

# UNIVERSAL HEXAGON & 12-POINT TOOLING & GAGING



HEXAGON



12-POINT



SPLINE





**• Production Support** Our modern facility, including In-House Vacuum Heat Treating, CNC Form Grinding, CNC Turning, production CNC milling, automated wire EDM, conventional EDM, custom press-type work, and SPC quality systems allows us to perform for you with speed, reliability, and precision. Our engineering and technical staff, as well as worldwide agents are available to assist you with your manufacturing requirements. With over 40 years of experience in the fastener industry, we can provide the solution for your product application.



GAGE CALIBRATIONS



INSPECTION LABORATORY

### • Gage Certification

To help maintain gage compliance with several international gaging standards for both internal and external sizes, we offer gage calibration services to re-certify and repair the following: Hexagon, 12-Points, Splines, Square, Hexalobular, Six-Lobe, Six-Lobe Extra, Phillips, Cruciform and other configurations. All measurements performed are in accordance with ISO-Guide 17025, and all reference masters are directly traceable to N.I.S.T. We recommend your gages be routinely re-certified based on their use to ensure that the gaging members and dial indicators are accurate and reliable.

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# INTRODUCTION

**MISSION STATEMENT:** To be a world class contract supplier of tools and gages to the Aerospace, Automotive, Appliance, Defense, Electronic, Machine Tool, Medical Devices, Munition, and other industries with innovative designs, and to always be attentive to the needs of our customers.

**COMPANY:** Universal Punch Corp. is an ISO 9001:2008 registered company and has been a leader in the tooling and gaging industry for nearly four decades. As part of our continuing commitment to provide precision and excellence in all of our products, we maintain the largest state of the art 65,000 sq.ft. facility. Our spacious new plant is equipped with increased machining capacity, expanded heat treating department and a calibration and inspection laboratory. Our laboratory ensures that all products sold conform to ISO17025 standards. All measuring equipment and gaging masters are directly traceable to N.I.S.T.

**SERVICES:** Universal Punch Corp. is a high precision tool and gage manufacturer using high tech applications to make a wide range of products to meet today's increased demands for superior performing tools and high precision gaging. Our modern vacuum heat treating facility provides the control necessary to make tools with the highest structural integrity, capable of withstanding the severest heading application of warm or cold forming. In addition, complete inventories of standard tooling are available for immediate delivery in a variety of materials, finishes, and coatings.

**TOOLING:** We offer many popular drive systems with worldwide stocking agency, such as Phillips, Pozi 1A, 6-Lobe, 6-Lobe Extra, Supadrive, Six & Eight-Point Drives, 12-Point, ISO Hexalobular, Hexagon, Double Hex, Penta Drive, Square Drive, Indented Hexagon, Combinations, Spline Drive, Tamper Proof, NAS Cruciform, Star type forms, and custom forms.

**GAGING:** Go/No-Go, Penetration, Final Inspection, Plug Gages, Concentricity Gages, Thickness, Driver bit, recess, Wobble, Screw recess, Screw Testing Fixtures, runout, Protrusion Height, Variable reading Thread Gages, Special Modular Gaging Fixtures, SPC Data Collection Systems, and Gage Calibration Service.

**SPECIALTIES:** We have full time engineering staff using AutoCAD and SolidWorks CAD/CAM software for drawing and CNC machine programming. Our manufacturing processes consist of a large number of special five and six axis CNC Form Ginders, CNC Mill/Turning Lathes, Mills, Swiss Screw Machines, Wire EDM, and conventional EDM to ensure quality and reliability of products. We have a full in-house lab, temperature and humidity controlled for customer calibration of gages, SIP 305, Video Microscope, and Fiber Optics CMM.

**INTERNATIONAL SERVICES:** Universal Punch Corp. is dedicated to the global marketplace. Agents or distributors located in the United States, Mexico, Canada, South America, England, France, Spain, Germany, Italy, Switzerland, Turkey, India, South Korea, Singapore, China, Taiwan, Japan, and Australia are ready to assist you.

**Achievements:** ISO9001/2008 by Underwriters Laboratories UL DQS Inc. with quality emphasis on compliance to ISO Guide 25, the development of the two-piece hex punch system and later the 6-Lobe/Hexalobular system, special Medical Driver Systems, along with the patented Concentricity Gage and various fastener gages are just some of our achievements.

**WEBSITES:** [www.universalpunch.com](http://www.universalpunch.com) ; [www.concentricitygage.com](http://www.concentricitygage.com) ; [www.six-lobe.com](http://www.six-lobe.com) ; [www.wobble-broaches.com](http://www.wobble-broaches.com)

**EMAIL:** sales@universalpunch.com

**PHONE:** 714-556-4488

**FAX:** 714-556-6314

Servicing your tooling and gaging requirements into the twenty first century.

# TERMS AND CONDITIONS

**TERMS:** NET 30 DAYS ON APPROVED CREDIT, F.O.B. SANTA ANA, CALIFORNIA. ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

**DELIVERY:** IS ALWAYS QUOTED AFTER RECEIPT OF ORDER. STOCK ORDERS WILL PROCESS IN 2 BUSINESS DAYS UNLESS SPECIFIED NEXT DAY RUSH SERVICE.

**ORDERING & BILLING:**

MINIMUM BILLING - \$100.00

MINIMUM ORDER FROM STOCK - \$100.00

MINIMUM MANUFACTURED ORDER - \$200.00

**SHIPPING:** UNLESS OTHERWISE INSTRUCTED SHIPPING WILL BE DONE BY THE LEAST EXPENSIVE WAY. WE CANNOT ASSUME CHARGES OR RESPONSIBILITY DUE TO TRANSPORTATION DIFFICULTIES. DUE TO THE NATURE OF OUR BUSINESS, WE RESERVE THE RIGHT TO SHIP AND CHARGE THE CUSTOMER FOR 10% OVER OR UNDER SPECIFIED QUANTITIES.

**QUOTATIONS:** ARE VALID FOR 30 DAYS ONLY, UNLESS SPECIAL ARRANGEMENTS ARE MADE. WE RESERVE THE RIGHT TO ADVISE THE CUSTOMER OF ANY CHANGE IN PRICE UPON RECEIPT OF ORDER, IF YOU HAVE BEEN QUOTED INCORRECTLY.

**CANCELLATIONS:** WILL BE SUBJECT TO A MINIMUM CHARGE OF \$75.00 PLUS ANY APPLICABLE MATERIAL AND LABOR CHARGES FOR WORK IN PROGRESS.

**RETURNS:** POSITIVELY NO TOOLS OR GAGES MAY BE RETURNED WITHOUT FACTORY AUTHORIZATION (RMA) AND REQUESTS FOR SUCH MUST BE MADE WITHIN 10 BUSINESS DAYS OF RECEIPT OF MERCHANDISE. TOOLING ACCEPTED UNDER THESE CONDITIONS SHALL BE SUBJECT TO THE RIGHT OF REPAIR OR REPLACEMENT.

**MERCHANDISE RETURNS:** ALL RETURNED STOCK ITEMS WILL BE SUBJECT TO A 20% RESTOCKING CHARGE.

**EXCLUSIONS AND LIMITATIONS:** DUE TO THE SEVERITY OF ALL MANUFACTURING PROCESSES AND THE COMPLEXITY OF CONDITIONS SURROUNDING TOOL USAGE, IT IS A Firm POLICY OF THIS COMPANY NOT TO GUARANTEE TOOL PERFORMANCE, but ONLY CONFORMANCE TO PHYSICAL SPECIFICATIONS AND WORKMANSHIP.

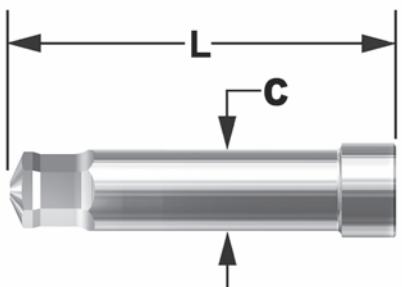
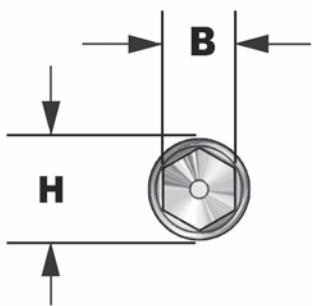
**GAGE LIMITED WARRANTY:** THIS LIMITED WARRANTY APPLIES ONLY TO GAGES AND GAGE PARTS MANUFACTURED by OR FOR UNIVERSAL PUNCH CORP.: THAT WITHIN TWELVE (12) MONTHS FROM DATE OF SHIPMENT, WE WILL REPAIR OR REPLACE, AT Our OPTION, FREE OF CHARGE, ANY PART OR PART WHICH UPON EXAMINATION WE FIND DEFECTIVE IN WORKMANSHIP OR MATERIAL. THE LIMITED WARRANTY DOES NOT APPLY TO ANY GAGES OR GAGE PARTS THAT HAVE BEEN DISASSEMBLED OR MODIFIED IN ANY WAY by THE USER. UNIVERSAL PUNCH CORP. IS NOT RESPONSIBLE FOR DAMAGE ARISING FROM FAILURE TO FOLLOW INSTRUCTIONS RELATING TO THE PRODUCT USE. THIS WARRANTY DOES NOT APPLY: (A) TO DAMAGE CAUSED by NON-UNIVERSAL PUNCH CORP. PRODUCTS; (B) TO DAMAGE CAUSED by ACCIDENT, ABUSE, MISUSE, FLOOD, FIRE, OR OTHER EXTERNAL CAUSES; (C) TO DAMAGE CAUSED by OPERATING THE PRODUCT OUTSIDE THE PERMITTED USES DESCRIBED by UNIVERSAL PUNCH CORP.; (D) TO DAMAGE CAUSED by SERVICE PROVIDED by ANYONE OTHER THAN UNIVERSAL PUNCH CORP. TECHNICIANS; (E) TO A GAGE OR GAGE PART THAT HAS BEEN MODIFIED TO SIGNIFICANTLY ALTER FUNCTIONALITY OR CAPABILITY WITHOUT THE WRITTEN PERMISSION OF UNIVERSAL PUNCH CORP.; OR (F) IF ANY SERIAL NUMBER HAS BEEN REMOVED or DEFACED.

TO THE EXTENT PERMITTED by LAW, THIS WARRANTY AND REMEDIES SET FOR THABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL or WRITTEN, STATUTORY, EXPRESS or IMPLIED. AS PERMITTED by APPLICABLE LAW, UNIVERSAL PUNCH CORP. SPECIFICALLY DISCLAIMS ANY AND ALL STATUTORY or IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN or LATENT DEFECTS, AND IN NO EVENT WILL UNIVERSAL PUNCH CORP. BE LIABLE FOR ANY SPECIAL, INDIRECT or CONSEQUENTIAL DAMAGES INCLUDING but NOT LIMITED TO, LOST PROFITS or OTHER DAMAGES FROM LOSS OF PRODUCTION CAUSED by DEFECTIVE PRODUCTS, or by UNSATISFACTORY PERFORMANCE OF THE PRODUCT. NO UNIVERSAL PUNCH AGENT or DISTRIBUTOR IS AUTHORIZED TO MAKE ANY MODIFICATION, EXPANSION, or ADDITION TO THIS WARRANTY. THIS LIMITED WARRANTY IS GOVERNED by AND CONSTRUED under THE LAWS OF THE COUNTY AND STATE IN WHICH THE PRODUCT WAS MANUFACTURED.

