
Brown & Sharpe	20-824-9*	44.30	38.98
Federal	20-825-6	44.30	38.98
Peacock, Mitutoyo	20-829-8	44.30	38.98
Starrett	20-830-6	44.30	38.98
Teclock	20-833-0	44.30	38.98
Baker, New Brown & Sharpe	20-835-5†	44.30	38.98

*3 hole pattern. † 4 hole pattern.

SAVE 12%

SPI® Classic
22 PC. DELUXE INDICATOR POINT KIT

SAVE 17%

MADE IN USA

- Wide selection of contact points in styles of half round, flat, bent, soft, long stem, taper & ball type in all popular lengths.
- AGD Specification #4-48 thread.
- Body dia.: 7/32"
- Individuals available on request.
- Black oxide

$27.34
20-619-3
(List $32.95)

SPI®
BALL CONTACT POINTS

Carbide Teflon Nylon Steel

- For dial indicators, depth gages, comparator gages, etc.
- Length: 1/4" – #4-48 thread.

DESCRIPTION	DIA.	PART NO.	LIST	SALE
Carbide Ball	1.5 mm	20-353-9	$10.10	$7.77
Carbide Ball	2.0 mm	20-354-7	10.10	7.77
Carbide Ball	3.0 mm	20-355-4	10.10	7.77
Nylon Ball	1/8"	20-359-6	21.65	16.67
Teflon Ball	1/8"	20-360-4	21.65	16.67
Steel Ball	3.0 mm	20-361-2	4.90	4.16

SAVE 23%

MADE IN USA

21-378-5

21-379-3

SAVE 21%

21-388-4

SPI® DIAL TEST INDICATORS AND SETS

Horizontal and Vertical

- Universal positioning capability.
- Fully jeweled movement.
- Easy to read dial.
- Satin chrome finish.
- Contact point: 0.080" dia. x 1/2" length.
- Contact point pivot: ±100 degrees.
- Dovetail stems: 5/32" (8 mm) and 3/8" (6 mm) dia.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.

Sets Include:

- Indicator, 2 contact points, universal clamp, height gage bar, 5/32" and 3/8" dia. Dovetail extensions and fitted case.

Certified
Right Out of the Box!

Horizontal

RANGE	GRAD.	READING	DIAL DIA.	DIAL COLOR	PART NO.	LIST	SALE
0.008"	0.0001"	0-4-0	1 1/4"	White	21-376-9	$114.20	$90.21
0.020"	0.0005"	0-10-0	1 1/4"	White	21-377-7	93.70	74.02
0.030"	0.0005"	0-15-0	1 1/4"	White	21-378-5	85.80	67.78
0.030"	0.0005"	0-15-0	1 1/4"	Black	21-379-3	85.80	67.78
0.2 mm	0.002 mm	0-100-0	32 mm	White	21-380-1	117.40	92.74
0.5 mm	0.01 mm	0-25-0	32 mm	White	21-381-9	108.60	85.79
0.8 mm	0.01 mm	0-40-0	32 mm	White	21-382-7	90.50	71.49
1.0 mm	0.01 mm	0-50-0	32 mm	White	21-383-5	108.60	85.79

Horizontal Sets

RANGE	GRAD.	READING	DIAL DIA.	DIAL COLOR	PART NO.	LIST	SALE
0.008"	0.0001"	0-4-0	1 1/4"	White	21-501-2	$167.55	$132.36
0.020"	0.0005"	0-10-0	1 1/4"	White	21-502-0	147.00	116.13
0.030"	0.0005"	0-15-0	1 1/4"	White	21-503-8	107.75	85.12
0.030"	0.0005"	0-15-0	1 1/4"	Black	21-504-6	107.75	85.12
0.2 mm	0.002 mm	0-100-0	32 mm	White	21-505-3	170.75	134.89
0.5 mm	0.01 mm	0-25-0	32 mm	White	21-506-1	154.10	121.73
0.8 mm	0.01 mm	0-40-0	32 mm	White	21-507-9	121.90	96.30
1.0 mm	0.01 mm	0-50-0	32 mm	White	21-508-7	154.10	121.73

Vertical

RANGE	GRAD.	READING	DIAL DIA.	DIAL COLOR	PART NO.	LIST	SALE
0.008"	0.0001"	0-4-0	1 1/4"	White	21-384-3	$129.25	$102.10
0.020"	0.0005"	0-10-0	1 1/4"	White	21-385-0	108.65	85.83
0.030"	0.0005"	0-15-0	1 1/4"	White	21-386-8	85.80	67.78
0.2 mm	0.002 mm	0-100-0	32 mm	White	21-387-6	131.55	103.92
0.5 mm	0.01 mm	0-25-0	32 mm	White	21-388-4	112.10	88.55
0.8 mm	0.01 mm	0-40-0	32 mm	White	21-389-2	85.80	67.78

PEACOCK® DIAL TEST INDICATORS

SAVE up to 25%

11-876-0

11-884-4

- Available with white face and black needle or black face with orange needle.
- Complete with 0.038", 0.078", 0.125" diameter chrome contact points and 3/8", 1/4" and 5/32" diameter holder stems.
- Auto reversing.
- 180° swing on point and shaft.
- Fully jeweled movements.
- Universal positioning capability.
- Dovetails on top and back.
- Non-magnetic.

Horizontal

RANGE	GRAD.	DIAL READING	DIAL DIA.	DIAL COLOR	POINT LENGTH	PART NUMBER	LIST	SALE
0 - 0.030"	0.0005"	0-15-0	1.375"	Black	.750"	11-873-7	$173.10	$147.13
0 - 0.030"	0.0005"	0-15-0	1.375"	White	.750"	11-874-5	173.10	129.82
0 - 0.040"	0.0005"	0-20-0	1.375"	Black	1.750"	11-875-2	186.20	139.65
0 - 0.040"	0.0005"	0-20-0	1.375"	White	1.750"	11-876-0	186.20	139.65
0 - 0.008"	0.0001"	0-4-0	1.375"	Black	.375"	11-877-8	186.20	139.65
0 - 0.008"	0.0001"	0-4-0	1.375"	White	.375"	11-878-6	186.20	139.65
0 - 0.030"	0.0005"	0-15-0	1.828"	White	.750"	11-879-4	185.45	157.63
0 - 0.008"	0.0001"	0-4-0	1.828"	White	.375"	11-880-2	226.15	169.61
0 - 0.030"	0.0005"	0-15-0	1.828"	Black	.750"	11-881-0	185.45	157.63
0 - 0.008"	0.0001"	0-4-0	1.828"	Black	.375"	11-882-8	226.15	169.61
Repl. Crystal for Large Face						11-883-6	13.95	—

Vertical

RANGE	GRAD.	DIAL READING	DIAL DIA.	DIAL COLOR	POINT LENGTH	PART NUMBER	LIST	SALE
0 - 0.008"	0.0001"	0-4-0	1.375"	Black	.375"	11-884-4	$221.75	$166.31
0 - 0.030"	0.0005"	0-15-0	1.375"	Black	.750"	11-885-1	208.90	156.67
0 - 0.030"	0.0005"	0-15-0	1.375"	White	.375"	11-886-9	208.90	156.67
0 - 0.008"	0.0001"	0-4-0	1.375"	White	.750"	11-887-7	240.60	180.45

TESA® TESATAST® DIAL TEST INDICATORS

20-122-8

- Bidirectional measuring with automatic reversal inside the movement.
- Continuous clockwise pointer rotation providing error-free reading.
- Insensitive to magnetic fields.
- Jeweled movement with 7 rubies.
- Ball-bearing lever system with measuring insert swivelling through to 240°.
- Very low measuring force.
- Full-metal construction giving exceptional robustness.
- Supplied with a durable molded case, point wrench and extension dovetail.

MEAS. RANGE	GRADUATION	DIAL READING	DIAL DIA.	POINT LENGTH	PART NUMBER	PRICE
0.030"	0.0005"	0-15-0	1"	1/2"	20-121-0	$197.90
0.008"	0.0001"	0-4-0	1"	1/2"	20-122-8	231.25
0.030"	0.0005"	0-15-0	1 1/2"	1/2"	20-123-6	220.45
0.008"	0.0001"	0-4-0	1 1/2"	1/2"	20-124-4	252.75
0.008"	0.00005"	0-4-0	1 1/2"	1/2"	20-125-1	352.75
0.020"	0.0005"	0-10-0	1 1/2"	1 7/16"	20-107-9	291.45

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SPI® EXTENDED RANGE DIAL TEST INDICATORS & SETS

SAVE up to 15%

21-529-3

21-531-9

Certified Right Out of the Box!

- Easy to read graduations.
- Jeweled movement.
- Automatic reversal.
- Revolution counter.
- Rotating dial.
- Dial color: white.
- Accuracy: ±0.0012"
- 5/32" pivot stem with additional dovetail mount.
- Contact point swivels 210°.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

21-535-0

- **21-534-3, 21-535-0 & 21-536-8 Kits Include:**
  - Indicator
  - Height gage bar with clamp dia.: 1/4" x 1/2" x 3"
  - Axial support with 3/8" stem and dovetail
  - Adapter sleeve: 5/32 - 3/8"
  - (2) Dovetail stems: 3/8" & 5/32"
  - (3) contact points: 0.040" (steel) 0.080" & 0.120" (carbide) x 0.709" long
- **21-537-6 Kit Includes:**
  - Indicator
  - Magnetic base
  - 3 9/16" extension arm
  - Wrench
  - (2) Dovetail stems: 3/8" & 5/32"
  - (3) contact points: 0.040" (steel) 0.080" & 0.120" (carbide) x 0.709" long

21-537-6

Inch

MEAS. RANGE	GRADUATION	DIAL READING	DIAL DIA.	POINT LENGTH	HORIZONTAL PART NO.	LIST	SALE	VERTICAL PART NO.	LIST	SALE
0.060"	0.0005"	0-15-0	1 3/16"	0.709"	**21-528-5**	$163.40	**$138.89**	**21-531-9**	$125.40	**$112.86**
0.060"	0.0005"	0-15-0	1 1/2"	0.709"	**21-529-3**	163.40	**138.89**	**21-532-7**	125.40	**112.86**
0.060"	0.001"	0-15-0	1 3/16"	0.709"	**21-530-1**	163.40	**138.89**	**21-533-5**	125.40	**112.86**

Sets

MEAS. RANGE	GRADUATION	DIAL READING	DIAL DIA.	POINT LENGTH	HORIZONTAL PART NO.	LIST	SALE
0.060"	0.0005"	0-15-0	1 3/16"	0.709"	**21-534-3**	$189.75	**$161.28**
0.060"	0.0005"	0-15-0	1 1/2"	0.709"	**21-535-0**	195.00	**165.75**
0.060"	0.001"	0-15-0	1 3/16"	0.709"	**21-536-8**	181.90	**154.61**
0.060"	0.0005"	0-15-0	1 1/2"	0.709"	**21-537-6**	191.15	**162.47**

SPI® SWIVEL JOINT CLAMPS FOR TEST INDICATORS

SAVE 10%

14-881-7

- Adapt indicators to holding bars, height gage attachments, joint attachments, long and short arm attachments, etc.
- Overall length: 1 3/4".
- Stainless steel.

HOLDER DIA.	CLAMP DIA.	PART NUMBER	LIST	SALE
5/16"	1/4"	14-878-3	$40.35	**$36.31**
1/4"	1/4"	14-879-1	40.35	**36.31**
5/16"	5/32"	14-880-9	40.35	**36.31**
3/8"	1/4"	14-881-7	48.75	**43.87**
5/16"	5/16"	14-882-5	48.75	**43.87**
3/8"	5/16"	14-883-3	48.75	**43.87**
3/8"	3/8"	14-884-1	48.75	**43.87**
1/2"	3/8"	14-885-8	58.45	**52.60**
1/2"	5/16"	14-887-4	58.45	**52.60**

SAVE 14%

51-130-3 Axial Indicator

SPI® TEST INDICATOR ACCESSORY

Dovetail Holder

- Black oxide finish, cold rolled steel.

SHANK DIA.	TYPE	OVERALL LENGTH	PART NUMBER	LIST	SALE
3/8"	Axial (3 Joints)	5 1/4"	51-130-3 *	$41.20	**$35.43**

* Also accepts 5/32" and 1/4" stems

Indicator not included

SPI® Classic SWEEP-IT

SAVE up to 16%

- Attitude of the indicator does not change across the entire range.
- Eliminates the need to reposition the indicator and insures concentricity of progressive measurements.
- Directly adapts to dovetailed 5/32" shank of indicator.

MADE IN USA

SHANK	RANGE	PART NO.	LIST	SALE
3/8"	0 - 8"	20-757-1	$94.85	**$84.41**
3/8"	0 - 12"	20-758-9	116.80	**98.11**

SPI® TEST INDICATOR & QUILL CLAMP HOLDER SET

SAVE up to 46%

13-726-5

- SPI Dial Test Indicator (21-378-5):
  - 1 1/4" dial diameter.
  - Range: 0.030"
  - Reading: 0-15-0
  - Contact point: 0.080" dia. X 1/2" long
  - Graduation: 0.0005"
  - 2 dovetail stems: 5/32" and 3/8" dia.
  - Short Form Certificate of Calibration included.
- Quill Clamp Holder
  - Fits milling machines with 1 7/8" dia. spindle.
  - Clamps directly onto spindle o.d.
  - Has clearance to avoid a tool in collet or chuck.
  - Clamps directly onto machine quill.
  - Will not disturb working tool in the machine.

DESCRIPTION	PART NO.	LIST	SALE
Test Indicator & Quill Clamp Holder Set	**13-726-5**	$114.80	**$86.10**
Quill Clamp Holder Only	**13-167-2**	42.95	**23.19**

Certified Right Out of the Box!

SAVE up to 19%

INDICATOR MOUNTING ATTACHMENTS

Dovetail Indicator Holder

12-442-0

- Attaches to any dovetail equipped indicator.
- Spring loaded holder locks in 4 quadrants.
- Spring loaded head allows many variable angle settings.
- Brass locking mechanism will not damage indicator.
- 1/4" shank with 3" reach.

DESCRIPTION	PART NO.	LIST	SALE
Dovetail Indicator Holder	12-442-0	$23.35	$19.38

Axial Support Bracket

12-443-8

- Movable parts allow bending for best orientation to workpiece.
- Uses dovetail, 5/32" or 1/4" stems.

DESCRIPTION	PART NO.	LIST	SALE
Axial Support Bracket	12-443-8	$39.30	$33.79

Holding Bar with Pin (not shown)

- Fits any height gage or column clamp that accepts 3/16" wide x 5/16" height bars.
- Removable pin is 7/32" diameter to fit the most popular clamp styles - reverses to 5/32" diameter.
- Parts area available to allow removable set-ups.
- 3" overall length.

DESCRIPTION	PART NO.	LIST	SALE
Holding Bar with Pin	12-445-3	$57.55	$51.21

Universal Clamp

12-441-2

- Fits all dovetail equipped indicators.
- 7/32" and 5/32" holes to accept rods and attachments.

DESCRIPTION	PART NO.	LIST	SALE
Universal Clamp	12-441-2	$37.20	$32.73

Height Gage Bar

12-444-6

- Fits all clamps that accept 1/4" thick by 1/2" height bars.
- 3" overall length.
- 0.220" pin diameter fits all 7/32" clamping holes.

DESCRIPTION	PART NO.	LIST	SALE
Height Gage Bars	12-444-6	$48.75	$39.48

Vertical Type

Horizontal Type

Interapid SWITZERLAND TEST INDICATORS

- Automatic reversing contact point, swiveling through 210°, vertical models 190°.
- Revolution counter.
- Swivel stem 5/32" dia.
- Complete with contact point wrench in fitted case.

Horizontal Type

READING	DIAL DIA.	RANGE	CONTACT POINT	PART NUMBER	PRICE
0.0005"	1 1/2"	0.060"	0.080" x 0.687"	12-001-4	$276.00
0.0005"	1"	0.060"	0.080" x 0.687"	12-002-2	276.00
0.0001"	1 1/2"	0.016"	0.080" x 0.687"	12-003-0	350.70
0.0001"	1"	0.016"	0.080" x 0.687"	12-004-8	347.35
0.001"	1"	0.060"	0.080" x 0.687"	12-005-5	279.40
0.0005"	1 1/2"	0.060"	0.080" x 2.750"	12-006-3	386.85

Metric sizes available.

Vertical Type

READING	DIAL DIA.	RANGE	CONTACT POINT	PART NUMBER	PRICE
0.0005"	1 1/2"	0.060"	0.080" x 0.687"	12-011-3	$303.00
0.0005"	1"	0.060"	0.080" x 0.687"	12-012-1	296.35
0.001"	1"	0.060"	0.080" x 0.687"	12-013-9	279.40
0.0001"	1 1/2"	0.016"	0.080" x 0.687"	12-014-7	367.55
0.0005"	1 1/2"	0.060"	0.080" x 2.750"	12-015-4	389.10

Metric sizes available.

SAVE 11%

ZERO-SET FOR TEST INDICATOR

12-364-6 Indicator not included

- Designed for test indicators with dovetails and functions as a quick and practical work positioning device.
- Setting up a workpiece before machining, or aligning the center of a round workpiece in relation to the cutting head, takes virtually no time.
- Attach directly to the collet, then zero-in the work position by reading the test indicator.
- The hardened clamping post consists of three O.D.'s, from top, 1/4", 3/8" and 1/2" and has hardness of approximately 58 to 60 RC.
- It reaches anywhere within a 8" diameter and fine-adjusts about 3/8" with a large knurled knob.
- Can be adapted to transfer stands.

DESCRIPTION	PART NO.	LIST	SALE
Zero-Set for Indicator Holder	12-364-6	$259.60	$231.04
Holder Attachment	12-365-3	138.95	123.66

20-910-6

SPINDLE SQUARES™

A simple solution to squaring your machine. Just zero indicators on flat surface (like a granite plate), install in milling machine spindle, bring the spindle down to the table and adjust the head until both indicators read the same.

- 3/8" shank.
- Fully assembled with indicators mounted and ready for use.
- No more tramming or split reading, compensating for loose, worn gears or mirrors.
- Can also be used with a sine bar or protractor to set angle.
- Constructed of steel with precision ground contact points for durability and accuracy.
- Mini inch model designed for mini-milling or table-top machines and comes in a custom leather pouch.
- All other models furnished in fitted case.

DESCRIPTION	GRADUATION	DISTANCE BETWEEN CONTACT POINTS	PART NUMBER	PRICE
Standard Inch Model	0.001"	4"	20-910-6	$203.90
Tool Grade Inch Model	0.0005"	4"	91-332-7	218.60
Mini Inch Model	0.0005"	3"	91-331-9	213.40
Metric Model	0.01 mm	101 mm	91-330-1	209.00

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SPI® Classic

ALIGNMENT & POSITIONING INDICATORS

SAVE up to 11%

Dial or Electronic Model Available

- Advanced concept in finding zero, the true starting point of all 3 axis (X-Y-Z) on workpieces.
- Probe actually gets deflected in any of the 3 axes until indicator reaches centerline. At this point the workface (edge) is in direct line with the spindle.
- Radial run-out compensation.
- With the 3D tester centered in a tool holder, the workpiece edge can be positively picked up in one approach, no guessing as with electronic edge finders.
- Can be used on conductive and nonconductive workpieces.
- Electrically insulated contact point for safe applications on all CNC centers and EDM machines.
- 31 mm L x 4 mm dia. stylus included.
- 3/4" shank.

Made in Germany

13-165-6

14-476-6

DESCRIPTION	PART NO.	LIST	SALE
IP67 Dial Indicator	13-165-6	$576.75	$513.30
Electronic Indicator	14-476-6*	731.55	694.97
31 mm Long x 4 mm dia. Stylus	14-477-4	59.00	53.10
56 mm Long x 6 mm dia. Stylus	14-478-2	83.25	74.92
Repl. Battery for 14-476-6	07-319-7*	2.55	–

*D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

Accessories for 98-399-9

DESCRIPTION	PART NO.	PRICE
Optional short stylus, 28 mm long with 3 mm dia. ball	98-406-2	$59.00
Repl. standard stylus, 41 mm long with 4 mm dia. ball	98-407-0	47.45
Optional long stylus, 67 mm long with 6 mm dia. ball	98-408-8	77.50

SAVE up to 12%

SPI®

Ground Ship ONLY

MIGHTY MAG

- 4-way measurement: inside, outside, depth and step.
- Precision ground stainless steel construction.
- Satin chrome finish with etched graduations.
- Available in models with single set screw, double set screw with fine adjustment, heavy duty and thumb lock.
- Indicators include a Certificate of calibration traceable to NIST.
- Furnished in fitted case.
- D.O.T. Regulated. Shipped via ground freight only.

DESCRIPTION	PART NO.	LIST	SALE
Mighty Mag	98-279-3	$26.95	$23.71
Mighty Mag with 0.250" Travel Indicator 22-297-6	13-998-0	65.30	58.77
Mighty Mag with 0.500" Travel Indicator 22-308-1	98-265-2	52.00	46.80
Mighty Mag with 1.00" Travel Indicator 22-300-8	98-266-0	46.50	41.85
Mighty Mag with 2.00" Travel Indicator 22-310-7	13-997-2	85.25	76.72

SAVE 10%

NOGA SIMPLY SOPHISTICATED

VACUUM BASE

- Powerful suction.
- Ideal for use on granite surface plates.
- On/Off lever for easy attaching or removing.
- Holds firmly to any smooth, nonporous surface.
- Threaded mounting hole to accept arms with 8 x 1.25 mm thread.

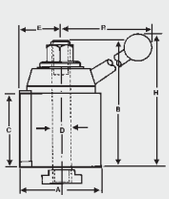
$69.21
95-743-1
(List $76.90)

$439.15
91-146-1

phase II

QUICK CHANGE LATHE TOOL POSTS

SAVE 20%



- Wedge Type Tool Posts' provides built-in quick tool changing.
- T-nut may require machining.

Wedge Type Tool Posts

TOOL POST SERIES	WIDTH A	B	C	D	E	OAH H	R	FITS LATHE SIZE	PART NUMBER	LIST	SALE
100	2 1/2"	3 7/8"	2 1/4"	9/16"	1 3/8"	4 11/16"	5 3/4"	12"	71-126-7	$276.20	$220.96
200	3"	4 5/8"	2 3/4"	5/8"	1 5/8"	5 9/16"	7 5/16"	10 - 15"	71-127-5	351.25	281.00
300	3 1/2"	5 1/8"	3"	3/4"	1 7/8"	6 1/8"	7 7/8"	13 - 18"	71-128-3	459.45	367.56
400	4"	6 1/4"	3 5/8"	7/8"	2 1/8"	7"	9"	14 - 20"	71-129-1	279.25	223.40

SPI®

SPINDLE SQUARES™ WITH 360° ROTATING INDICATORS

Designed for CNC Mills, Safety and Convenience

- Ball-bearing mounting Rotating Dials eliminate Parallax.
- Includes Patent Pending Tram Clamp for traditional single dial tramming.
- Easy to read AGD 2 indicators.
- Graduation: 0.0005"
- 6.81" between indicator centers.
- 3/8" shank.
- Solid steel construction.
- Furnished in fitted case.
- 2 year warranty.

Industrial Quality

UNIVERSAL INDICATOR HOLDER

with Magnetic Base

- Universal swivel with friction movement.
- Powerful permanent magnet.
- Overall height 3 3/4".
- Clamp indicator with either dovetail or 5/32" dia. stem.
- D.O.T. Regulated. Shipped via ground freight only.

$67.20
98-296-7

98-298-3

98-297-5

Ground Ship ONLY

Accessories

DESCRIPTION	PART NO.	PRICE
Mill Adapter with 3/8" and 1/2" dia. steps	98-297-5	$13.80
5/32" Stem Adapter with 5/32" and 1/4" dia. holes and dovetail	98-298-3	22.50
Universal Indicator Holder with Magnetic Base, including Mill Adapter and Stem Adapter as above	98-299-1	87.95

SAVE up to 39%

SPI®

MAGNETIC STANDS

Will accommodate dial or test indicators with 5/32", 5/16" and 3/8" dia. stems or with 1/4" lug-nut mount.

- Base with V-shape and outside flats for use on round or flat surfaces.
- Models with or without fine adjustment.
- Pull: 175 lbs.
- On/Off lever.
- D.O.T. Regulated. Shipped via ground freight only.

MAGNETIC BASE L X W X H	OVERALL HT.	FINE ADJ.	PART NUMBER	LIST	SALE
2 1/4" x 2" x 2 1/8"	9"	No	14-400-6	$46.50	$31.15
2 1/4" x 2" x 2 1/8"	9"	Yes	14-401-4	54.85	36.20
4 1/2" x 2" x 2 1/8"	17"	Yes	14-413-9	131.15	80.00
2 1/4" x 2" x 2 1/8"	–	–	14-402-2	35.80	24.34

Note: D.O.T. Regulated. Shipped via ground freight only.

14-401-4

Ground Ship ONLY

14-402-2

brown & sharpe

MITI-MITE MAGNETIC BASE INDICATOR HOLDERS

with "V" Vase for Mounting Round Parts

Fixed Upright Post

- Base dimensions: 1 1/4" Square x 1 3/4" High
- Post Dia.: 5/16"
- Tool Post: 5.25"
- Swivel Clamp Hole: 1/4" dia.
- 4.5" Long Stepped Rod: dia. 7/32", 1/4" and 5/16"

DESCRIPTION	PART NO.	PRICE
w/o Fine Adjustment	20-576-5	$114.00
w/Fine Adjustment	20-577-3	122.65

Ball & Socket Post

- Base dimensions: 1 1/4" Square x 1 3/4" High
- Tool Post: 5"
- Includes Three Posts: 7/32" dia. x 1 1/2" long
  7/32" dia. x 4 3/8" long
  5/16" dia. x 1 1/2" long

DESCRIPTION	PART NO.	PRICE
w/o Fine Adjustment	20-578-1	$114.00
w/Fine Adjustment	20-579-9	119.75

20-576-5

20-579-9

SAVE up to 32%

14-237-2

15-835-2

Ground Ship ONLY

SPI®

MAGNETIC BASE HOLDERS

with Articulating Arms

- Arms have 3 articulating joints that can be locked with a single hand knob.
- Use with 3/8" and 8 mm stem diameter indicators and dovetails.
- Magnetic bases have On/Off switch.
- D.O.T. Regulated. Shipped via ground freight only.

BASE L.	BASE W.	BASE HT.	ARM L.	MAGNETIC PULL (LBS.)	PART NUMBER	LIST	SALE
1.42"	1.18"	1.38"	7"	72	14-237-2	$90.35	$64.14
2.36"	2.00"	2.17"	11"	180	14-238-0	113.20	82.63
2.36"	2.00"	2.17"	13 3/8"	180	14-239-8	136.10	92.54
4.77"	1.98"	2.19"	25"	286	15-835-2	259.70	233.73

SAVE 24%

$30.66
13-607-7
(List $40.35)

SPI®

FINE QUALITY MAGNETIC BASE HOLDER

For Test Indicators and Other Applications

- Adjustable post assembly swivels into a 40° desired position and has a fine adjusting screw for final setting.
- Can also be used with inspection magnifiers, mirrors, safety shields, oil sprays, air lines, etc.
- Permanent magnetic base.
- 5 1/4" fine pivot adjustment post.
- Base Diameter: 1 1/4"
- D.O.T. Regulated. Shipped via ground freight only.

Ground Ship ONLY

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

NEW

NOGA
SIMPLY SOPHISTICATED

MAGNETIC BASES

Compatible with Noga Arms

Ground Ship ONLY

- On/Off lever.
- M8 x 1.25 threaded hole.
- 82-123-1 thread - M10 x 1.25"
- 82-124-9 has multi threads - M6, M8, M10, M12, M10 x 1.25"
- D.O.T. Regulated. Shipped viground freight only. No collect shipments

MAGNETIC BASE L X W X H	MAG. PULL (LBS.)	PART NUMBER	PRICE
2.36" x 1.97" x 2.17"	175	82-466-4	$42.70
2.95" x 1.97" x 2.17"	225	82-467-2	62.30
4.75" x 1.97" x 2.17"	295	82-123-1	70.65
2.95" x 1.97" x 2.17"	225	82-124-9	82.35

SAVE 39%

$60.23
51-202-0
(List $98.75)

ECONOMY FLEXIBLE MAGNETIC STAND

Ground Ship ONLY

- 1 knob locks in any position.
- Total reach: 10½".
- Accepts indicators with dovetails and ⅜" dia. stems.
- Magnetic base 2.37" x 2.00" x 2.12" with On/Off switch.
- D.O.T. Regulated. Shipped via ground freight only.

NOGA
SIMPLY SOPHISTICATED

FLEXIBLE MAGNETIC MINI-BASE

SAVE up to 15%

- Central-locking knob.
- 5" reach.
- Magnetic pull: 63 lbs.
- Fine adjustment at the base of arm.
- Holds indicators with dovetails and ⅜" dia. stems.
- 2⅜" x 1¼" x ⅝" with powerful permanent magnet (magnetizes at bottom and both ends)
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

Accessories

DESCRIPTION	PART NO.	LIST	SALE
Repl. ⅜" Clamp	82-458-1	147.85	125.67

$131.25
98-277-7

SPI® Classic

INDICATOR STANDS W/GRANITE BASE

SAVE 10%

Plain Type - with Granite Base

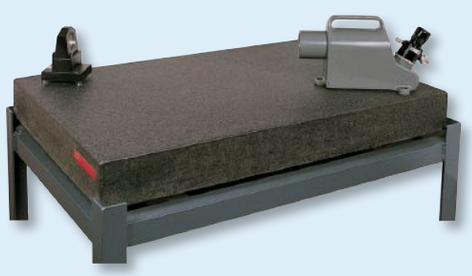
- With lugback.
- Accepts all AGD Indicators.
- Flatness of Black Granite Base: ±0.00005"
- Column of plain type 8".

BASE DIMENSIONS LENGTH	WIDTH	HEIGHT	PART NUMBER	LIST	SALE
6"	5"	2"	50-500-8	$125.60	$113.04
8"	6"	2"	50-501-6	165.20	148.68

50-501-6

SURFACE PLATES

- Autocollimator calibration for overall accuracy.
- Local accuracy and repeat measurement guaranteed by electronic inspection.
- Certification traceable to NIST.



Laboratory Grade AA					Inspection Grade A			
SIZE (IN.)	THICK-NESS	OVERALL ACCURACY ±	4 LEDGES PART NO.	PRICE	THICK-NESS	OVERALL ACCURACY ±	2 LEDGES PART NO.	PRICE
12 x 18	3"	.000025"	50-145-2	$443.05	3"	.00005	50-171-8	$337.45
18 x 24	4"	.000037"	50-147-8	891.75	3"	.000075	50-112-2	557.65
24 x 24	4"	.000037"	50-148-6	1,125.95	3"	.000075	50-173-4	843.65
24 x 36	6"	.000050"	50-149-4	1,705.35	4"	.0001	50-174-2	1,141.00
24 x 48	6"	.000075"	50-150-2	2,438.10	6"	.00015	50-175-9	1,762.50
36 x 48	6"	.0001"	50-151-0	3,565.75	6"	.0002	50-113-0	2,370.10
36 x 72	10"	.00015"	50-152-8	5,565.50	8"	.0003	50-176-7	4,309.50
48 x 72	10"	.000175"	50-153-6	6,795.30	8"	.00035	50-177-5	5,089.10

Shipped via truck freight collect, FOB Los Angeles.

Toolroom Grade B					Surface Plate Stands			
SIZE (IN.)	THICK-NESS	OVERALL ACCURACY ±	0 LEDGE PART NO.	PRICE	W/LEVELING SCREWS PART NO.	PRICE	W/CASTERS PART NO.	PRICE
12 x 18	3"	.0001"	50-193-2	$228.20	– –	–	–	
18 x 24	3"	.00015"	50-195-7	391.90	50-123-9	$557.65	50-133-8	$740.45
24 x 24	3"	.00015"	50-196-5	629.50	50-124-7	590.20	50-134-6	763.70
24 x 36	4"	.0002"	50-197-3	858.70	50-125-4	700.45	50-135-3	915.50
24 x 48	6"	.0003"	50-198-1	1,412.70	50-126-2	768.35	50-136-1	980.55
36 x 48	6"	.0004"	50-199-9	1,935.20	50-127-0	816.35	50-137-9	1,102.95
36 x 72	6"	.0006"	50-201-3	3,131.10	50-128-8	982.10	50-138-7	1,346.25
48 x 72	6"	.0007"	50-202-1	4,085.65	50-129-6	1,166.45	50-139-5	1,649.80

Shipped via truck freight collect, FOB Los Angeles.

SAVE up to 44%

SPI® CENTER & EDGE FINDERS

- Accurately locates the starting point for all types of machine work and jig boring.
- Hardened and ground all over.