**OBTAINING WARRANTY SERVICE:** WARRANTY SERVICE CAN ONLY be OBTAINED DIRECTLY FROM THE MANUFACTURER, UNIVERSAL PUNCH CORP. AND PROVIDED MANUFACTURER APPROVAL MUST be OBTAINED. WARRANTY SERVICE APPLIES TO PARTS THAT ARE TENDERED or PRESENTED FOR SERVICE DURING THE WARRANTY PERIOD. SERVICE OPTIONS, PARTS AVAILABILITY and RESPONSE TIMES MAY VARY ACCORDING TO THE PRODUCT being RETAINED.

# #3230 HEXAGON PUNCHES

ASME/ANSI 18.3

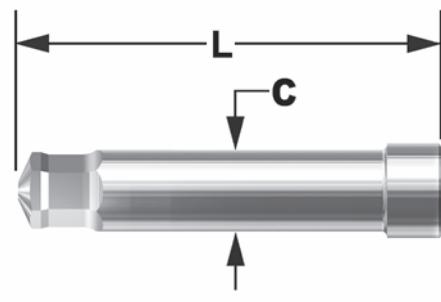
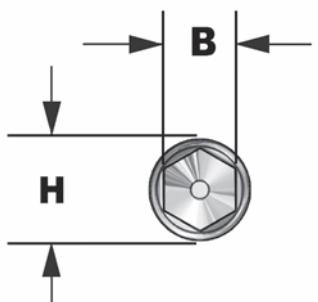


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	h inch / mm	L inch / mm
3230-02	#2 & #3	.0791 / 2,01	.125 / 3,18	.187 / 4,76	1.02 / 25,9
3230-04	#4 & #5	.0952 / 2,41	.125 / 3,18	.187 / 4,76	1.02 / 25,9
3230-06	#6	.1111 / 2,82	.140 / 3,56	.218 / 5,56	1.02 / 25,9
3230-08	#8	.1426 / 3,61	.176 / 4,47	.218 / 5,56	1.02 / 25,9
3230-10	#10	.1587 / 4,01	.194 / 4,67	.250 / 6,35	1.02 / 25,9
3230-25	1/4"	.1900 / 4,83	.229 / 5,81	.281 / 7,14	1.37 / 34,9
3230-31	5/16"	.2530 / 6,43	.302 / 7,67	.343 / 8,74	1.37 / 34,9
3230-37	3/8"	.3160 / 8,03	.377 / 9,58	.437 / 11,13	1.37 / 34,9
3230-50	7/16" & 1/2"	.3790 / 9,63	.450 / 11,43	.500 / 12,70	1.50 / 38,1
3230-62	5/8"	.5050 / 12,83	.600 / 15,24	.656 / 16,66	2.50 / 63,5
3230-75	3/4"	.6310 / 16,03	.750 / 19,05	.812 / 20,62	3.00 / 76,2

MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# #3231 METRIC HEXAGON PUNCHES

ASME/ANSI / ISO / DIN / JIS

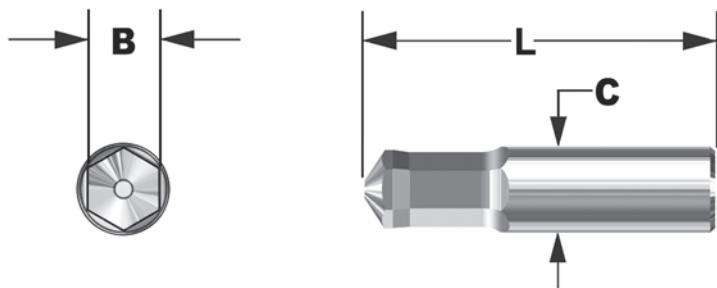


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	h inch / mm	L inch / mm
3231-03	M3	.1016 / 2,58	.196 / 4,99	.256 / 6,50	1.730 / 44,2
3231-04	M4	.1213 / 3,08	.196 / 4,99	.256 / 6,50	1.730 / 44,2
3231-05	M5	.1612 / 4,09	.216 / 5,49	.276 / 7,07	2.283 / 58,0
3231-06	M6	.2024 / 5,14	.259 / 6,58	.319 / 8,10	2.283 / 58,0
3231-08	M8	.2417 / 6,14	.314 / 7,98	.374 / 9,50	2.283 / 58,0
3231-10	M10	.3219 / 8,17	.393 / 9,98	.453 / 11,51	3.150 / 80,0
3231-12	M12	.4006 / 10,17	.491 / 12,48	.551 / 14,00	3.150 / 80,0
3231-14	M14	.4808 / 12,21	.589 / 14,98	.650 / 16,51	3.543 / 90,0
3231-16	M16-M18	.5595 / 14,21	.668 / 16,98	.728 / 18,50	3.543 / 90,0
3231-20	M20-M22	.6783 / 17,23	.826 / 20,98	.925 / 23,50	3.937 / 100,0
3231-24	M24-M27	.7589 / 19,27	.905 / 22,00	.965 / 24,50	6.024 / 153,0

MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# #3232 METRIC HEXAGON PUNCHES

ASME/ANSI / ISO / DIN / JIS

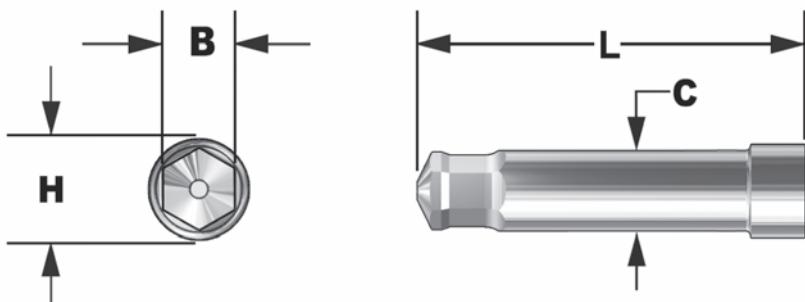


PART NUMBER	SCREW SIZE	hEx SIZE	B inch / mm	C inch / mm	L inch / mm
3232-03	M3	2,5	.1016 / 2,58	.196 / 4,9	1.41 / 36,0
3232-04	M4	3	.1213 / 3,08	.196 / 4,9	1.41 / 36,0
3232-05	M5	4	.1612 / 4,09	.236 / 5,9	1.41 / 36,0
3232-06	M6	5	.2024 / 5,14	.275 / 6,9	1.41 / 36,0
3232-08	M8	6	.2417 / 6,13	.295 / 7,4	1.41 / 36,0
3232-10	M10	8	.3219 / 8,17	.393 / 10,0	1.41 / 36,0
3232-12	M12	10	.4006 / 10,17	.472 / 12,0	1.41 / 36,0
3232-14	M14	12	.4808 / 12,21	.570 / 14,4	1.85 / 47,0
3232-16	M16-M18	14	.5595 / 14,21	.668 / 16,9	1.85 / 47,0
3232-20	M20-M22	17	.6783 / 17,22	.826 / 20,9	2.16 / 55,0
3232-24	M24-M27	19	.7589 / 19,27	.904 / 22,9	2.36 / 60,0

MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# #3235 METRIC HEXAGON PUNCHES

ASME/ANSI / ISO / DIN / JIS



PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	h inch / mm	L inch / mm
3235-03	M3	.1016 / 2,58	.137 / 3,50	.197 / 5,00	1.024 / 26,0
3235-04	M4	.1213 / 3,08	.157 / 4,00	.217 / 5,55	1.024 / 26,0
3235-05	M5	.1612 / 4,09	.202 / 5,15	.260 / 6,60	1.181 / 30,0
3235-06	M6	.2024 / 5,14	.250 / 6,35	.312 / 7,90	1.417 / 36,0
3235-08	M8	.2417 / 6,14	.295 / 7,50	.354 / 9,00	1.417 / 36,0
3235-10	M10	.3219 / 8,17	.387 / 9,85	.445 / 11,30	1.417 / 36,0
3235-12	M12	.4006 / 10,17	.478 / 12,15	.539 / 13,70	1.575 / 40,0
3235-14	M14	.4808 / 12,21	.570 / 14,50	.630 / 16,00	1.969 / 50,0
3235-16	M16	.5595 / 14,21	.661 / 16,80	.728 / 18,50	2.362 / 60,0
3235-20	M20	.6783 / 17,23	.797 / 20,25	.866 / 22,00	2.953 / 75,0
3235-24	M24	.7589 / 19,27	.905 / 23,00	.965 / 24,50	3.150 / 80,0

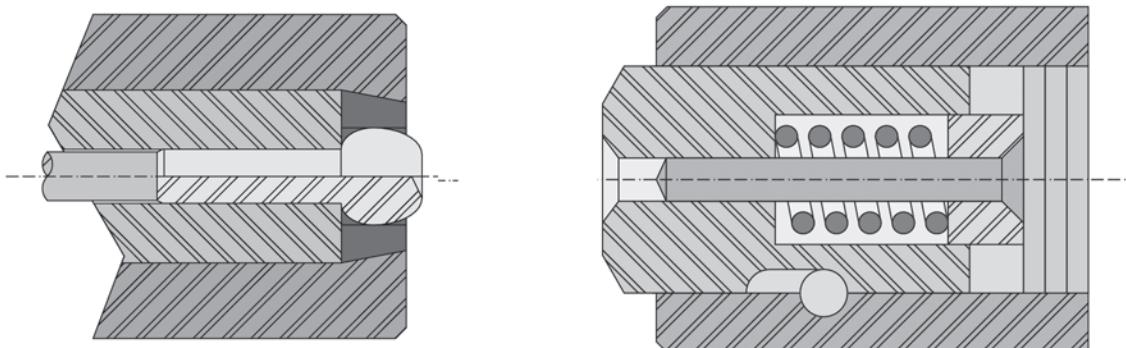
MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# 12-POINT PUNCH & INSERT ASSEMBLY