DESCRIPTION	SHANK DIA.	TIP DIA.	PART NO.	LIST	SALE
Edge Finder	1/2"	0.200"	98-322-1	$13.85	$10.38
Edge Finder	1/2"	0.500"	98-329-6	13.85	10.52
Edge Finder	10 mm/3/8"	10 mm	98-327-0 *	18.60	15.81
Edge Finder	10 mm	10 mm	98-328-8	14.35	12.19
Center Finder	3/8"		98-323-9	14.35	8.03
Center Finder	1/2"		98-324-7	13.70	10.82
Combo Edge & Center Finder	3/8"	0.200"	98-325-4	13.85	11.35
Combo Edge & Center Finder	1/2"	0.200"	98-326-2	14.35	12.19
4 Pc. Center & Edge Finder Set	3/8" & 1/2"	0.200" & 0.500"	51-831-6	42.45	28.44

*Stepped shank 10 mm/3/8"

SPI® ELECTRONIC EDGE-CENTER-DEPTH FINDER

$300.95
98-316-3

Made in Japan

- Deluxe Edge Finder with highly sensitive LED lamp.
- Lamp lights up at just a few grams of pressure on stylus touching ferrous as well as non-ferrous metals.
- Operates even if work piece is oily.
- Includes 2 (N/1.5v) batteries.
- Precision ground stylus 0.400" dia. x 2 3/8" length.
- Overall length: 6 1/16"
- Accuracy: ± 0.0001"
- No over travel.
- Sub-zero treatment is added to prevent distortion throughout years of use.
- In addition to most convenient edge finding, the instrument can also be used as positioning tool for outside, inside and depth measurements.
- 3/4" shank.

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery (2 ea.)	60-456-1	$4.60

SPI® ELECTRONIC EDGE FINDER

SAVE up to 20%

- Repeatability T.I.R within 0.0002".
- Hardened and precision ground.
- Four highly visible LED lights.
- Reads off any electrically conductive metal.
- Accuracy: 0.0004"
- Ball Dia.: 0.400"
- 3/4" shank.
- Overall length: 3 3/4"
- Furnished in a plastic case.

$108.68
13-160-7
(List $135.85)

Accessories

DESCRIPTION	PART NO.	LIST	SALE
Repl. Battery 12V (2 ea.)	60-197-1	$4.60	$4.14

$495.67
98-330-4
(List $583.15)

SAVE up to 15%

Ground Ship ONLY

SPI® ELECTRONIC TOOL SETTER

- Heat treated, precision ground tool steel, 1 31/32" dia.
- Parallel and repeatability within 0.0002" to inside of groove.
- Height bottom to inside of groove: 2.0000 ±0.0001"
- Built-in magnet for use on horizontal and vertical faces.
- 0.196" (5 mm) compression stroke for over-run protection.
- 3V lithium battery included.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

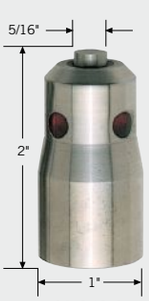
Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Battery	07-319-7	$2.55

ELECTRONIC LOCATING GAGES

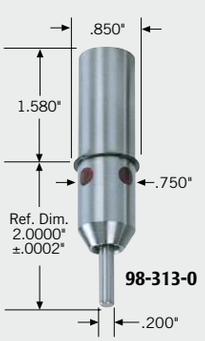
- Indicator lamps light up at the slightest touch of the workpiece with 360° visibility.
- Hardened and precision ground.
- Batteries included.

DESCRIPTION	PART NO.	PRICE
Edge Finder	98-311-4	$153.72
Height Offset Presetting Gage	98-312-2	156.96
Three Axis Locator	98-313-0	266.45
Replacement Bulb	06-628-2	5.60
Replacement Battery	07-310-6	2.25



98-312-2

98-311-4



98-313-0

SPI® AUDIBLE/CONVENTIONAL EDGE FINDER SET

SAVE 14%

This versatile set allows you to accurately locate the starting point on all types of surfaces including flat and round surfaces, shoulders, and many more.
Set includes:
- 3/8" x 0.200" combo edge and center finder
- 1/2" x 0.200" combo edge and center finder
- 3/8" x 0.200" audible edge finder
- 1/2" x 0.500" audible edge finder

- Furnished in fitted case.

$46.09
13-146-6
(List $53.60)

SPI® HEIGHT OFFSET GAGE

SAVE up to 15%

- Repeatability T.I.R. within 0.0002".
- Hardened and precision ground on all surfaces.
- Four visible lamps light up at the slightest touch of the workpiece with 360° visibility.
- 1.5V (x3) batteries included.
- 2" OAL, 0.312" head diameter.
- Spring loaded to safeguard against damage from overrun.

DESCRIPTION	PART NO.	PRICE
Repl. Battery	07-310-6	$2.25
Repl. Bulb	13-425-4	5.60

$116.40
13-156-5
(List $136.95)

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

20-362-0

SAVE up to 31%

OUTSIDE MICROMETERS & SETS

Inch & Metric

- Ratchet stop.
- Carbide measuring faces.
- Painted frame; enamel.
- Resolution: 0.0001"/0.01 mm

Inch

RANGE (IN.)	ACCURACY (IN.)	PART NUMBER	LIST	SALE
0 - 1	0.0001	20-362-0	$29.95	$24.85
1 - 2	0.0001	20-363-8	35.65	30.30
2 - 3	0.0001	20-364-6	38.20	32.47
3 - 4	0.0001	20-365-3	44.55	37.86
4 - 5	0.0001	20-366-1	50.90	43.26
5 - 6	0.0001	20-367-9	57.25	48.66

Sets

RANGE (IN.)	ACCURACY (IN.)	PART NUMBER	LIST	SALE
0 - 3	0.0001	20-368-7	$108.05	$83.19
0 - 4	0.0001	20-369-5	146.20	103.80
0 - 6	0.0001	20-370-3	254.25	175.43

Metric

RANGE (MM)	ACCURACY (MM)	PART NUMBER	LIST	SALE
0 - 25	0.004	20-371-1	$31.85	$26.11
25 - 50	0.004	20-372-9	35.65	30.30
50 - 75	0.005	20-373-7	38.20	32.47
75 - 100	0.005	20-374-5	44.55	37.86
100 - 125	0.006	20-375-2	50.90	43.26
125 - 150	0.006	20-376-0	57.25	48.66

Sets

RANGE (MM)	ACCURACY (MM)	PART NUMBER	LIST	SALE
0 - 75	0.005	20-377-8	$104.95	$83.96
0 - 100	0.005	20-378-6	136.45	103.70
0 - 150	0.006	20-379-4	230.95	180.14

17-944-0

SAVE 35%

CALIPER TYPE MICROMETERS

- Caliper type enables precise measuring in hard to reach areas.
- Carbide measuring faces.
- Spindle dia.: 0.250"
- Graduation: 0.001"
- Ratchet thimble.
- Painted frame.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

Certified
Right Out of the Box!

RANGE	ACCURACY	PART NO.	LIST	SALE
0 - 1"	±0.0002"	17-944-0	$327.20	$212.68
1 - 2"	±0.00024"	17-945-7	363.70	236.40

11-545-1

Certified
Right Out of the Box!

IP54 ELECTRONIC MICROMETERS & SETS

- Carbide measuring faces.
- Standard included above 0 - 1" range.
- Inch/Metric conversion.
- Absolute and Incremental measuring modes.
- Spindle dia.: 0.250"
- Resolution: 0.00005"/0.001 mm
- Friction thimble.
- Battery: #357/303 included.
- Lever lock.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

RANGE	ACCURACY	PART NO.	PRICE
0 - 1"	±0.00016"/0.002 mm	11-545-1	$114.05
1 - 2"	±0.00016"/0.002 mm	11-546-9	133.20
2 - 3"	±0.0002"/0.003 mm	11-547-7	152.60
3 - 4"	±0.0002"/0.003 mm	11-548-5	175.55
4 - 5"	±0.00024"/0.003 mm	11-549-3	193.90
5 - 6"	±0.00024"/0.003 mm	11-550-1	214.55
6 - 7"	±0.00028"/0.004 mm	11-551-9	235.15
7 - 8"	±0.00028"/0.004 mm	11-552-7	250.50

Micrometer Sets

DESCRIPTION	RANGE	PART NO.	PRICE
3 Pc. Set	0 - 3"	11-553-5	$398.10
4 Pc. Set	0 - 4"	11-554-3	577.85
Repl. Battery		07-310-6	2.25

Sets include standards.

Gage Blocks not included

$294.06
98-384-1

5" V-SINE BAR

- Width: 1¼"
- 1" round capacity.
- Accuracy: 0.0003"
- Hardened and ground steel.
- Clamp included.

Certified
Right Out of the Box!

SAVE up to 38%

17-635-4

OUTSIDE MICROMETERS

- Carbide measuring faces.
- Painted steel frame.
- Standards included above 0 - 1"/0 - 25 mm range.
- Spindle Dia.: 0.25".
- Graduation: 0.0001"/0.01mm.
- Ratchet thimble.
- Spindle lock.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

Inch

RANGE	ACCURACY	PART NO.	LIST	SALE
0 - 1"	±0.0001"	17-640-4	$73.00	$45.26
1 - 2"	±0.0002"	17-641-2	80.80	50.09
2 - 3"	±0.0002"	17-642-0	79.10	49.04
3 - 4"	±0.0002"	17-643-8	84.40	64.14
4 - 5"	±0.0002"	17-644-6	95.00	72.20
5 - 6"	±0.0002"	17-645-3	106.40	80.86
6 - 7"	±0.0002"	17-646-1	127.35	96.78
7 - 8"	±0.0002"	17-647-9	139.00	105.64
8 - 9"	±0.0002"	17-648-7	149.90	113.92
9 - 10"	±0.0003"	17-649-5	161.10	122.43
10 - 11"	±0.0003"	17-650-3	171.75	130.53
11 - 12"	±0.0003"	17-651-1	182.90	139.00

Sets

RANGE	NO. OF PCS.	PART NO.	LIST	SALE
0 - 3"	3	17-634-7	$263.42	$173.85
0 - 6"	6	17-635-4	516.38	392.44
0 - 12"	12	17-636-2	1,231.65	1,108.48
6 - 12"	6	17-637-0	860.70	654.13

Metric

RANGE (MM)	ACCURACY (MM)	PART NUMBER	LIST	SALE
0 - 25	±0.004	17-652-9	$73.00	$55.48
25 - 50	±0.004	17-653-7	79.10	60.11
50 - 75	±0.005	17-654-5	79.10	60.11
75 - 100	±0.005	17-655-2	84.40	64.14

Sets

RANGE (MM)	NO. OF PIECES	PART NUMBER	LIST	SALE
0 - 75	3	17-853-3	$239.50	$182.02
0 - 150	6	17-854-1	516.40	392.46

17-840-0

IP65 ABSOLUTE ELECTRONIC OUTSIDE MICROMETERS

Certified Right Out of the Box!

- IP65 level protection.
- Carbide measuring faces.
- Spindle dia.: 0.250"
- Standard included above 0 - 1" range.
- Painted frame with heat shield.
- Resolution: 0.00005"/0.001 mm
- Inc./abs./inch/metric measuring.
- Ratchet thimble.
- Spindle lock.
- SPC/USB data output.
- Automatic shut-off.
- Battery: 357/303 included.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

17-848-3

RANGE	ACCURACY	PART NO.	PRICE
0 - 1"/0 - 25 mm	±0.0001"/0.002 mm	17-840-0	$153.30
1 - 2"/25 - 50 mm	±0.0002"/0.002 mm	17-841-8	186.75
2 - 3"/50 - 75 mm	±0.0002"/0.003 mm	17-842-6	213.90
3 - 4"/75 - 100 mm	±0.0002"/0.003 mm	17-843-4	241.10
4 - 5"/100 - 125 mm	±0.0002"/0.003 mm	17-844-2	268.25
5 - 6"/125 - 150 mm	±0.0002"/0.003 mm	17-845-9	308.45
6 - 7"/150 - 175 mm	±0.0002"/0.004 mm	17-846-7	321.40

Sets

RANGE	PART NO.	PRICE
0 - 3"	17-847-5	$542.40
0 - 6"	17-848-3	1,196.65

Accessories

DESCRIPTION	PART NO.	PRICE
SPC/USB Interface & Cable	20-461-0	$89.30
Repl. Battery (357/303)	07-310-6	2.25

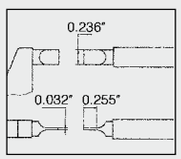
IP54 ELECTRONIC BLADE MICROMETERS

Certified Right Out of the Box!

SAVE up to 37%

- Measures narrow grooves and hard to reach areas.
- Non rotating spindle has 0.25" dia.
- Standard included above 0 - 1" range.
- Painted frame with heat shield.
- Resolution: 0.00005"/0.001 mm
- Inch/Metric conversion.
- Ratchet thimble.
- Spindle lock.
- SPC/USB data output.
- Battery: 357/303 included.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.

17-749-3



RANGE	ACCURACY	PART NO.	LIST	SALE
0 - 1"	±0.0001"	17-749-3	$553.85	$348.92
1 - 2"	±0.0002"	17-750-1	578.80	364.64
SPC/USB Interface & Cable		17-598-4	145.85	123.97
Repl. Battery (357/303)		07-319-7	2.55	–

Mitutoyo IP54 INDICATING MICROMETERS

Function as a GO/NO-GO Gage and is Great for High Production Runs

- Large easy to read dial face.
- ±0.0023" range with 0.00005" graduations.
- Hard coated crystal protects against scratches.
- Can be hand held or mounted in a micrometer stand.
- Supplied in fitted case.

10-398-6

MEAS. RANGE	THROAT DEPTH OF FRAME	PART NUMBER	PRICE
0 - 1"	0.98"	10-398-6*	$827.00
1 - 2"	1.349"	10-399-4	891.00
2 - 3"	1.97"	10-400-0	993.00

* retractable anvil button on the right side.

17-767-5

DISC MICROMETERS

- Disc flanges on micrometer make it possible to get accurate measurements on areas not reachable with standard micrometers such as gear pitch, ribs, slot and groove distances.
- Painted frame with plastic heat shield.
- Disc flange dia.: 0.787"
- Spindle dia.: 0.250"
- Graduation: 0.0001"
- Standards included above 0 - 1"
- Ratchet thimble.
- Non rotating spindle.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

Certified Right Out of the Box!

RANGE	ACCURACY	PART NO.	PRICE
0 - 1"	0.0001"	17-767-5	$132.80
1 - 2"	0.0002"	17-768-3	146.20
2 - 3"	0.0002"	17-769-1	160.90
3 - 4"	0.0002"	17-770-9	182.45

INDICATING MICROMETERS

SAVE 24%

- Retractable anvil with indicator for precise measurement.
- Carbide tipped measuring faces.
- Lever lock.
- Spindle dia.: 0.250"/6 mm
- Indicator Resolution: 0.00005"/0.001 mm
- Indicator Range: ±0.0016"/0.04 mm
- Micrometer Reading: 0.0001"/0.002 mm
- Standards included above 0 - 1" range.
- 1 - 2" does not have center support.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

21-070-8

Certified Right Out of the Box!

MEAS. RANGE	ACCURACY	PART NO.	LIST	SALE
0 - 1"	±0.0001"	21-070-8	$565.45	$429.74
1 - 2"	±0.0002"	21-071-6	667.35	507.18
0 - 25 mm	±0.002 mm	21-074-0	602.60	457.97

ECONOMY MICROMETER ANVIL ATTACHMENTS

- 7 of the most popular anvils in a plastic case.

SAVE 30%

$21.38
65-087-9
(List $30.55)

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

$19.16
57-501-9
(List $25.55)

Micrometer and Caliper not included

SAVE 25%

SPI® MICROMETER & CALIPER HOLSTERS

- Heavy duty leather holsters for safe,convenient carry-along and store amicrometer and caliper.
- Ideal for set-up personnel and floor inspectors.
- Made from high quality, heavy duty leather with steel rivet fasteners.

Micrometer Not Included

SAVE up to 32%

SPI® BALL ATTACHMENTS

- Designed to fit all types of Outside Micrometers.
- Precision molded neoprene retainer with reinforced band, adds strength and holding power.
- Hardened and lapped chrome steel ball.

BALL DIA.	FITS SPINDLE DIA.	PART NO.	LIST	SALE
0.200"	0.235 - 0.270"	10-451-3	$7.05	$4.79
5 mm	6.35 - 6.86 mm	12-369-5	9.50	7.79

$321.44
20-750-6
(List $396.85)

SAVE 19%

SPI® Classic KAFER DIAL DEPTH GAGE

- Measuring range: 0 - 1".
- Reading: 0.001"
- Accuracy: ±0.0005".
- Removable base: 3.15 x 0.59"
- Dial dia. 2¼".
- Continuous dial for 1".
- Large revolution counter. Jeweled bearings.
- Uniform pressure over full range of travel.
- 1", 2" and 3" extensions included.
- #4 - 48 thread

Made in Germany

Shown with Torque wrench

Certified
Right Out of the Box!

11-566-7

SPI® DEPTH MICROMETERS

Inch and Metric

- Graduation: 0.001"/0.01 mm
- Accuracy:±0.0002"/0.005 mm up to 6"
  ±0.00028"/0.007 mm over 6"
- Interchangeable rods with flat ends.
- Ratchet stop.
- Positive locking clamp.
- Torque wrench included.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

Inch

MEAS. RANGE	NO. OF RODS	BASE LENGTH	PART NUMBER	PRICE
0 - 4"	4	2½"	11-565-9	$124.35
0 - 6"	6	2½"	11-566-7	159.00
0 - 12"	12	2½"	11-567-5	302.95
0 - 4"	4	4"	11-568-3	134.25
0 - 6"	6	4"	11-569-1	157.35
0 - 12"	12	4"	11-570-9	302.95

Metric

RANGE (MM)	NO. OF RODS	BASE L (MM)	PART NUMBER	PRICE
0 - 100	4	63	11-571-7	$124.35
0 - 150	6	63	11-572-5	153.95
0 - 300	12	63	11-573-3	308.25
0 - 100	4	102	11-574-1	141.05
0 - 150	6	102	11-575-8	177.30
0 - 300	12	102	11-576-6	333.75

Certified
Right Out of the Box!

SAVE up to 25%

17-825-1

SPI® IP65 ELECTRONIC DEPTH MICROMETERS

- IP65 dust and water protection.
- Ratchet stop.
- Inch/Metric absolute and incremental data.
- Resolution: 0.00005"/0.01 mm
- Accuracy: ±0.0002" up to 6"
  ±0.00028" over 6"
- SPC/USB data output.
- Automatic shut-off.
- Battery: 357/303 included.
- Flat end rods.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

MEASURING RANGE	NO. OF RODS	BASE LENGTH	PART NUMBER	LIST	SALE
0 - 6"	6	2½"	17-825-1	$444.20	$355.36
0 - 6"	6	4"	17-826-9	482.85	362.13
0 - 12"	12	2½"	17-827-7	537.15	429.72
0 - 12"	12	4"	17-828-5	602.35	481.88
SPC/USB Interface & Cable			20-461-0	89.30	–
Repl. Battery (357/303)			07-310-6	2.25	–

Swiss Made

SPI® Classic SLOT & GROOVE GAGE

- Extreme accuracy, simplicity and versatility for measuring the width and distance of slots and grooves for stop rings, circlips, "O" rings, joints, or axial lengths in a bore etc.
- 0 - 2" range.
- 2 to 6" with optional sleeve and spindle.
- Direct reading.
- Graduation: 0.0005".
- Continuous dial.
- Large revolution counter.
- Jeweled movement, shockproof.
- Resistant to corrosion.
- Setting gage, table stand and fitted case included.

DESCRIPTION	PART NO.	PRICE
Slotmaster, complete includes: .051" & 1 - 2" Spindle & Sleeve with Clamp Set	20-650-8	$3,195.00

20-935-3

SPI® GROOVE MICROMETERS

Certified Right Out of the Box!

- Flanged spindle for measuring width, bore depth, and location of grooves.
- Non-rotating spindle with bi-directional ratchet stop.
- Two separate laser engraved graduations on barrel (top and bottom).
- Graduation: 0.001"/0.01 mm
- Accuracy: ±0.001"/0.01 mm
- Parallelism: 0.001"/0.01 mm
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

INSIDE	OUTSIDE	DISC DIA.	REACH*	PART NO.	PRICE
0.06 - 1.05"	0.0" - 1.0"	0.26"	1.40"	20-935-3 †	$225.40
0.06 - 1.05"	0.0" - 1.0"	0.52"	3.38"	20-936-1	236.10
1.05 - 2.05"	1.0" - 2.0"	0.52"	3.38"	20-937-9	249.80
2.05 - 3.05"	2.0" - 3.0"	0.52"	3.38"	20-938-7	274.20
1.6 - 26.5 mm	0 - 25 mm	6.5 mm	35.5 mm	20-940-3 †	225.40

* Reach is to the stationary flange, then add measuring range.
† without adjustable stop.

Mitutoyo MyCAL Lite

Digital Caliper for DIY

- The LCD screen allows error-free readout of measurements.
- Depth measuring bar.
- Zero-setting.
- Power On/Off.
- Inch/Metric conversion.
- Alarm: Low voltage, Counting value compensation error.
- Resolution: 0.001"/0.1 mm
- Accuracy: 0.005"/0.2 mm

MEAS. RANGE	PART NO.	PRICE
0 – 6"/0 – 150 mm	10-149-3	$113.00
0 – 8"/0 – 200 mm	10-150-1	174.00
Repl. Battery (SR44)	07-310-6	2.25

$51.24
15-603-4
(List $73.20)

Certified Right Out of the Box!

SPI® 6" PERSONALIZED DIAL CALIPER

Engrave Your Caliper with Up To 24 Upper-Case Characters

SAVE 30%

- Designate what you want engraved at time of order.
- Continuous dial reads 0 - 100 with 0.001" graduations.
- 4-way measurement: Inside, outside, depth, and step.
- Satin chrome finish.
- Covered rack.
- Positive lock.
- Main beam hardened and ground.
- Accuracy: ±0.001" over 6" travel.
- Certificate of calibration traceable to NIST.
- Furnished in fitted case.

17-901-0

SPI® CALIPER TYPE ABSOLUTE ELECTRONIC INSIDE MICROMETERS

SAVE up to 12%

Certified Right Out of the Box!

- Carbide measuring faces.
- Satin chrome finish.
- Sizes up to 2" include a setting ring.
- Painted frame with heat shield.
- Resolution: 0.00005"/0.001 mm
- Inc./Abs./inch/metric measuring.
- Ratchet thimble.
- Spindle lock.
- SPC/USB data output.
- Automatic shut-off.
- Battery: 357/303 included.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

MEASURING RANGE	ACCURACY	PART NO.	LIST	SALE
0.2 - 1.2"/5 - 30 mm	±0.0001"/0.007 mm	17-900-2	$294.25	$258.94
1 - 2"/25 - 50 mm	±0.0002"/0.008 mm	17-901-0	307.25	270.38
2 - 3"/50 - 75 mm	±0.0002"/0.009 mm	17-902-8	323.80	284.94
3 - 4"/75 - 100 mm	±0.0002"/0.010 mm	17-903-6	336.80	296.38
4 - 5"/100 - 125 mm	±0.0002"/0.010 mm	17-904-4	350.95	308.83
SPC/USB Interface & Cable		20-461-0	89.30	–
Repl. Battery (357/303)		07-310-6	2.25	–

SAVE 20%

SPI® DIAL CALIPERS

Extra-Smooth Movement

Certified Right Out of the Box!

- Dual pinion mechanism offers extra smooth feel.
- Sturdy aluminum die-cast housing.
- 4-way measurement: inside, outside, depth and step.
- Graduation: 0.001"/0.01 mm
- Shock proof design.
- Short Form Certificate of Calibration included.
- Furnished in fitted case.
- 2 year warranty.

Inch

RANGE MIN	RANGE/ REV.	JAW LENGTH	JAW THICKNESS	ACCURACY	DIAL COLOR	PART NUMBER	LIST	SALE
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	White	17-982-0	$90.00	$72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Black	17-983-8	90.00	72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Green	17-984-6	90.00	72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Orange	17-985-3	90.00	72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Purple	17-986-1	90.00	72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Red	17-987-9	90.00	72.00
0 - 6"	0.100"	1 9/16"	0.138"	±0.001"	Blue	17-988-7	90.00	72.00
0 - 8"	0.100"	1 15/16"	0.157"	±0.0015"	White	17-989-5	138.15	110.52
0 - 8"	0.100"	1 15/16"	0.157"	±0.0015"	Black	17-990-3	138.15	110.52
0 - 12"	0.100"	2 1/2"	0.157"	±0.0015"	White	17-991-1	208.65	166.92
0 - 12"	0.100"	2 1/2"	0.157"	±0.0015"	Black	17-992-9	208.65	166.92

Metric

RANGE MIN (MM)	RANGE/ REV. (MM)	JAW LENGTH (MM)	JAW THICKNESS	ACCURACY (MM)	DIAL COLOR	PART NUMBER	LIST	SALE
0 - 150	1	40	0.138"	±0.02	White	17-993-7	$94.60	$75.68
0 - 200	1	50	0.138"	±0.03	White	17-994-5	119.65	95.72
0 - 300	1	64	0.157"	±0.04	White	17-995-2	216.05	172.84

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SPI 60th ANNIVERSARY

IP54 ELECTRONIC CALIPERS

with ½" Easy to Read LCD Display

SAVE up to 20%

18-010-9

Ground Ship ONLY

- Precision ground hardened stainless steel construction.
- Inch/Inch fraction/Metric conversion.
- 4-Way measurements: inside, outside, depth and step.
- Auto power on/off.
- With thumb roller and slide lock.
- Display Resolution: 0.0005"/0 - 1/128"/0.01 mm
- Furnished in fitted case.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.
- 2 year warranty.

RANGE	JAW LENGTH	JAW THICKNESS	ACCURACY	PART NUMBER	LIST	SALE
0 - 6"/0 - 150 mm	1 19/32"	0.138"	±0.001"/0.02 mm	18-010-9	$50.00	$40.00
0 - 8"/0 - 200 mm	1 15/16"	0.138"	±0.001"/0.02 mm	19-009-0	83.05	66.44
0 - 12"/0 - 300 mm	2 3/8"	0.157"	±0.0015"/0.03 mm	19-008-2	124.95	99.96
Repl. Battery				07-319-7	2.55	–

Caller sold separately

SPI

CALIPER ACCESSORY KIT

$57.65
12-416-4

- Fits all 4", 6" and 8" dial, vernier and electronic calipers.
- Measures slots, grooves, webs, shoulders, holes, pockets and places impossible to reach.
- Adapts in seconds.
- #4 - 48 thread.
- Jaw thickness max.: 0.140"
- Contains 1 pair each: flat, conical, stem and ball end points.
- Allen wrench and instructions included.
- 2 year warranty.

SPI Classic

Ground Ship ONLY

Swiss Made

$915.30
30-236-4
(List $1,130.00)

SAVE up to 19%

PAV

6" DIGITAL CALIPER

Double Prismatic Frame - Double V Guide

- Double prismatic frame (double V guide) with 4 lapped contact faces for velvet smooth and play free movement.
- IP67 Protection.
- Hardened Stainless Steel frame and jaws with 4-way measuring, outside, inside, step and depth.
- Reading: 0.0005"
- Overall accuracy: 0.0015"
- Depth Rod Dia.: 0.063"
- Direct inch/metric conversion.
- Two button: MODE for Data send & inch/mm conversion, SET for Data send, Zero, Sleep & Off.
- SPC through Proximity-USB or RS Connection.
- Battery life over a year.
- Complete in fitted case.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

DESCRIPTION	PART NO.	PRICE
Repl. Battery	07-319-7	$2.55

SAVE up to 25%

$121.95
11-544-4
(List 162.60)

Ground Ship ONLY

SPI

6" WIRELESS DATA TRANSMITTING IP67 DIGITAL CALIPER

- Stainless steel construction.
- Large high contrast LCD display.
- 4-Way measurements: inside, outside, depth and step.
- Inch/Metric conversion.
- Wireless Data Transmission to your bluetooth device.
- Jaw length: 1 19/32"
- Jaw thickness: 0.137"
- Auto shut-off after 15 minutes of no data transmission.
- Furnished in fitted case.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

DESCRIPTION	PART NO.	PRICE
Repl. Battery (CR2032)	07-319-7	$2.55

SAVE up to 14%

SPI

ELECTRONIC THICKNESS GAGES

13-161-5

Handy, easy to use electronic thickness gage. Available in two ranges.

- Inch/Metric conversion.
- Zero set at any position.
- Accuracy: ±0.00016"
- Resolution: 0.0005"
- Anvil dia,: 0.350"
- 2 year warranty.

RANGE	PART NO.	LIST	SALE
0 - 0.600"	13-161-5	$122.95	$110.65
0 - 1.000"	13-162-3	185.05	159.14
Repl. Battery	07-310-6	2.25	–

$42.50
98-370-0

SPI

PEE DEE THREAD MEASURING SET

- 48 wires – 16 different sizes.
- Measures all threads from 3 - 48 threads per inch.
- Measures all metric threads from 0.5 mm to 6 mm.
- Also measures ACME threads.
- Laminated chart included.
- Furnished in fitted vinyl case.

Certified
Right Out of the Box!

Ground Ship ONLY

INTERNAL/EXTERNAL ELECTRONIC CALIPER GAGES

- Digital resolution: 0.0002"/0.005 mm
- Analog resolution: 0.0005", 0.001", 0.0002" 0.01, 0.02, 0.05 mm
- Accuracy: ±0.0008"/0.02 mm
- Inch/metric conversion.
- Preset origin for absolute measurement.
- Origin data recall.
- Absolute and incremental measurement.
- Dial rotates ±170 degrees.
- SPC/USB data output.
- Automatic shut-off.
- Battery: CR2032 included.
- Furnished in fitted case.
- Short Form Certificate of Calibration traceable included.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.
- 2 year warranty.

Internal

- Suited for measuring bores, internal grooves and other hard to reach inside dimensions.
- Analog display: ±20 graduation
- Contact point: 1/16" radius chisel x 0.020" wide.

MEAS. RANGE	PART NO.	PRICE
0.4 – 1.2"	21-108-6	$208.70
0.8 – 1.6"	21-109-4	208.70
1.2 – 2.0"	21-110-2	208.70

External

- Suited for measuring outside diameters, grooves and other hard to reach outside dimensions.
- Contact point: 0.030" flat

MEAS. RANGE	PART NO.	PRICE
0.0 – 0.8"	21-100-3	$201.70

Accessories

DESCRIPTION	PART NO.	PRICE
SPC/USB Interface & Cable	20-461-0	$89.30
Repl. Battery (CR2032)	07-319-7	2.55

$96.55
98-430-2
(List $148.55)

SAVE 35%

ULTRA PRECISION WAVY PARALLEL SET

- Made of high quality spring steel, hardened, stress relieved, and precision ground.
- Parallel within ±0.0002", paired ±0.0002".
- Includes 9 pairs 4¼" long with the following heights: 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 1/2".
- Shims can be compressed, which proves useful in the holding of thin parts.
- Complete with fitted wooden case.

$1,935.00
15-003-7

RECTANGULAR LONG GAGE BLOCK SET

- Grade 0.
- 8 pc. set includes: 5, 6, 7, 8, 10, 12, 16 & 20" blocks.
- Certificate of calibration traceable to NIST included.
- Furnished in fitted case.

$184.07
98-446-8
(List $204.53)

10 PAIR 1/8" PARALLEL SET

- 6" length.
- Parallel heights 1/2" thru 1 5/8" in 1/8" increments.
- Hardness 50 RC. 6" length.
- Ground parallel within 0.0002" each pair.
- Absolute heights are nominal.
- Furnished in fitted case.

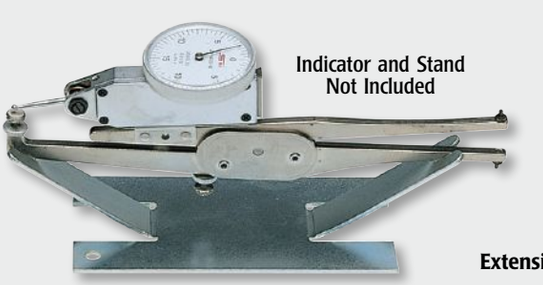
INDICAL BORE AND GROOVE GAGE

- Indical is a simple holder to which any test indicator can be attached for checking bores, O ring and snap ring grooves, thread reliefs, undercuts, etc.
- For indicator without dovetail, special adapters are required. Specify make and model.
- I.D. range .600" - 6". – (.200" - .600" with optional off-set points 06-003-8).

SAVE up to 11%

DESCRIPTION	PART NO.	LIST	SALE
I.D. Indical with 3 pairs of points and case	30-518-5	$229.85	$204.56

Indicator not included in above price.