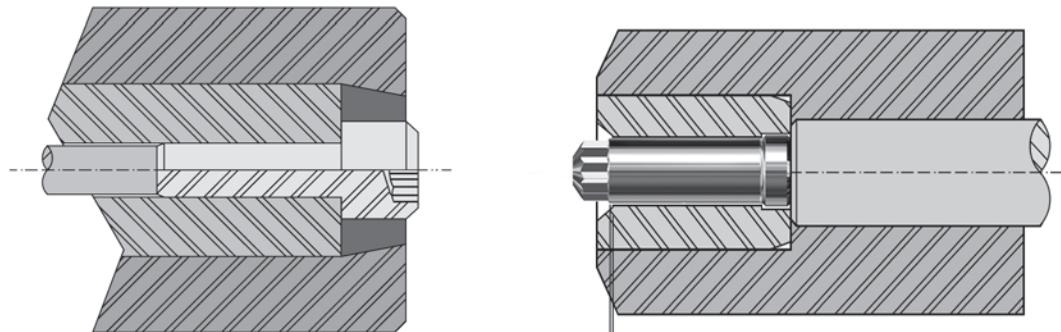
12-POINT PUNCH PINS & INSERT HOLDERS

SOCKET HEAD BOLT SCREWS  
FLAT HEAD BOLT SCREWS  
OVAL HEAD BOLT SCREWS

UPSET DIE



FINAL DIE



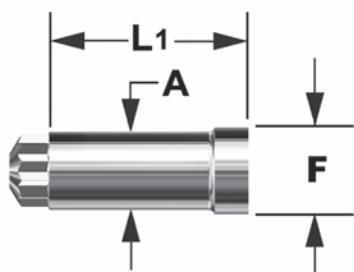
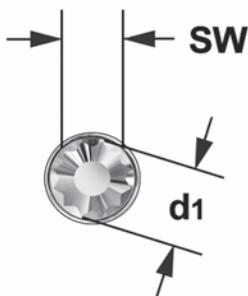
SOCKET HEAD BOLTS

FLAT HEAD BOLTS

OVAL HEAD BOLTS

# #3700 12-POINT PUNCH PINS

DIN34824 / VW01043

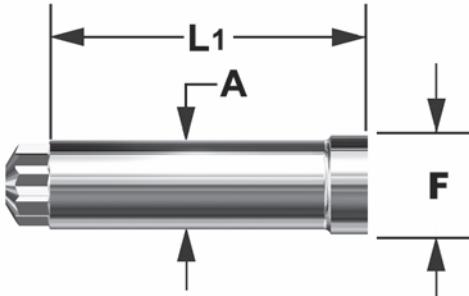
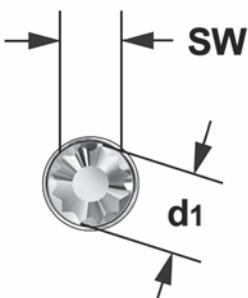


PART NUMBER	SCREW SIZE	SW inch / mm	A inch / mm	d1 inch / mm	f inch / mm	L inch / mm
3700-04	M4	.106 / 2,69	.159 / 4,03	.146 / 3,70	.126 / 3,21	.630 / 16,0
3700-05	M5	.140 / 3,55	.208 / 5,28	.195 / 4,94	.167 / 4,22	.633 / 16,0
3700-06	M6	.174 / 4,43	.271 / 6,88	.243 / 6,16	.206 / 5,24	.761 / 19,3
3700-08	M8	.209 / 5,31	.330 / 8,38	.291 / 7,39	.244 / 6,20	1.01 / 25,6
3700-10	M10	.281 / 7,13	.374 / 9,49	.387 / 9,84	.328 / 8,33	1.01 / 25,6
3700-12	M12	.332 / 8,42	.469 / 11,91	.461 / 11,69	.386 / 9,79	1.01 / 25,6
3700-14	M14	.381 / 9,67	.562 / 14,27	.533 / 13,51	.450 / 11,44	1.01 / 25,6
3700-16	M16	.448 / 11,37	.652 / 16,56	.630 / 15,98	.530 / 13,45	1.51 / 38,3
3700-18	M18	.485 / 12,30	.733 / 18,61	.677 / 17,20	.570 / 14,48	1.51 / 38,3

MATERIAL: M42 HARDNESS: RC 62-64

# #3705 12-POINT EXTENDED PUNCH PINS

DIN34824 / VW01043

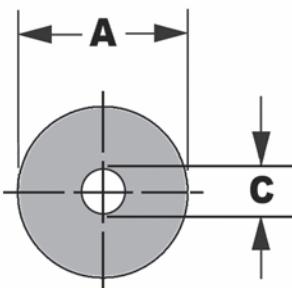
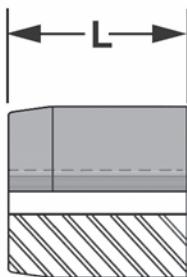


PART NUMBER	SCREW SIZE	SW inch / mm	A inch / mm	d1 inch / mm	f inch / mm	L inch / mm
3700-04	M4	.106 / 2,69	.159 / 4,03	.146 / 3,70	.126 / 3,21	1.42 / 36,2
3700-05	M5	.140 / 3,55	.208 / 5,28	.195 / 4,94	.167 / 4,22	1.42 / 36,2
3700-06	M6	.174 / 4,43	.271 / 6,88	.243 / 6,16	.206 / 5,24	1.42 / 36,2
3700-08	M8	.209 / 5,31	.330 / 8,38	.291 / 7,39	.244 / 6,20	1.74 / 44,2
3700-10	M10	.281 / 7,13	.374 / 9,49	.387 / 9,84	.328 / 8,33	1.74 / 44,2
3700-12	M12	.332 / 8,42	.469 / 11,91	.461 / 11,69	.386 / 9,79	2.41 / 61,2
3700-14	M14	.381 / 9,67	.562 / 14,27	.533 / 13,51	.450 / 11,44	2.41 / 61,2
3700-16	M16	.448 / 11,37	.652 / 16,56	.630 / 15,98	.530 / 13,45	2.41 / 61,2
3700-18	M18	.485 / 12,30	.733 / 18,61	.677 / 17,20	.570 / 14,48	2.41 / 61,2

MATERIAL: M42 HARDNESS: RC 62-64

# #3710 12-POINT FLAT HEAD BOLT INSERTS

DIN34824 / VW01043

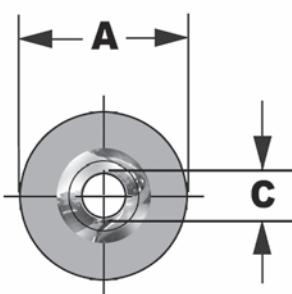
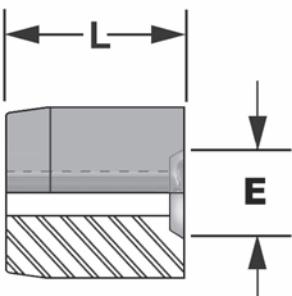


PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	L inch / mm
3710-04	M4	.562 / 14,27	.159 / 4,03	.500 / 12,70
3710-05	M5	.562 / 14,27	.208 / 5,28	.500 / 12,70
3710-06	M6	.562 / 14,27	.271 / 6,88	.500 / 12,70
3710-08	M8	.562 / 14,27	.330 / 8,38	.500 / 12,70
3710-10	M10	.562 / 14,27	.374 / 9,49	.500 / 12,70
3710-12	M12	.875 / 22,22	.469 / 11,91	1.000 / 25,40
3710-14	M14	.875 / 22,22	.562 / 14,27	1.000 / 25,40
3710-16	M16	1.000 / 25,40	.652 / 16,56	1.000 / 25,40
3710-18	M18	1.250 / 31,75	.733 / 18,61	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 60-62

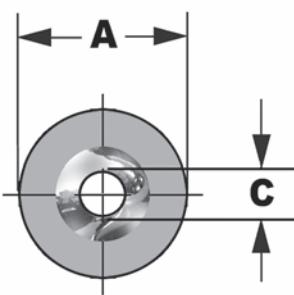
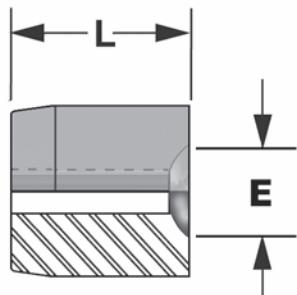
# #3711 12-POINT SOCKET HEAD BOLT INSERTS

DIN34824 / VW01043



PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	E inch / mm	L inch / mm
3711-04	M4	.562 / 14,27	.159 / 4,03	.118 / 3,00	.500 / 12,70
3711-05	M5	.562 / 14,27	.208 / 5,28	.140 / 3,56	.500 / 12,70
3711-06	M6	.562 / 14,27	.271 / 6,88	.161 / 4,09	.500 / 12,70
3711-08	M8	.562 / 14,27	.330 / 8,38	.183 / 4,65	.500 / 12,70
3711-10	M10	.562 / 14,27	.374 / 9,49	.205 / 5,21	.500 / 12,70
3711-12	M12	.875 / 22,22	.469 / 11,91	.226 / 5,74	1.000 / 25,40
3711-14	M14	.875 / 22,22	.562 / 14,27	.270 / 6,86	1.000 / 25,40
3711-16	M16	1.000 / 25,40	.652 / 16,56	.312 / 7,92	1.000 / 25,40
3711-18	M18	1.250 / 31,75	.733 / 18,61	.375 / 9,53	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 60-62

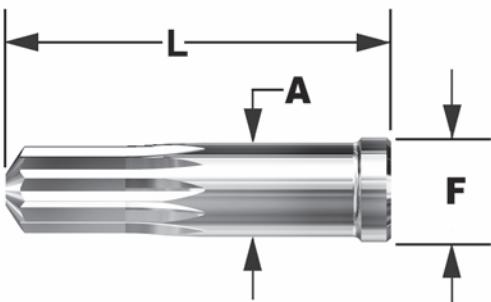
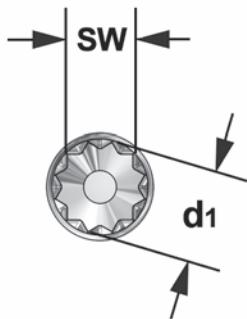


PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	E inch / mm	L inch / mm
3712-04	M4	.562 / 14,27	.159 / 4,03	.118 / 3,00	.500 / 12,70
3712-05	M5	.562 / 14,27	.208 / 5,28	.140 / 3,56	.500 / 12,70
3712-06	M6	.562 / 14,27	.271 / 6,88	.161 / 4,09	.500 / 12,70
3712-08	M8	.562 / 14,27	.330 / 8,38	.183 / 4,65	.500 / 12,70
3712-10	M10	.562 / 14,27	.374 / 9,49	.205 / 5,21	.500 / 12,70
3712-12	M12	.875 / 22,22	.469 / 11,91	.226 / 5,74	1.000 / 25,40
3712-14	M14	.875 / 22,22	.562 / 14,27	.270 / 6,86	1.000 / 25,40
3712-16	M16	1.000 / 25,40	.652 / 16,56	.312 / 7,92	1.000 / 25,40
3712-18	M18	1.250 / 31,75	.733 / 18,61	.375 / 9,53	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 60-62

# #3800 12-POINT MULTI-STATION PUNCHES

DIN34824 / VW01043

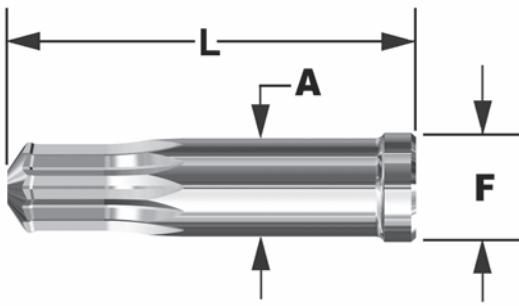
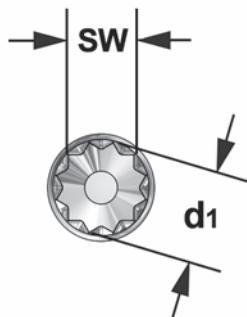