Indicator and Stand Not Included

Replacement Parts 4 - 48 Thread

DESCRIPTION	PART NO.	LIST	SALE
Stand for easy set-up	30-520-1	$31.00	$27.59
Standard Points, pair	06-000-4	12.50	–
Long Points, pair	06-001-2	12.50	–
Ball Points, pair	06-002-0	12.50	–
Offset Replacement Contact Points	06-003-8	26.85	–
Gem	06-005-3	24.30	–
1/4" Extension	06-007-9	8.20	–
1/2" Extension	06-008-7	8.20	–
3/4" Extension	06-009-5	8.20	–
1" Extension	06-010-3	8.20	–

06-000-4

06-001-2

06-002-0

06-003-8

For I.D. work in small range use contact point 06-003-8 and grind to desired size.

Extensions

1" 06-010-3

3/4" 06-009-5

1/2" 06-008-7

1/4" 06-007-9

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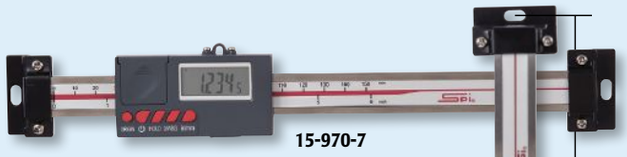
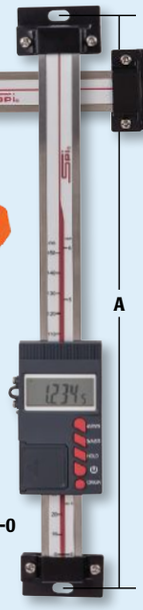


15-970-7



15-964-0

SAVE up to 37%

Ground Ship ONLY

SPI® IP54 ELECTRONIC ABSOLUTE HORIZONTAL/VERTICAL LINEAR SCALES

- Stainless steel construction.
- Inch/Metric conversion.
- Absolute and incremental function.
- On/Off button.
- Auto shut-off after 5 minutes of non use.
- Preset button.
- Hold button.
- Origin button: to set origin at any point.
- Resolution: 0.001"/0.01mm
- SPC/USB data output.
- Convenient mounting brackets included.
- Battery CR2032 included.
- 2 year warranty.
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

Vertical Linear Scales

MEASURING RANGE	ACCURACY	A	PART NUMBER	LIST	SALE
0 - 4"/100 mm	0.001"/0.02 mm	9 1/4"	15-963-2	$83.70	$66.96
0 - 6"/150 mm	0.0015"/0.03 mm	11 1/4"	15-964-0	104.55	79.45
0 - 8"/200 mm	0.0015"/0.03 mm	13 1/4"	15-965-7	125.80	95.60
0 - 12"/300 mm	0.002"/0.051 mm	17 1/4"	15-966-5	146.55	111.37
0 - 20"/508 mm	0.0025"/0.0635 mm	25 1/4"	15-967-3	167.85	127.56
0 - 40"/1000 mm	0.003"/0.076 mm	45 1/4"	15-968-1	409.85	258.20

Horizontal Linear Scales

MEASURING RANGE	ACCURACY	A	PART NUMBER	LIST	SALE
0 - 4"/100 mm	0.001"/0.02 mm	9 1/4"	15-969-9	$83.70	$75.33
0 - 6"/150 mm	0.0015"/0.03 mm	11 1/4"	15-970-7	104.55	94.09
0 - 8"/200 mm	0.0015"/0.03 mm	13 1/4"	15-971-5	125.80	113.22
0 - 12"/300 mm	0.002"/0.051 mm	17 1/4"	15-972-3	146.55	131.89
0 - 20"/508 mm	0.0025"/0.0635 mm	25 1/4"	15-973-1	167.85	142.67
0 - 40"/1000 mm	0.003"/0.076 mm	45 1/4"	15-974-9	409.85	311.48

Accessories

DESCRIPTION	PART NO.	LIST	SALE
SPC/USB Interface & Cable	11-967-7	$123.45	$92.58
Wireless Data Output	17-599-2	121.80	97.44
Repl. Battery (CR2032)	07-319-7	2.55	—

50-019-9

RECTANGULAR GAGE BLOCK SETS

SAVE up to 42%

- Each block is serialized and meets or exceeds Federal Specifications ASME B89.1.9-2002.
- Carbide gage blocks are recommended in an abrasive environment.
- All sets are supplied in deluxe fitted wood cases.

36 Pc. Sets

1 Blocks: .0.50"
10 Blocks: .1000" - .1009" in .0001" steps
9 Blocks: .101" - .109" in .001" steps
9 Blocks: .110" - .190" in .010" steps
4 Blocks: .200" - 500" in .100" steps
3 Blocks: 1", 2" & 4"

Steel

GRADE	TOLERANCE	PART NO.	LIST	SALE
Economy	±0.00005"	50-046-2	$158.60	$99.91
AS-1		50-047-0	385.30	223.47
0		50-048-8	560.90	353.36

81 Pc. Sets

1 Blocks: .0.50"
10 Blocks:.1000" - .1009" in .0001" steps
49 Blocks:.101" - .149" in .001" steps
17 Blocks:.150" - .950" in .050" steps
4 Blocks:1.000" - 4.000" in .1.000" steps

Steel

GRADE	TOLERANCE	PART NO.	LIST	SALE
Economy	±0.00005"	50-019-9	260.60	$158.96
AS-1		50-049-6	560.90	336.54
0		50-018-1	657.25	578.38

Carbide

GRADE	TOLERANCE	PART NO.	LIST	SALE
Economy	±0.00005"	50-050-4	1,370.00	$1,123.40

INDIVIDUAL PIN GAGES

Range 0.011" - 1.000"

- Black oxide coating prevents corrosion and shows gage wear.
- Hardened drill rod RC 60-62
- Overall length: 2"

	SPI® BRIGHT	SPI® BLACK	PREMIUM
0.011 –0.060" specify size	$3.15 ea.	$3.75 ea.	$4.30 ea.
0.061 –0.500" specify size	3.15 ea.	3.75 ea.	3.80 ea.
0.501 –0.625" specify size	3.75 ea.	4.95 ea.	4.60 ea.
0.626 –0.750" specify size	5.30 ea.	6.25 ea.	6.70 ea.
0.751 –0.832" specify size	8.10 ea.	8.70 ea.	10.85 ea.
0.833 –0.916" specify size	9.35 ea.	9.95 ea.	11.65 ea.
0.917 –1.000" specify size	9.95 ea.	11.20 ea.	12.55 ea.

Unless specified with the order, individual pin gages will be supplied in the minus tolerance (–0.0002" + 0.0000")

SPI® STEEL STRAIGHT EDGES

Square & Beveled 60°

Square

Beveled

- Made of the finest tool steel.
- Precision ground to rigid quality standards.
- Nongraduated.
- Beveled models are beveled on both sides.

L	W	THICK.	EDGE FLATNESS	PARALLELISM	SQUARE PART NO.	PRICE	BEVELED PART NO.	PRICE
12"	1 13/32"	5/16"	0.00047"	0.00094	77-640-1	$43.55	77-630-2	$55.05
18"	1 13/32"	5/16"	0.00047"	0.00094	77-641-9	61.90	77-631-0	73.45
24"	1 13/32"	5/16"	0.00067"	0.0013	77-642-7	80.20	77-632-8	123.75
36"	2 13/32"	3/8"	0.00083"	0.0016	77-643-5	160.40	77-633-6	189.05
48"	2 13/32"	3/8"	0.0011"	0.002	77-644-3	245.15	77-634-4	269.25
60"	2 3/4"	3/8"	0.0011"	0.002	77-645-0	284.10	77-635-1	332.20
72"	2 3/4"	3/8"	0.0015"	0.0029	77-646-8	418.10	77-636-9	481.15
96"	2 3/4"	17/32"	0.0018"	0.0036	77-647-6	672.85	77-637-7	715.70
120"	2 3/4"	17/32"	0.0021"	0.0043	77-648-4*	850.25	77-638-5*	972.60

* Truck shipment.

SPI® 1-2-3, 2-3-4 & 2-4-6 BLOCK SETS

- Hardened steel to RC 55-60, ground to surface finish 6-16 microinches.

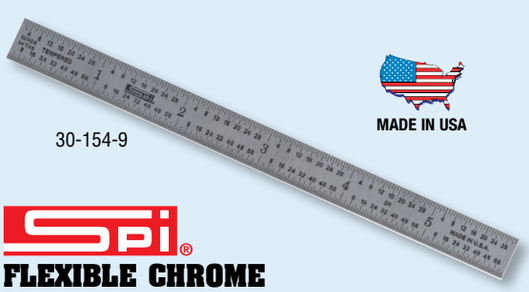
Matched 1-2-3 and 2-3-4 Blocks

- Squareness of all sides within 0.0001" per inch on 1-2-3 Blocks, 0.0003" per inch on 2-3-4 Blocks.
- Five tapped holes (3/8"-16), 18 untapped holes (0.340" dia.).

Matched 2-4-6 Blocks

- Squareness of all sides within 0.0003" per inch.
- Five tapped holes (5/8"-11), 18 untapped holes (0.520" dia.).

DESCRIPTION	PART NO.	LIST	SALE
1-2-3 Block Set	13-670-5	$54.25	$43.40
2-3-4 Block Set	13-672-1	142.75	107.06
2-4-6 Block Set	13-671-3	275.55	206.66



30-154-9

MADE IN USA

SPI® FLEXIBLE CHROME STEEL RULES

- Etched and black filled for readability.
- Rules are hardened and tempered.
- Satin chrome finish.
- Graduations:
  - 4R - 8ths, 16ths, 32nds, 64ths
  - 5R - 32nds, 64ths, 10ths, 100ths
  - 16R - 32nds, 64ths, 50ths, 100ths

SIZE	TYPE	WIDTH	THICK -NESS	PART NUMBER	PRICE
6"	4R	1/2"	0.015"	30-153-1	$11.50
6"	5R	1/2"	0.015"	30-154-9	11.50
6"	16R	1/2"	0.015"	30-155-6	11.50
12"	4R	1/2"	0.015"	30-156-4	22.45
12"	5R	1/2"	0.015"	30-157-2	22.45
12"	16R	1/2"	0.015"	30-158-0	22.45
24"	4R	3/4"	0.020"	30-159-8	63.35
24"	5R	3/4"	0.020"	30-160-6	63.35
24"	16R	3/4"	0.020"	30-161-4	63.35

$16.65
13-719-0
(List $21.35)

SAVE 22%

SPI® COUNTERSINK ANGLE GAGE

- Easily verifies countersink angles.
- Graduated in 32nds for depth measurement.
- Accuracy: ±15 minutes.
- Standard angles are 60, 82, 90, 100, 110 and 120°.

SAVE 15%

$24.99
14-033-5
(List $29.40)

Made in Japan

SPI® Classic ACME SCREW PITCH GAGE

- For grinding and setting tools when cutting Acme threads.
- Angles and edges hardened and ground.
- Pitches included: 1, 1 1/3, 1 1/2, 1 3/4, 2, 2 1/2, 3, 4, 5, 6, 7, 8, 9 and 10.

30-310-7

31-375-9

SAVE up to 37%

SPI® RADIUS & ANGLE GAGES

A) 25 Pc. Radius Gage Fraction Set.

- 1/64" to 17/64" by 64ths plus 9/32" to 1/2" by 32nds.
- 5 clearly marked measuring surfaces.
- For convex and concave radii.
- Rust proof steel, satin chrome finish.

A2) 26 Pc. Radius Gage Decimal Set with Holder.

- 0.010", 0.015", 0.020", 0.025", 0.030" to 0.100" in incr. of 0.010", 0.120" to 0.220". in incr of 0.020", 0.240", 0.280", 0.300" to 0.500" in incr. of 0.050"

B) 18 Pc. Angle Gage Set.

- Checks primary, 1/2 primary & complementary angles.
- Primary range is 5° to 90° in increments of 5°.
- 8 surfaces.
- Stainless steel, satin finish.

DESCRIPTION	PART NO.	LIST	SALE
A) Radius Gage/ Fractional	30-310-7	$112.70	$101.43
A2) Radius Gage/ Decimal	30-688-6	202.25	192.13
B) Set of 18 Angle Gages	31-375-9	93.60	58.96

SPI® Classic SURFACE ROUGHNESS STANDARDS

- Economy Set of 30 specimens, 7/8" x 3/8" electro formed, solid nickel.
- Ideal for use by draftsman, engineers, machinists, etc.
- Each type of surface finish is truly and consistently reproduced, offering a realistic idea of the feel, appearance and texture of the machined components.
- Conforms to S.A.E. and military specifications for visual and tactile inspections.
- Set includes:

3 pcs. Flat Lapping	2, 4 and 8 µ"
3 pcs. Reaming	16, 32 and 63 µ"
6 pcs. Grinding	2, 4, 8, 16, 32 and 63 µ"
6 pcs. Horizontal Milling	16, 32, 63, 125, 250 & 500 µ"
6 pcs. Vertical Milling	16, 32, 63, 125, 250 & 500 µ"
6 pcs. Turning	16, 32, 63, 125, 250 & 500 µ"

- Instructions and graph correlating inch and metric surface finish values plus ISO "N" scale included in set.
- Complete in special wallet.

$142.00
30-695-1

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

HARDNESS TESTING FILE SET

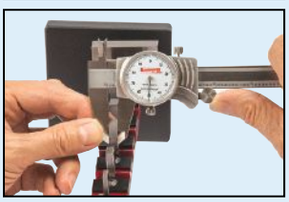
- Practical, inexpensive method to quickly determine approx. hardness of heat treated work-pieces and materials.
- Indispensable for every machinist and heat treater.
- Handy, color coded set of 6 testing files covers nominal hardnesses from 40 RC to 65 RC in increments of 5 RC.
- Special curved design for easy access in hard to reach places.

SAVE up to 12%

$120.07
98-720-6
(List $136.45)

Individual Testing Files

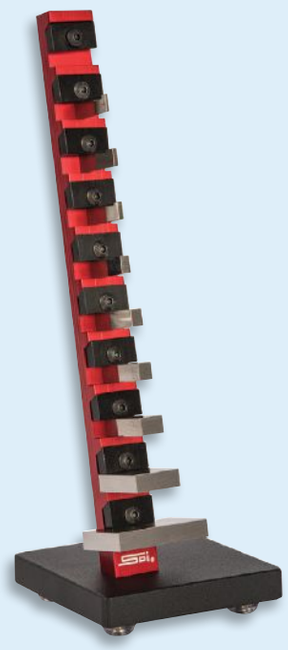
DESCRIPTION	PART NO.	LIST	SALE
40 RC Red	98-721-4	$31.40	$28.26
45 RC Yellow	98-722-2	31.40	28.26
50 RC Light Green	98-723-0	31.40	28.26
55 RC Dark Green	98-724-8	31.40	28.26
60 RC Blue	98-725-5	31.40	28.26
65 RC Black	98-726-3	31.40	28.26



Caliper & Micrometer not included.

$238.20
11-368-8

Certified
Right Out of the Box!



CALIPER/MICROMETER CALIBRATION KIT

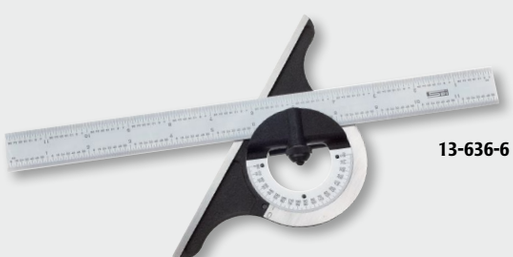
Perfect for Calibrating and Checking Accuracy

- 12 Pc. Kit includes:
  - 12" stand
  - 9 - Grade 0 Gage Blocks: 0.0625, 0.100, 0.125, 0.200", 0.250, 0.300, 0.500, 1.00, 2.00"
  - Optical Flat
  - 3 mm T-handle hex wrench
- Accuracy: 0.00005"
- Material: Steel
- Certificate of calibration traceable to NIST.
- Furnished in fitted case.

BEVEL PROTRACTORS

Cast Head

- Your choice of graduated 12" rule.
- Round head design.
- Maximum measuring range: 180°
- Dial graduation: 0 - 180°



13-636-6

SAVE up to 12%

RULE GRAD.	PART NO.	LIST	SALE
4R	13-636-6	$101.00	$89.89
E/M	13-637-4	108.50	96.56
16R	13-638-2	108.50	96.56
Clamp Screw	13-242-3	4.90	4.31

31-050-8 Machinists Level

31-060-7 Inspection Block Level

31-080-5 Inspection Square Block Level

Classic SPIRIT LEVELS

Machinists Levels

- Cross and main vial – main vial adjustable.
- Flat plus Vee bearing surfaces, width $1^{3}/_{32}$".

SIZE	SENSITIVITY PER 10" INCH	SECONDS	PART NUMBER	PRICE
6"	0.001"	20	31-050-8 *	$193.05
8"	0.001"	20	31-051-6 *	202.10
8"	0.0005"	10	31-052-4 †	233.85
12"	0.001"	20	31-053-2 *	252.70
12"	0.0005"	10	31-054-0 †	293.15
Vial (0.001" Sensitivity)			02-095-8 *	60.00
Vial (0.0005" Sensitivity)			02-094-1 †	60.40

Inspection Block Levels

- Maximum clarity of the bubbles.
- Heat insulating top plate with glass.
- Stabilized cast iron base with hardened surfaces.
- Flat plus Vee bearing surfaces, width $1^{9}/_{16}$".
- Exceptional resistance to shock.
- Cross vial and main vial easily adjustable.
- Furnished in fitted wooden case.

SIZE	SENSITIVITY PER 10" INCH	SECONDS	BASE FLATNESS	PART NUMBER	PRICE
8"	0.0005"	10	0.0002"	31-060-7 *	$451.70
8"	0.0001"	2	0.0001"	31-061-5 †	738.45
12"	0.0005"	10	0.0002"	31-062-3 *	556.05
12"	0.0001"	2	0.0001"	31-063-1 †	863.25
Vial (0.0005" Sensitivity)				02-111-3 *	47.85
Vial (0.0001" Sensitivity)				02-093-3 †	152.35

Inspection Square Block Levels

- Maximum clarity of the bubbles.
- Heat insulating top plate with glass.
- Stabilized cast iron base with hardened surfaces.
- 2 sides with flat bearing surfaces and 2 sides with flat plus Vee bearing surfaces. Width $1^{9}/_{16}$".
- Cross and main vial easily adjustable.
- Furnished in fitted wooden case.

SIZE	SENSITIVITY PER 10" INCH	SECONDS	BEARING FLATNESS	PART NUMBER	PRICE
8 x 8"	0.0005"	10	0.00025"	31-080-5 *	$1,033.60
8 x 8"	0.0001"	2	0.00025"	31-081-3 †	1,650.50
Vial (0.0005" Sensitivity)				02-111-3 *	47.85
Vial (0.0001" Sensitivity)				02-093-3 †	152.35

SPI® Classic
SPI-TRONIC DIGITAL LEVELS

SPI Exclusively features the V-groove on the top and a flat bottom with two 6 - 32 threaded holes.

- Multi-functional level, Protractor and Inclinometer.
- Measures full 360°, 0° to 90° in each quadrant, with standard counter-clockwise rotation.
- Large clear LCD display instantly shows level, true vertical and any angle between.
- Additional features include a hold button freeze for convient out-of-sight measurements.
- Reset plus Superset self-calibration modes.
- Uses standard 9V Alkaline battery (included).
- Plastic case included.

SPI® Pro 360 & 3600 feature Top V-groove

31-040-9

SAVE up to 26%

SPI® Pro 360 & 3600 feature Flat Bottom

31-038-3

Pro 360:

Measuring Range:	360° (4 x 90°)
Resolution:	0.1°
Accuracy:	± 0.1° -level ±10° ± 0.1° -plumb ±10° ± 0.2° -max. error
Repeatability:	Same as accuracy

DESCRIPTION	PART NO.	LIST	SALE
Pro 360 Digital Level	31-038-3	$265.95	$196.80
Repl. Case	31-042-5	80.30	72.27

Pro 3600:

Resolution:	0.01° (0° to ±10°) 0.10° (10° to 90°)
Accuracy:	0 - 10° ± 0.05° 10 - 80° ± 0.20° 80 - 90° ± 0.10°
Repeatability:	± 0.05°. Complete in case. RS232 output for SPC systems. Optional cable is available.

DESCRIPTION	PART NO.	LIST	SALE
Pro 3600 Digital Level	31-040-9	$413.75	$351.68
Pro 3600 Data Logger Software	31-029-2	87.20	74.12
SPC Cable with Foot Switch	31-041-7*	177.45	159.70
Repl. Case	31-042-5	80.30	72.27

*Foot switch (31-041-7) - Connects a PRO3600 to a computer for Statistical Process Control and allows reading to be sent when foot switch is depressed. Includes foot switch, 9 pin female connector with a 4' cable and 8' cable that connects to the level. Please inquire for custom cable lengths.

SPI® PRO 360 & 3600 do not have sub-plate mounting holes in the V-groove. When a sub-plate is mounted over the V-groove the frame will be distorted.

MADE IN USA

SPC Cable with Footswitch sold separately

31-029-2

Certified
Right Out of the Box!

SAVE up to 20%

15-372-6

SPI®
ELECTRONIC HEIGHT GAGES

Single Beam

- Inch/Metric conversion at any position.
- Zero-setting at any position.
- Carbide tipped scriber.
- Resolution: 0.0005"
- Smooth slider feed wheel.
- Large LCD display.
- Manual On/Off power.
- Short Form Certificate of Calibration included.
- 2 year warranty.

RANGE	ACCURACY	PART NO.	LIST	SALE
0 - 12"/0 - 300 mm	±0.0015"/±0.04 mm	15-372-6	$448.45	$358.76
0 - 18"/0 - 450 mm	±0.0015"/±0.04 mm	15-373-4	523.00	444.55
0 - 24"/0 - 600 mm	±0.003"/±0.07 mm	15-374-2	597.70	508.04
Repl. Battery		07-310-6	2.25	–

SAVE 15%

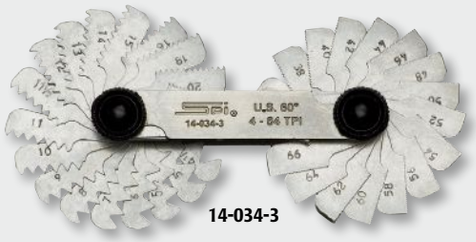
30-190-3

SPI®
AMERICAN STANDARD & WIRE GAGES

- Made of heavy gage hardened steel 62 RC.
- Heat treated Carbon Steel.
- Satin chrome finish, no glare.
- Accuracy: +0.0002", -0.00015"
- Gaging slots meet Federal Specifications.
- Front face shows gage size, back shows decimal equivalents adjacent to each slot.

MADE IN USA

DESCRIPTION	PART NO.	LIST	SALE
American Standard and Gage for measuring wire diameter and non-ferrous sheets with copper, aluminum and wrought iron.	30-190-3	$41.65	$35.40
U.S. Standard Gage for measuring steel, plate iron and uncoated sheet metal.	30-189-5	41.65	35.40



14-034-3

14-035-0

Spi® Classic SCREW PITCH GAGES

Made in Japan

SAVE up to 32%

For American National or U.S. Standard 60° V Threads

- Precision sets of screw pitch gages.
- Knurled locking knob for securing in position.
- Narrow leaf design permits checking both external and internal threads.

51 Leaves 4-84 Pitch

- 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84.

DESCRIPTION	PART NO.	LIST	SALE
51 Leaves 4-84 Pitch	14-034-3	$34.90	**$31.41**

30 Leaves 4-42 Pitch

- 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42.

DESCRIPTION	PART NO.	LIST	SALE
30 Leaves 4-42 Pitch	14-035-0	$23.25	**$16.97**

28 Leaves 40-80 Pitch

- 4, 4½, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 24, 27, 28, 32, 36, 40, 44, 48, 56, 64, 72, 80.

DESCRIPTION	PART NO.	LIST	SALE
28 Leaves 40-80 Pitch	14-036-8	$22.10	**$15.02**

30 Leaves 6-60 Pitch

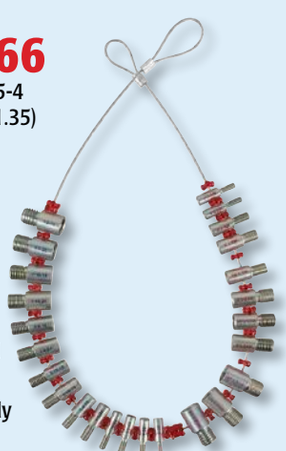
- 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 48, 50, 56, 60.

DESCRIPTION	PART NO.	LIST	SALE
30 Leaves 6-60 Pitch	14-037-6	$23.25	**$18.83**

THREAD DETECTIVE

SAVE 21%

$32.66
13-345-4
(List $41.35)



Precise & Easy to Use Thread Identifier for Nuts & Bolts

- Thread sizes are permanently stamped on each gage.
- Inch sizes: #6, #8, #10, ¼" thru ½"
- Metric sizes: M4 thru M12.

Spi® BRIDGE CAM WELDING GAGE

SAVE 47%

$83.55
14-169-7
(List $157.65)

This versatile cam-type weld gage can be used for checking surfaces, angles, depths, etc.

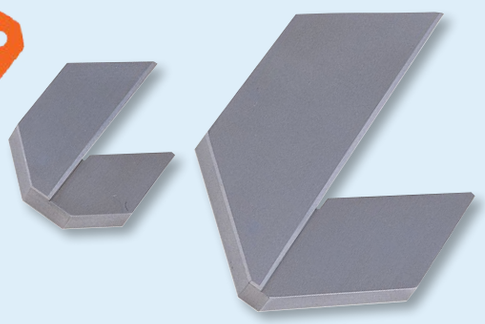
- Can measure fit-up bevels, weld reinforcement, fillet weld leg length, undercuts and pits, throat of fillet weld, angles to 60° height of weld metal, and misalignments.
- High quality stainless steel construction.
- Quick and accurate measurement of most common weld sizes.
- Accuracy: ±0.005", ±0.5 degree
- Readings in Inch and Metric.
- Adjustable scale compensates for wear on pointer.

Spi® CENTER SQUARES

SAVE 20%

- Eliminates the need for cumbersome combination square set.
- Has 90 degree V and beveled edge for easy finding and scribing centers.

DESCRIPTION	PART NO.	LIST	SALE
1½" Center Square	51-856-3	$13.00	**$10.40**
3" Center Square	51-857-1	22.85	**18.28**



SAVE up to 44%

30-394-1

Spi® PROTRACTORS

30-393-3

- Measures angles from 0 - 180°.
- Made of chrome steel — Satin chrome finish.
- Accuracy: ±0.5 degree
- Lock nut — Diameter of protractor dial 3½".

DESCRIPTION	PART NO.	LIST	SALE
With Rectangular Protractor Head	30-393-3	$35.95	**$21.57**
With Half-Round Protractor Head	30-394-1	29.90	**16.74**

Spi® ELECTRONIC UNIVERSAL PROTRACTOR

$299.50
13-164-9

- Hardened stainless steel.
- Measuring range: 0 - 360°
- Range selection: 1 x 360°, 2 x 180°, 4 x 90°.
- Dual reading LCD display arc minutes/decimal degrees.
- Acute angle attachment, 6" and 12" blades included.
- Fine adjustment.
- Preset function.
- Resolution: 30"
- Accuracy: ±5'
- D.O.T. Regulated. Shipped via ground freight only. No collect shipments.

DESCRIPTION	PART NO.	PRICE
Repl. Battery	07-319-7	**$2.55**

QUICK-NUT SPRING CALIPERS

Inside & Outside Models

- QUICK-NUT Means Fast and Easy Adjustments.
- Fully hardened with tempered joints, springs and washers.
- Polished steel finish.
- Inside calipers meet Federal Specifications type I, class I.
- Outside calipers meet Federal Specifications type II class I.

SAVE 29%

RANGE	INSIDE CALIPER PART NO.	LIST	SALE	OUTSIDE CALIPER PART NO.	LIST	SALE	SPRING DIVIDER PART NO.	LIST	SALE
3"	13-700-0	$14.30	$10.15	13-706-7	$14.30	$10.15	13-712-5	$14.30	$10.15
4"	13-701-8	15.80	11.21	13-707-5	15.80	11.21	13-713-3	15.80	11.21
6"	13-702-6	19.35	13.73	13-708-3	19.35	13.73	13-714-1	19.35	13.73
8"	13-703-4	22.05	15.65	13-709-1	22.05	15.65	13-715-8	22.05	15.65
10"	13-704-2	24.65	17.50	13-710-9	24.65	17.50	13-716-6	24.65	17.50
12"	13-705-9	28.25	20.05	13-711-7	28.25	20.05	13-717-4	28.25	20.05

ACCURACY:
±0.01 X maximum dial reading
+ actual test reading.

Flat Tip

Round Tip

SAVE 11%

CORREX TENSION/ COMPRESSION GAGES

- Measurements can be made in clockwise or counterclockwise directions.

RANGE IN GRAMS	GRADUATION GRAMS	DIAL DIA.	WEIGHT	FEELER LENGTH	WITH FLAT FEELER TIP PART NO.	WITH ROUND FEELER TIP PART NO.	LIST	SALE
.3 - 3	1/10	1 1/2"	4 oz.	1 1/4"	31-001-1	31-016-9	$275.20	$244.92
.6 - 6	1/5	1 1/2"	4 oz.	1 1/4"	31-002-9	31-017-7	275.20	244.92
2 - 15	1/2	1 1/2"	4 oz.	1 1/4"	31-003-7	31-018-5	288.35	256.63
3 - 30	1	1 1/2"	4 oz.	1 1/4"	31-004-5	—	288.35	256.63
5 - 50	1	1 1/2"	4 oz.	1 1/4"	31-005-2	31-020-1	288.35	256.63
10 - 100	2	1 1/2"	4 oz.	1 1/4"	31-006-0	31-021-9	288.35	256.63
15 - 150	5	1 1/2"	4 oz.	1 1/4"	31-007-8	31-022-7	290.95	258.94
25 - 250	5	1 1/2"	4 oz.	1 1/4"	31-008-6	31-023-5	290.95	258.94
50 - 500	10	2 1/2"	9 oz.	1 3/4"	31-009-4	31-024-3	557.60	496.26
100 - 1000	20	2 1/2"	9 oz.	1 3/4"	31-010-2	31-025-0	557.60	496.26
200 - 2000	50	2 1/2"	9 oz.	1 3/4"	31-011-0	31-026-8	618.35	550.33

$519.35
15-144-9

COATING THICKNESS GAGE

The SPI coating thickness gauge can perform two different methods of calculating thickness measurement by utilizing the characteristics of both eddy current and magnetic induction.

- Testing performance is both nondestructive and extremely accurate.
- Sleek state of the art thickness gauge easily detects the thickness of non-magnetic coating on a magnetic substrate (ferrous) or an insulating coating on a non-magnetic conductive substrate (nonferrous).
- Can be used in many areas of industry including automotive, manufacturing, general engineering, commercial inspection, etc.
- Flip display for reading upside down.
- Includes: unit, 2 substrate samples (steel, aluminum), 4 calibrated thickness samples, operation manual, batteries, and carrying case.

Main Technical Data

- Measuring range: 0 - 1000µµm max. or 0 - 40 mils.
- Guaranteed tolerance: ± (2 µm+3%) ± (0.1 mils +3%).
- Display: 3 digits (digit height = 15 mm).
- Min. measuring area: 0.2" x 0.2" (5 mm x 5 mm).
- Min. radius of curvature: Convex: 0.12" (3 mm), Concave: 1.2" (30 mm).
- Min. substrate thickness: Ferrous: 20 mils (0.5 mm), Nonferrous: 2 mils (50 µm).
- Calibration: zero calibration, foil calibration.
- Max. surface temperature of test object: 302° F (contact time max. is 2 seconds).
- Memory: 10 measurements.
- Power source: 1 AAA battery.
- Dimensions: 4.25" x 1.80" x 0.885".
- Weight: 2.7oz.

DESCRIPTION	PART NO.	PRICE
Repl. Batteries (4 pk.)	60-187-2	$3.95

SURFACE FINISH COMPARATORS

- Conventional machining microfinish comparator: Twenty-two replicated machined surface finish specimens with examples of six different machining processes calibrated in microinches (µ).
- Supplied in a leatherette case with instructions & engineering data.

TYPE OF PROCESS	FINISH RANGE GAGED (µ)
Lapping	2, 4, 8
Blanchard Grinding	16, 32
Conventional Grinding	8, 16, 32, 63
Shape Turning	32, 63, 125, 250, 500
Milling	63, 125, 250, 500
Profiling	63, 125, 250, 500

DESCRIPTION	PART NO.	PRICE
S-22	30-690-2	$101.45
S-22 Certified	30-691-0	382.05

30-690-2

$12.96
98-728-9
(List $16.20)

SAVE 20%

SURFACE FINISH COMPARATOR

- Accurate - exact reproductions.
- Range of 18 specimens - 16 to 500 microinches.
- Versatile - specimens include mill, end mill, grinding, shape turning and flame cut.
- Made of tough, scratch resistance, ABS unbreakable plastic.
- Complete with plastic wallet.