PART NUMBER	SCREW SIZE	SW inch / mm	A inch / mm	d1 inch / mm	f inch / mm	L inch / mm
3800-04	M4	.106 / 2,69	.159 / 4,03	.146 / 3,70	.217 / 5,5	1.41 / 36
3800-05	M5	.140 / 3,55	.208 / 5,28	.195 / 4,94	.256 / 6,5	1.41 / 36
3800-06	M6	.174 / 4,43	.271 / 6,88	.243 / 6,16	.315 / 8,0	1.41 / 36
3800-08	M8	.209 / 5,31	.330 / 8,38	.291 / 7,39	.394 / 10,0	1.73 / 44
3800-10	M10	.281 / 7,13	.374 / 9,49	.387 / 9,84	.472 / 12,0	1.73 / 44
3800-12	M12	.332 / 8,42	.469 / 11,91	.461 / 11,69	.571 / 14,5	2.40 / 61
3800-14	M14	.381 / 9,67	.562 / 14,27	.533 / 13,51	.630 / 16,0	2.40 / 61
3800-16	M16	.448 / 11,37	.652 / 16,56	.630 / 15,98	.728 / 18,5	2.40 / 61
3800-18	M18	.485 / 12,30	.733 / 18,61	.677 / 17,20	.787 / 20,0	2.40 / 61

MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# #3805 12-POINT EXTRUSION PUNCHES

DIN34824 / VW01043



PART NUMBER	SCREW SIZE	SW inch / mm	A inch / mm	d1 inch / mm	f inch / mm	L inch / mm
3805-04	M4	.106 / 2,69	.157 / 4,00	.146 / 3,70	.217 / 5,5	1.41 / 36
3805-05	M5	.140 / 3,55	.216 / 5,50	.195 / 4,94	.256 / 6,5	1.41 / 36
3805-06	M6	.174 / 4,43	.255 / 6,50	.243 / 6,16	.315 / 8,0	1.41 / 36
3805-08	M8	.209 / 5,31	.315 / 8,00	.291 / 7,39	.394 / 10,0	1.73 / 44
3805-10	M10	.281 / 7,13	.393 / 10,00	.387 / 9,84	.472 / 12,0	1.73 / 44
3805-12	M12	.332 / 8,42	.511 / 13,00	.461 / 11,69	.571 / 14,5	2.40 / 61
3805-14	M14	.381 / 9,67	.551 / 14,00	.533 / 13,51	.630 / 16,0	2.40 / 61
3805-16	M16	.448 / 11,37	.649 / 16,50	.630 / 15,98	.728 / 18,5	2.40 / 61
3805-18	M18	.485 / 12,30	.708 / 18,00	.677 / 17,20	.787 / 20,0	2.40 / 61

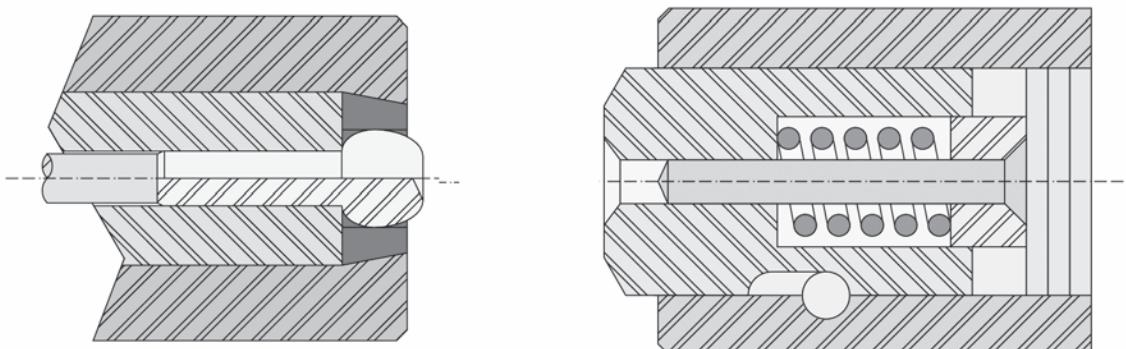
MATERIAL: ASP-30PM HARDNESS: RC 64-66 PVD COATINGS AVAILABLE UPON REQUEST.

# HEXAGON PUNCH & INSERT ASSEMBLY

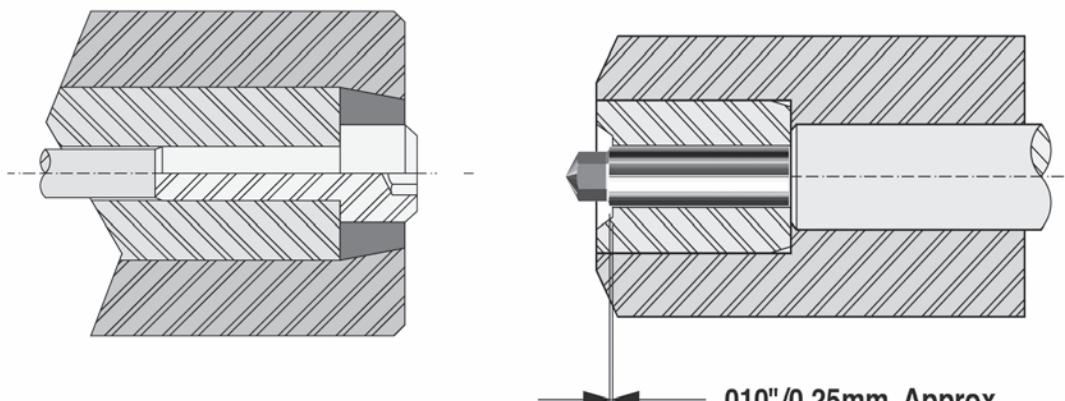
PUNCH PINS & INSERTS, ROUND DESIGN

4602 & 5602 SOCKET HEAD SCREWS  
4603 & 5603 FLAT HEAD SCREWS  
4604 & 5604 BUTTON HEAD SCREWS

UPSET DIE



FINAL DIE



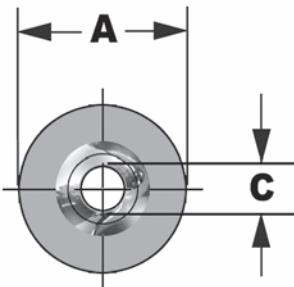
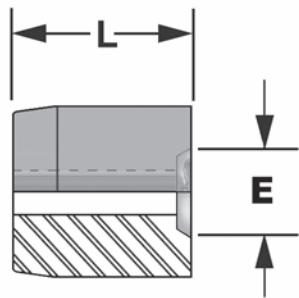
SOCKET HEADS

FLAT HEADS

BUTTON HEADS

# #4602 SOCKET HEAD INSERTS

ASME/ANSI 18.3

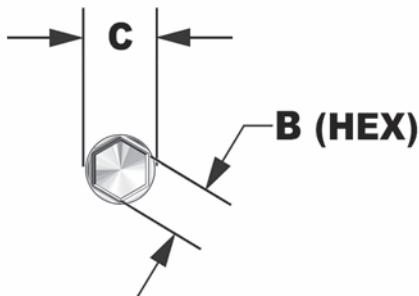
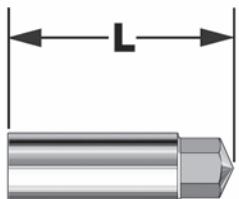


PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	E inch / mm	L inch / mm
4602-01	#1	.562 / 14,27	.078 / 1,98	.118 / 3,00	.500 / 12,7
4602-02	#2	.562 / 14,27	.098 / 2,49	.140 / 3,56	.500 / 12,7
4602-03	#3	.562 / 14,27	.098 / 2,49	.161 / 4,09	.500 / 12,7
4602-04	#4	.562 / 14,27	.112 / 2,85	.183 / 4,65	.500 / 12,7
4602-05	#5	.562 / 14,27	.112 / 2,85	.205 / 5,21	.500 / 12,7
4602-06	#6	.562 / 14,27	.130 / 3,31	.226 / 5,74	.500 / 12,7
4602-08	#8	.562 / 14,27	.168 / 4,27	.270 / 6,86	.500 / 12,7
4602-10	#10	.562 / 14,27	.187 / 4,75	.312 / 7,92	.500 / 12,7
4602-25	1/4"	.875 / 22,22	.221 / 5,62	.375 / 9,53	1.000 / 25,4
4602-31	5/16"	.875 / 22,22	.296 / 7,52	.469 / 11,91	1.000 / 25,4
4602-37	3/8"	1.000 / 25,40	.370 / 9,40	.562 / 14,27	1.000 / 25,4
4602-43	7/16"	1.250 / 31,75	.445 / 11,31	.656 / 16,66	1.000 / 25,4
4602-50	1/2"	1.250 / 31,75	.445 / 11,31	.750 / 19,05	1.000 / 25,4

MATERIAL: D2 HARDNESS: RC 59-61

# #5602 HEXAGON ROUND PINS

ASME/ANSI 18.3

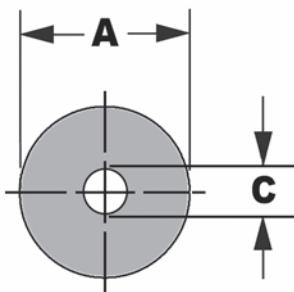
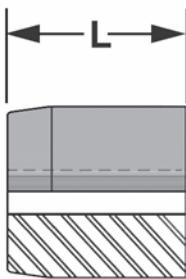


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5602-01	#1	.0633 / 1,60	.078 / 1,98	.559 / 14,20
5602-02	#2	.0790 / 2,00	.098 / 2,49	.570 / 14,48
5602-03	#3	.0790 / 2,00	.098 / 2,49	.574 / 14,58
5602-04	#4	.0952 / 2,41	.112 / 2,85	.592 / 15,04
5602-05	#5	.0952 / 2,41	.112 / 2,85	.597 / 15,16
5602-06	#6	.1111 / 2,82	.130 / 3,31	.608 / 15,44
5602-08	#8	.1424 / 3,61	.168 / 4,27	.626 / 15,90
5602-10	#10	.1585 / 4,02	.187 / 4,75	.648 / 16,46
5602-25	1/4"	.1897 / 4,81	.221 / 5,62	1.182 / 30,02
5602-31	5/16"	.2527 / 6,41	.296 / 7,53	1.228 / 31,19
5602-37	3/8"	.3157 / 8,01	.370 / 9,41	1.278 / 32,46
5602-43	7/16"	.3787 / 9,61	.445 / 11,31	1.323 / 33,60
5602-50	1/2"	.3787 / 9,61	.445 / 11,31	1.352 / 34,34

MATERIALS: M2 RC62-64 ASP-30PM RC64-66

# #4603 FLAT HEAD INSERTS

ANSI 18.3 1986

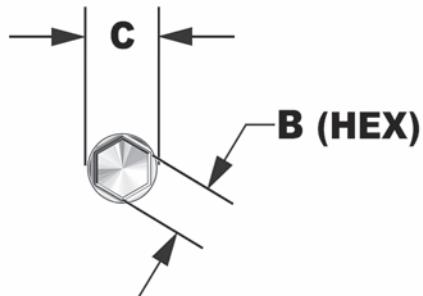
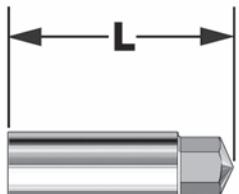


PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	L inch / mm
4603-01	#1 & #2	.562 / 14,27	.062 / 1,58	.500 / 12,70
4603-03	#3 & #4	.562 / 14,27	.078 / 1,98	.500 / 12,70
4603-05	#5 & #6	.562 / 14,27	.095 / 2,42	.500 / 12,70
4603-08	#8	.562 / 14,27	.112 / 2,85	.500 / 12,70
4603-10	#10	.562 / 14,27	.150 / 3,81	.500 / 12,70
4603-25	1/4"	.875 / 22,22	.187 / 4,75	1.000 / 25,40
4603-31	5/16"	.875 / 22,22	.221 / 5,62	1.000 / 25,40
4603-37	3/8"	1.000 / 25,40	.260 / 6,61	1.000 / 25,40
4603-43	7/16"	1.250 / 31,75	.296 / 7,52	1.000 / 25,40
4603-50	1/2"	1.250 / 31,75	.370 / 9,40	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 59-61

# #5603 HEXAGON ROUND PINS

ANSI 18.3 1986

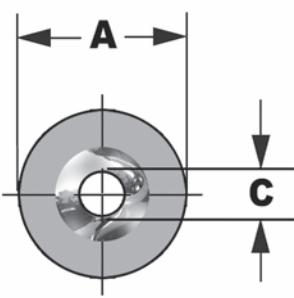
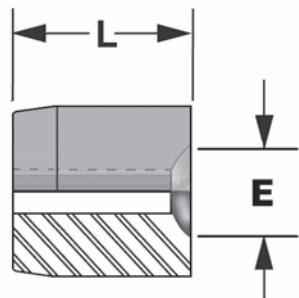


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5603-01	#1	.0510 / 1,29	.062 / 1,58	.561 / 14,25
5603-02	#2	.0510 / 1,29	.062 / 1,58	.568 / 14,43
5603-03	#3	.0633 / 1,60	.078 / 1,98	.577 / 14,66
5603-04	#4	.0633 / 1,60	.078 / 1,98	.589 / 14,96
5603-05	#5	.0790 / 2,00	.095 / 2,42	.604 / 15,34
5603-06	#6	.0790 / 2,00	.095 / 2,42	.609 / 15,47
5603-08	#8	.0952 / 2,41	.112 / 2,85	.624 / 15,85
5603-10	#10	.1268 / 3,22	.150 / 3,81	.643 / 16,33
5603-25	1/4"	.1585 / 4,02	.187 / 4,75	1.176 / 29,87
5603-31	5/16"	.1897 / 4,81	.221 / 5,62	1.208 / 30,68
5603-37	3/8"	.2215 / 5,62	.260 / 6,61	1.241 / 31,52
5603-43	7/16"	.2527 / 6,41	.296 / 7,53	1.249 / 31,72
5603-50	1/2"	.3157 / 8,01	.370 / 9,41	1.279 / 32,49

MATERIALS: M2 RC62-64

# #4604 BUTTON HEAD INSERTS

ANSI 18.3 1986

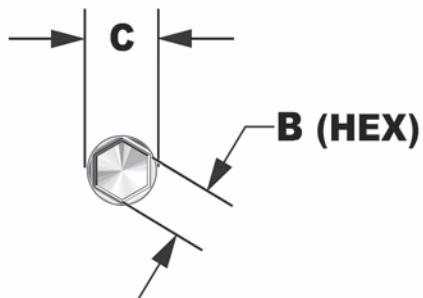
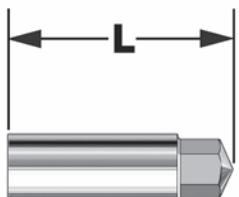


PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	E inch / mm	L inch / mm
4604-01	#1	.562 / 14,27	.062 / 1,58	.149 / 3,78	.500 / 12,70
4604-02	#2	.562 / 14,27	.062 / 1,58	.174 / 4,42	.500 / 12,70
4604-03	#3	.562 / 14,27	.078 / 1,98	.198 / 5,03	.500 / 12,70
4604-04	#4	.562 / 14,27	.078 / 1,98	.223 / 5,66	.500 / 12,70
4604-05	#5	.562 / 14,27	.095 / 2,42	.248 / 6,30	.500 / 12,70
4604-06	#6	.562 / 14,27	.095 / 2,42	.272 / 6,91	.500 / 12,70
4604-08	#8	.562 / 14,27	.112 / 2,85	.322 / 8,18	.500 / 12,70
4604-10	#10	.562 / 14,27	.150 / 3,81	.371 / 9,42	.500 / 12,70
4604-25	1/4"	.875 / 22,22	.187 / 4,75	.447 / 11,35	1.000 / 25,40
4604-31	5/16"	.875 / 22,22	.221 / 5,62	.557 / 14,15	1.000 / 25,40
4604-37	3/8"	1.250 / 31,75	.260 / 6,61	.666 / 16,92	1.000 / 25,40
4604-50	1/2"	1.250 / 31,75	.371 / 9,43	.890 / 22,61	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 59-61

# #5604 HEXAGON ROUND PINS

ANSI 18.3 1986



PART NUMBER	SCREW SIZE	A inch / mm	C inch / mm	L inch / mm
5604-01	#1	.0510 / 1,29	.062 / 1,58	.519 / 13,18
5604-02	#2	.0510 / 1,29	.062 / 1,58	.514 / 13,05
5604-03	#3	.0633 / 1,60	.078 / 1,98	.518 / 13,15
5604-04	#4	.0633 / 1,60	.078 / 1,98	.511 / 12,97
5604-05	#5	.0790 / 2,00	.095 / 2,42	.522 / 13,25
5604-06	#6	.0790 / 2,00	.095 / 2,42	.517 / 13,13
5604-08	#8	.0952 / 2,41	.112 / 2,85	.521 / 13,23
5604-10	#10	.1268 / 3,22	.150 / 3,81	.534 / 13,56
5604-25	1/4"	.1585 / 4,02	.187 / 4,75	1.029 / 26,13
5604-31	5/16"	.1897 / 4,81	.221 / 5,62	1.025 / 26,03
5604-37	3/8"	.2215 / 5,62	.260 / 6,61	1.018 / 25,85
5604-50	1/2"	.3157 / 8,01	.371 / 9,43	1.041 / 26,44