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

$1,471.80
15-140-7

SPI® PORTABLE HARDNESS TESTERS

State of the art, digital hardness tester designed to test large, hard metal parts

- Automatic conversion to these hardness scales: Rockwell B and C, Brinell, Vicker and Shore & Leeb.
- Measuring ranges: 20-68 HRC, 13-100 HRB, 20-894 HB, 45-950 HV, 14-100 HSD, 10-900 HLD
- Accuracy: ±1 HRC
- Easy-to-use keypad operation.
- Large LCD display with back light.
- Low battery indicator.
- Specifications:

Accuracy:	±0.5% (Referred to L = 800, ±6L units) L = Leeb
Measuring Range:	200-960 HL
Materials:	Steel & cast steel, alloy tool steel, stainless steel, gray cast iron, spheroidal iron, cast aluminum
Operating Temp.:	5 to 104° F
Battery Type:	4-AA Batteries

Portable Hardness Tester (15-140-7)

- Memory and output via RS232.
- Dimensions: 10" L x 12" H x 5" Depth
- Weight: 11 Lbs.
- Includes: Unit, impact device "D", calibrated test block, battery set, cleaning brush, operation manual and carrying case.

Accessories

DESCRIPTION	PART NO.	PRICE
Repl. Batteries - AA (Pkg. of 4)	60-188-0	$3.80

SPI® DIGIT COUNTER DIAL HEIGHT GAGES

Certified
Right Out of the Box!

Height Gage with Dual Direction Digit Counter.

- Large dial indicator and error-proof digital counter makes these gages easy to read.
- The double digital counter can be zero-set at any height within range.
- The digital counter has two displays which separately register upward and downward movements from preset reference points
- 0.100" Graduations provide quick coarse readings with 0.001" graduations on indicator for fine readings.
- All gages feature a large feed wheel, which facilitates coarse and fine vertical adjustments.
- Scribber shank dia.: 0.354" x 0.354"
- Carbide tipped scriber.
- Stainless steel beams.
- Bottom surface of the base is hardened, ground and lapped for maximum flatness.
- With fine-adjusting wheel and lock.
- Certificate of calibration traceable to NIST.
- 2 year warranty.

11-561-8

RANGE	ACCURACY	PART NO.	PRICE
12"	±0.0015"	11-561-8	$317.85
18"	±0.002"	11-562-6	447.85
20"	±0.002"	11-563-4	506.95
24"	±0.002"	11-564-2	589.65

SPI® THICKNESS GAGE FEELER STOCK

91-345-9

½ x 12"/12.7 mm x 300 mm

- Inch Stock: 38 different thicknesses from 0.001 - 0.040".
- Metric Stock: 26 different thicknesses from 0.03 - 1.00 mm.
- Made of the finest tempered steel.
- Each piece marked with thickness.
- Rounded ends with no sharp edges.

Inch

THICKNESS	PART NO.	LIST	SALE	THICKNESS	PART NO.	LIST	SALE
0.0010"	91-352-5	$3.05	$2.59	0.0180"	91-371-5	$1.45	$1.23
0.0015"	91-353-3	2.10	1.78	0.0190"	91-372-3	1.45	1.23
0.0020"	91-354-1	2.10	1.78	0.0200"	91-373-1	1.45	1.23
0.0025"	91-355-8	2.10	1.78	0.0210"	91-374-9	1.45	1.23
0.0030"	91-356-6	2.10	1.78	0.0220"	91-375-6	1.45	1.23
0.0040"	91-357-4	1.65	1.40	0.0230"	91-376-4	1.45	1.23
0.0050"	91-358-2	1.65	1.40	0.0240"	91-377-2	1.45	1.23
0.0060"	91-359-0	1.65	1.40	0.0250"	91-378-0	1.45	1.23
0.0070"	91-360-8	1.65	1.40	0.0260"	91-379-8	1.45	1.23
0.0080"	91-361-6	1.65	1.40	0.0270"	91-380-6	1.45	1.23
0.0090"	91-362-4	1.45	1.23	0.0280"	91-381-4	1.45	1.23
0.0100"	91-363-2	1.45	1.23	0.0290"	91-382-2	1.45	1.23
0.0110"	91-364-0	1.45	1.23	0.0300"	91-383-0	1.45	1.23
0.0120"	91-365-7	1.45	1.23	0.0310"	91-384-8	1.75	1.48
0.0130"	91-366-5	1.45	1.23	0.0320"	91-385-5	1.75	1.48
0.0140"	91-367-3	1.45	1.23	0.0330"	91-386-3	1.75	1.48
0.0150"	91-368-1	1.45	1.23	0.0340"	91-387-1	1.75	1.48
0.0160"	91-369-9	1.45	1.23	0.0350"	91-388-9	1.75	1.48
0.0170"	91-370-7	1.45	1.23	0.0400"	91-389-7	3.20	2.72

Inch Sets

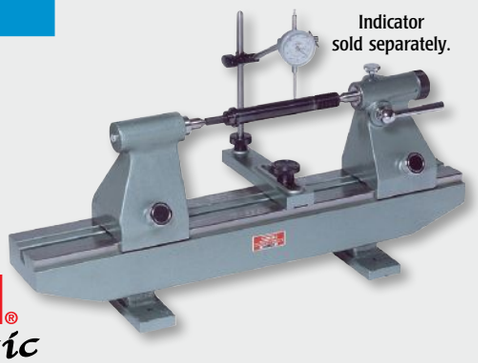
DESCRIPTION	PART NO.	LIST	SALE
32 pc. set containing 1 of each from 0.001 - 0.030"	91-345-9	$58.85	$45.90
108 pc. set containing 12 of each: .0015, .002, .003, .004, .006, .008, .010, .012, .015"	91-347-5	127.50	81.60

Metric

THICKNESS (MM)	PART NUMBER	LIST	SALE	THICKNESS (MM)	PART NUMBER	LIST	SALE
0.03	91-390-5	$3.95	$3.35	0.40	91-404-4	$1.75	$1.48
0.04	91-391-3	2.95	2.50	0.45	91-405-1	1.75	1.48
0.05	91-392-1	2.95	2.50	0.50	91-406-9	2.30	1.95
0.06	91-393-9	2.95	2.50	0.55	91-407-7	2.30	1.95
0.07	91-394-7	2.95	2.50	0.60	91-408-5	2.30	1.95
0.08	91-396-2	2.30	1.95	0.65	91-409-3	2.30	1.95
0.09	91-397-0	2.30	1.95	0.70	91-395-4	2.30	1.95
0.10	91-398-8	2.30	1.95	0.75	91-410-1	2.30	1.95
0.15	91-399-6	1.75	1.48	0.80	91-411-9	2.30	1.95
0.20	91-400-2	1.75	1.48	0.85	91-412-7	2.30	1.95
0.25	91-401-0	1.75	1.48	0.90	91-413-5	2.95	2.50
0.30	91-402-8	1.75	1.48	0.95	91-414-3	2.95	2.50
0.35	91-403-6	1.75	1.48	1.00	91-415-0	2.95	2.50

Metric Set

DESCRIPTION	PART NO.	LIST	SALE
14 pc. set containing 1 of each from 0.03 - 0.06 0.08 and 0.10 - 0.50 mm in 0.05 mm increments.	91-346-7	$34.90	$27.22



Made in Japan

SPI® Classic

HEAVY DUTY BENCH CENTERS

- For accurate checking of concentricity on cylindrical workpieces.
- 5/8" x 60° MT2 centers are hardened and precision ground.
- Tail stock center is spring loaded and lever operated.
- Easy positive locking of clamps.
- Heavy duty cast iron bed for added stability.
- Adjustable vertical post assembly included (indicator optional).

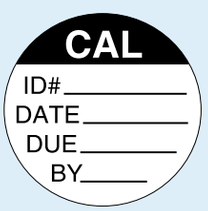
DISTANCE BETWEEN CENTERS	CENTER HEIGHT	MAXIMUM LOAD (LBS.)	OVERALL LENGTH	WEIGHT (LBS.)	PART NUMBER	PRICE
15.75"	5.91"	55	29.53"	106	30-710-8*	$1,849.85
31.50"	9.45"	110	48.03"	330	30-711-6*	4,425.90

*Shipped via truck, freight collect.

SPI®

CIRCULAR CLEAR COVER CALIBRATION LABELS

These labels are the answer for small flat areas on the frame of calipers, micrometers, etc.

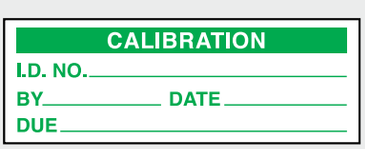


- The clear polyester cover prevents tampering with important data.
- Size: 1/2" diameter
- Material: M304 permanent adhesive, write on vinyl.
- Write-on label with pens, pencils, felt tip, typewriter and rubber stamps.
- M712 clear polyester adhesive cover, pre-attached.
- Package quantity: 200

$27.70
14-017-8

SPI®

CLEAR COVER CALIBRATION LABELS



14-011-1

Protect the integrity of your information with our Clear Cover Labels.

- The clear polyester cover, with adhesive back, is pre-positioned on one side of the label and seals down over the variable data you have entered.
- This clear cover also prevents tampering and alteration and protects your information from spills, soil, and abrasion.
- Size: 1 3/4" x 5/8"
- Material: M304 permanent adhesive, write on vinyl.
- Write-on label with pens, pencils, felt tip, typewriter and rubber stamps.
- M712 clear polyester adhesive cover, pre-attached.
- Package quantity: 144

COLOR	PART NO.	PRICE/PKG.
Green/White	14-011-1	$27.95
Blue/White	14-012-9	27.95
Red/White	14-013-7	27.95
Orange/White	14-014-5	27.95
Black/White	14-015-2	27.95
Lt. Green/White	14-016-0	27.95

SPI®

HARDNESS TESTERS

Dial or Digital

- Use Rockwell A, B, C and F scales for measuring hardness.
- Standards: EN-ISO 6508 and ASTM-E18.
- Resolution: 0.5 of a Rockwell unit.
- Test Loads: 10 kgf preload; 60, 100, 150 kgf load.
- Measuring Range: 20 - 100 RH.
- Testing Space: Vertical - 6.7"/170 mm;
  Horizontal - 6.5"/165 mm (from centerline)
- High quality precision instrument for measuring hardness with ease of operation; precise and durable.
- Electronic model contains large backlit display with load progress bar, automatic loading, unloading and holding of test force.
- Dimensions: 34" H x 17" W x 25" Depth
- Accessories included:
  - Diamond Rockwell indentor 1/4" shank
  - Rockwell ball indentor: 1/16"
  - ±60 HRC test block
  - ±25 HRC test block
  - ±85 HRC test block
  - Flat anvil: 60 mm
  - Large flat anvil: 150 mm
  - V-Block anvil: 40 mm
  - Adjustable feet
  - Protective spindle cover

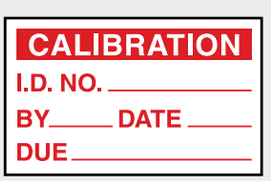
15-818-8

DESCRIPTION	WEIGHT LBS.	PART NUMBER	PRICE
Dial Hardness Tester	230	15-817-0*	$2,786.50
Digital Hardness Tester	240	15-818-8*	3,472.20

*Shipped via truck, freight collect.

SPI®

MINIATURE CLEAR COVER CALIBRATION LABELS



14-006-1

If Space is Limited These Small Labels May be the Answer

- Same features as our larger labels.
- Small 1" x 5/8" size.
- Material: M304 permanent adhesive, write on vinyl.
- Write-on label with pens, pencils, felt tip, typewriter and rubber stamps.
- M712 clear polyester adhesive cover, pre-attached.
- Package quantity: 140

SAVE 23%

COLOR	PART NO.	LIST/PKG.	SALE/PKG.
Green	14-005-3	$26.85	$20.67
Red	14-006-1	26.85	20.67
Orange	14-007-9	26.85	20.67
Black	14-008-7	26.85	20.67
Lt. Green	14-009-5	26.85	20.67
Blue	14-010-3	26.85	20.67

SPI®

DIGITAL MINI PROTRACTOR

- Range: 360° all 4 sides with 0 - 90°.
- Dimension: 2.2" x 2.2" x 1.2"
- Resolution: 0.05°
- Repeatability: 0.1°
- Accuracy: ±0.2°
- Auto shut-off after 3 - 5 min.
- Zero & hold button.
- Magnets on bottom and 2 side walls.
- Low battery warning.
- 9 volt battery included.

DESCRIPTION	PART NO.	PRICE
2 Pk. 9V Batteries	60-150-0	$9.70

$58.86
11-983-4
(List $81.76)

SAVE up to 28%

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

$1,118.77
12-502-1
(List $1,491.70)

SAVE 25%

SPI® MICROSCOPE ON A BOOM STAND

- Specifications:
  - Vertical Post: Square
  - Zoom Objective: 0.65X - 4.5X
  - Eyepiece: 10X
  - Total Magnification: 6.5X - 45X
  - Field of View Diameter: 30 - 4.4 mm
  - Work Distance Changeable: 95 mm
  - Pupil Distance: 51 - 82 mm

Comparator stand and probe not included.

31-842-8

SPI® Classic SPI•TRONIC ANALOG COMPARATOR

Inch/Metric

- Easy to operate Analog Comparator, ideal for the machine shop.
- 2 independent measuring channels, A and B with 4 single functions: +A, −A, +B, −B and 4 functions for sum or differential readings: +A+B, +A−B, −A+B and −A−B.
- 5 inch and 5 metric measuring ranges.
- Dual scale 3-0-3 and 10-0-10 meter with tolerance markers.
- Operates with Tesa & Pretec measuring probes.
- Red, green and yellow tolerance classification lamps for undersize, o.k. and oversize measuring results.
- RS 232C data output.
- Splash proof and sealed for dust.
- Built-in switch for 110V or 220V operation.
- Externally accessible zero and calibration controls.
- Size 6" x 8" x 8" high. Weight 7 lbs.
- Analog; 5 inch and 5 metric measuring ranges.

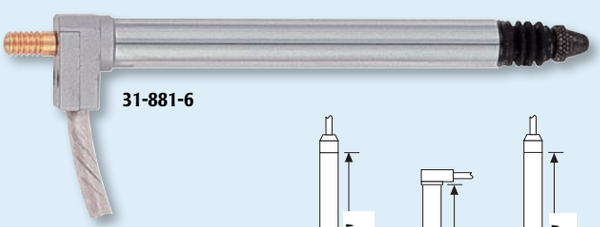
INCH		METRIC	
RANGE	READING	RANGE	READING
±0.0003"	0.000010"	±10µm	0,5µm
±0.001"	0.000050"	±30µm	1µm
±0.003"	0.0001"	±100µm	5µm
±0.010"	0.0005"	±300µm	10µm
±0.030"	0.001"	±1000µm	50µm

DESCRIPTION	PART NO.	PRICE
SPI•TRONIC Analog Comparator	31-842-8	$895.20

SPI® Classic CENTER SCOPE

- Straight shank ½" dia. Eye piece angle 60°.
- 45X magnification for optical position accuracy of 0.0001".
- Field of view: 0.100" dia. Focal length: ⅝".
- Single dash line reticle for easy observation of the work reference line.
- Optional Edge Block to locate the edge of any workpiece to the spindle axis, and optional V-Block Gage for precision centering of a v-block to the spindle for cross axis boring.

DESCRIPTION	PART NO.	PRICE
Center Scope in Fitted Case	40-120-8	$495.85
Edge Block	40-121-6	84.30
V-Block Gage	40-122-4	66.95



SPI® Classic PRETEC ELECTRONIC MEASURING PROBES

- New series of half bridge PRETEC probes has been designed to make them compatible with most other brands of amplifiers.
- Adaptability to other amplifiers is accomplished by a switchable bridge in the connector.
- Measuring piston moves on 32 ball bearings and has roller guide for radial stability.
- Hard-chrome plated 8 mm dia. stem.
- Contact point with 2.5 mm dia. carbide ball and 2.5 mm thread.
- Connector with 6½ ft. cable.

MEASURING TRAVEL	PRE-& POST-TRAVEL	REPEAT-ABILITY	LINE-ARITY	MEASURING FORCE	MODEL	PART NUMBER	PRICE
±.079"	**	0.00000078"	.3%	2.11 oz.	2940	31-880-8	$577.00
±.040"	***	0.00000078"	.3%	2.11 oz.	2922	31-881-6	746.95
±.040"	***	0.00000078"	.3%	2.82 oz.	2921	31-882-4	1,024.20
±.040"	**	0.00000078"	.3%	2.11 oz.	2928	31-884-0	634.00
±.118"	***	0.000019"	.5%	2.82 oz.	2970	31-885-7	1,112.75

**) Pre-travel adjustable to max. 0.043", post-travel adjustable to max. 0.094".
***) Pre-travel factory set to 0.023", post-travel set to .094"

DESCRIPTION	PART NO.	PRICE
1 Reduction Bushing 8 mm to ⅜" dia.	30-299-2	$8.40

Lever Head 2952

- Exceptional adaptability.
- Adjustable measuring travel ± 0.040".
- Adjustable measuring force 0 - 0.88 oz.
- Pre-travel max. 0.043", post-travel max. 0.094
- Repeatability 0.000019". Linearity .3%.
- Connector with 6½ ft. cable.
- Parallel movement, no cosine error.
- Variety of carbide and ruby contact points with 1.6 mm thread available.

DESCRIPTION	PART NO.	PRICE
Lever Head 2952	31-887-3	$1,268.60

Made in Japan

$76.54
40-144-8
(List $90.05)

SPI Classic

7X MINI COMPARATOR - 1" DIA.

- Simple compact design comparator with Double type achromatic lens.
- Focusing ring with smooth multiple threads for sharp images.
- Body height: $^{27}/_{32}$"
- Includes #5 (40-081-3) reticle.
- Accepts standard 1" dia. reticles #1 through #13, (Part No. 40-081-2 to 40-094-5).

SAVE 15%

40-216-4

SAVE 10%

40-237-0

BAUSCH+LOMB

LOUPES

Coddington 10X Lighted Loupe

- 19.8 mm dia. lens, 1" focal distance, 40 Diopters.
- Uses two AA penlight batteries (not included).

DESCRIPTION	PART NO.	LIST	SALE
Coddington 10X Lighted Loupe	40-216-4	$46.40	$41.76

5X Aspheric Magnifier

- Aspheric lenses assure edge to edge clarity.
- 2" focal distance, 20 diopter.

DESCRIPTION	PART NO.	LIST	SALE
5X Aspheric Magnifier	40-237-0	$13.70	$12.33

40-166-1

Made in Japan

SAVE 14%

SPI Classic

STEINHEIL LOUPES

- High grade pocket size magnifiers in Steinheil system.
- Sliding frame serves as convenient handle for holding the loupe and protects both lens surfaces from dust and damage.

MAG.	PART NO.	LIST	SALE
7X	40-166-1	$98.35	$84.58
10X	40-167-9	96.25	82.77
14X	40-168-7	102.50	88.15
20X	40-169-5	102.50	88.15

SPI

PROFILE PROJECTORS

- Inspect parts with surface and/or profile illumination.
- Solid, stable steel construction.
- X & Y table positioning through ball screws (0.1"/rev.) with quick disconnect for fast positioning.
- Excellent quality optical system provides clear images and accurate magnification.
- Error of contour is less than 0.08% of the illumination.
- 10X magnification.
- Screen diameter: 12" with a crosshair and a line at 45° and one line 30°/60° for quick angle checking.
- Hood reduces glare from overhead lights.
- Illumination: 24V/150W halogen lamp with 3 fans to disperse heat, adjustable for light intensity.
- Easy access to mirror for calibration.
- Power source: 110V/220V (AC), 50/60Hz, 400W total power.
- Resolution (X/Y axis): 0.0004"/0.001 mm, 0.00002"/0.0005 mm.
- Measuring accuracy: 4.0+L/25 µm; L = measuring length.

15-540-8
Truck Collect

TABLE SIZE	GLASS STAGE	STAGE TRAVEL X	Y	Z	PART NUMBER	PRICE
13.3" x 5.9"	6.8" x 3.9"	5.9"	2.0"	3.5"	15-540-8	$8,443.20
15.9" x 8.9"	10.2" x 6.3"	7.8"	3.9"	3.5"	15-541-6	10,857.25

$337.43
40-138-0
(List $411.50)

Made in Japan

SAVE 18%

SPI Classic

ZOOM COMPARATOR

- Continuous zooming magnification from 8X to 16X with click stops at 8X, 10X, 12X, 14X and 16X.
- Field of view: 0.788" to 0.394" dia.
- Size: 2.56" x 1.77" dia.
- Diopter adjustment ring: +2.5D to – 5D
- Reticle with 0.005"/0.1 mm graduation included, $1^{3}/_{8}$" dia. reticle 40-241-2 to 40-253-7 listed with 10X Comparators also fit.

SAVE up to 20%

40-147-1

SPI Classic

HIGH POWER 15X POCKET COMPARATOR 1" DIA.

- Precision ground glass reticle 1" dia. with very sharp 0.005" scale graduation.
- Visual field: 0.550" dia.

DESCRIPTION	PART NO.	LIST	SALE
High Power Pocket Comparator 15X with 40-261-0 reticle	40-147-1	$176.40	$141.12
1" Reticle #13	40-261-0	34.00	$30.60
1" Reticle #1	40-262-8	34.00	30.60
1" Reticle #2	40-263-6	34.70	31.23
1" Reticle #8	40-264-4	34.00	30.60

Made in Japan

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SAVE up to 28%

40-151-3

SPI® Classic

LOUPES

- All purpose magnifier.
- Ideal for machinists, toolmakers and inspectors.

MAG.	PART NO.	LIST	SALE
5X	40-150-5	$20.35	$16.48
10X	40-151-3	32.50	23.40
22X	40-152-1	56.95	46.69

Made in Japan

$51.56
40-157-0
(List $67.85)

SAVE 24%

Made in Japan

SPI® Classic

PARASITE LOUPE

- High grade crown glass lens with very sharp and clear magnified image.
- 3" dia. lens 2.5X with imbedded small lens 7/8" dia. for 5X compound magnification.
- Overall length: 6½"

40-181-0

OPTIVISOR WITH OPTILUPE

40-187-7 OPTILUPE

OPTIVISOR

- Comfortable, adjustable headband.
- Optical glass lenses ground and polished to precision optical standard for superior magnification.
- Optilupe, for additional magnification for all models, optional.

MAG.	FOCAL LENGTH	COMPLETE SET PART NO.	COMPLETE SET PRICE	REPLACEMENT LENS PART NO.	REPLACEMENT LENS PRICE
1½X	20"	40-181-0	$68.55	06-030-1	$38.75
1¾X	14"	40-182-8	68.55	06-031-9	38.75
2X	10"	40-180-2	68.55	06-032-7	38.75
2½X	8"	40-183-6	68.55	06-033-5	38.75
2¾X	6"	40-184-4	68.55	06-034-3	40.80
3½X	4"	40-185-1	68.55	06-035-0	40.80
Optilupe	(2½X)	40-187-7	$16.90		

40-143-0

40-142-2

SPI® Classic

7X & 10X POCKET COMPARATORS

Made in Japan

SAVE up to 29%

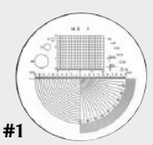
- Pocket-size measuring and inspection comparator.
- Body height 2 5/16".

DESCRIPTION	PART NO.	LIST	SALE
7X Set - Includes 7X 1" Dia. Comparator #5 Reticle & Illuminator (40-143-0) in fitted case.	40-140-6	$124.00	$99.20
7X Set - Includes 7X 1" Dia. Comparator. #5 Reticle in fitted case	40-141-4	95.15	67.55
7X Set - Includes 7X 1" Dia. Comparator with #1, #5, #7, #8 & #12 Reticle in fitted case.	40-142-2	192.60	144.45
10X Set - Includes 10X 1 3/8" Dia. Comparator #5 Reticle in fitted case	40-145-5	$147.60	115.12
10X Set - Includes 10X 1 3/8" Dia. Comparator with #1, #5, #7, #8 & #12 Reticle in fitted case	40-146-3	212.75	165.94
* 1" Illuminator	40-143-0	18.30	16.47
* 1 3/8" Illuminator	40-148-9	19.80	17.82
12 pack C Batteries	60-189-8	24.60	–

* Requires 2 C-batteries, not included

Individual Reticles

RETICLE	1" Dia. PART NO.	1 3/8" Dia. PART NO.
#1	40-081-2	40-241-2
#2	40-082-0	40-242-0
#3	40-083-8	40-243-8
#4	40-084-6	40-244-6
#5	40-085-3	40-245-3
#6	40-086-1	40-246-1
#7	40-087-9	40-247-9
#8	40-088-7	40-248-7
#9	40-089-5	40-249-5
#10	40-090-3	40-250-3
#11	40-091-1	40-251-1
#12	40-092-9	40-252-9
#13	40-093-7	40-253-7
List	$21.05	$23.55
Sale	$18.94	$21.19



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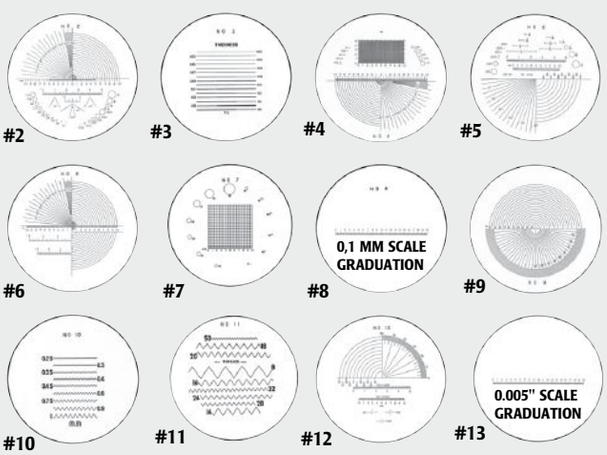


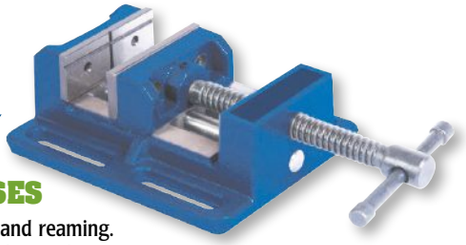
SPI® MAGNIFIERS

- Magnifiers have lenses made of three precision ground elements cemented together to provide the best image possible in a hand-held magnifier.
- Lens diameter is 0.83".

MAGNIFICATION	PART NO.	LIST	SALE
10x	14-158-0	$42.25	$29.99
15x	14-159-8	44.55	31.63
20x	14-160-6	46.90	33.29
30x	14-161-4	48.10	34.15

SAVE 29%

14-159-8



TOP QUALITY
LOW PROFILE DRILL PRESS VISES

- Use for drilling, tapping and reaming.
- Made from FC25 fine grain cast iron.
- Trapezoidal thread lead screw.
- 4 lug bolt slots for mounting to drill table.
- Replaceable jaw has "V" groove for holding round stock.

76-721-0

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	PRICE
3"	3"	1 1/8"	2 7/16"	6 9/16"	10	76-721-0	$50.25
4"	4"	1 1/2"	2 7/8"	7 9/16"	15	76-722-8	61.85
6"	6"	2"	3 9/16"	10 15/16"	36	76-723-6	145.25
8"	8"	2"	3 9/16"	15 7/16"	54	76-724-4	218.05

76-425-8

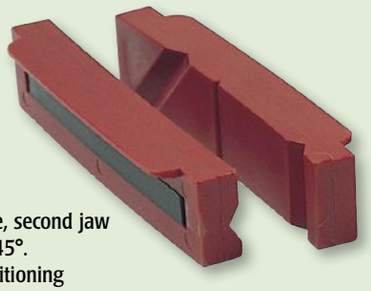
76-424-1

TOP QUALITY
QUICKIE VISE HANDLES

SAVE up to 15%

- Speeds up opening and closing of machine vises.
- Provides faster and more efficient production.
- Fits all vises with 3/4" hex.
- Short turning radius for clamping of more delicate parts.
- Machined anodized aluminum.
- Use permanently on CNC vises and with any standard handle.

DESCRIPTION	PART NO.	LIST	SALE
Single Position Quick Handle	76-424-1	$19.58	$17.62
Double Position Quick Handle	76-425-8	34.90	29.66



FLEXBAR

MAGNETIC "SOFT JAW" VISE LINERS

- 5" long for use on all vises.
- One jaw has horizontal Vee-groove, second jaw has 2 vertical Vee's plus 1 Vee at 45°.
- Overlap configuration for easy positioning to assure parallel set-up.
- Nylon material.
- Length of Jaw: 5"
- Priced per pair.

SAVE 12%

$18.61
70-066-6
(List $21.15)

STEP JAWS

For Precision Economy Vises

SAVE up to 11%

- Adds flexibility in clamping of workpieces.
- Hardened and ground finish.
- Fits Kurt Anglock, SPI® Lock-Tight and Quad-1 vises.

VISE SIZE	STEP DIMENSION WIDTH	STEP DIMENSION DEPTH	PART NUMBER	LIST PER PAIR	SALE PER PAIR
4"	.138"	.157"	76-605-5	$84.55	$77.78
6"	.177"	.197"	76-607-1	225.35	200.56

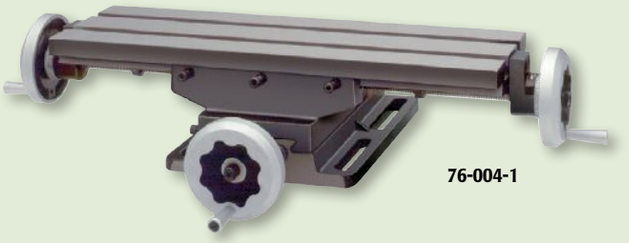
70-922-0

SHOP GRADE
PRECISION SCREWLESS VISES

SAVE up to 41%

- A quality precision screwless vise made from tool steel.
- Heat treated to 58-62 RC.
- Each part is precision ground square and parallel to 0.0002" including the jaws and vertical vees.

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
2"	2 1/2"	1"	2"	51/2"	4	70-921-2	$139.80	$92.26
2 1/2"	3 3/8"	1 1/4"	2 1/2"	7"	4 1/2	70-922-0	190.80	116.38
2 7/8"	4"	1 1/2"	3.40"	8"	10	70-918-8	199.70	121.81
2 7/8"	4"	1 3/8"	2 5/8"	7 1/2"	8.90	70-919-6	214.20	143.51
3 1/2"	4 7/8"	1 9/16"	3.30"	9 1/4"	16	70-923-8	366.60	216.29
4"	4 7/8"	1 3/4"	3 1/2"	9 5/8"	23	70-924-6	411.60	242.84



SAVE 10%

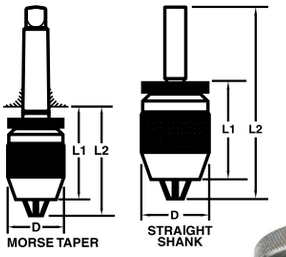
76-004-1

SHOP GRADE
COMPOUND SLIDE MILLING & DRILLING TABLE

Table has a heavy-duty rugged slide used in all kinds of positioning, milling, drilling, microscope viewing and staging. Adjustable gibs for heavy loads.

- Locking screws allow table to lock in place.
- "U" slots for bolts up to 5/8".

TABLE W X L	HEIGHT	TRAVEL LONG	TRAVEL CROSS	BASE W X L	T-SLOTS	WEIGHT LBS.	PART NUMBER	LIST	SALE
6" x 19"	5"	11"	7 1/2"	8 x 10 1/2"	9/16"	56	76-004-1	$307.15	$276.43



71-601-9

ALBRECHT

CLASSIC PLUS KEYLESS DRILL CHUCKS WITH INTEGRAL SHANK

- Integral shank design is more compact than a combined drill chuck and arbor, resulting in greater accuracy and rigidity and larger work envelope.
- Integral shank eliminates the possibility of a chuck slipping on its arbor.
- Keyless operation.
- This unit is often less expensive than a separate chuck and arbor
- Self-tightening (clockwise rotation only).

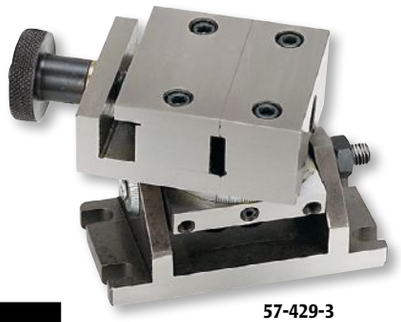
SHANK TYPE	CAPACITY	MAX. RPM	D	L1	L2	PART NUMBER	PRICE
2MT	1/32 – 1/2"	7,000	2"	3 3/8"	3 7/8"	71-601-9	$471.45
3MT	1/32 – 1/2"	7,000	2"	3 3/8"	3 7/8"	71-602-7	473.80
4MT	1/32 – 1/2"	7,000	2"	3 7/16"	3 15/16"	71-603-5	499.50
R8	1/32 – 1/2"	7,000	2"	3 5/16"	3 13/16"	71-604-3	518.25
5/8 SS	1/32 – 1/2"	7,000	2"	3 1/8"	3 5/8"	71-605-0	469.20
3MT	1/8 – 5/8"	4,000	2 1/4"	3 1/2"	4 1/16"	71-606-8	526.80
4MT	1/8 – 5/8"	4,000	2 1/4"	3 9/16"	4 1/16"	71-607-6	553.05
R8	1/8 – 5/8"	4,000	2 1/4"	3 7/16"	3 15/16"	71-608-4	569.10

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

MINI PRECISION TILT & SWIVEL VISE

Use For Jig Boring, Jig Grinding, Precision Milling, Drilling or Grinding

- Tolerance; ±0.0004"
- Graduated on the tilt and the swivel.
- Equipped with removable jig plates for grinding or milling.
- Use as a fixed vise by removing the swivel attachment.



57-429-3

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OAL	WT. LBS.	PART NUMBER	PRICE
2 1/4"	17/32"	25/32"	3 3/4"	5 5/8"	2	57-429-3	$290.00

SHOP GRADE TOOL HOLDING FIXTURE

for CAT or BT 40/50 Toolholders

- Change end mills, drills, collets and retention knobs quickly and securely.
- Made from 6061 anodized aluminum with steel key.
- Four counter bored screw holes on base for mounting on workbench, toolbox or side of machine.
- Can be assembled for horizontal or vertical use.
- Adjustable handle, can be lifted and turned to any desired position.

SAVE 11%

DESCRIPTION	PART NO.	LIST	SALE
CAT 40	98-097-9	$93.25	$82.99
CAT 50	98-098-7	112.15	99.81

UNIVERSAL LIVE CENTERS

- Made of high quality tool steel, hardenedand precision ground.
- Sealed triple-bearing system.
- Seven easily interchangeable points; 1 ea. 1/4", 5/16", 3/8", 1 1/4", 2 ea. 1/2" and 1 female.
- Maximum speed 2,000 RPM.

SAVE up to 22%

Precision Set with Interchangeable Tips

SHANK	PART NO.	LIST	SALE
MT-2	51-209-5	$202.95	$180.62
MT-3	51-210-3	206.35	160.95
MT-4	51-211-1	225.20	175.65

SHOP GRADE 5" PRECISION SINE PLATE

Sine plates are made of 1018 Steel, case hardened 0.040 - 0.060" deep. 58 - 60 Rockwell "C" and finish ground.

- Square and parallel within 0.0002".
- Center distance of rolls 5.000 ±0.0005".
- Overall dimensions (±1/16"): 3 1/4" W x 6" L x 1 5/16" H.
- Dia. of rolls: 0.708" ±0.0002".
- Thirteen 1/4-20 tapped holes.
- Minute angle step 0.200" - 0.0001".
- End rail included.
- Weight: 8.8 Lbs.

$259.15
34-792-2
(List $355.00)

SAVE 27%

SHOP GRADE TAPER SPINDLE WIPERS

Maintain Spindle Accuracy and Improve Contact

- Wipers use cotton material to clean spindles.
- Taper type: NT, MAS BT, DIN69 871-A DAT.

97-306-5

SAVE 41%

TAPER SIZE	PART NO.	LIST	SALE
30	97-306-5	$30.70	$18.11
40	97-307-3	35.05	20.67
50	97-308-1	61.30	36.16

MICRO DRILL ADAPTERS

SAVE up to 11%

- Precision sensitive drill adapter for small hole drilling.
- Reduced drill breakage.
- Applicable in mills, lathes, drill presses and jig borers.
- 1/2" straight shank.
- 3/4" travel. (71-643-1 has 1/2" travel).
- Easy operation, grasp free turning ring, feed with gentle finger pressure, auto return upon release.
- Has 0 JT male taper.

DRILL CHUCK WITH ADAPTER	CHUCK CAP.	PART NUMBER	LIST	SALE
Albrecht 15 - JO (Keyless)	0 - 1/16"	71-635-7	$488.50	$464.07
Albrecht 30 - (Keyless)	0 - 1/8"	71-636-5	378.20	336.59
Jacobs - JO - Key Type	0 - 5/32"	71-641-5	168.75	150.18
Adapter Only		71-643-1	88.25	78.54
Adapter Only (Import)		71-644-9	35.55	31.63

SAVE 12%

$652.47
63-066-5
(List $741.45)

SHOP GRADE 5" PRECISION COMPOUND SINE PLATE

- Sine plates are made of 1018 Steel, case hardened. 0.040 - 0.060 deep. 58 - 60 RC and finish ground.
- 6" x 6" work surface has twenty-five 1/4 - 20 tapped holes.
- Two offset straps for rigid locking of angle settings.
- Minute angle step 0.200" - 0.0001" in gage block roll.
- End rail included.
- Square and parallel within 0.0002".
- Dimensions: 6" L x 6" W x 3 1/4" H
- Weight: 27 lbs.

SAVE 35%

78-299-5

78-300-1

SHOP GRADE 5C SOLID ADJUSTABLE COLLET STOPS

Use For Fast & Easy Positioning

- Equipped with a screwdriver slot in the end of the stud.
- 7/16 - 20 internal thread.

STUD LENGTH	STUD DIA.	PART NUMBER	LIST	SALE
4"	0.950"	78-299-5	$12.60	$8.19
8"	0.430"	78-300-1	43.50	28.27

SAVE up to 42%

SHOP GRADE
DRILL PRESS ANGLE VISES

For Machining On An Angle

- Made from high quality steel.
- Quickly adjust from 0° to 90°.
- Screw and handle high quality steel with ACME threaded screw and hexagonal head for tight clamping.
- Hinge pin hole is precision drilled and reamed to eliminate lateral play.

66-962-2

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
2 1/2"	2"	1.35"	2.87"	7.59"	10	66-962-2	$55.30	$36.49
3 1/2"	3 5/16"	1.35"	3.23"	9.13"	17	66-963-0	65.15	45.60
4 1/2"	3 3/4"	1.62"	3.70"	11"	22	66-964-8	103.45	60.00

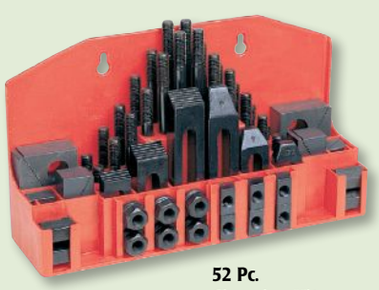
SAVE 22%

SHOP GRADE
PRECISION MILLING MACHINE VISES

- Made from gray cast iron.
- Removable hinged handle for fast locking.
- Provide better clamping pressure.

76-565-1

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
4"	4.00"	1 1/4"	3.70"	12 3/8"	30	76-563-6	$178.00	$138.84
5"	4.35"	1 3/8"	3.94"	14 3/8"	46	76-564-4	210.55	164.22
6"	5.90"	1 1/2"	6.22"	16.85"	56	76-565-1	247.50	193.05
6"	7.50"	1 1/2"	4.93"	17.20"	66	76-566-9	298.90	233.14
8"	8.00"	1 15/16"	6.10"	20.00"	105	76-567-7	552.40	430.87

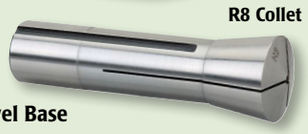


52 Pc. Clamping Kit

6" Milling Vise w/ Swivel Base

59 PC. R8 TOOLING PACKAGE

For Bridgeport® Type Milling Machines



R8 Collet

6" Precision Milling Machine Visewith Swivel Base

- 6 1/4" Jaw opening.
- Removable hinged handle for fast locking.
- No need to hammer workpiece.
- Provides better clamping pressure.
- Weight: 95 lbs.

$360.84
97-959-1
(List $410.05)

52 Pc. Clamping Kit

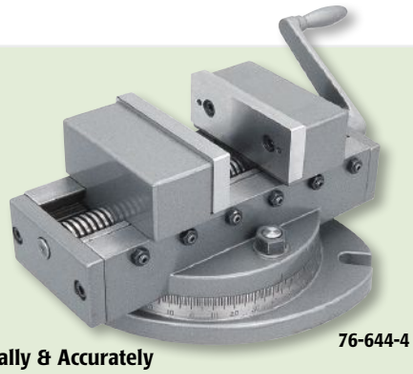
- 24 - 1/2"-13 studs: 4 each 3", 4", 5", 6", 7" & 8"
- 4 - coupling nuts
- 6 - 5/8" t-slot nuts
- 6 - flange nuts
- 6 - serrated end clamps
- 6 - 1" wide step block pairs
- Storage rack

SAVE 12%

6 Pc. R8 Collet Set

- Sizes: 1/8" - 3/4"

SAVE 35%



76-644-4

TOP QUALITY
SELF-CENTERING MILLING MACHINE VISE

Now Quickly Center Jobs Automatically & Accurately

- Use in applications where the same operation is to be performed on workpieces of varying sizes.
- Rotating the crank handle automatically adjusts workpiece to the center.
- Centric clamping makes it quick and easy to mill slots and grooves.
- Accurate set up of jobs with only a single machine setting.
- Made of high tensile seasoned cast iron with fully hardened & ground tool steel jaws.
- Swivel base rotates a full 360°.
- Hold down slots for secure clamping to the table.

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
4"	4"	1 1/2"	6 3/8"	10 3/4"	32	76-644-4	$478.75	$311.18

SAVE up to 49%

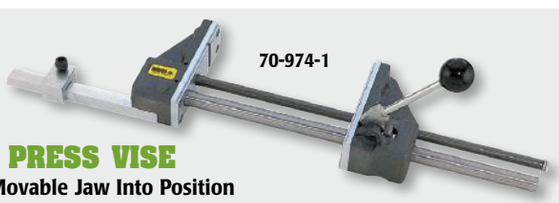
SHOP GRADE
LOW PROFILE DRILL PRESS VISES

- Sturdy for general drilling work.
- Cast iron body and slide.
- 4 lug bolt slots for mounting to drill press table.
- High quality steel for main screw and handle.
- High quality steel jaw plates.

66-972-1

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
3"	3"	0.59"	1.77"	7.28"	8	66-859-0	$25.70	$16.70
4"	4"	0.84"	2.05"	8.45"	9	66-972-1	63.25	32.25
5"	4 5/8"	0.89"	2.33"	9.65"	10	66-973-9	84.00	42.84
6"	5 1/2"	0.98"	2.40"	10.86"	13	66-974-7	118.60	60.48

heinrich
GET A GRIP WITH HEINRICH



70-974-1

GRIP-MASTER SAFETY DRILL PRESS VISE

Quick-Set By Sliding Movable Jaw Into Position

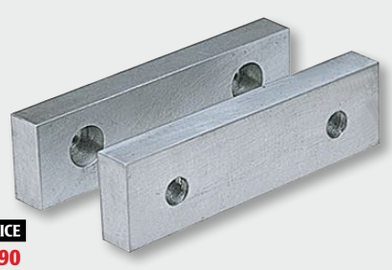
- Quick-Acting - Opens to 12 3/4"
- Press on lever advances jaw locking workpiece securely.
- Built-in recessed parallel jaws hold work square.
- Vertical V-Groove in jaw grips on rounds.
- Mounts on drill press table and swings away when not in use.

MADE IN USA

JAW WIDTH	JAW OPENING	JAW DEPTH TO BARS	HEIGHT	OAL	WT. LBS.	PART NUMBER	PRICE
5 21/32"	12 3/4"	3"	1 3/4"	27 3/8"	13	70-974-1	$329.00

SOFT JAWS

- Fits Kurt Anglock, SPI Lock-Tight and Parlec vises.
- Made of 6061 Aluminum, precision machined.
- Ideal for quick and easy NC or manual set-ups.



VISE SIZE	JAW DIMENSIONS	PART NO.	PRICE
4"	5/8 x 1 1/4 x 4 1/16"	70-952-7	$31.90
5"	3/4 x 1 1/2 x 5 1/8"	70-953-5	31.90
6"	3/4 x 2 x 6"	70-954-3	34.60
8"	1 1/8 x 2 1/4 x 8 1/8"	70-955-0	68.10

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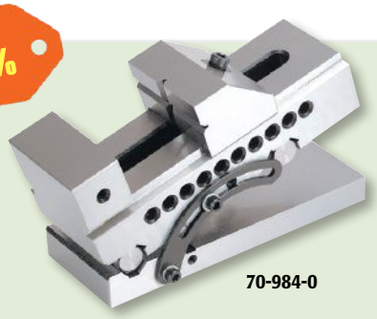
SAVE 18%



70-984-0

SHOP GRADE
SUPER PRECISION SINE VISE

- Made from fine quality alloy steel, heat treated to 58 - 62 RC.
- Parallelism and squareness: 0.0004".

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
3"	4"	1 1/4"	3 5/8"	7 1/2"	17.8	70-984-0	$234.15	$192.00

PANAVISE®

70-912-1

- Tilt, turn and rotation, all controlled by just one convenient knob and split ball feature.
- Vise head and locking unit independently rotate 360°.
- Tilt action 180° to any position from horizontalto vertical.
- Jaw width 2 1/2". Jaw opening 2 1/4".
- Overall height 6 3/4". Base dia. 5".
- Three lugs in base provides easy, permanent bench mounting or optional baseplate mounting.
- Attractive gray/green hammertone finish.

DESCRIPTION	PART NO.	PRICE
Panavise with Nylon Jaws	70-912-1	$79.95
Baseplate 8 1/2" dia.	70-913-9	32.45
Pair of Nylon Jaws	70-914-7	6.15
Pair of Plated Steel Jaws	70-915-4	13.15

TOP QUALITY
PRECISION TOOLMAKER'S INSERT VISES

SAVE up to 34%

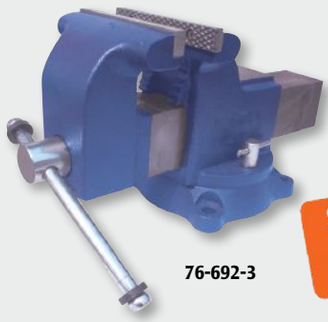
76-746-7

- Vise is designed to be placed into a larger vise for working with very small work pieces.
- Suitable for use in EDM applications.

JAW WIDTH	JAW OPENING	JAW DEPTH	HEIGHT	OVERALL LENGTH	WEIGHT LBS.	PART NUMBER	LIST	SALE
1"	13/16"	3/8"	1 1/4"	2.55	1	76-746-7	$112.55	$85.53
1"	13/16"	3/8"	1 3/16"	2.55	1	76-748-3*	180.20	118.93

*Stainless Steel

TOP QUALITY
WORKSHOP BENCH VISES



76-692-3

SAVE 15%

- Cast Iron.
- Replaceable steel top jaws.
- Built-in pipe jaws.
- Double lockdowns.
- 360° locking swivel base.

JAW WIDTH	JAW OPENING	JAW DEPTH	PIPE CAPACITY MIN.	PIPE CAPACITY MAX.	WEIGHT LBS.	PART NUMBER	LIST	SALE
4"	4"	2 3/4"	5/8"	2"	22	76-692-3	$61.80	$52.53
5"	5"	3"	5/8"	2 3/8"	31	76-693-1	71.25	60.56
6"	6"	3 1/2"	5/8"	2 1/2"	42	76-694-9	127.10	108.03
8"	8"	4"	5/8"	3"	70	76-695-6	157.50	133.87

70-949-3

70-950-1

WORK STOPS
Standards for Various Brand Machine Vises

SAVE up to 14%

- Hardened spring loaded work stop clamp for vises with a minimum protrusion of 1/16".

RANGE	WIDTH	HEIGHT	STEP	PART NO.	LIST	SALE
1/2" - 7/8"	1 1/2"	.50"	.38"	70-949-3	21.50	18.49

For narrow jaws, less than 1/2" (70-945-1) and less than 5/8" (70-949-3), the spring has to be removed.

Deluxe Workstop

- Two ground pins for positive location.
- Hard anodized aluminum body.

DESCRIPTION	PART NO.	LIST	SALE
Work Stop for 3/4" Thick Jaws	70-950-1	$29.30	$26.37
Work Stop for 7/8" Thick Jaws	70-951-9	29.30	26.37

MADE IN USA

$44.95
58-815-2
(List $49.95)

SAVE 10%

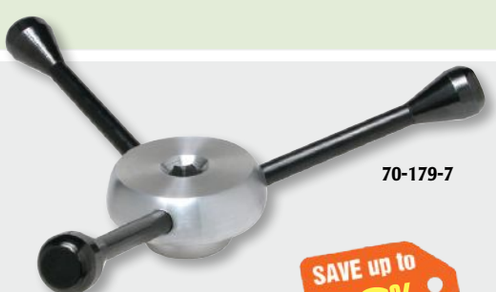
MILL STOP

- Rigid placement stop for milling set-ups with vises or angle plates.
- Use as holder for spray mist.
- 1/2" hole for T-Slot machine mounting
- 3/8" dia. rod with 1/4" step.
- 10" stop rod.
- Base dimensions: 2" x 4 1/2".
- Overall Height: 7 1/4".

$124.50
58-808-7

MILLING MACHINE VISE PIVOT WORKSTOP
Unique Hinged Workstop

- Swing it out of the way for clearance.
- Accurately and quickly relocate the stop for repeat set-ups.
- Quick positioning.



70-179-7

SAVE up to 36%

TOP QUALITY
SPEED HANDLES
A True Time Saver

- Fits all standard vises and will facilitate fast opening and closing of jaws.

SIZE	HEX SIZE	PART NUMBER	LIST	SALE
4"	9/16"	70-137-5	$29.95	$19.76
5"	5/8"	70-138-3	29.95	19.76
6"	3/4"	70-179-7	29.95	19.16
8"	7/8"	70-139-1	29.95	19.76

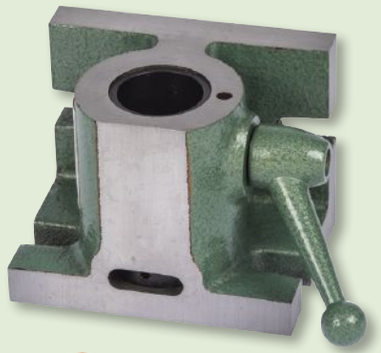
Pin and collet not included

$526.31
70-221-7

KALAMAZOO INDUSTRIES, INC.

5C COLLET FIXTURE FOR CHUCKS

- For short runs using a 5C collet.
- Lock and release at the front.
- Heavy-duty.
- All steel hardened and ground.
- Drilled and tapped holes at rear of collet chuck for mounting to a plate.
- Hex key included.
- Size: 3" W x 3½" L.



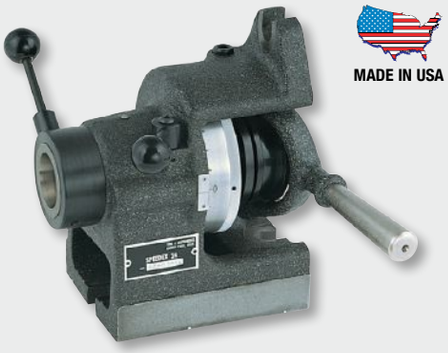
SAVE 20%

$130.44
78-310-0
(List $163.05)

SHOP GRADE
HORIZONTAL/VERTICAL 5C COLLET FIXTURE

Change Collets Quickly and Easily

- Max capacity: 1⅛"
- Cam for positive lock and release of collet.
- Retains positive relation to base.
- Can be adjusted or changed without disturbing set-up.
- 4" H x 5" W x 3¾" L



MADE IN USA

FINN

$1,720.45
70-193-8

SPEED-DEX 24

5C Precision Indexing Fixture

- For vertical or horizontal use.
- 5C collet spindle hardened and precision ground to 0.0005".
- 24 position index plate, hardened & precision ground for 2, 3, 4, 6, 8, 12 and 24 divisions.
- Exclusive ratchet lever design for convenient indexing in either direction as well as for direct engagement.
- Blockouts for odd or even indexing in any 15° increment.
- Center height: 4".
- Capacity: 1⅛".

$123.69
70-189-6
(List $162.75)

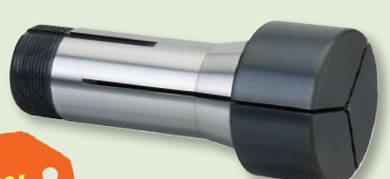
SAVE 24%

SHOP GRADE
ADJUSTABLE 2MT TAILSTOCK

- Solid cast iron body.
- Base dimensions 3¼" x 5⅛".
- Center travel 1".
- Center height 4" – adjustable 0.08".
- Weight: 6 lbs.
- Ideal for use with Speed-Dex Indexing Fixtures.

SAVE up to 47%

SAVE up to 27%



SAVE 35%

34-970-4

SHOP GRADE
5C STEP COLLETS

Machinable

- 1⅛" thick flange.
- Especially designed for larger and odd shaped pieces.
- Has a machinable face, ground sleeve and taper.
- Can be heat treated after machining or used as is.
- Made of 1065 steel.

FACE DIA.	PILOT HOLE SIZE	PART NUMBER	LIST	SALE
2"	¼"	34-970-4	$54.50	$35.42
3"	5/16"	34-971-2	58.90	38.28
4"	5/16"	34-972-0	84.05	54.63
5"	5/16"	34-973-8	113.15	73.54
6"	5/16"	34-974-6	138.30	89.89

SHOP GRADE
CNC TOOLHOLDER TIGHTENING FIXTURES

Horizontal/Vertical

- Multiple uses on toolholder taper BT and CAT.
- Designed for max. protection of toolholder.
- Compact design for mounting on work table or tool cart.

SHANK TAPER	BASE LENGTH	PART NUMBER	LIST	SALE
BT30	8.26"	35-182-5	$258.00	$136.74
BT40	8.26"	35-183-3	104.25	72.97
CAT30	8.26"	35-184-1	104.25	55.25
CAT40	8.26"	35-185-8	325.00	172.25
BT50	11.02"	35-186-6	104.25	83.40
CAT50	11.02"	35-187-4	258.00	136.74

SHOP GRADE
5C EMERGENCY COLLETS

- Soft head for easy machining.
- Precision ground taper and collar.
- 5C collet head is 1½" dia.
- Collet 5C-E with ¼" hole features ⅜" extra length on the face.

COLLET	HOLE	MATERIAL	PART NO.	LIST	SALE
5C-E	¼"	Steel	71-520-1	$23.55	$17.19
5C-E2	⅛"	Steel	71-521-9	23.55	17.19
5C-E1	1/16"	Steel	71-522-7	16.95	12.37
5C	*	Nylon	71-535-9	18.15	16.33
5C	.059"	Brass	71-536-7	39.30	28.68
5C	.118"	Steel	71-537-5	29.50	21.53

* Furnished with 3 clips for precision machining of desired bore.

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SHOP GRADE
5C EXPANDING COLLETS & SET

Fits All 5C Closers & Fixtures

- Great for holding small parts by the inside diameter.
- Soft head for easy machining.
- Can be machined and re-machined to different diameters.
- Once the collet is seated, it will not draw back into the spindle, as a result shoulder widths are held to within ±0.001".

SAVE up to 44%

71-157-2

Individual Expanding Collets

BODY LENGTH	RANGE MIN.	RANGE MAX.	PART NUMBER	LIST	SALE
1"	1/4"	1/2"	71-130-9	$45.15	$29.34
1"	7/16"	1"	71-131-7	47.55	29.00
1"	3/4"	1 1/2"	71-132-5	47.55	29.00
1"	3/4"	2"	71-133-3	84.60	47.37
1"	3/4"	2 1/2"	71-134-1	103.60	63.19
1"	3/4"	3"	71-135-8	132.35	74.11
1"	3/4"	4"	71-136-6	148.65	83.24
1 1/2"	3/4"	1 1/2"	71-137-4	83.95	47.01
1 1/2"	3/4"	2"	71-138-2	102.25	62.37
1 1/2"	3/4"	2 1/2"	71-139-0	118.05	72.01
1 1/2"	3/4"	3"	71-140-8	145.60	81.53
1 1/2"	3/4"	4"	71-141-6	155.95	95.12
2"	3/4"	1 1/2"	71-142-4	93.40	52.30
2"	3/4"	2"	71-143-2	118.05	66.10
2"	3/4"	2 1/2"	71-144-0	$132.35	$74.11
2"	3/4"	3"	71-145-7	155.95	87.33
2"	3/4"	4"	71-146-5	177.00	107.97
2"	3/4"	5"	71-147-3	234.75	143.19
2 1/2"	3/4"	1 1/2"	71-148-1	123.65	69.24
2 1/2"	3/4"	2"	71-149-9	132.35	74.11
2 1/2"	3/4"	2 1/2"	71-150-7	147.75	90.12
2 1/2"	3/4"	3"	71-151-5	177.00	107.97
3"	3/4"	1 1/2"	71-152-3	132.35	74.11
3"	3/4"	2"	71-153-1	147.75	82.74
3"	3/4"	2 1/2"	71-154-9	156.95	95.73
3"	3/4"	3"	71-155-6	180.00	100.80
3"	3/4"	4"	71-156-4	197.50	110.60
–	–	–	–	–	–

4 PC. 5C EXPANDING COLLET SET

- 1" body length with 1/4" - 2" range.
- Includes wooden rack.

DESCRIPTION	PART NO.	LIST	SALE
4 Pc. 5C Expanding Collet Set	71-157-2	$206.75	$126.11

SAVE 31%

SHOP GRADE
CIRCULAR SAW ARBORS

- Steel, heat treated shanks.
- Ideal for precision slotting and trimming of small parts.

3/8" dia. Shanks for Sawblades 0.001 to 0.093"

FLANGE DIA.	SAW BLADE HOLE DIA.	PART NUMBER	LIST	SALE
1/2"	1/4"	96-061-7	$29.05	$20.04
5/8"	3/8"	96-062-5	33.70	23.25
3/4"	1/2"	96-063-3	35.15	24.25
Set of above 3 arbors with wrenches on fitted base		96-064-1	105.45	72.76

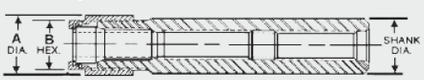
1/2" dia. Shanks for Sawblades 0.001 to 0.187"

FLANGE DIA.	SAW BLADE HOLE DIA.	PART NUMBER	LIST	SALE
1/2"	1/4"	96-065-8	$29.60	$20.42
5/8"	3/8"	96-066-6	33.95	23.42
3/4"	1/2"	96-067-4	35.40	24.42
Set of above 3 arbors with wrenches on fitted base		96-068-2	109.55	75.58
1" flange for 5/8" dia. sawblade hole, with 5/8" dia. shank		96-069-0	49.95	34.46

"STUBBY" DOUBLE ANGLE COLLET CHUCKS

- Ideal for use on manual & CNC chuckers, CNC lathes & screw machines.
- Back-up screw included.

SAVE 14%



DA COLLET SERIES	SHANK DIA.	OAL	A DIA.	B HEX SIZE	MAX. DIA. THROUGH SHANK	COLLET CHUCK PART NUMBER	LIST	SALE	REPL. LOCK NUT PART NUMBER	LIST	SALE
300	0.500"	3.60"	0.56"	1/2"	1/4"	69-191-5	$99.75	$85.78	69-198-0	$24.55	$21.11
200	0.625"	3.75"	0.75"	11/16"	3/8"	69-192-3	106.70	91.76	69-199-8	26.05	22.40
200	0.750"	3.80"	0.81"	3/4"	3/8"	69-193-1	117.75	101.26	69-200-4	28.15	24.20
100	1.000"	4.00"	1.06"	7/8"	9/16"	69-194-9	126.75	109.00	69-214-5	31.75	27.30
180	1.250"	6.20"	1.56"	1 3/8"	3/4"	69-195-6	159.75	137.38	69-215-2	54.90	47.21
180	1.500"	6.20"	1.56"	1 3/8"	3/4"	69-196-4	171.30	147.31	69-215-2	54.90	47.21

SHOP GRADE
DRILL CHUCKS WITH INTEGRATED SHANK

SAVE up to 31%

RANGE	TAPER	DIA.	LENGTH OPEN	LENGTH CLOSED	PART NUMBER	LIST	SALE
0 - 1/2"	3/4"	2.00"	5.75"	6.22"	71-770-2	$185.05	$127.68
0 - 1/2"	MT 2	2.00"	6.46"	6.93"	71-771-0	188.15	129.82
0 - 1/2"	MT 3	2.00"	7.16"	7.64"	71-772-8	185.25	127.82
0 - 1/2"	R-8	2.00"	6.70"	7.12"	71-773-6	185.40	152.02

Spanner Wrenches

DESCRIPTION	PART NO.	LIST	SALE
For Chucks with 0 - 3/8" range	71-774-4	$8.90	$7.65
For Chucks with 0 - 1/2" range	71-775-1	8.90	7.65
For Chucks with 1/8 - 5/8" range	71-776-9	8.90	7.65

71-770-2

1" Straight Shank Shown

SAVE up to 38%

R8 Shown

SHOP GRADE
SHANKS FOR BORING HEADS

7/8" x 20 Threads

TYPE	PART NO.	LIST	SALE
No. 2 MT 3/8" x 16 Draw Bar Thread	51-147-7	$41.15	$25.51
No. 2 MT Tang Type	51-148-5	41.15	25.51
No. 3 MT Tang Type	51-149-3	46.25	28.67
No. 4 MT Tang Type	51-151-9	56.45	34.99
R-8 Bridgeport	51-198-0	46.25	28.67
1/2" Dia. Straight Shank	51-191-5	23.20	18.56
3/4" Dia. Straight Shank	51-193-1	24.70	19.76
1" Dia. Straight Shank	51-194-9	28.75	23.00

1 1/2" x 18 Threads

TYPE	PART NO.	LIST	SALE
No. 3 MT Tang Type	51-152-7	$55.55	$34.44
No. 4 MT Tang Type	51-153-5	59.20	36.70
No. 5 MT Tang Type	51-154-3	84.60	52.45
R-8 Bridgeport	51-199-8	45.55	31.88
3/4" Dia. Straight Shank	52-040-3	37.90	30.32
1" Dia. Straight Shank	51-195-6	28.00	22.40
1 1/4" Dia. Straight Shank	51-196-4	44.00	29.92
1 1/2" Dia. Straight Shank	51-197-2	44.00	27.28

Dial Indicator, sold separately.

$118.35
98-207-4

DEEPOL

Positive Depth Control for BRIDGEPORT Mills J & 2J Heads

- DEEPOL offers a fast way to measure the true quill travel on your Bridgeport Mill very accurately by reading it on a travel indicator.
- Covers the full 5" quill travel.
- Does not interfere with the fine feed Bridgeport wheel.
- Saves time. Can be mounted and removed by single clamping screw.

SAVE 35%

35-666-7

SINGLE KNURLING TOOL

- Complete with medium cut high speed steel knurl.
- Pitch: 21 TPI.
- Number of Teeth: 49.

SIZE OF HOLDER L	W	HT.	KNURL SIZE DIA.	W	HOLE	PART NUMBER	LIST	SALE
4"	1/2"	1/2"	3/4"	1/4"	1/4"	35-666-7	$13.15	$8.54

$26.14
70-582-2
(List $30.40)

SPRING CENTER

With 60° Included Angle

SAVE 14%

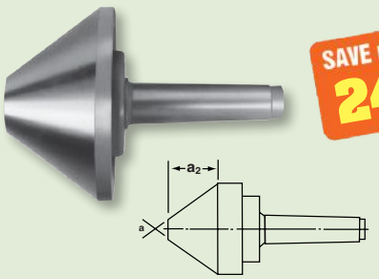
- Use for hand tapping.
- Mount center in a drill chuck or collet.
- Insert the hardened point in the center of the tapping fixture or in the center of the back of the tap.
- As the tap is turned the pressure provided by the center will follow the tap as it threads the hole assuring straight and accurate hand tapped threads.
- One size center can be used for all standard tapping applications.
- Shank size: 1/2"
- Spring travel: 3/8"

SHOP GRADE

BULL NOSE LIVE CENTERS

For Piping or Tubing

SAVE up to 24%



The Bull Nose center has all the features of the live center, but with a larger rugged head for working with pipe and hollow shafts.

- Radial loads based on 500 RPM.
- Bearing sealed and waterproofed to assure long life and consistent accuracy.
- Accuracy: 0.0003"

MORSE TAPER	OUTSIDE DIA.	MIN. CONE DIA.	HEAD L. a2	OAL	ANGLE a	RADIAL LOAD (LBS.)	PART NUMBER	LIST	SALE
2	2.480"	0.460"	2.480"	5.350"	70°	440	34-866-4	$81.15	$61.67
3	3.070"	0.710"	3.030"	6.770"	70°	440	34-867-2	95.55	79.30
3	4.210"	1.250"	2.760"	6.500"	75°	660	74-862-4*	190.20	144.55
4	5.040"	1.380"	3.270"	7.600"	75°	700	34-868-0	185.45	166.90
5	5.790"	1.380"	4.090"	9.580"	75°	1100	34-869-8	336.10	302.49

*Accuracy: 0.0005"

SAVE 10%

EAGLE ROCK®

ANTI-BACKLASH RING SETS

For Lathe Chucks

66-160-3

- For preloading and turning out chuck soft jaws on lathe.
- Standard set includes 48 rings from 1" to 3 15/16" dia. in 1/16" increments.
- Small stack set includes 16 rings from 1" to 1 15/16" dia. in 1/16" increments.
- Convenient wooden rack.