MATERIALS: M2 RC62-64

# HEXAGON PUNCH & INSERT ASSEMBLY

## PUNCH PINS & INSERT, HEX DESIGN

4605 & 5605 SOCKET HEAD SCREWS

4606 & 5606 FLAT HEAD SCREWS

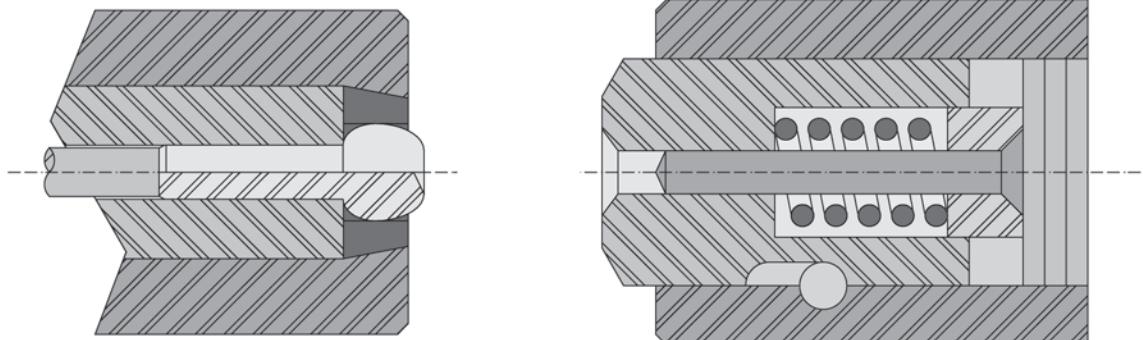
4607 & 5607 METRIC FLAT HEAD SCREWS

4611 & 5611 METRIC SOCKET HEAD SCREWS

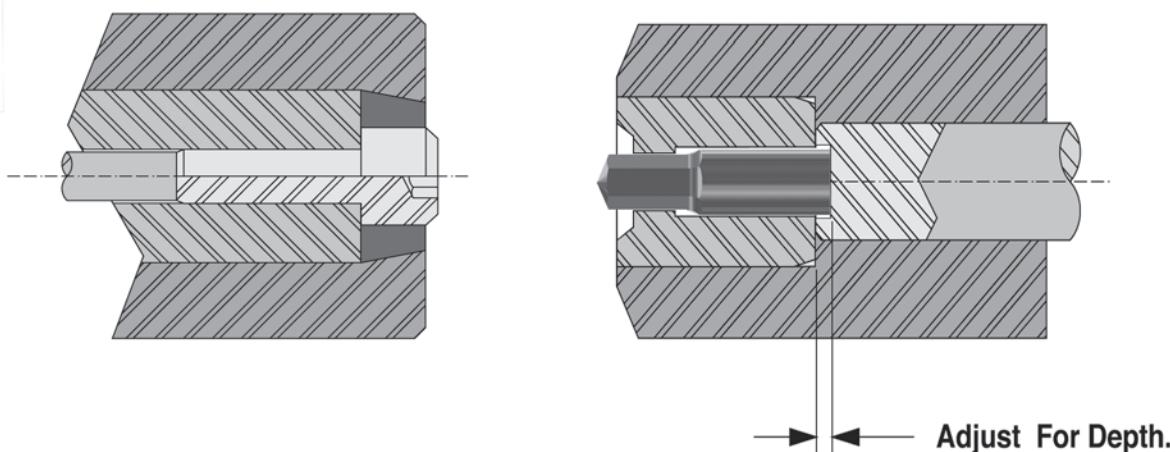
4612 & 5612 METRIC BUTTON HEAD SCREWS

4613 & 5613 BUTTON HEAD SCREWS

### UPSET BLOW



### 2ND FINISHING BLOW



SOCKET HEADS



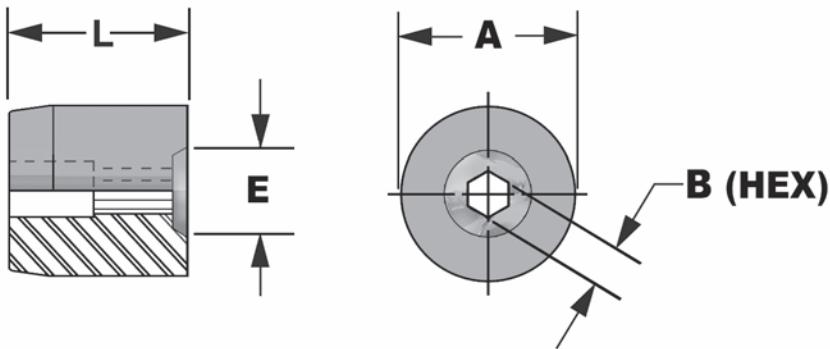
FLAT HEADS



BUTTON HEADS

# #4605 SOCKET HEAD INSERTS

ASME/ANSI B18.3

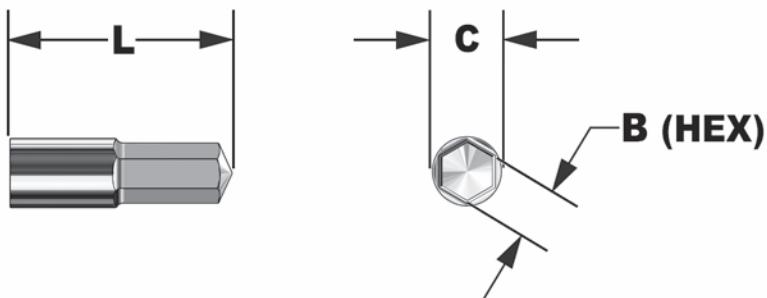


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	E inch / mm	L inch / mm
4605-01	#1	.562 / 14,27	.063 / 1,61	.118 / 3,00	.500 / 12,70
4605-02	#2	.562 / 14,27	.079 / 2,00	.140 / 3,56	.500 / 12,70
4605-03	#3	.562 / 14,27	.079 / 2,00	.161 / 4,09	.500 / 12,70
4605-04	#4	.562 / 14,27	.095 / 2,41	.183 / 4,65	.500 / 12,70
4605-05	#5	.562 / 14,27	.095 / 2,41	.205 / 5,21	.500 / 12,70
4605-06	#6	.562 / 14,27	.111 / 2,82	.226 / 5,74	.500 / 12,70
4605-08	#8	.562 / 14,27	.142 / 3,62	.270 / 6,86	.500 / 12,70
4605-10	#10	.562 / 14,27	.158 / 4,03	.312 / 7,92	.500 / 12,70
4605-25	1/4"	.875 / 22,22	.190 / 4,82	.375 / 9,53	1.000 / 25,40
4605-31	5/16"	.875 / 22,22	.253 / 6,42	.469 / 11,91	1.000 / 25,40
4605-37	3/8"	1.000 / 25,40	.316 / 8,02	.562 / 14,27	1.000 / 25,40
4605-43	7/16"	1.250 / 31,75	.379 / 9,62	.656 / 16,66	1.000 / 25,40
4605-50	1/2"	1.250 / 31,75	.379 / 9,62	.750 / 19,05	1.000 / 25,40
4605-62	5/8"	1.375 / 34,92	.505 / 12,82	.938 / 23,83	1.000 / 25,40
4605-75	3/4"	1.500 / 38,10	.631 / 16,02	1.125 / 28,57	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 59-61

# #5605 HEXAGON PINS

ASME/ANSI B18.3

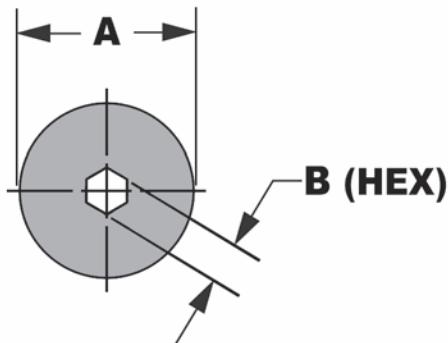
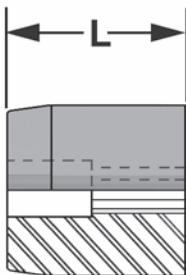


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5605-01	#1	.0635 / 1,61	.078 / 1,98	.602 / 15,29
5605-02	#2 & #3	.0791 / 2,00	.095 / 2,41	.617 / 15,67
5605-04	#4 & #5	.0952 / 2,41	.112 / 2,84	.632 / 16,05
5605-06	#6	.1111 / 2,82	.130 / 3,30	.617 / 15,67
5605-08	#8	.1426 / 3,62	.168 / 4,27	.635 / 16,12
5605-10	#10	.1587 / 4,03	.187 / 4,75	.652 / 16,56
5605-25	1/4"	.1900 / 4,82	.221 / 5,61	1.216 / 30,89
5605-31	5/16"	.2530 / 6,42	.296 / 7,52	1.257 / 31,93
5605-37	3/8"	.3160 / 8,02	.370 / 9,40	1.287 / 32,69
5605-43	7/16"	.3790 / 9,62	.445 / 11,30	1.322 / 33,58
5605-50	1/2"	.3790 / 9,62	.445 / 11,30	1.351 / 34,32
5605-62	5/8"	.5050 / 12,82	.590 / 14,99	1.443 / 36,65
5605-75	3/4"	.6310 / 16,02	.735 / 18,67	1.535 / 38,99

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #4606 FLAT HEAD INSERTS

ASME/ANSI B18.3

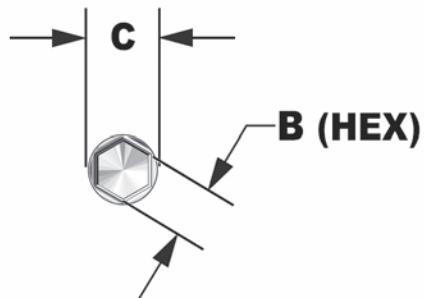
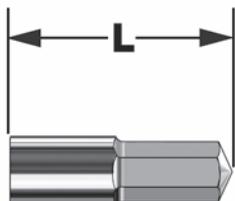


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	L inch / mm
4606-01	#1 & #2	.562 / 14,27	.0510 / 1,29	.500 / 12,70
4606-03	#3 & #4	.562 / 14,27	.0635 / 1,61	.500 / 12,70
4606-05	#5 & #6	.562 / 14,27	.0791 / 2,00	.500 / 12,70
4606-08	#8	.562 / 14,27	.0952 / 2,41	.500 / 12,70
4606-10	#10	.562 / 14,27	.1270 / 3,22	.500 / 12,70
4606-25	1/4"	.875 / 22,22	.1587 / 4,03	1.000 / 25,40
4606-31	5/16"	.875 / 22,22	.1900 / 4,82	1.000 / 25,40
4606-37	3/8"	1.000 / 25,40	.2217 / 5,63	1.000 / 25,40
4606-43	7/16"	1.250 / 31,75	.2530 / 6,42	1.000 / 25,40
4606-50	1/2"	1.250 / 31,75	.3160 / 8,02	1.000 / 25,40
4606-62	5/8"	1.375 / 34,92	.3790 / 9,62	1.000 / 25,40
4606-75	3/4"	1.500 / 38,10	.5050 / 12,82	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 59-61

# #5606 HEXAGON PINS

ASME/ANSI B18.3

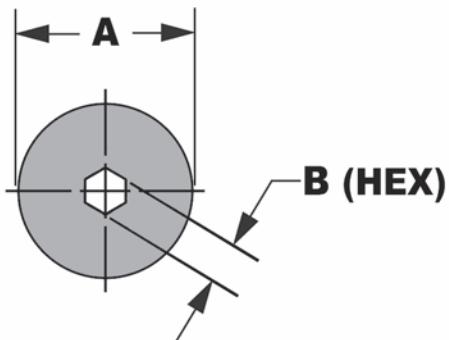
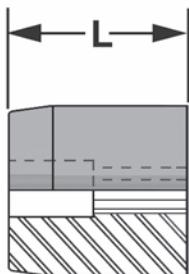


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm	Substitute Punch
5606-01	#1 & #2	.0510 / 1,29	.062 / 1,57	.582 / 14,78	None
5606-03	#3 & #4	.0635 / 1,61	.078 / 1,98	.602 / 15,29	Part No. 5605-01
5606-05	#5 & #6	.0791 / 2,00	.095 / 2,43	.617 / 15,67	Part No. 5605-02-03
5606-08	#8	.0952 / 2,41	.112 / 2,86	.632 / 16,05	Part No. 5605-04-05
5606-10	#10	.1270 / 3,22	.150 / 3,82	.651 / 16,54	None
5606-25	1/4"	.1587 / 4,03	.187 / 4,75	1.184 / 30,07	None
5606-31	5/16"	.1900 / 4,82	.221 / 5,63	1.216 / 30,89	Part No. 5605-25
5606-37	3/8"	.2217 / 5,63	.260 / 6,62	1.249 / 31,72	None
5606-43	7/16"	.2530 / 6,42	.296 / 7,52	1.257 / 31,93	Part No. 5605-31
5606-50	1/2"	.3160 / 8,02	.370 / 9,40	1.287 / 32,69	Part No. 5605-37
5606-62	5/8"	.3790 / 9,62	.445 / 11,30	1.352 / 34,34	Part No. 5605-50
5606-75	3/4"	.5050 / 12,82	.590 / 14,99	1.443 / 36,65	Part No. 5605-62

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #4607 METRIC FLAT HEAD INSERTS

ASME/ANSI B18.3.1/.3/.5M

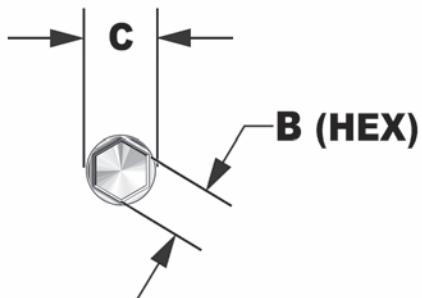
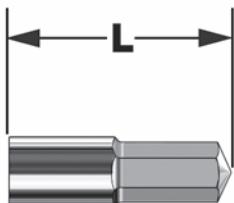


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	L inch / mm
4607-03	M3	.562 / 14,27	.082 / 2,10	.630 / 16,0
4607-04	M4	.562 / 14,27	.102 / 2,60	.630 / 16,0
4607-05	M5	.562 / 14,27	.122 / 3,10	.630 / 16,0
4607-06	M6	.875 / 22,22	.162 / 4,12	.787 / 19,9
4607-08	M8	.875 / 22,22	.202 / 5,14	.787 / 19,9
4607-10	M10	1.00 / 25,40	.241 / 6,14	1.00 / 25,4
4607-12	M12	1.25 / 31,75	.321 / 8,18	1.00 / 25,4
4607-14	M14	1.25 / 31,75	.400 / 10,18	1.00 / 25,4
4607-16	M16	1.50 / 38,10	.400 / 10,18	1.00 / 25,4
4607-18	M18	1.75 / 44,45	.480 / 12,21	1.25 / 31,7
4607-20	M20	1.75 / 44,45	.480 / 12,21	1.25 / 31,7
4607-22	M22	2.00 / 50,80	.559 / 14,21	1.50 / 38,1
4607-24	M24	2.00 / 50,80	.559 / 14,21	1.50 / 38,1