DESCRIPTION	PART NO.	LIST	SALE
48 Pc. Anti-Backlash Ring Set	66-160-3	$490.30	$441.27
16 Pc. Anti-Backlash Ring Set	66-161-1	159.75	143.77

SAVE 11%

SPI®

7 PC. JACK SCREW SET

$24.51
97-954-2
(List $27.55)

- 2 1/4" - 3 1/4" range screw adjustment with added 1" and 2" extensions which can be used together or separately.
- Swivel cap and pointed screw for different applications.
- 1,000 lb. weight capacity.
- Plastic case included.

$532.08
57-038-2
(List $597.85)

Arbors not included

STATIC BALANCER

Wheel Type

SAVE 11%

- Great for balancing, straightening and alignment.
- Heaviest end will rotate to bottom.
- To balance, distribute weights until the piece remains static.
- Ideal for balancing grinding wheels, milling cutters, etc.
- True running discs, supported with low friction bearing for maximum performance.
- Maximum wheel dimensions: 16" dia., 6" width, Weight 36 lbs.

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

DIAMOND ANGLE DRESSER

For Grinding Wheels

SAVE 20%

$239.96
72-168-8
(List $299.95)

- Time saving tool eliminates makeshift plates, parallel or clamp set-ups.
- Lever action keeps hands at a safe distance.
- Guide block and bar are hardened and ground.
- Dial is graduated 90° in each direction.
- Diamond travel is: 1"
- Can dress tangent angles when used with radius dresser.
- Diamond sold separately.

DESCRIPTION	PART NO.	LIST	SALE
1/4 Carat Diamond in 1/4 x 1" Shank	72-169-6	$25.35	$20.28

SWIVEL ANGLE TABLES

SAVE up to 49%

- Heavy casting and rugged construction with machined T-slots.
- Adjustable from 0 to 90° graduation.
- 2 locking screws.

TABLE W	TABLE L	OVERALL HEIGHT	T-SLOT	WT. (LBS.)	PART NUMBER	LIST	SALE
5"	6"	4 1/2"	3/8"	12	67-016-6	$279.55	$142.57
6"	8"	5"	3/8"	26	67-017-4	291.95	178.08
8"	10"	6 1/2"	7/16"	62	67-018-2	393.90	220.58
10"	12"	8"	1/2"	110	67-019-0 *	541.25	346.40
12"	15"	9"	9/16"	165	67-020-8 *	700.20	497.14

* Ships truck freight class 65.

61-967-6

VORTEC

COLD AIR GUNS

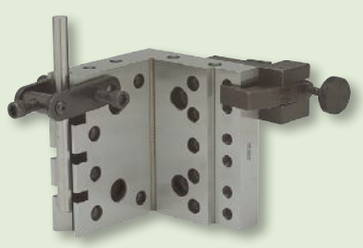
- Safe on metals, plastics, glass and ceramic parts.
- Uses only filtered, factory compressed air (80-100 PSIG) to produce cold air for spot cooling.
- The internal configuration reduces air temperature by 100°F below inlet temperature.
- No Freon - No Liquid Coolant - No Moving Parts - Virtually Maintenance Free.
- Built in muffler.
- Meets OSHA noise specification.

DESCRIPTION	PART NO.	PRICE
Adjustable Cold Air Gun	61-965-0	$436.45
Adj. Cold Air Gun w/Mag. Base	61-967-6	570.35
Dual-Point Nozzle for Adj. Air Gun	61-968-4	44.75

6" X 48" BELT & 9" DISC SANDER

- Quick belt adjustment.
- Belt locks at any angle from horizontal to vertical.
- Table tilts 45° and has a miter gage.
- 3/4 HP, 115V, 1 Ph. 1350 SFPM.
- Approx. weight 130 lbs.
- Complete with Stand.
- Truck collect.

$501.15
90-189-2



30-131-7 with Yoke Clamp for cylindrical parts and Adjustable Side Clamp, sold separately.

30-131-7 with Offset Face Clamp, sold separately

SUBURBAN

VERSATILITY HIGH PRECISION ANGLE PLATE

- Steel angle plates, hardened to 58-62 RC.
- All sides precision ground — flat, parallel and square within 0.0002"
- 1" x 1/4" deep step in 4" x 4" x 4 1/2" Angle Plate plus Vee to hold cylindrical parts with or without shoulders. — Twenty-five 5/16"-18 tapped holes.

DESCRIPTION	PART NO.	PRICE
4" x 4" x 4 1/2" Versatility Angle Plate	30-131-7	$833.00

Optional:

DESCRIPTION	PART NO.	PRICE
Offset Face Clamp	30-132-5	$30.85
Yoke Clamp for cylindrical parts 1/4" - 7/8" cap.	30-133-3	62.85
Adjustable Side Clamp, 1/2" - 1 1/2" cap.	30-134-1	110.95

SAVE 43%

ECONOMY DEMAGNETIZER

- 110 Volts, On-Off switch.
- Quickly demagnetizes tools, drills, punches, dies, etc. by sliding the item across surface.
- Dimensions: 4.5" W x 6.75" L x 5.0" H.
- Weight: 11 lbs.

$50.24
51-168-3
(List $88.15)

STEEL CLAMPING KITS

SAVE 11%

Heat Treated, Black Finish
52 Piece kits, each kit includes:

- 24 Studs, 4 ea. 3", 4", 5", 6", 7" and 8" long.
  - – 6 T-nuts
  - – 4 Coupling nuts
  - – 6 Flange nuts
  - – 6 Step blocks
  - – 6 Serrated end clamps
  - – 1 T-slot cleaner

Holder With Back For Convenient Wall Mounting

STAND	TABLE SLOT	STUD SIZE	BLOCK WIDTH	PART NUMBER	LIST	SALE
Plastic	9/16"	1/2 - 13	1"	97-901-3	$256.85	$228.59
Plastic	5/8"	1/2 - 13	1"	97-902-1 *	153.60	136.70
Metal	11/16"	1/2 - 13	1"	97-903-9	233.75	208.03

* for BRIDGEPORT

INDUSTRIAL FLOOR FANS

SAVE 34%

90-517-4

Meets OSHA Standards

- All metal construction.
- Fan rotates 360° for multi-directional use.
- Double locking chrome-plated steel guards.
- 3 blades.
- 3-speed, 120V, 1-phase.
- Motor is totally enclosed and permanently lubricated.
- 10', SJT-Type 3-conductor cord.

BLADE SIZE	H.P.	CFM	AMPS	PART NUMBER	LIST	SALE
12"	1/12	1600/2200/2750	1.1	90-517-4	$180.40	$119.06
18"	1/8	3600/5200/6350	2.2	90-518-2	189.55	124.57

3 SPEED 20" PEDESTAL FAN

SAVE 10%

90-525-7

Great for Home, Office, Reception Area and Store

- Tubular steel stand with round base needs little floor space.
- Polypropylene blade is impact and chemical resistant.
- Front steel fan guard snaps into plastic rear grill and needs no clips.
- Height adjusts from 40" to 51" from floor to center of the fan.
- 5' grounded, 3-conductor cord.
- ETL certificate.
- Easy assembly.
- 3 blades.

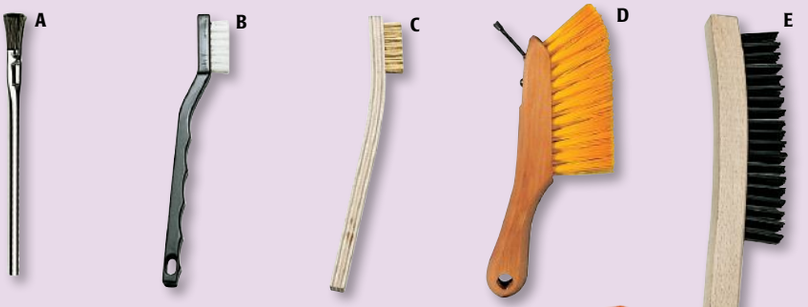
BLADE SIZE	H.P.	CFM	PART NUMBER	LIST	SALE
20"	1/3	2825/3530/4590	90-525-7	$123.76	$111.38

METROLOGY CASTING MATERIAL

- Available in 2 viscosities.
- Quick Setting self cures in 6 minutes, Thin Pour self cures in 10 - 15 minutes.
- Works on all metals, plastics, rubber, ceramics, etc.
- Dimensional stability risk of Thin Pour less than 0.50%, with Quick Setting Putty less than 0.25%.
- Tear strength of Thin Pour 44 lbs. per square inch, 105 lbs. per square inch with Quick Setting Putty.
- Safe, non-toxic, easy to use.
- 100 times faster than RTV silicons.
- Eliminates the use of release agents.

DESCRIPTION	PART NO.	PRICE
Thin Pour, 380 ml kit, 1 bottle of base material, 1 bottle of catalyst, 5 measuring cups and 10 stirring sticks	98-896-4	$191.15
Thin Pour, 130 ml kit, 1 bottle of base material, 1 bottle of catalyst, 5 measuring cups and 10 stirring sticks	98-736-2	70.00
Quick Setting Putty, 1 3/4 lbs. kit, 1 jar of base material, 1 jar of catalyst and 5 mixing sticks	98-897-2	205.15
Quick Setting Putty, 220 ml kit, 1 jar of base material, 1 jar of catalyst and 5 mixing sticks	98-737-0	90.95
Economy Quick Setting Putty, 7 lbs. kit	98-898-0	720.85

MACHINE SHOP BRUSHES



A – Acid brush, horsehair, tin coated tube handle, 6" long.
B – Scratch brush, 7 1/4" plastic handle.
C – Scratch brush, 7 3/4" wooden handle.
D – T-Slot Table brush, 8 1/2" hardwood handle.
E – Scratch brush, 13 3/4" wood handle.

SAVE up to 28%

TYPE	DESCRIPTION	PER PKG.	PART NO.	LIST/PKG.	SALE/PKG.
A	No.1 Acid Brush 3/8" x 3/4"	12 pcs.	96-195-3	$4.21	$2.99
A	No.2 Acid Brush 1/2" x 13/16"	12 pcs.	96-196-1	5.17	3.99
A	No.3 Acid Brush 9/16" x 13/16"	12 pcs.	96-197-9	6.80	4.99
A	No.1 Acid Brush 3/8" x 3/4"	144 pcs.	96-240-7	20.08	-
A	No.2 Acid Brush 1/2" x13/16"	144 pcs.	96-241-5	24.20	-
ANo.2 Acid Brush 9/16" x 13/16"		144 pcs.	96-241-5	24.20	-
C	3 x 7 Rows .006" Brass	1 pc.	96-247-2	2.40	-
C	3 x 7 Rows .006" Stainless Steel	1 pc.	96-248-0	2.15	-
B	3 x 7 Rows .006" Brass	1 pc.	96-251-4	2.30	-
B	3 x 7 Rows .012" Nylon	1 pc.	96-252-2	2.30	-
E	3 x 19 Rows .013" Steel	1 pc.	96-256-3	4.55	-
D	3 x 11 rows, .020" Fiber	1 pc.	96-273-8	15.45	-

AUTOMATIC CENTER PUNCH

98-260-3

98-261-1

SAVE up to 18%

- No hammer required. Simply hold punch in upright position and press handle down for a perfect center mark, depth of impression can be controlled.
- All moveable parts are tool steel, hardened. 5" length x 5/8" dia.

DESCRIPTION	PART NO.	LIST	SALE
Automatic Center Punch	98-260-3	$23.65	$19.39
Repl. Point	98-261-1	3.95	3.55

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

KANT TWIST

CLAMPS

- Weighs approximately half as much as comparable C-clamps.
- The only "C" clamp with built-in "V" Blocks.
- Provides three different gripping surfaces.

High Tensile Steel Clamps w/Copper Plated Jaws

DEPTH CLAMP SIZE	DEPTH OPEN B	CLOSED C	PART NUMBER	PRICE
1 1/2"	1 1/8"	1"	98-119-1	$18.50
3/4"	3/8"	3/8"	98-120-9	15.00
1"	1/2"	1/2"	98-121-7	16.30
2"	1 1/8"	1 1/4"	98-122-5	21.70
2 1/2" D	1 3/4"	1 3/4"	98-125-8	19.95
1"	1/2"	1/2"	98-126-6	15.00
2"	1 1/8"	1 1/4"	98-127-4 *	18.15
3"	1 3/8"	1 7/8"	98-128-2 *	25.75
4 1/2" D	2 3/8"	3"	98-129-0 *	27.65
6"	2 1/8"	3 3/8"	98-130-8 *	42.05
6" D	4 5/8"	5 1/2"	98-131-6 *	45.75
6"	4 5/8"	5 1/2"	98-132-4 +	64.40
9"	3 3/8"	5 7/16"	98-133-2	119.30
10" D	6 1/8"	7 3/8"	98-134-0	170.95
12"	4 5/8"	7"	98-135-7	189.75

With Polyurethane Jaws

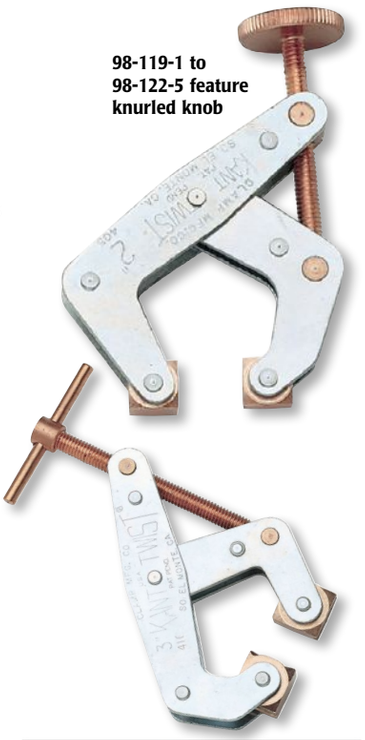
3"	1 3/8"	1 7/8"	98-136-5 *	$34.55
4 1/2" D	2 3/8"	3"	98-137-3 *	33.70
6" D	4 5/8"	5 1/2"	98-139-9 *	53.95

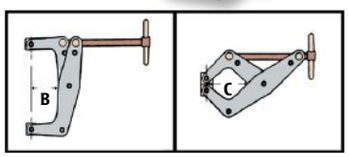
All Stainless Steel Clamps

2"	1 1/8"	1 1/4"	98-141-5	$44.95
3"	1 3/8"	1 7/8"	98-142-3	59.70
4 1/2" D	2 3/8"	3"	98-143-1	69.10

D = Deep throat
*With straight plus crisscross grooves in the large jaw for secure holding of long or round objects at an angle.
+Multi-purpose clamp, includes adjustable stop for difficult clamping situations.

98-119-1 to 98-122-5 feature knurled knob





Grip for T-Handle available

96-221-7

96-222-5

sure shot SPRAYERS

- Use instead of aerosol cans.
- Uses bulk liquids and compressed air.
- Easy to fill and pressurize with a standard tire fill gage.
- Enamel coated sprayers for all non-water soluble liquids.
- Environmentally safe, non ozone depleting.
- All have a 1 qt. capacity.

MATERIAL	COLOR	NOZZLE	USE WITH	PART NO.	PRICE
Enamel Coated Steel	Red	1 Mist #302 1 Pin #301	Non-Water Soluble	96-221-7	$62.05
Enamel Coated Steel	Black	Adj. Fine Mist to pin stream	Non-Water Soluble	96-222-5	59.60

SAVE up to 17%

93-288-9

Jupiter Pneumatics universal air solutions

EXTENDED REACH SAFETY BLOW GUNS

Pistol Grip

Venturi tip increases air volume and limits static pressure to less than 30 PSI when the tip is blocked.

- Rugged cast aluminum body.
- 1/4" NPT inlet.
- Meets OSHA requirements.

LENGTH	PART NO.	LIST	SALE
12"	93-288-9	$35.15	$29.17
18"	93-289-7	38.50	31.95
24"	93-290-5	40.40	33.53
36"	93-291-3	42.30	36.37
48"	93-292-1	45.60	37.84

51-038-8

Industrial Quality AIR TOOLS

1/4" 90° ANGLE AIR DIE GRINDER & KIT

SAVE up to 18%

- 22,000 RPM.
- 1/4" collet.
- 1/4" air inlet.
- Length: 6 1/8".
- 0.30 HP.
- Rear exhaust.
- 4 CFM @90 PSI.

Kit Includes:

- Die grinder
- 5 ea. 1/8" and 1/4" arbor stones
- 1/8" collet insert
- Hose Adapter
- Collet changing wrenches
- Furnished in fitted carrying case

DESCRIPTION	PART NO.	LIST	SALE
Angle Air Die Grinder	51-038-8	$61.35	$50.30
Angle Air Die Grinder Kit	51-039-6	65.40	56.24

$59.95
97-831-2

IDEAL

VOLTAGE TESTER

Extremely Rugged and Reliable.

- Solenoid indicator and neon test lamp for double protection.
- Tests 80V to 600V AC/DC – 25 to 60 Hz.
- Replaceable leads with shielded probe tips.
- Neon bulb lights from 100-600 V AC/DC.
- Long, slim prod tips permit probing of all types of receptacles.
- Spring loaded "Safety-Shields" guard prod tips and lock back for open area testing.

Specifications

VAC Ranges:	120 V, 240 V, 480 V, 600 V, AC
VAC Accuracy:	Relative indication only
VDC Ranges:	120 V, 240 V, 600 V, DC
VDC Accuracy:	Relative indication only
Operating Frequency:	25-60 Hz
Input Impedance:	Low
Overload Protection:	1000 VDC/750 VAC rms

DESCRIPTION	PART NO.	PRICE
Repl. Leads	97-838-7	$35.25
Leather Carrying Case	97-837-9	24.35

CALCULATED INDUSTRIES®

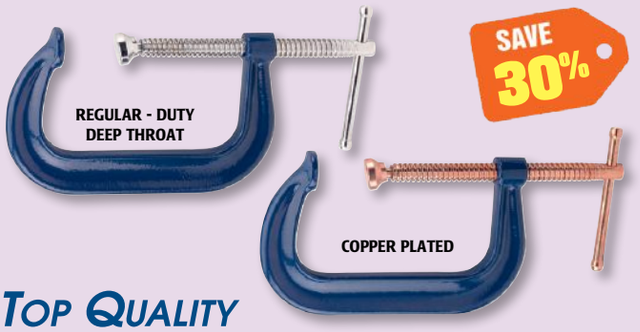
MACHINIST CALC® PRO 2

Advanced Machining Math & Materials

NEW

$84.95
31-099-5
(List $89.95)

- Built-in drill size and thread tables save time and steps.
- Bolt hole pattern layouts.
- Trigonometric solutions.
- Right triangle math.
- 3-wire measurements.
- Fractional/metric conversions.
- Includes materials and tool settings combined with depth, width and length of cut.
- Hundreds of calculations, including:
  - Speeds and Feeds
  - Built-in Drill and Thread Size reference tables
  - Drill Point Cut Depth solutions
  - Bolt Pattern hole layouts with center x, y coordinates
  - Right triangle math
  - Trigonometric solutions
  - Wire Sizes and 3-Wire Measurements
- Work in and convert between U.S. and Metric units, including:
  - Decimal Inches/Mils
  - Feet-Inch-Fractions
  - m, mm, cm
  - Area, Volume and Weight
- Quick Reference guide and East-to-Follw user's guide included.
- Display: 12 digits (8 normal, 4 fractions) with full annunciators.
- LCD dimensions: 0.813" x 2.5"
- Size: 6.25" x 3.5" x 0.9"
- Battery: CR2025 (included)
- Shock resistant Armadillo Gear case.



SAVE 30%

TOP QUALITY
FORGED C-CLAMPS

Regular - Duty Deep Throat

- Acme roll threaded screws for maximum strength.
- Drop forged heat treated frames.
- Deep throat for maximum clearance.
- Available with copper plated screw, swivel and crosspin for welding applications.

Regular - Duty Deep Throat

OPENING CAP. MAX.	MIN.	THROAT DEPTH	LOAD LIMIT (LBS.)	SCREW DIA.	PART NUMBER	LIST	SALE
2"	0"	2"	3,500	1/2"	33-000-1	$18.15	$12.70
3"	0"	2 3/8"	3,500	5/8"	33-001-9	20.15	14.10
4"	0"	2 3/4"	6,500	3/4"	33-002-7	27.75	19.42
6"	0"	3 5/8"	6,900	3/4"	33-003-5	37.65	26.35
8"	0"	4 1/2"	6,900	3/4"	33-004-3	48.10	33.67
10"	2"	5 3/8"	8,000	7/8"	33-005-0	63.10	44.17
12"	3"	5 3/4"	9,500	7/8"	33-006-8	87.40	61.18

Copper Plated Screw and Handle

OPENING CAP. MAX.	MIN.	THROAT DEPTH	LOAD LIMIT (LBS.)	SCREW DIA.	PART NUMBER	LIST	SALE
2"	0"	2"	3,500	1/2"	33-007-6	$18.15	$12.70
3"	0"	2 3/8"	3,500	5/8"	33-008-4	21.10	14.77
4"	0"	2 3/4"	6,500	3/4"	33-009-2	30.60	21.42
6"	0"	3 5/8"	6,900	3/4"	33-010-0	42.10	29.47
8"	0"	4 1/2"	6,900	3/4"	33-011-8	54.55	38.18
10"	2"	5 3/8"	8,000	7/8"	33-012-6	75.55	52.88
12"	3"	5 3/4"	9,500	7/8"	33-013-4	94.65	66.25

MINI MAGIC DEMAGNETIZER

SAVE 11%

$88.06
98-270-2
(List $98.95)

- Thoroughly demagnetizes tools, dies, punches, cutters, parts, etc. simply by sliding it over the surface of the item to be demagnetized.
- Complete with 5 foot oil resistant cord.
- 3 1/2" L x 1 3/4" W x 1 3/4" H.
- Single phase current. 110 volt.

RELTON CORPORATION

STICK-KUT™ LUBRICATING STICK WAX

$14.74
99-200-8
(List $17.55)

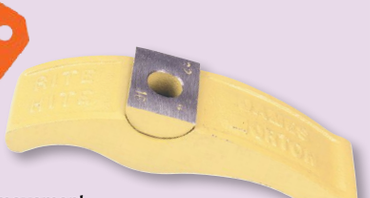
- Safe and effective lubricant for grinding wheels, sanding belts and saw blades.
- Eliminates heat build-up and belt loading.
- Extends wheel life.
- Provides smooth, cool cutting.
- Reduces loading, stops binding and prevents burring.
- 15 oz. stick.

SAVE 16%

BESSEY

RITE HITE HOLD-DOWN CLAMPS

SAVE up to 17%



- Cast steel, fully heat treated.
- Instant set-up, self positioning.
- Swivel rocker is attached to base to prevent movement.

Long Models

MAXIMUM STUD SIZE	NOMINAL CLAMP RANGE	DIM.	LOCAL LIMIT (LBS.)	PART NUMBER	LIST	SALE
3/8"	0 to 1 1/4"	1 1/8" x 3 1/2"	10,000	96-980-8	$41.60	$34.52
1/2"	0 to 2 1/2"	1 7/16" x 5 3/4"	12,800	96-982-4	45.30	38.95
5/8"	0 to 3 1/2"	1 7/8" x 6 3/4"	18,000	96-984-0	54.85	47.17
3/4"	0 to 5"	2 1/8" x 9"	24,000	96-986-5	80.35	69.10

Short Models

MAXIMUM STUD SIZE	NOMINAL CLAMP RANGE	DIM.	LOCAL LIMIT (LBS.)	PART NUMBER	LIST	SALE
3/8"	0 to 1"	1 1/8" x 3"	14,000	96-979-0	$40.50	$34.83
1/2"	0 to 1 3/4"	1 3/8" x 4 1/4"	16,800	96-981-6	44.00	37.84
5/8"	0 to 2 3/4"	1 7/8" x 5 1/2"	24,000	96-983-2	53.55	46.05
3/4"	0 to 3 1/2"	2" x 7"	35,000	96-985-7	79.05	67.98

SAVE 13%

$16.53
32-606-6
(List $19.00)

TOP QUALITY
VISE MOUNTING KIT FOR KURT

- Mounts Kurt D-675 & D-688 to Bridgeport style table.
- Convenient package kit for specific application.
- One kit mounts one vise.

9 Pc. Kit Contains:

- 2 each of 1/2 - 13 x 3" stud.
- 2 each of 1/2 - 13 x 5/8 slot.
- 2 each of 1/2 - 13 x Flange Nut.
- 2 each of 1/2" Flat Washer.
- 1 each of T-Slot Cleaner.

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

WD-40

- Lubricates and prevents rust and corrosion for all metals.
- Penetrates to quickly free "frozen" or rusted metal parts and displaces moisture.
- D.O.T. Regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.

Ground Ship ONLY

DESCRIPTION	PART NO.	PRICE
3 oz. Aerosol Can	99-264-4	$4.85
8 oz. Aerosol w/Smart Straw	99-265-1	7.65
11 oz. Aerosol w/Smart Straw	99-266-9	9.55
16 oz. Aerosol Can	99-269-3	9.20
18 oz. Can	99-267-7	11.60
1 Gallon Can	99-270-1	32.35
5 Gallon Pail	99-268-5	145.50
Trigger pump sprayer (empty)	98-883-2	7.20

99-266-9

LANO-LUBE

SAVE 11%

- Moisture free, stops rust, always clean, no odor, anti seize properties.
- Uses include: coating gages and accessories, manufactured components and heat treated parts.
- Machine uses: tapping of metals, drilling centers, machining of plastics.
- Coating of shank and spindle of dial indicatorsand similar instruments.
- Use as anti seize for lead screws, ball screws, slides and positioners.
- Protect lead screws on micrometers.
- 2 oz. tube.
- D.O.T. Regulated. Shipped via ground freight only.

Ground Ship ONLY

$9.21
98-727-1
(List $10.35)

SAVE up to 21%

SPI® FLOAT N LOCK POSITIONER

- It's an excellent dial indicator holder.
- All metal parts used.
- Precision angled bearings interface and lock the ball preciselywith a small turn of the locking knob. Excellent rigidity factor.
- Self-compensating, no need to disassemble to re-establish tension (as with other designs).
- Right angle notch (for 90° positioning) can be swung to any point 360° and then locked.
- D.O.T. Regulated. Shipped via ground freight only.

Ground Ship ONLY

13-248-0

13-249-8

DESCRIPTION	PART NO.	LIST	SALE
Mounting Bottom Holes 3/8"-16	13-248-0	$37.99	$31.15
Magnetic Base (90 lb. Pull) 3 1/4" x .435" High	13-249-8	50.11	39.58

TAP MAGIC CUTTING & TAPPING FLUIDS

Ground Ship ONLY

- D.O.T. Regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.

99-336-0

Tap Magic EP-Extra™

- Use on all metals including stainless, aluminum and titanium.
- Penetrates to the cutting edge of the tool.
- Clings to the tool—for a smoother and more even finish.
- Does not Contain 1,1,1-Trichloroethane.
- Contains NO Class 1 ozone depleting chemicals.

SIZE	TYPE	PART NO.	PRICE
4 oz.	Can	99-336-0	$5.20
12 oz.	Aerosol Can	99-337-8	17.55
16 oz.	Bottle	99-338-6	17.10
1 Gal.	Bottle	99-339-4	102.70
5 Gal.	Pail	99-340-2	425.45

Tap Magic Aluminum

- Use for tapping, drilling, milling and reaming operations.
- Not a cutting oil.
- Cutting fluid specifically designed for cutting aluminum.

SIZE	TYPE	PART NO.	PRICE
4 oz.	Can	99-341-0	$5.20
12 oz.	Aerosol Can	99-342-8	17.55
16 oz.	Bottle	99-343-6	17.10
1 Gal.	Bottle	99-344-4	102.70
5 Gal.	Pail	99-345-1	425.45

Tap Magic ProTap

- Use for machining operations on all metals.
- Highly effective on stainless steel and Inconel.
- Penetrates to the cutting edge of the tool for effortless cuts.
- Totally biodegradable and free of all regulated chemicals
- Will not stain or change the properties of even soft metals - like aluminum.
- High boiling point: 680° F to 1,000° F.
- Contains NO Class 1 ozone depleting chemicals.

SIZE	TYPE	PART NO.	PRICE
4 oz.	Can	99-346-9	$5.20
12 oz.	Aerosol Can	99-347-7	17.55
16 oz.	Bottle	99-348-5	17.10
1 Gal.	Bottle	99-349-3	102.70
5 Gal.	Pail	99-350-1	425.45

Little GIANT® SMALL SUBMERSIBLE PUMPS

SAVE 12%

- Designed for high volume service in a low pressure environment.
- Pumps can be used for evaporative coolers, water fountains, gardens and coolant applications.
- Housings contain non-toxic mineral oil providing continual lubrication and optimum cooling for maximum motor life.
- Epoxy coated aluminum housing for effective head dissipation and long life.
- Snap-off screen. 1/4" male NPT outlet, 6 foot power cord.
- Model 1-A includes 90° elbow accessory.
- Model 2E-N has hooded inlet.

90-200-7

90-201-5

Specifications:

MODEL	GAL./HR. @ 1'	SHUT OFF (FT.)	PSI	H.P.	MOTOR AMPS	WT.
1-A	170	7.0	3.0	1/200	1.1	3.4
2E-N	300	11.8	5.1	1/40	1.7	4.7

DESCRIPTION	PART NO.	LIST	SALE
Model I-A Submersible Pump	90-200-7	$93.65	$82.41
Model 2E-N Submersible Pump	90-201-5	106.95	94.11

SHOP ACCESSORIES

CROWN
ALL 4

$8.75
98-889-9

- Penetrates, lubricates, protects, cleans and prevents rust.
- Ultra thin, high quality petroleum distillates blended film out performs many single purpose products.
- Forms an even film over the metal surface to protect against corrosion attack.
- Does not contain silicone. Will not harm plastic, rubber, fabrics or painted surfaces. Especially effective in high humidity. 12 oz. net fill.
- 16 oz. Aerosol.
- Crown® model #7340.
- D.O.T. Regulated. Shipped via ground freight only. No UPS Consignee or Collect shipments.
- State restrictions may apply.

Ground Ship ONLY

COILHOSE PNEUMATICS
AIR TOOL LUBRICANT

SAVE 20%

- Contains no class 1 ozone depleting chemicals.
- A specially formulated, high grade lubricant which prolongs the service life of air tools, cylinders and accessories.
- Rust proofs and removes moisture as it lubricates. Winter Grade formulation keeps air tools working to -45ºF.
  NOTE: Air tools should be oiled each day they are used. Failure to oil tools may void warranties.
- State restrictions may apply.

DESCRIPTION	PART NO.	LIST	SALE
4 oz. Air Tool Lubricant Oil	62-329-8	$4.40	$3.52
16 oz. Air Tool Lubricant Oil	62-330-6	7.95	6.36
1 Gal. Air Tool Lubricant Oil	62-331-4	34.45	27.56
16 oz. Winter Grade	62-332-2	19.05	15.24

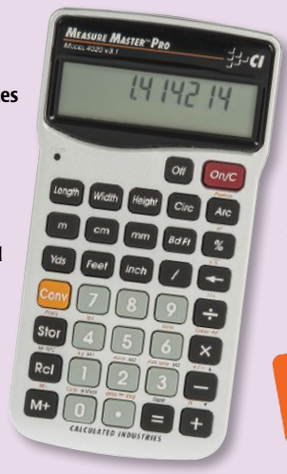
62-329-8

62-332-2

CALCULATED INDUSTRIES
MEASURE MASTER PRO
Ideal for Faster, More Accurate Material Estimates

NEW

- Work in and convert between dimensional formats including feet-inch-fractions, decimal-feet-inch-fractions, yards, meters, entimeters and millimeters, as well as areas and volumes.
- English and Spanish Quick Reference Guides and Pocket Reference Guides.
- Display: 11 Digits (7 normal, 4 fractions) with Full Annunciators
- LCD dimensions: 0.625" x 2.5"
- Size: 5.6" x 3.0" x 0.6"
- Battery: Two 3-volt (LR-44/A76) (inlcuded)
- Protective hard slide cover.



$45.09
31-130-8
(List $50.10)

SAVE 10%

$2.00
62-680-4
(List $2.45)

SAVE 18%

Devcon
SUPERGLUE INSTANT ADHESIVE

- Super strong, 5,000 psi, Super Glue.
- For instant bonds of close-fitting parts.
- Bonds metals, rubber and most plastics.
- Ideally suited to O-ring splicing, tacking gaskets, weather stripping, fixturing parts, belts and bumpers.
- 2 grams tube.