MATERIAL: D2 HARDNESS: RC 59-61

# #5607 METRIC HEXAGON PINS

ASME/ANSI B18.3.1/.3/.5M

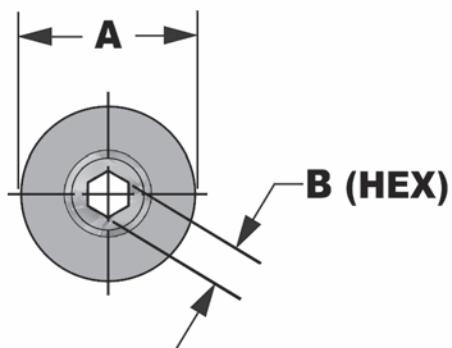
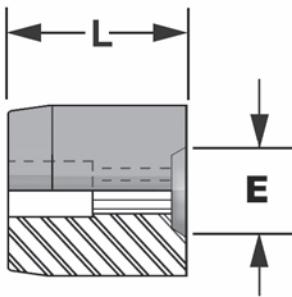


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5607-03	M3	.082 / 2,10	.112 / 2,85	.741 / 18,82
5607-04	M4	.102 / 2,60	.129 / 3,29	.764 / 19,41
5607-05	M5	.122 / 3,10	.149 / 3,80	.782 / 19,86
5607-06	M6	.162 / 4,12	.220 / 5,61	1.009 / 25,63
5607-08	M8	.202 / 5,14	.250 / 6,35	1.019 / 25,88
5607-10	M10	.241 / 6,14	.296 / 7,51	1.278 / 32,46
5607-12	M12	.321 / 8,18	.390 / 9,91	1.306 / 33,17
5607-14	M14	.400 / 10,18	.479 / 12,18	1.355 / 34,42
5607-16	M16	.400 / 10,18	.479 / 12,18	1.355 / 34,42
5607-18	M18	.480 / 12,21	.572 / 14,52	1.633 / 41,47
5607-20	M20	.480 / 12,21	.572 / 14,52	1.633 / 41,47
5607-22	M22	.559 / 14,21	.663 / 16,84	2.020 / 51,30
5607-24	M24	.559 / 14,21	.663 / 16,84	2.020 / 51,30

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #4611 METRIC SOCKET HEAD INSERTS

ASME/ANSI B18.3.1/.3M

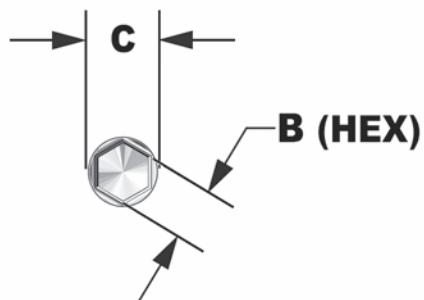
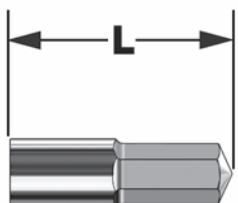


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	E inch / mm	L inch / mm
4611-02	M2	.562 / 14,27	.062 / 1,57	.146 / 3,70	.630 / 16,00
4611-02.5	M2,5	.562 / 14,27	.081 / 2,05	.173 / 4,39	.630 / 16,00
4611-03	M3	.562 / 14,27	.100 / 2,56	.216 / 5,49	.630 / 16,00
4611-04	M4	.562 / 14,27	.120 / 3,07	.275 / 6,98	.630 / 16,00
4611-05	M5	.875 / 22,22	.160 / 4,08	.334 / 8,48	.630 / 16,00
4611-06	M6	.875 / 22,22	.200 / 5,08	.394 / 10,01	.787 / 19,99
4611-08	M8	.875 / 22,22	.240 / 6,09	.512 / 13,00	.787 / 19,99
4611-10	M10	1.250 / 31,75	.319 / 8,11	.630 / 16,00	1.000 / 25,40
4611-12	M12	1.250 / 31,75	.398 / 10,12	.708 / 17,98	1.000 / 25,40
4611-14	M14	1.375 / 34,92	.478 / 12,14	.826 / 20,98	1.000 / 25,40
4611-16	M16	1.375 / 34,92	.557 / 14,15	.944 / 23,98	1.000 / 25,40
4611-20	M20	2.000 / 50,80	.675 / 17,14	1.188 / 30,17	1.250 / 31,75
4611-24	M24	2.000 / 50,80	.755 / 19,17	1.422 / 36,12	1.250 / 31,75

MATERIAL: D2 HARDNESS: RC 59-61

# #5611 METRIC HEXAGON PINS

ASME/ANSI B18.3.1/.3M

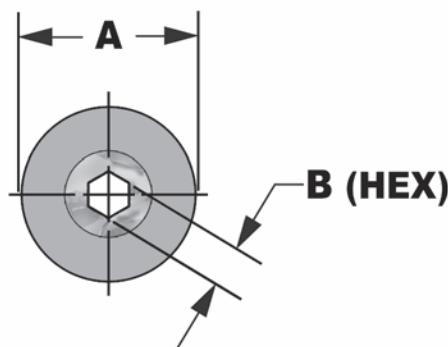
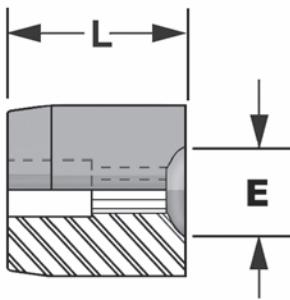


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5611-02	M2	.062 / 1,57	.095 / 2,41	.699 / 17,75
5611-02.5	M2,5	.081 / 2,05	.112 / 2,84	.702 / 17,83
5611-03	M3	.100 / 2,56	.129 / 3,29	.738 / 18,75
5611-04	M4	.120 / 3,07	.149 / 3,80	.760 / 19,30
5611-05	M5	.160 / 4,08	.220 / 5,61	.953 / 24,21
5611-06	M6	.200 / 5,08	.250 / 6,35	.967 / 24,56
5611-08	M8	.240 / 6,09	.296 / 7,51	1.020 / 25,91
5611-10	M10	.319 / 8,11	.390 / 9,91	1.292 / 32,82
5611-12	M12	.398 / 10,12	.479 / 12,18	1.344 / 34,14
5611-14	M14	.478 / 12,14	.572 / 14,52	1.386 / 35,20
5611-16	M16	.557 / 14,15	.663 / 16,84	1.471 / 37,36
5611-20	M20	.675 / 17,14	.800 / 20,32	1.550 / 39,37
5611-24	M24	.755 / 19,17	.892 / 22,65	1.628 / 41,35

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #4612 METRIC BUTTON HEAD INSERTS

ASME/ANSI B18.3.4M

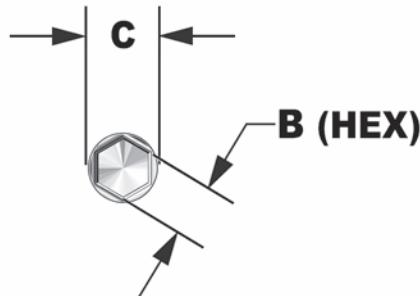
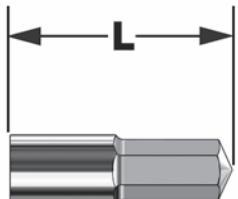


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	E inch / mm	L inch / mm
4612-03	M3	.562 / 14,27	.080 / 2,04	.231 / 5,87	.630 / 16,00
4612-04	M4	.562 / 14,27	.100 / 2,55	.308 / 7,83	.630 / 16,00
4612-05	M5	.875 / 22,22	.121 / 3,07	.385 / 9,78	.787 / 19,99
4612-06	M6	.875 / 22,22	.161 / 4,09	.426 / 10,81	.787 / 19,99
4612-08	M8	1.000 / 25,40	.200 / 5,09	.568 / 14,42	.787 / 19,99
4612-10	M10	1.250 / 31,75	.239 / 6,09	.710 / 18,02	1.000 / 25,40
4612-12	M12	1.375 / 34,92	.319 / 8,11	.852 / 21,63	1.000 / 25,40
4612-16	M16	1.500 / 38,10	.398 / 10,11	1.135 / 28,84	1.250 / 31,75

MATERIAL: D2 HARDNESS: RC 59-61

# #5612 METRIC HEXAGON PINS

ASME/ANSI B18.3.4M

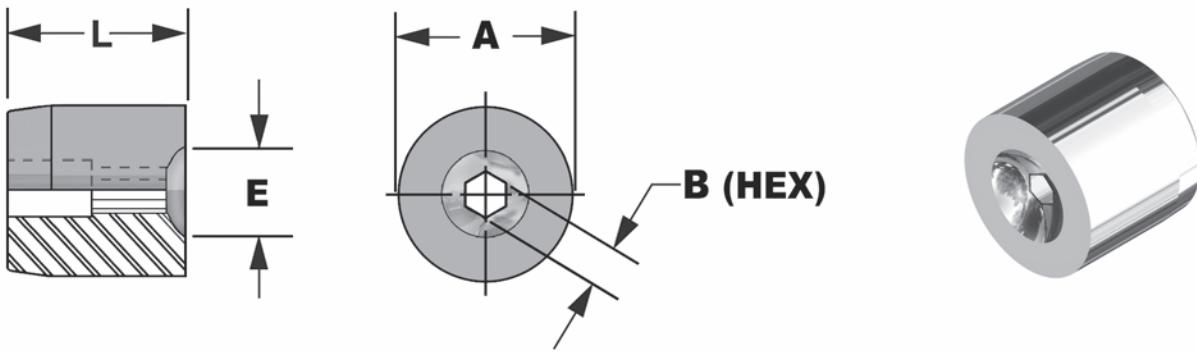


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5612-03	M3	.0803 / 2,04	.112 / 2,85	.674 / 17,12
5612-04	M4	.1006 / 2,55	.129 / 3,30	.671 / 17,04
5612-05	M5	.1211 / 3,07	.149 / 3,81	.824 / 20,93
5612-06	M6	.1610 / 4,09	.220 / 5,61	.837 / 21,26
5612-08	M8	.2004 / 5,09	.250 / 6,35	.831 / 21,10
5612-10	M10	.2398 / 6,09	.296 / 7,52	1.034 / 26,26
5612-12	M12	.3193 / 8,11	.390 / 9,91	1.060 / 26,92
5612-16	M16	.3980 / 10,11	.479 / 12,19	1.294 / 32,86