$9.00
96-759-6

DYKEM
HI-SPOT BLUE

- Blue, soft, uniform paste spreads easily and evenly.
- The film remains pliable and transferable and in good condition for months.
- Detects high spots on bearings, gears and other close fits.
- .55 oz. tube.

$10.95
62-596-2

SINCE 1894 Boraxo by Dial
HEAVY DUTY POWDER HAND SOAP, 5 LB.

- Contains no phosphate.
- Original powdered hand soap.
- Combines the scrubbing power of Borax with the cleaning power of soap.
- Easily dissolves grease and dirt when washing with water.

SAVE 17%

63-402-2

PRO-SAFE™ THE PROFESSIONAL CHOICE
CHIP DEFLECTORS
Magnetic Base Guards with 3/16" Polycarbonate Shield

Ground Ship ONLY

- Swivel Base Positioner affords a variety of shield positions instantly.
- Shield swivels 360 degrees in two planes and 180 in 3rd plane. A twist on locking knob positively locks all.
- Cantilever Design - leaves room for shield to cover work area.
- Magnetic base with 80lbs. magnetic force.
- D.O.T. Regulated. Shipped via ground freight only.

SHIELD SIZE	PART NO.	LIST	SALE
6" x 8"	63-402-2	$71.70	$59.51
8" x 12"	63-404-8	84.95	70.50

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

$101.45
98-236-3

UNIVERSAL WAY COVER

For Full Size Vertical Mills

- A great way to protect the appearance of your machine and maintain the good condition of the saddle cross way.
- Cover consists of two pieces of heavy duty 1/16" thick neoprene rubber that protect exposed ways from dropped tools, chips, abrasives, and cutting oil.
- The long piece covers the exposed rear portion of the ways. The short piece covers the exposed front length of the cross ways.
- Easy to install - no drilling or tapping required.
- The 2 piece guard covers the ways behind and in front of the table.

56-182-9

CREWS GLASSES
An MCR Safety Brand

MAGNIFYING SAFETY GLASSES

Get a Closer Look

These glasses combine the convenience of ready-to-wear magnifiers with complete protection. These stylish glasses meet or exceed industry eye and face protection standards.

Crews BearKat® Readers

- Single wraparound lens design.
- Flexible temple design.
- Polycarbonate lens.
- Nonslip rubber head grips.
- Filters 99% of UV radiation.
- Compliance: ANSI Z87.1+.

LENS COLOR	FRAME COLOR	DIOPTER	PART NUMBER	PRICE
Clear	–	1	56-182-9	$9.35
Clear	–	1.5	56-183-7	9.35
Clear	–	2	56-184-5	9.35
Clear	–	2.5	56-185-2	9.35

Crews Klondike Magnifier®

- 11° Base curve.
- 5-Position ratchet spatula temples.
- Compliance: ANSI Z87.1+.

LENS COLOR	FRAME COLOR	DIOPTER	PART NUMBER	PRICE
Clear	Black	1	56-186-0	$16.45
Clear	Black	1.5	56-187-8	16.45
Clear	Black	2	56-188-6	16.45
Clear	Black	2.5	56-189-4	16.45

ELECTRO-SPARK METAL ENGRAVING PEN

SAVE up to 18%

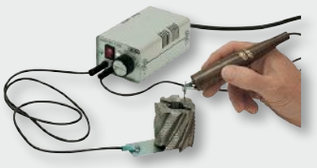
- Writes with ease on all metals, aluminum, brass, steel, hardened steel, carbide, etc.
- Permanent marking – can be removed by grinding only.
- Connected to a single-phase transformer.
- Optional settings provide smooth writing from fine to very heavy.
- Furnished complete with 3 ea. 3/64" x 1" electrodes.

97-475-8

POWER RATING	NO. OF SETTINGS	INCLUDED PEN HANDLE	HOUSING	PART NUMBER	LIST	SALE
50 W	6	Deluxe	Metal	97-475-8	$565.10	$463.38

Accessories

DESCRIPTION	PART NO.	LIST	SALE
Electrode, 3/64 x 1"	97-476-6	$9.90	$8.91
Electrode, 1/32 x 1"	97-477-4	10.15	9.13
Electrode, 1/16 x 1"	97-478-2	11.45	10.30
Deluxe Pen Handle	97-481-6	177.60	159.84



FIX THREAD RESTORER

- For repairing damaged threads.
- Used like a file. Pass over and restore face of thread instantly.
- 7/16" square files x 8 3/8" long.

SAVE up to 32%

DESCRIPTION	FOR USE WITH	PART NO.	LIST	SALE
11, 12, 13, 14, 16, 18, 20 & 24	Bolts	95-569-0	$13.95	$11.29
9, 10, 12, 16, 20, 27, 28 & 32	Bolts	95-570-8	14.50	11.74
.80, 1.00, 1.25, 1.50, 1.75, 2.00, 2.50, 3.00 mm	Metric	95-571-6	14.50	11.74
8, 10, 11 1/2, 14, 16, 18, 24, 27	Pipe	95-553-4	15.55	10.57
Black Plastic Handle for all 7/16" Square Files		95-574-0	1.30	1.10

6 PC. UTILITY FILE SET

- Set consists of six American pattern 6 1/2" utility files.
- Shapes include: square, half-round, triangular, round, warding and flat.
- Each file comes with its own plastic handle.
- Smooth grit.

SAVE 45%

$21.03
80-839-4
(List $38.25)

Industrial Quality
AIR TOOLS

AIR DIE GRINDER & KIT

Ideal for cylinder work and high speed grinding

- 22,000 RPM.
- 1/4" collet.
- 1/4" air inlet.
- Length: 6 3/4".
- 0.45 HP.
- Rear exhaust.
- 4 CFM @90 PSI.
- Ball bearing construction assures long life.

SAVE up to 38%

51-036-2

Kit Includes:

- Die grinder
- 5 ea. 1/8" and 1/4" arbor stones
- 1/8" collet insert
- Hose adapter
- 2 collet changing wrenches
- Furnished in fitted carrying case

DESCRIPTION	PART NO.	LIST	SALE
Air Die Grinder	51-035-4	$49.10	$30.44
Air Die Grinder Kit	51-036-2	65.40	49.05

Accessory

DESCRIPTION	PART NO.	LIST	SALE
1/4" Collet	51-037-0	$15.15	$12.87

SAVE up to 17%

DISPENSING BOTTLES

- Made of low density polyethylene.
- These dispensing bottles have a threaded nozzle with snap on sealer caps.
- Spout openings are initially 0.030", enlarge the opening to suit your need.
- Package quantity: 12.

CAP. (ML)	CAP. (APP. OZ.)	CAP. SIZE (MM)	PART NUMBER	LIST	SALE
30	1	18	63-349-5	$17.50	$15.57
60	2	25	63-350-3	21.60	19.22
125	4	24	63-351-1	29.20	25.98
250	8	24	63-352-9	47.35	39.30
500	16	28	63-353-7 †	4.20	3.73

† = Package quantity: 1.

SAVE 43%

TRIGGER SPRAYERS & BOTTLES

Trigger Sprayers

- Clog and leak proof nozzle.
- Compatible with most chemicals.

DESCRIPTION	PART NO.	LIST	SALE
Trigger with 8" Dip Tube	65-657-9	$2.00	$1.14
Trigger with 9¾" Dip Tube	65-656-1	2.20	1.25

HDPE Bottles

- The translucent HDPE material makes it easy to see fill level and color of liquid.

DESCRIPTION	PART NO.	LIST	SALE
916B - 16 oz. Translucent Plastic Bottle	65-661-1	$1.35	$0.76
922B - 22 oz. Translucent Plastic Bottle	65-659-5	1.35	0.76
924B - 24 oz. Translucent Plastic Bottle	65-660-3	1.35	0.76
932B - 32 oz. Translucent Plastic Bottle	65-658-7	1.50	0.85

$106.44
60-953-7
(List $119.60)

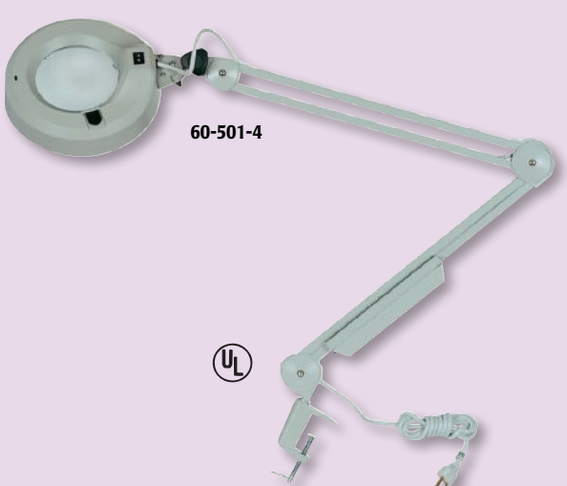
SAVE 11%

electrix task

15 WATT 12" FLUORESCENT GOOSENECK LAMP

Dual Tube

- Utilizes cool-running, energy-efficient fluorescent bulbs.
- Compact 12" flexible gooseneck is ideal for positioning the lamp in confined work spaces.
- 18½" wide Lexan shade with inner reflector offers generous amount of light distribution over work surface.
- Supplied with bulbs.
- On/Off switch.
- 9' cord with plug.
- Color: Black



LUXO

LAMPS

- Series 60-500 Models are Luxo fluorescent, illuminated magnifiers with standard 3 diopter lens. 5 and 10 diopter lenses are available.
- For higher magnification auxiliary lenses can be furnished.
- 22W T9 circline fluorescent tube included.
- 60-501-4 - 60-502-2 provided w/clamp 60-920-6
- Color: Light gray.
- 3 conductor SVT cord set.

DESCRIPTION	PART NO.	PRICE
2 extension arms – 45" reach	60-501-4	$401.45
2 extension arms – 30" reach	60-502-2	378.50

Bulbs & Tubes

DESCRIPTION	PART NO.	PRICE
Quad compact 13 watt fluorescent light	60-949-5	$35.85
22W T9 circline tube	60-947-9	8.60

See the SPI catalog for more LUXO lamps and lenses.

Thomas&Betts

CATAMOUNT® CABLE TIES - INDUSTRIAL JARS

Fits the Needs of General-Purpose Fastening and Wire Terminations

SAVE up to 25%

- Natural nylon for indoor use.
- Black weather-resistant nylon for outdoor use.
- Re-useable jar.
- Multi-colored assortment:
  7.5" length (100 ea.): blue, orange, green
  4" length (100 ea.): pink, yellow.

MATERIAL	JAR QTY.	LENGTH	WIDTH	SIZE QTY.	MAX. BUNDLE	TENSILE STRENGTH	PART NUMBER	LIST	SALE
Natural	650	4" 7.5" 11.1"	.100" .187" .187"	300 300 50	5/8" (.625) 1¾" (1.75) 3"	18# 50# 50#	60-519-6	$16.70	$12.85
Black	650	4" 7.5" 11.1"	.100" .187" .187"	300 300 50	5/8" (.625) 1¾" (1.75) 3"	18# 50# 50#	60-520-4	19.00	14.44
Multi-Colored	500	4" 7.5"	.100" .187"	300 200	5/8" (.625) 1¾" (1.75)	18# 50#	60-521-2	15.70	11.77

Jupiter Pneumatics
universal air solutions

AIR REGULATORS W/PRESSURE GAUGE

Brass & Zinc Plated Air Regulators, Ideal for Compressors

SAVE 22%

- Min. Temp.: 32°F; Max. Temp.: 122°F.
- Min. psi: 10; Max. psi: 120.
- ¼" NPT connection.
- Use to measure cylinder of tank pressure.

MATERIAL	PART NO.	LIST	SALE
Brass	67-368-1	$11.30	$8.81
Zinc	67-369-9	13.30	10.37

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SAVE 25%

MINI-RATCHET LEVER HOISTS

- Compact and fit conveniently within your tool chest and roller cabinets.
- Excellent for do-it-yourself projects as well as light-duty commercial jobs.
- Capacities: 550 Lbs. to 1100 Lbs.
- Lift range: 5′ to 10′.
- Hardened link-type steel load chain.
- Rubber handgrip for better comfort and security.
- Forged upper and lower hooks with latches standard.
- Impact resistant, all-steel frame, gear case and cover.
- Meet or exceed ASME/ANSI B30.2.

91-565-2

CAP. LBS.	LIFT FT.	STRANS OF CHAIN	MIN. DIST. BTWN. HOOKS	AVG. HANDLE EFFWORT LBS.	WEIGHT LBS.	PART NUMBER	LIST	SALE
550	5	1	8 1/16"	49	5	91-565-2	$104.35	$78.26
1100	5	1	10 1/4"	49	10	91-569-4	146.90	110.17
1100	10	1	10 1/4"	49	12	91-571-0	178.45	133.83

SAVE 31%

93-281-4

Industrial Quality AIR TOOLS

NYLON SELF-STORING HOSE & BLOW GUN SETS

- Blow gun that meets OSHA requirements.
- Spring guards reinforce and protect hose/fittings.
- 1/4" ID.
- Rated up to 200 PSI.
- Color: Yellow.

DESCRIPTION	NPT	L (FT.)	PART NO.	LIST	SALE
Thumb Lever/Rigid Fittings	1/4"	25	93-281-4	$21.15	$14.59
Thumb Lever/Swivel Fittings	1/4"	25	93-282-2	21.15	14.59
Pistol Grip/Rigid Fittings	1/4"	25	93-283-0	37.10	25.59

93-386-1

93-389-5

SAVE 10%

Industrial Quality AIR TOOLS

GENERAL-DUTY SPRING RETRACTABLE HOSE REELS

- Easily wraps, stores and protects hose.
- Steel construction.
- Corrosion resistant powder coating.
- Solid 1" steel center support shaft.
- Multi position release ratchet.
- Spring is fully enclosed and lubricated.
- Four direction non-snag rollers.
- Wall, ceiling or floor mounted.
- Max Pressure: 300 PSI.
- Complete with hose.

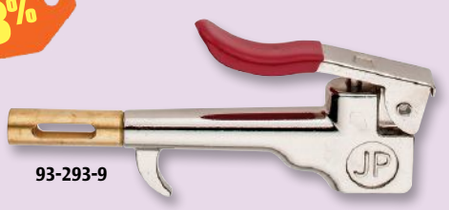
NPT	HOSE ID	LENGTH	PART NO.	LIST	SALE
3/8"	3/8"	25'	93-386-1	$87.35	$78.61
3/8"	3/8"	50'	93-387-9	137.75	123.97
3/8"	3/8"	75'	93-388-7	185.60	167.04
1/2"	1/2"	33'	93-389-5	130.15	117.13
1/2"	1/2"	50'	93-390-3	173.65	156.28
1/2"	1/2"	75'	93-391-1	206.35	185.71

Jupiter Pneumatics universal air solutions

SAVE up to 38%

BLOW GUNS

Extended Safety Nozzle with Thumb Lever
- Nozzle length: 3 1/2"
- High volume safety tip.
- 1/4" NPT inlet.



93-293-9

Compact Safety Nozzle with Thumb Lever
- Chrome plated die cast aluminum.
- 1/4" NPT inlet.

Compact Safety Booster Nozzle with Thumb Lever
- Chrome plated die cast zinc.
- 1/4" NPT inlet.

93-294-7

Pocket Type Adjustable Blow Gun
- 4" Aluminum Body.
- Integral Industrial coupler plug – 1/4" body.
- Rotating adjustable tip.

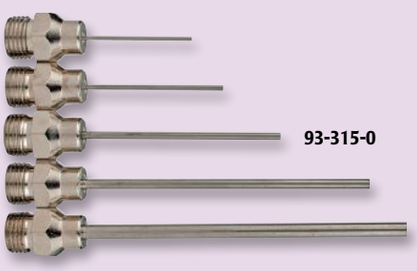
Flexible Rubber Blow Gun
- Bending rubber tip controls airflow.
- 1/4" NPT brass inlet.

93-296-2

DESCRIPTION	PART NO.	LIST	SALE
Extended Safety Nozzle	93-293-9	$14.00	$9.66
Compact Safety Nozzle	93-294-7	8.85	6.10
Compact Safety Booster	93-295-4	9.90	6.83
Pocket Type Adjustable Blow Gun	93-296-2	7.00	4.83
Flexible Rubber Blow Gun	93-297-0	9.35	6.45

93-297-0

Blow Gun Tips & Set
- Made from stainless steel with nickel plated brass base.
- Corrosion resistant.
- 1/8" MPT thread will fit most blow guns.



93-315-0

DESCRIPTION	PART NO.	LIST	SALE
0.042 x 15/16" Needle Tip	93-310-1	$5.45	$3.37
0.050 x 1 3/16" Needle Tip	93-311-9	5.45	3.37
0.072 x 1 3/4" Needle Tip	93-312-7	5.45	3.37
0.095 x 2 15/32" Needle Tip	93-313-5	5.45	3.37
0.134 x 2 3/4" Needle Tip	93-314-3	5.45	3.54
5 Pc. Needle Tips Set	93-315-0	21.75	13.48

SHOP GRADE
FRACTIONAL HSS NC SPOTTING DRILLS

SAVE up to 35%

90° & 120°

- High speed steel (HSS) provides good wear resistance and can be used in general purpose applications on both ferrous and nonferrous materials.
- 90° points to start drills up to 120°.
- 120° points to start drills above 120°.
- Zero back taper for perfect chuck fit.

SIZE	FLUTE LENGTH	OAL	90° PART NO.	120° PART NO.	LIST	SALE
1/4"	3/4"	2 1/2"	70-196-1	70-208-4	$14.30	$9.29
1/4"	3/4"	4"	70-197-9	70-209-2	20.55	13.35
3/8"	1 1/8"	3 1/8"	70-198-7	70-210-0	15.45	10.04
3/8"	1 1/8"	5"	70-199-5	70-211-8	21.90	14.23
5 1/2"	1 3/8"	3 3/4"	70-200-1	70-212-6	19.80	12.87
1/2"	1 3/8"	6"	70-201-9	70-213-4	27.40	17.81
5/8"	1 5/8"	4 3/8"	70-202-7	70-214-2	25.75	16.73
5/8"	1 5/8"	7"	70-203-5	70-215-9	34.65	22.52
3/4"	1 7/8"	5"	70-204-3	70-216-7	35.20	22.88
3/4"	1 7/8"	8"	70-205-0	70-217-5	47.60	30.94
1"	2 1/4"	6"	70-206-8	70-218-3	60.55	39.35
1"	2 1/4"	8"	70-207-6	70-219-1	64.45	41.89

SAVE 25%

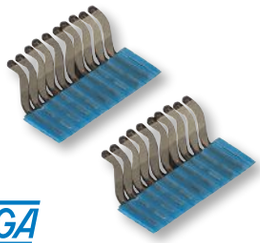
SHOP GRADE
STRAIGHT TAP WRENCHES

- Straight handle design provides good leverage.
- Adjust for different sizes by turning on the handle.

CAP. HAND TAPS	CAP. HAND REAMERS	APPROX. OAL	PART NUMBER	LIST EACH	SALE EACH
1/16 - 1/4"	1/8 - 21/64"	7"	42-579-3	$9.90	$7.42
3/32 - 3/8"	1/8 - 25/64"	9"	42-580-1	14.15	10.61
3/16 - 5/8"	11/64 - 7/16"	11"	42-581-9	15.15	11.36
3/16 - 3/4"	11/64 - 41/64"	15"	42-582-7	22.95	17.21
1/4 - 1 1/8"	9/32 - 29/32"	19"	42-583-5	39.90	29.92
3/8 - 1 3/4"	17/64 - 1"	38"	42-584-3	64.30	48.22

SAVE 14%

$21.50
82-795-6
(List $25.00)



NOGA
SIMPLY SOPHISTICATED

20 PC. HSS DEBURRING SET

- Includes: 20 - B10 blades and soft grip holder.

ADJUSTABLE SCRAPER AND BURRING TOOL

SAVE 10%

- Adjustable blade for best suited working length.
- Reversible blade, finish ground on both sides.
- Hardened high speed steel blades, triangle profile, 3" long, for long wear.
- Bull-nosed collet face serving as a non-marring edge guide.
- Balanced, comfortable hand grip, 4 1/2" long.

DESCRIPTION	PART NO.	LIST	SALE
Adjustable Scraper including 82-401-1 Straight Blade	82-400-3	$39.90	$35.91
Straight Blade	82-401-1	12.75	11.47
45° Angle Blade	82-402-9	12.75	11.47
90° Angle Blade	82-403-7	12.75	11.47

SHOP GRADE
TAP GUIDE

Reversible Tension Pin For Male and Female Centering Of Tap

- 1/2" diameter hardened shank, knurled for easy handling.
- 3/16" diameter hardened spring tension pin.

SAVE 30%

TAP RANGE	SHANK DIA.	LENGTH	PART NUMBER	LIST	SALE
#10 - 1"	1/2"	3"	70-224-1	$16.95	$11.86

SHOP GRADE
HSS & M-42 COBALT 60° COMBINED DRILLS & COUNTERSINKS

SAVE 35%

Right Hand

SIZE	BODY DIA.	DRILL DIA.	DRILL LENGTH	OVERALL LENGTH	HSS PART NO.	HSS LIST	HSS SALE	M-42 COBALT PART NO.	M-42 COBALT LIST	M-42 COBALT SALE
1	1/8"	3/64"	3/64"	1 1/4"	43-267-4	$2.55	$1.65	73-722-1	$5.95	$3.86
2	3/16"	5/64"	5/64"	1 7/8"	43-268-2	2.65	1.72	73-723-9	6.15	3.99
3	1/4"	7/64"	7/64"	2"	43-269-0	2.65	1.72	73-724-7	6.35	4.12
4	5/16"	1/8"	1/8"	2 1/8"	43-270-8	2.65	1.72	73-725-4	6.65	4.32
5	7/16"	3/16"	3/16"	2 3/4"	43-271-6	4.95	3.21	73-726-2	10.45	6.79
6	1/2"	7/32"	7/32"	3"	43-272-4	8.30	5.39	73-727-0	16.20	10.53
7	5/8"	1/4"	1/4"	3 1/4"	43-273-2	12.10	7.86	73-728-8	24.35	15.82
8	3/4"	5/16"	5/16"	3 1/2"	43-274-0	16.30	10.59	73-729-6	34.70	22.55

SHOP GRADE
HAND TAPPER

#6 to 5/8" Capacity

- Spindle hardened and ground.
- Spindle balance for highly sensitive tap feel.
- Offset handle for speed and ease of operation.
- Slide lock vise jaw prevents tap breakage.
- Complete with offset handle, hardened precision spindle, 9 Tap Adapters (#6 to 5/8") and adapter rack.

SAVE 30%

Specifications

Table Length: 12 1/2"
Table Width: 6 1/2"
Clearance Height: 7 7/8"
Throat Depth: 7 1/2"
Weight (approx.): 37 Lbs.

DESCRIPTION	PART NO.	LIST	SALE
Hand Tapper	70-255-5	$299.95	$209.96

Set of 9 Replacement Adapters

- Sizes: #6, #8, #10, 1/4", 5/16", 3/8", 7/16", 1/2", 5/8"

DESCRIPTION	PART NO.	LIST	SALE
Set of 9 Repl. Adapters	70-256-3	$79.95	$55.96

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

49-214-0

Case not Included

SAVE 10%

SHOP GRADE
HSS 118° 1/4" REDUCED STRAIGHT SHANK DRILL SET

- Designed for use in portable drills with 1/4" chuck capacity.
- These short all purpose drills can be used for wood, sheet metal, aluminum and mild steel.

NO. OF PCS.	DESCRIPTION	PART NUMBER	LIST	SALE
4	5/16" - 1/2" x 16ths	49-214-0	$31.50	$28.35

SAVE 30%

SHOP GRADE
LETTER HSS BRIGHT FINISH JOBBER DRILLS

- 118° Point for quick penetration.

Tool Material: HSS

- Provides good wear resistance in mild steels, soft metals (aluminum, copper, brass, bronze) and nonferrous materials.

Coating Advantages: Bright (Polished) Finish

- Improves chip flow of soft and low carbon materials.
- Letters A to E sold in packs of 12
  Letters F to Z sold in packs of 6

SIZE	DEC. EQUIV.	FLUTE LENGTH	OAL	PART NUMBER	LIST EACH	SALE EACH
A	0.2340"	2 5/8"	3 7/8"	70-071-6	$2.35	$1.64
B	0.2380"	2 3/4"	4"	70-072-4	2.35	1.64
C	0.2420"	2 3/4"	4"	70-073-2	2.35	1.64
D	0.2460"	2 3/4"	4"	70-074-0	2.35	1.64
E	0.2500"	2 3/4"	4"	72-298-3	1.95	1.36
F	0.2570"	2 7/8"	4 1/8"	70-075-7	2.50	1.75
G	0.2610"	2 7/8"	4 1/8"	70-076-5	2.85	1.99
H	0.2660"	2 7/8"	4 1/8"	70-077-3	2.85	1.99
I	0.2720"	2 7/8"	4 1/8"	70-078-1	2.85	1.99
J	0.2770"	2 7/8"	4 1/8"	70-079-9	3.05	2.13
K	0.2810"	2 15/16"	4 1/4"	70-080-7	3.35	2.34
L	0.2900"	2 15/16"	4 1/4"	70-081-5	3.35	2.34
M	0.2950"	3 1/16"	4 3/8"	70-082-3	3.55	2.48
N	0.3020"	3 1/16"	4 3/8"	70-083-1	3.55	2.48
O	0.3160"	3 3/16"	4 1/2"	70-084-9	3.60	2.52
P	0.3230"	3 5/16"	4 5/8"	70-085-6	4.00	2.80
Q	0.3320"	3 7/16"	4 3/4"	70-086-4	4.00	2.80
R	0.3390"	3 7/16"	4 3/4"	70-087-2	4.35	3.04
S	0.3480"	3 1/2"	4 7/8"	70-088-0	4.50	3.15
T	0.3580"	3 1/2"	4 7/8"	70-089-8	5.20	3.64
U	0.3680"	3 5/8"	5"	70-090-6	5.20	3.64
V	0.3770"	3 5/8"	5"	70-091-4	5.35	3.74
W	0.3860"	3 3/4"	5 1/8"	70-092-2	5.50	3.85
X	0.3970"	3 3/4"	5 1/8"	70-093-0	6.65	4.65
Y	0.4040"	3 7/8"	5 1/4"	70-094-8	7.55	5.28
Z	0.4130"	3 7/8"	5 1/4"	70-095-5	7.95	5.56

SAVE 30%

SHOP GRADE
FRACTIONAL HSS BRIGHT FINISH JOBBER DRILLS

- 118° Point for quick penetration.

Tool Material: HSS

- Provides good wear resistance in mild steels, soft metals (aluminum, copper, brass, bronze) and nonferrous materials.

Coating Advantages: Bright (Polished) Finish

- Improves chip flow of soft and low carbon materials.
- 1/64" to 25/64" sold in packs of 12
  13/32" to 1/2" sold in packs of 6

SIZE	DEC. EQUIV.	FLUTE LENGTH	OAL	PART NUMBER	LIST EACH	SALE EACH
1/32"	0.0312"	1/2"	1 3/8"	72-284-3	$1.10	$0.77
1/16"	0.0625"	7/8"	1 7/8"	72-286-8	1.00	0.70
3/32"	0.0938"	1 1/4"	2 1/4"	72-288-4	1.00	0.70
1/8"	0.1250"	1 5/8"	2 3/4"	72-290-0	1.05	0.73
5/32"	0.1562"	2	3 1/8"	72-292-6	1.15	0.80
3/16"	0.1875"	2 5/16"	3 1/2"	72-294-2	1.40	0.98
7/32"	0.2188"	2 1/2"	3 3/4"	72-296-7	1.70	1.19
1/4"	0.2500"	2 3/4"	4"	72-298-3	1.95	1.36
9/32"	0.2812	2 15/16"	4 1/4"	72-300-7	2.45	1.71
5/16"	0.3125	3 3/16"	4 1/2"	72-302-3	3.10	2.17
11/32"	0.3438	3 7/8"	4 3/4"	72-304-9	3.80	2.66
3/8"	0.3750	3 5/8"	5	72-306-4	4.45	3.11
13/32"	0.4062	3 7/8"	5 1/4"	72-308-0	5.20	3.64
7/16"	0.4375	4 1/16"	5 1/2"	72-310-6	6.05	4.23
15/32"	0.4688	4 5/16"	5 3/4"	72-312-2	7.15	5.00
1/2"	0.5000	4 1/2"	6"	72-314-8	7.50	5.25

82-516-6

SAVE 20%

CLIMAX METAL PRODUCTS COMPANY

DRILL STOP COLLAR KITS

Now Quickly & Easily Drill All Holes to a Uniform Depth

- **11 Pc. Standard Kit** includes collars for bit sizes: 1/8", 3/16", 1/4", 5/16", 3/8", 7/8" and 1/2" along with 4 hex wrenches.
- **Replacement Collars** for Standard Kit include all 7 collars shown above
- **4 Pc. Large Kit** includes collars for bit sizes: 5/8", 3/4", 7/8" & 1"

NO. OF PCS.	DESCRIPTION	PART NUMBER	LIST	SALE
11	Standard Kit	82-516-6	$24.24	$19.39
7	Repl. Collars for Standard Kit	82-517-4	12.98	10.38
4	Large Kit	82-518-2	11.17	8.93

Huot

DRILL INDEX CASES

- High quality steel index boxes provide quick and easy access to drills.
- Every storage hole is clearly marked for size with permanent raised lettering.
- Dimensions.

Tap & Drill index

HOLES	THREADS	PART NO.	PRICE
36	6-32 #36, 8-32 #29, 10-24 #25, 1/4-20 #7, 5/16-18 F, 3/8-16-5/16, 7/16-14U, 1/2-13-27/64	82-589-3	$14.40

For Jobber Size Fractional Drills

HOLES	THREADS	PART NO.	PRICE
29	1/16" to 1/2" by 64th	82-596-8	$10.75

For Wire Gage Drills

HOLES	THREADS	PART NO.	PRICE
60	No. 1 thru 60	82-597-6	$11.40

For Letter Size Drills

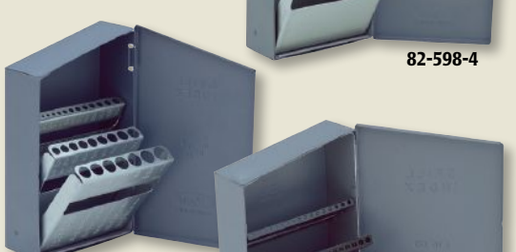
HOLES	THREADS	PART NO.	PRICE
26	A thru Z	82-598-4	$10.75

For Combination of Drills

HOLES	THREADS	PART NO.	PRICE
115	1/16" to 1/2" by 64th No. 1 to 60, A to Z	82-599-2	$55.10

82-589-3

82-598-4



82-596-8

82-597-6

82-599-2

SHOP GRADE
2 FLUTE M-42 COBALT DOUBLE END MILLS

SAVE 30%

Regular Length • 30° Helix

- Centercutting design with good chip removal capability.
- Designed for plunge cutting and milling slots and pockets.
- Premium 8% cobalt is especially effective for machining high strength, heat resistant, exotic and other difficult-to-machine materials.

MILL DIA.	SHANK DIA.	LOC	OAL	PART NUMBER	LIST EACH	SALE EACH
1/8"	3/8"	3/8"	3 1/16"	54-151-6	$15.65	$10.95
5/32"	3/8"	7/16"	3 1/8"	54-152-4	16.55	11.58
3/16"	3/8"	7/16"	3 1/8"	54-153-2	15.65	10.95
7/32"	3/8"	1/2"	3 1/8"	54-154-0	16.55	11.58
1/4"	3/8"	1/2"	3 1/8"	54-155-7	15.90	11.13
9/32"	3/8"	9/16"	3 1/8"	54-156-5	16.85	11.79
5/16"	3/8"	9/16"	3 1/8"	54-157-3	15.65	10.95
11/32"	3/8"	9/16"	3 1/8"	54-158-1	16.55	11.58
3/8"	3/8"	9/16"	3 1/8"	54-159-9	15.90	11.13
13/32"	1/2"	13/16"	3 3/4"	54-160-7	24.40	17.08
7/16"	1/2"	13/16"	3 3/4"	54-161-5	23.55	16.48
15/32"	1/2"	13/16"	3 3/4"	54-162-3	36.15	25.30
1/2"	1/2"	13/16"	3 3/4"	54-163-1	24.15	16.90
9/16"	5/8"	1 1/8"	4 1/2"	54-164-9	35.15	24.60
5/8"	5/8"	1 1/8"	4 1/2"	54-165-6	32.00	22.40
11/16"	3/4"	1 5/16"	5"	54-150-8	68.60	48.02
3/4"	3/4"	1 5/16"	5"	54-166-4	40.70	28.49
7/8"	7/8"	1 9/16"	5 1/2"	54-167-2	52.05	36.43
1"	1"	1 5/8"	5 7/8"	54-168-0	64.00	44.80

SAVE up to 25%

42-571-0

SHOP GRADE
ROUND DIE STOCKS & SET

3 Screw Type

- Stocks of this design will hold round adjustable dies of any construction although they are specifically manufactured for holding dies with the open type adjustment.

Individuals

DIA.	OAL	PART NO.	LIST EA.	SALE EA.
13/16"	6 7/12"	42-570-2	$5.90	$4.42
1"	8 1/4"	42-571-0	5.90	4.42
1 1/2	12 3/8"	42-572-8	8.05	6.03
2"	15 3/8"	42-573-6	12.95	9.71
2 1/2"	19"	42-574-4	23.50	17.62
3"	22 1/4"	42-575-1	39.60	29.70
3 1/2	29 3/4"	42-576-9	56.70	42.52
5"	43"	42-578-5	133.65	100.23

4 Pc. Set

SIZES	PART NO.	LIST	SALE
13/16, 1, 1 1/2, 2"	72-385-8	$25.60	$20.99

SHOP GRADE
NUMBER HSS BRIGHT FINISH JOBBER DRILLS

SAVE 30%

- 118° Point for quick penetration.

Tool Material:

HSS

- Provides good wear resistance in mild steels, soft metals (aluminum, copper, brass, bronze) and nonferrous materials.

Coating Advantages: Bright (Polished) Finish

- Improves chip flow of soft and low carbon materials.
- # 1 to 60 sold in packs of 12

SIZE	DEC. EQUIV.	FLUTE LENGTH	OAL	PART NUMBER	LIST EACH	SALE EACH
#1	0.2280"	2 5/8"	3 7/8"	72-548-1	$2.10	$1.47
#2	0.2210"	2 5/8"	3 7/8"	72-549-9	2.10	1.47
#3	0.2130"	2 1/2"	3 3/4"	72-550-7	1.90	1.33
#4	0.2090"	2 1/2"	3 3/4"	72-551-5	1.90	1.33
#5	0.2055"	2 1/2"	3 3/4"	72-552-3	1.90	1.33
#6	0.2040"	2 1/2"	3 3/4"	72-553-1	1.90	1.33
#7	0.2010"	2 7/16"	3 5/8"	72-554-9	1.65	1.15
#8	0.1990"	2 7/16"	3 5/8"	72-555-6	1.70	1.19
#9	0.1960"	2 7/16"	3 5/8"	72-556-4	1.65	1.15
#10	0.1935"	2 7/16"	3 5/8"	72-557-2	1.65	1.15
#11	0.1910"	2 5/16"	3 1/2"	72-558-0	1.55	1.08
#12	0.1890"	2 5/16"	3 1/2"	72-559-8	1.55	1.08
#13	0.1850"	2 5/16"	3 1/2"	72-560-6	1.50	1.05
#14	0.1820"	2 3/16"	3 3/8"	72-561-4	1.50	1.05
#15	0.1800"	2 3/16"	3 3/8"	72-562-2	1.50	1.05
#16	0.1770"	2 3/16"	3 3/8"	72-563-0	1.50	1.05
#17	0.1730"	2 3/16"	3 3/8"	72-564-8	1.50	1.05
#18	0.1695"	2 1/8"	3 1/4"	72-565-5	1.30	0.91
#19	0.1660"	2 1/8"	3 1/4"	72-566-3	1.30	0.91
#20	0.1610"	2 1/8"	3 1/4"	72-567-1	1.30	0.91
#21	0.1590"	2 1/8"	3 1/4"	72-568-9	1.15	0.80
#22	0.1570"	2"	3 1/8"	72-569-7	1.20	0.84
#23	0.1540"	2"	3 1/8"	72-570-5	1.20	0.84
#24	0.1520"	2"	3 1/8"	72-571-3	1.20	0.84
#25	0.1495"	1 7/8"	3	72-572-1	1.10	0.77
#26	0.1470"	1 7/8"	3	72-573-9	1.15	0.80
#27	0.1440"	1 7/8"	3	72-574-7	1.10	0.77
#28	0.1405"	1 3/4"	2 7/8"	72-575-4	1.05	0.73
#29	0.1360"	1 3/4"	2 7/8"	72-576-2	1.00	0.70
#30	0.1285"	1 5/8"	2 3/4"	72-577-0	1.00	0.70

SIZE	DEC. EQUIV.	FLUTE LENGTH	OAL	PART NUMBER	LIST EACH	SALE EACH
#31	0.1200"	1 5/8"	2 3/4"	72-578-8	$1.00	$0.70
#32	0.1160"	1 5/8"	2 3/4"	72-579-6	1.00	0.70
#33	0.1130"	1 1/2"	2 5/8"	72-580-4	1.00	0.70
#34	0.1110"	1 1/2"	2 5/8"	72-581-2	1.00	0.70
#35	0.1100"	1 1/2"	2 5/8"	72-582-0	1.00	0.70
#36	0.1065"	1 7/16"	2 1/2"	72-583-8	1.00	0.70
#37	0.1040"	1 7/16"	2 1/2"	72-584-6	1.00	0.70
#38	0.1015"	1 7/16"	2 1/2"	72-585-3	1.00	0.70
#39	0.0995"	1 3/8"	2 3/8"	72-586-1	1.00	0.70
#40	0.0980"	1 3/8"	2 3/8"	72-587-9	1.00	0.70
#41	0.0960"	1 3/8"	2 3/8"	72-588-7	1.00	0.70
#42	0.0935"	1 1/4"	2 1/4"	72-589-5	1.00	0.70
#43	0.0890"	1 1/4"	2 1/4"	72-590-3	1.00	0.70
#44	0.0860"	1 1/8"	2 1/8"	72-591-1	1.00	0.70
#45	0.0820"	1 1/8"	2 1/8"	72-592-9	1.00	0.70
#46	0.0810"	1 1/8"	2 1/8"	72-593-7	1.00	0.70
#47	0.0785"	1"	2"	72-594-5	1.00	0.70
#48	0.0760"	1"	2"	72-595-2	1.00	0.70
#49	0.0730"	1"	2"	72-596-0	1.00	0.70
#50	0.0700"	1"	2"	72-597-8	1.00	0.70
#51	0.0670"	1"	2"	72-598-6	1.00	0.70
#52	0.0635"	7/8"	1 7/8"	72-599-4	1.00	0.70
#53	0.0595"	7/8"	1 7/8"	72-600-0	1.00	0.70
#54	0.0550"	7/8"	1 7/8"	72-601-8	1.00	0.70
#55	0.0520"	7/8"	1 7/8"	72-602-6	1.00	0.70
#56	0.0465"	3/4"	1 3/4"	72-603-4	1.00	0.70
#57	0.0430"	3/4"	1 3/4"	72-604-2	1.00	0.70
#58	0.0420"	11/16"	1 5/8"	72-605-9	1.05	0.73
#59	0.0410"	11/16"	1 5/8"	72-606-7	1.05	0.73
#60	0.0400"	11/16"	1 5/8"	72-607-5	1.05	0.73

SHOP GRADE
4 FLUTE HSS CENTERCUTTING DOUBLE END MILLS

SAVE 30%

Regular Length • 30° Helix

- Recommended for finishing operations in a wide range of ferrous and nonferrous materials.
- Centercutting design allows for plunge milling into solid materials at the beginning of a slotting operation.

MILL DIA.	SHANK DIA.	LOC	OAL	PART NUMBER	LIST EACH	SALE EACH
1/8"	3/8"	3/8"	3 1/16"	40-617-3	$15.35	$10.74
3/16"	3/8"	1/2"	3 1/4"	40-618-1	15.35	10.74
1/4"	3/8"	5/8"	3 3/8"	40-619-9	15.35	10.74
5/16"	3/8"	3/4"	3 1/2"	40-620-7	15.35	10.74
3/8"	3/8"	3/4"	3 1/2"	40-621-5	15.35	10.74
15/32"	1/2"	1"	4 1/8"	40-622-3	20.70	14.49
1/2"	1/2"	1"	4 1/8"	40-623-1	21.60	15.12
5/8"	5/8"	1 3/8"	5"	40-624-9	30.50	21.35
11/16"	3/4"	1 5/8"	5 5/8"	40-625-6	36.30	25.41
3/4"	3/4"	1 5/8"	5 5/8"	40-626-4	38.30	26.81
13/16"	7/8"	1 7/8"	6 1/4"	40-627-2	33.90	23.73
7/8"	7/8"	1 7/8"	6 1/8"	40-628-0	49.50	34.65
1"	1"	1 7/8"	6 3/8"	40-629-8	59.60	41.72

$71.80
54-320-7
(List $89.75)

SAVE 20%

Unibit®
HSS STEP DRILL SET

- 28 hole sizes with just 3 bits.
- Self starting multiple hole sizes.
- 1/8 - 1/2" x 32nds
- 3/16 - 1/2" x 16ths
- 1/4 - 3/4" x 16ths

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

FINE GRAIN SOLID CARBIDE SPOTTING & CHAMFERING DRILLS

SIZE	OVERALL LENGTH	NUMBER OF FLUTES	60° PART NO.	90° PART NO.	120° PART NO.	PRICE
1/4"	2 1/2"	2	82-590-1	82-620-6	82-690-9	$41.90
1/4"	2 1/2"	4	82-591-9	82-621-4	82-691-7	41.90
3/8"	2 1/2"	2	82-592-7	82-622-2	82-692-5	56.25
3/8"	2 1/2"	4	82-593-5	82-623-0	82-693-3	56.25
1/2"	3"	2	82-594-3	82-624-8	82-694-1	70.60
1/2"	3"	4	82-595-0	82-625-5	82-695-8	70.60
3/4"	4"	2	—	82-626-3	—	177.55
3/4"	4"	4	—	82-627-1	—	177.55

Sizes 3/8" and larger feature Weldon flat.

SAVE 25%

73-595-1

SHOP GRADE 5 PC. HSS COUNTERSINK & DEBURRING TOOL SETS

Countersink Angles: 60°, 82°, 90° & 100°

- Use with portable drills and drill presses on ferrous and non-ferrous materials.
- Complete in fitted case.

SIZE RANGE	60° PART NO.	82° PART NO.	90° PART NO.	100° PART NO.	LIST	SALE
1/16, 5/32, 3/16, 5/16, 9/16"	73-594-4	73-595-1	73-596-9	73-597-7	$91.30	$68.47

SAVE 10%

COBALT HSS

Helix Angle 20°, Point Angle 118°
2 Facet Point

CARBIDE

Helix Angle 30°, Point Angle 130°
4 Facet Point (secondary relief)

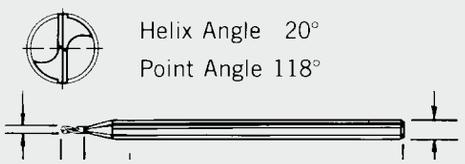
SPHINX® SPIREC MICRO DRILLS

Cobalt HSS & Carbide

- Available in COBALT High Speed Steel as well as in MICRO GRAIN Carbide.
- 2 spiral flutes, right hand cut.
- Accuracy +0.0000 -0.00015".

Packaged and sold in quantities of 10 pcs. per size.

DRILL SIZE (d) MM	DRILL SIZE (d) INCHES	SHANK DIA. MM	SHANK DIA. INCHES	OAL (L)	FLUTE L. (l)	COBALT HSS PART NO.	EACH DRILL LIST	EACH DRILL SALE	CARBIDE PART NO.	EACH DRILL LIST	EACH DRILL SALE
0.10	0.0039					—			81-880-7		
0.11	0.0043	1.0	0.039	0.984"	0.020"	81-681-9	$13.35	$12.01	81-881-5	$27.45	$24.70
0.12	0.0047					81-682-7			81-882-3		
0.13	0.0051					81-683-5			81-883-1		
0.14	0.0055	1.0	0.039	0.984"	0.031"	81-684-3	13.35	12.01	81-884-9	27.45	24.70
0.15	0.0059					—			81-885-6		
0.16	0.0063					81-686-8			81-886-4		
0.17	0.0067	1.0	0.039	0.984"	0.043"	81-687-6	13.35	12.01	81-887-2	27.45	24.70
0.18	0.0071					81-688-4			81-888-0		
0.19	0.0075					81-689-2			81-889-8		
0.20	0.0079					—			81-890-6		
0.21	0.0083					—			81-891-4		
0.22	0.0087	1.0	0.039	0.984"	0.059"	81-692-6	9.80	8.82	81-892-2	22.25	20.02
0.23	0.0091					81-693-4			81-893-0		
0.24	0.0095					81-694-2			81-894-8		
0.25	0.0098					81-695-9			81-895-5		
0.26	0.0102					81-696-7			81-896-3		
0.27	0.0106					81-697-5			81-897-1		
0.28	0.0110	1.0	0.039"	0.984"	0.075"	81-698-3	9.80	8.82	81-898-9	22.25	20.02
0.29	0.0114					81-699-1			81-899-7		
0.30	0.0118					81-700-7			81-900-3		
0.31	0.0122					81-701-5			81-901-1		
0.32	0.0126					—			81-902-9		
0.33	0.0130					81-703-1			81-903-7		
0.34	0.0134					81-704-9			81-904-5		
0.35	0.0138	1.0	0.039	0.984"	0.095"	81-705-6	9.80	8.82	81-905-2	18.55	16.69
0.36	0.0142					81-706-4			81-906-0		
0.37	0.0146					81-707-2			81-907-8		
0.38	0.0150					81-708-0			81-908-6		
0.39	0.0154					81-709-8			81-909-4		
0.40	0.0157					81-711-4			81-911-0		
0.41	0.0161					81-712-2			81-912-8		
0.42	0.0165					81-713-0			81-913-6		
0.43	0.0169					81-714-8			81-914-4		
0.44	0.0173	1.0	0.039	0.984"	0.118"	81-715-5	9.80	8.82	81-915-1	18.55	16.69
0.45	0.0177					81-716-3			81-916-9		
0.46	0.0181					81-717-1			81-917-7		
0.47	0.0185					81-718-9			—		
0.48	0.0189					81-719-7			81-919-3		
0.49	0.0193	1.0	0.039	0.984"	0.134"	81-720-5	9.80	8.82	81-920-1	18.55	16.69
0.50	0.0197					81-721-3			81-921-9		
0.51	0.0201					81-722-1			81-922-7		
0.52	0.0205	1.0	0.039	0.984"	0.134"	81-723-9	9.80	$8.82	81-923-5	$18.55	$16.69
0.53	0.0209					81-724-7			81-924-3		
0.54	0.0213					81-725-4			81-925-0		
0.55	0.0217					81-726-2			—		
0.56	0.0221					81-727-0			81-927-6		
0.57	0.0224	1.0	0.039	0.984"	0.154"	81-728-8	9.80	8.82	81-928-4	18.55	16.69
0.58	0.0228					81-729-6			81-929-2		
0.59	0.0232					81-730-4			81-930-0		
0.60	0.0236					81-731-2			81-931-8		
0.61	0.0240					81-732-0			81-932-6		
0.62	0.0244					81-733-8			81-933-4		
0.63	0.0248					81-734-6			81-934-2		
0.64	0.0252	1.0	0.039	0.984"	0.165"	81-735-3	9.80	8.82	81-935-9	18.55	16.69
0.65	0.0256					81-736-1			81-936-7		
0.66	0.0260					81-737-9			81-937-5		
0.67	0.0264					81-738-7			81-938-3		
0.68	0.0268					81-739-5			81-939-1		
0.69	0.0272					81-740-3			81-940-9		
0.70	0.0276					81-741-1			81-941-7		
0.71	0.0280	1.0	0.039	0.984"	0.188"	81-742-9	9.80	8.82	81-942-5	18.55	16.69
0.72	0.0283					81-743-7			81-943-3		
0.73	0.0287					81-744-5			81-944-1		
0.74	0.0291					81-745-2			81-945-8		
0.75	0.0295					81-746-0			81-946-6		
0.76	0.0299					81-747-8			81-947-4		
0.77	0.0303	1.0	0.039	0.984"	0.209"	81-748-6	9.80	8.82	81-948-2	18.55	16.69
0.78	0.0307					81-749-4			81-949-0		
0.79	0.0311					81-750-2			81-950-8		
0.80	0.0315					81-752-8			81-952-4		
0.81	0.0319					81-753-6			81-953-2		
0.82	0.0323	1.5	0.059	0.984"	0.209"	81-754-4	9.80	8.82	81-954-0	18.55	16.69
0.83	0.0327					81-755-1			81-955-7		
0.84	0.0331					81-756-9			81-956-5		
0.85	0.0335					81-757-7			81-957-3		
0.86	0.0339					81-758-5			81-958-1		
0.87	0.0343					81-759-3			81-959-9		
0.88	0.0346					81-760-1			81-960-7		
0.89	0.0350					81-761-9			81-961-5		
0.90	0.0354	1.5	0.059	0.984"	0.236"	81-762-7	9.80	8.82	81-962-3	18.55	16.69
0.91	0.0358					81-763-5			81-963-1		
0.92	0.0362					81-764-3			81-964-9		
0.93	0.0366					81-765-0			81-965-6		
0.94	0.0370					81-766-8			81-966-4		
0.95	0.0374					81-767-6			81-967-2		
0.96	0.0378					81-768-4			81-968-0		
0.97	0.0382					81-769-2			81-969-8		
0.98	0.0386	1.5	0.059	0.984"	0.268"	81-770-0	9.80	8.82	81-970-6	18.55	16.69
0.99	0.0390					81-771-8			81-971-4		
1.00	0.0394					81-772-6			81-972-2		
1.05	0.0413					81-773-4			81-973-0		
1.10	0.0433	1.5	.059	0.984"	0.299"	81-774-2	9.80	8.82	81-974-8	18.55	16.69
1.15	0.0453					81-775-9			81-975-5		
1.20	0.0472					81-777-5			81-977-1		
1.25	0.0492	1.5	.059	.984"	.335"	81-778-3	9.80	8.82	81-978-9	18.55	16.69
1.30	0.0512					81-779-1			81-979-7		
1.35	0.0531					81-780-9			81-980-5		
1.40	0.0551	1.5	.059	.984"	.374"	81-781-7	9.80	8.82	81-981-3	18.55	16.69
1.45	0.0571					81-782-5			81-982-1		



SAVE 10%

SPHINX®
DRILLS SPIREC MICRO CENTER DRILLS

Cobalt HSS

- Up to size 0.35 mm center drills have straight flutes. All larger sizes feature 2 spiral flutes, right hand cut. 4-facet point (secondary relief).
- Thick shank combined with extra short flute length provides maximum stability for center drilling and drilling tough materials.
- Accuracy: ±0.0002".
- Overall length (L): 0.984".
- Shank (D): 1.5 mm/0.059".

Packaged and sold in quantities of 10 pcs. per size.

DRILL SIZE (D) MM	DRILL SIZE (D) INCHES	FLUTE LENGTH (l)	PART NUMBER	LIST EACH	SALE EACH
0.10	0.0039	0.016"	81-240-4	$12.70	$11.43
0.15	0.0059	0.016"	81-241-2	10.90	9.81
0.20	0.0079	0.024"	81-242-0	9.70	8.73
0.25	0.0098	0.024"	81-243-8	8.95	8.05
0.35	0.0138	0.035"	81-245-3	8.15	7.33
0.40	0.0158	0.039"	81-247-9	7.80	7.02
0.45	0.0177	0.039"	81-248-7	7.80	7.02
0.50	0.0197	0.047"	81-249-5	7.80	7.02
0.55	0.0217	0.047"	81-250-3	7.80	7.02
0.60	0.0236	0.055"	81-251-1	7.80	7.02
0.65	0.0256	0.055"	81-252-9	7.80	7.02
0.70	0.0276	0.055"	81-253-7	7.80	7.02
0.75	0.0295	0.055"	81-254-5	7.80	7.02
0.80	0.0315	0.067"	81-256-0	7.80	7.02
0.85	0.0335	0.067"	81-257-8	7.80	7.02
0.90	0.0354	0.067"	81-258-6	7.80	7.02
0.95	0.0374	0.071"	81-259-4	7.80	7.02
1.00	0.0394	0.071"	81-260-2	7.80	7.02
1.05	0.0413	0.079"	81-261-0	7.80	7.02
1.10	0.0433	0.079"	81-262-8	7.80	7.02
1.15	0.0453	0.090"	81-263-6	7.80	7.02
1.20	0.0472	0.090"	81-265-1	7.80	7.02
1.25	0.0492	0.090"	81-266-9	7.80	7.02
1.30	0.0512	0.090"	81-267-7	7.80	7.02
1.35	0.0531	0.106"	81-268-5	7.80	7.02
1.40	0.055	0.106"	81-269-3	7.80	7.02
1.45	0.0571	0.106"	81-270-1	7.80	7.02
1.50	0.0591	0.118"	81-271-9	7.80	7.02

SAVE 30%

SHOP GRADE
4 FLUTE M-42 COBALT CENTERCUTTING DOUBLE END MILLS

Regular Length • 30° Helix

- Designed for plunge cutting and milling slots and pockets.
- Features centercutting design with good chip removal capability.
- High resistance to abrasion for increased tool life.

MILL DIA.	SHANK DIA.	LOC	OAL	PART NUMBER	LIST	SALE
1/8"	3/8"	3/8"	3 1/16"	40-643-9	$21.15	$14.80
5/32"	3/8"	7/16"	3 1/8"	40-644-7	22.65	15.85
3/16"	3/8"	1/2"	3 1/4"	40-645-4	21.15	14.80
7/32"	3/8"	9/16"	3 1/4"	40-646-2	22.65	15.85
1/4"	3/8"	5/8"	3 3/8"	40-647-0	21.15	14.80
9/32"	3/8"	11/16"	3 3/8"	40-648-8	22.65	15.85
5/16"	3/8"	3/4"	3 1/2"	40-649-6	21.15	14.80
11/32"	3/8"	3/4"	3 1/2"	40-650-4	22.65	15.85
3/8"	3/8"	3/4"	3 1/2"	40-651-2	21.15	14.80
13/32"	1/2"	1"	4 1/8"	40-652-0	22.70	15.89
7/16"	1/2"	1"	4 1/8"	40-653-8	31.50	22.05
15/32"	1/2"	1"	4 1/8"	40-654-6	37.20	26.04
1/2"	1/2"	1"	4 1/8"	40-655-3	30.80	21.56
9/16"	5/8"	1 3/8"	5"	40-656-1	42.40	29.68
5/8"	5/8"	1 3/8"	5"	84-339-1	41.20	28.84
3/4"	3/4"	1 5/8"	5 5/8"	84-341-7	52.05	36.43
7/8"	7/8"	1 7/8"	6 1/8"	84-343-3	59.85	41.89
1"	1"	1 7/8"	6 3/8"	84-345-8	85.90	60.13

82-773-3

82-774-1

SAVE up to 19%

NOGA
SIMPLY SOPHISTICATED

CERAMIC DEBURRING TOOL

- Ideal for deburring plastic materials and soft metals.
- For straight, curved and most other shaped surfaces.
- Approximately 10" (250 mm) radius on length of cutting portion with 90° cutting edge.
- Extremely long life.

Disposable Handle and Ceramic Blade

- Blade is permanently mounted in premium soft grip.
- Use and throw away.

DESCRIPTION	PART NO.	LIST	SALE
Disp. Ceramic Deburring Tool	82-773-3	$50.95	$41.26

Replaceable Handle and Blade

- Overall length: 6 3/4", blade length: 2 5/16"

DESCRIPTION	PART NO.	LIST	SALE
Handle with Replaceable Blade	82-774-1	$42.74	$36.32
Handle Only	82-775-8	14.35	12.19
Spare Blade	82-776-6	26.75	24.07

SHOP GRADE
HSS & COBALT CORNER ROUNDING END MILL SETS

SAVE up to 20%

4 Pc. Sets

- All sizes have 3/4" shanks.

8 Pc. Sets

- Sizes 1/16" thru 1/8" have 3/8" shanks.
- Sizes 5/32" thru 3/8" have 1/2" shanks.

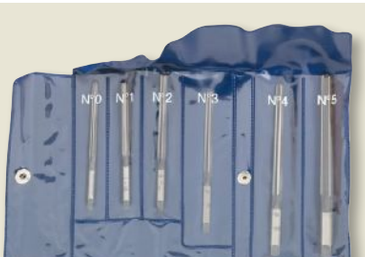
NO. OF PCS.	SIZES IN SET	HSS PART NO.	HSS LIST	HSS SALE	COBALT PART NO.	COBALT LIST	COBALT SALE
4	1/2, 9/16, 5/8, 3/4"	70-151-6	$356.25	$285.00	70-153-2	$333.60	$316.92
8	1/16, 3/32, 1/8, 5/32 3/16, 1/4, 5/16, 3/8"	70-152-4	317.65	254.12	70-154-0	275.30	220.24

70-154-0

SHOP GRADE
HSS TAPER PIN REAMER SETS

- Straight flute and left-handed flute are intended for hand reaming in easy-to-ream materials.
- Helical flute is designed for machine reaming.
- Supplied in plastic pouch.

FLUTE	NO. OF PCS.	SIZE RANGE	PART NUMBER	LIST	SALE
Straight	6	#0, 1, 2, 3, 4, 5	43-451-4	$87.15	$63.61
Straight	11	#0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	43-452-2	283.70	207.10
Left-Hand	6	#0, 1, 2, 3, 4, 5	72-503-6	115.05	83.98
Left-Hand	11	#0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	72-504-4	314.90	229.87
Helical	17	#7/0, 6/0, 5/0, 4/0, 3/0, 2/0 #0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	72-505-1	257.35	193.01



43-451-4

SAVE up to 27%

Special Pricing Valid at Participating U.S. Dealers and While Quantities Last • We Reserve The Right to Correct Publishing Errors.

SHOP GRADE
HSS & COBALT GROUND SQUARE TOOL BITS

SAVE 30%

42-983-7

M-2 HSS
- Excellent for general purpose and finishing work.

5% Cobalt
- Excellent for heavy cuts on castings and forgings. Higher wear resistance than M-2.

8% & 10% Cobalt
- A superior type high speed steel which will work better where high heat is present.
- Used for heavy cuts in hard materials.

SQUARE SIZE	OAL	M-2 HSS PART NO.	LIST	SALE	5% COBALT PART NO.	LIST	SALE	10% COBALT PART NO.	LIST	SALE	10% COBALT PART NO.	LIST	SALE
1/8"	2 1/2"	42-967-0	$1.85	$1.29	42-978-7	$3.40	$2.38	75-266-7	$3.70	$2.59	75-274-1	$4.35	$3.04
3/16"	2 1/2"	42-968-8	1.85	1.29	42-979-5	3.40	2.38	–	–	–	42-989-4	4.95	$3.46
1/4"	2 1/2"	42-969-6	2.25	1.57	42-980-3	4.05	2.83	75-267-5	4.45	3.11	42-990-2	5.20	3.64
5/16"	2 1/2"	42-970-4	2.70	1.89	42-981-1	4.85	3.39	75-268-3	5.45	3.81	42-991-0	6.65	4.65
3/8"	3"	42-971-2	4.00	2.80	42-982-9	6.60	4.62	75-269-1	7.55	5.28	42-992-8	9.45	6.61
7/16"	3 1/2"	42-972-0	7.35	5.14	42-983-7	11.65	8.15	75-270-9	13.20	9.24	42-993-6	20.50	14.35
1/2"	4"	42-973-8	7.75	5.42	42-984-5	13.30	9.31	75-271-7	15.15	10.60	42-994-4	20.55	14.38
5/8"	4 1/2"	42-974-6	14.55	10.18	42-985-2	23.90	16.73	75-272-5	27.00	18.90	42-995-1	40.05	28.03
3/4"	5"	42-975-3	21.40	14.98	42-986-0	35.65	24.95	–	–	–	42-996-9	60.25	42.17
7/8"	6"	42-976-1	40.95	28.66	42-987-8	64.75	45.32	–	–	–	–	–	–
1"	7"	42-977-9	48.65	34.05	42-988-6	77.00	53.90	75-273-3	90.60	63.42	–	–	–
1 1/4"	7"	75-264-2	77.30	54.11	75-265-9	110.65	77.45	–	–	–	–	–	–

SAVE up to 10%

NOGA
SIMPLY SOPHISTICATED

DEBURRING KIT

SAVE up to 21%

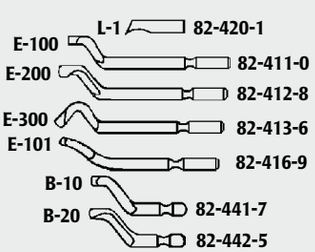
82-536-4

- Internal and external rotary deburring.
- Universal plastic handle accepts round, hexagonal or triangular telescoping blade holders, countersink blades or scrapers to perform a multitude of deburring and chamfering jobs.
- Twist of the wrist motion for convenient deburring of holes and radii.

DESCRIPTION	PART NO.	LIST	SALE
Super Burr Kit contains all of the following except, E-300 blade and B-20 blade	82-536-4	$198.80	$165.00

QTY.	DESCRIPTION	PART NUMBER	LIST EACH	SALE EACH
1	Universal Plastic Handle	82-438-3	$8.25	$6.76
1	C-Holder for Countersinks	82-430-0	8.55	6.75
1	C-Countersink 1/2" Diameter	82-448-2	17.60	14.43
1	C-Countersink 3/4" Diameter	82-383-1	25.55	22.48
1	C-Countersink 1 1/4" Diameter	82-449-0	39.10	32.06
1	Double-End Triangular Scraper	82-393-0	21.90	17.30
1	L-Chamfering Holder for L Blades	82-433-4	14.70	12.05
1	L-1 Blade for Steel & Aluminum	82-420-1	2.90	2.29
2	D-Holder for Mini-Scraper & Internal Scraper	82-431-8	8.20	6.72
1	D-Mini-Scraper HSS	82-391-4	12.00	9.48
1	D-Internal Scraper HSS	82-392-2	9.10	7.18
1	Double-End Holder for E & B Blades	82-408-6	8.65	6.83
1	E-100 Blade for holes in Steel & Aluminum	82-411-0	3.45	2.72
1	E-200 Blade for holes in Brass & Cast Iron	82-412-8	3.45	2.72
1	E-300 Blade for holes in Tubing Int./Ext.*	82-413-6	3.45	2.72
1	E-101 Blade for small holes in Steel & Aluminum	82-416-9	3.45	2.72
1	B-10 Blade for Steel & Aluminum	82-441-7	2.50	2.12
1	B-20 Blade for Brass & Cast Iron*	82-442-5	2.70	2.29
1	Double Burr w/guard, range 1/32 to 1/2" thick	82-495-3	26.85	22.01
2	HSS Blades for Double Burr	82-404-5	6.80	5.37
1	HSS Blade with 2 Flats 4.25 Keyway Burr	82-407-8	10.65	8.41
2	Disposable Burrs	82-468-0	5.95	4.87

*E-300 Blade and B-20 Blade are not included in kit, but are available as optional items.



VAL CUT®
TREPANNING TOOLS

Economy Version
- The proven "Drag-Cut" trepanning method for efficient use in BRIDGEPORT Mills, Drill Presses, etc. is now available in a cost saving square shank toolholder and cutter design.
- Clean bores up to 5 1/2" dia. are cut with hole type A cutters and clean discs are produced with type I cutters.
- Furnished complete with 1 hole type Cobalt cutter A 80-150-6, center drill, rule for easy diameter setting and allen wrench.

SHANK	CAPACITY	CUTTER SIZE	CUTTING DEPTH	PART NUMBER	LIST	SALE
1/2"*	3/4" - 3"	5 mm	3/8"	80-140-7	$201.15	$181.03

* with 3 flats for positive holding in 1/2" drill chuck.

Optional:

DESCRIPTION	PART NO.	LIST	SALE
Toolholder for 5 1/2" dia. capacity	80-145-6	$75.30	$67.77

Cutters

TYPE	CUTTER SIZE	CUTTING DEPTH	PART NUMBER	LIST	SALE
Hole A, Cobalt	5 mm	3/8"	80-150-6	$23.85	$21.46
Hole A, TiN coated	5 mm	3/8"	80-152-2	35.35	31.81
Disc I, Cobalt	5 mm	3/8"	80-154-8	23.85	21.46
Disc I, TiN coated	5 mm	3/8"	80-156-3	34.55	31.09

Accessories

DESCRIPTION	PART NO.	PRICE
Center Drill	80-033-4	$16.90
Center Guide	80-035-9	17.25

SWISS PRECISION INSTRUMENTS, INC.™

your partner in precision™

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Made in Japan

$23.40

40-151-3
(List $32.50)

SAVE 28%

SPI® Classic LOUPES

See pg. 29 for details.

FINN SPEED-DEX 24

See pg. 34 for details.

MADE IN USA

$1,720.45

70-193-8

$111.38

90-525-7
(List $123.76)

SAVE 10%

3 SPEED 20" PEDESTAL FAN

See pg. 38 for details.

$79.94

25-364-1
(List $99.95)

SAVE 20%

SHOP GRADE TAP GUIDE

See pg. 46 for details.

SPI® IP54 DIGITAL ROTOR GAGE

See pg. 2 for details.

NEW

$11.86

70-224-1
(List $16.95)

SAVE 30%