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #4613 BUTTON HEAD INSERTS

ASME/ANSI B18.3

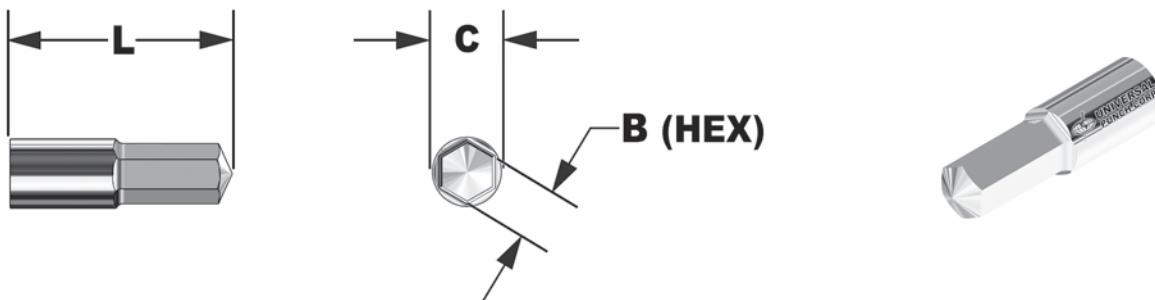


PART NUMBER	SCREW SIZE	A inch / mm	B inch / mm	E inch / mm	L inch / mm
4613-01	#1	.562 / 14,27	.050 / 1,29	.149 / 3,78	.500 / 12,70
4613-02	#2	.562 / 14,27	.050 / 1,29	.174 / 4,42	.500 / 12,70
4613-03	#3	.562 / 14,27	.063 / 1,60	.198 / 5,03	.500 / 12,70
4613-04	#4	.562 / 14,27	.063 / 1,60	.223 / 5,66	.500 / 12,70
4613-05	#5	.562 / 14,27	.078 / 2,00	.248 / 6,30	.500 / 12,70
4613-06	#6	.562 / 14,27	.078 / 2,00	.272 / 6,91	.500 / 12,70
4613-08	#8	.562 / 14,27	.095 / 2,41	.322 / 8,18	.500 / 12,70
4613-10	#10	.562 / 14,27	.126 / 3,22	.371 / 9,42	.500 / 12,70
4613-25	1/4"	.875 / 22,22	.158 / 4,02	.447 / 11,35	1.000 / 25,40
4613-31	5/16"	.875 / 22,22	.189 / 4,82	.557 / 14,15	1.000 / 25,40
4613-37	3/8"	1.250 / 31,75	.221 / 5,62	.666 / 16,92	1.000 / 25,40
4613-50	1/2"	1.250 / 31,75	.315 / 8,02	.890 / 22,61	1.000 / 25,40
4613-62	5/8"	1.375 / 34,92	.378 / 9,62	1.020 / 25,91	1.000 / 25,40

MATERIAL: D2 HARDNESS: RC 59-61

# #5613 HEXAGON PINS

ASME/ANSI B18.3

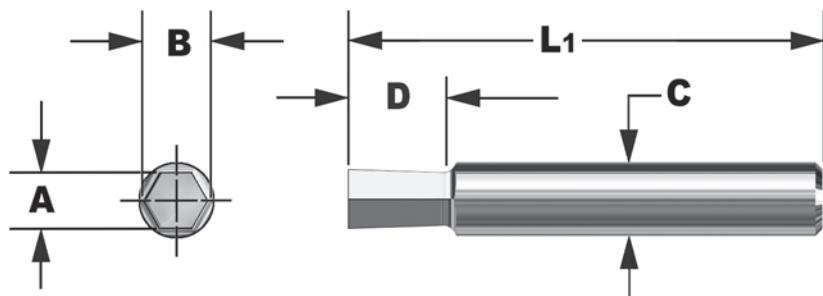


PART NUMBER	SCREW SIZE	B inch / mm	C inch / mm	L inch / mm
5613-01	#1 & #2	.0508 / 1,290	.062 / 1,57	.543 / 13,79
5613-03	#3 & #4	.0633 / 1,608	.078 / 1,98	.544 / 13,82
5613-05	#5 & #6	.0789 / 2,004	.095 / 2,41	.545 / 13,84
5613-08	#8	.0950 / 2,413	.112 / 2,84	.540 / 13,71
5613-10	#10	.1268 / 3,221	.150 / 3,81	.554 / 14,07
5613-25	1/4"	.1585 / 4,026	.187 / 4,75	1.051 / 26,69
5613-31	5/16"	.1898 / 4,821	.221 / 5,61	1.051 / 26,69
5613-37	3/8"	.2215 / 5,626	.260 / 6,60	1.047 / 26,91
5613-50	1/2"	.3158 / 8,021	.370 / 9,40	1.072 / 27,23
5613-62	5/8"	.3788 / 9,622	.445 / 11,56	1.061 / 26,95

MATERIALS: M2 RC62-64 OR ASP-30PM RC64-66

# #7000 HEXAGON BROACHES

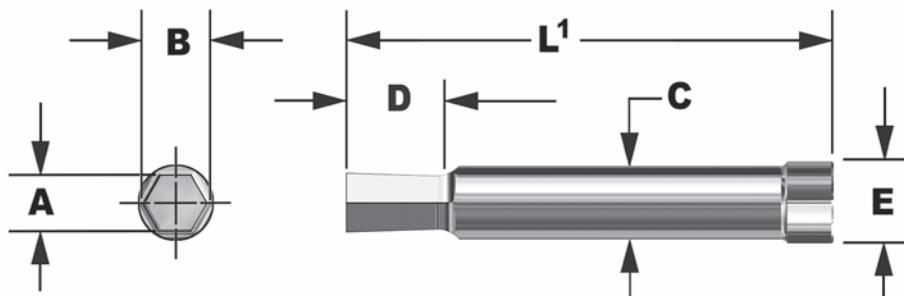
HI-LOK STYLE BRK-12



PART NUMBER	A inch / mm	B inch / mm	C inch / mm	D inch / mm	L1 inch / mm
7000-5A	.0645 / 1,638	.074 / 1,89	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-5	.0801 / 2,034	.092 / 2,34	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-6	.0806 / 2,047	.093 / 2,36	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-8	.0967 / 2,456	.111 / 2,97	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-10	.1295 / 3,289	.149 / 3,79	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-12	.1617 / 4,107	.186 / 4,74	.250 / 6,35	.281 / 7,14	1.87 / 47,6
7000-14	.1930 / 4,902	.222 / 5,66	.250 / 6,35	.281 / 7,14	1.87 / 47,6
7000-16	.2242 / 5,694	.258 / 6,57	.312 / 7,93	.312 / 7,93	1.87 / 47,6
7000-51	.0648 / 1,645	.074 / 1,89	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-52	.0804 / 2,042	.092 / 2,35	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-61	.0809 / 2,054	.093 / 2,37	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-81	.0970 / 2,463	.112 / 2,84	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-101	.1298 / 3,296	.149 / 3,80	.187 / 4,76	.250 / 6,35	1.87 / 47,6
7000-121	.1617 / 4,107	.186 / 4,74	.250 / 6,35	.281 / 7,14	1.87 / 47,6

# #7005 HEXAGON HI-LOK BROACHES

12-BH-0001 / WE02-02 / TA5558



PART NUMBER	A inch / mm	B inch / mm	C inch / mm	D inch / mm	E inch / mm	L1 inch / mm
7005-10	.1298 / 3,296	.148 / 3,75	.249 / 6,32	.300 / 7,62	.312 / 7,92	1.87 / 47,49
7005-12	.1617 / 4,567	.186 / 4,73	.249 / 6,32	.375 / 9,52	.312 / 7,92	1.87 / 47,49
7005-14	.1930 / 4,902	.221 / 5,61	.249 / 6,32	.450 / 11,43	.312 / 7,92	1.87 / 47,49
7005-16	.2242 / 5,694	.258 / 6,57	.300 / 7,62	.450 / 11,43	.363 / 9,22	1.87 / 47,49
7005-18	.2555 / 6,479	.294 / 7,48	.300 / 7,62	.500 / 12,70	.363 / 9,22	1.87 / 47,49
7005-20	.2555 / 6,489	.294 / 7,48	.300 / 7,62	.500 / 12,70	.363 / 9,22	1.87 / 47,49
7005-24	.3190 / 8,102	.368 / 9,35	.437 / 11,10	.500 / 12,70	.500 / 12,70	1.87 / 47,49

MATERIAL: ASP-30PM HARDNESS: RC 64-66

# #9025 HEXAGON PENETRATION GAGES

ASME/ANSI B18.3

FOR SOCKET CAP, SHOULDER AND SET SCREWS  
ASME/ANSI B18.3 STANDARDS

PART NUMBER	hExAGON SIZe
9025-03	.035"
9025-05	.050"
9025-06	1/16"
9025-07	5/64"
9025-09	3/32"
9025-10	7/64"
9025-12	1/8"
9025-14	9/64"
9025-15	5/32"
9025-18	3/16"
9025-21	7/32"
9025-25	1/4"
9025-31	5/16"
9025-37	3/8"
9025-43	7/16"
9025-50	1/2"
9025-56	9/16"
9025-62	5/8"
9025-75	3/4"
9025-87	7/8"



When Ordering Specify: Inch or Metric Dial Indicators. SPC-Compatible Digital Indicators priced on request. All gage probe sizes are calibrated to dimensions and tolerances as specified and are traceable to the N.I.S.T. National Institute of Standards and Technology.

# #9030 SPLINE PENETRATION GAGES

ASME/ANSI B18.3

FOR SPLINE SOCKET CAP, SHOULDER & SET SCREWS  
ASME/ANSI B18.3 STANDARDS

PART NUMBER	SPLINE SIZe
9030-033	0.033
9030-048	0.048
9030-060	0.060
9030-069	0.069
9030-072	0.072
9030-076	0.076
9030-096	0.096
9030-111	0.111
9030-133	0.133
9030-145	0.145
9030-168	0.168
9030-183	0.183
9030-216	0.216
9030-251	0.251
9030-291	0.291
9030-372	0.372
9030-454	0.454
9030-595	0.595
9030-620	0.620
9030-689	0.698
9030-790	0.790



When Ordering Specify: Inch or Metric Dial Indicators. SPC-Compatible Digital Indicators priced on request. All gage probe sizes are calibrated to dimensions and tolerances as specified and are traceable to the N.I.S.T. National Institute of Standards and Technology.

# #9035 METRIC SPLINE PENETRATION GAGES

ASME/ANSI B18.3.1.6M

FOR SPLINE SOCKET CAP, SHOULDER & SET SCREWS  
ASME/ANSI B18.3.1M, & 6M STANDARDS

PART NUMBER	SET SCREW SPLINE SIZE	S.h.C.S SPLINE SIZE
9045-084	0,84	
9045-122	1,22	
9045-152	1,52	
9045-182		1,829
9045-243		2,438
9045-244	2,44	
9045-281		2,819
9045-282	2,82	
9045-337		3,378
9045-368	3,68	
9045-405	4,05	
9045-464		4,648
9045-549	5,49	
9045-548		5,486
9045-638	6,38	
9045-739		7,391
9045-954	9,54	
9045-1153	11,53	
9045-1511	15,11	



When Ordering Specify: Inch or Metric Dial Indicators. SPC-Compatible Digital Indicators priced on request. All gage probe sizes are calibrated to dimensions and tolerances as specified and are traceable to the N.I.S.T. National Institute of Standards and Technology.

# #9040 METRIC HEXAGON PENETRATION GAGES ASME/ANSI B18.3.6M

FOR SOCKET CAP, SHOULDER AND SET SCREWS  
ASME/ANSI, ISO, JIS, DIN, BS, AND GB STANDARDS

PART NUMBER	hExAGON SIZE
9040-0.7	0,7mm
9040-0.9	0,9mm
9040-1.3	1,3mm
9040-1.5	1,5mm
9040-1.6	1,6mm
9040-2.0	2,0mm
9040-2.5	2,5mm
9040-3.0	3,0mm
9040-4.0	4,0mm
9040-5.0	5,0mm
9040-6.0	6,0mm
9040-8.0	8,0mm
9040-10	10mm
9040-12	12mm
9040-14	14mm
9040-16	16mm
9040-17	17mm
9040-19	19mm
9040-22	22mm
9040-24	24mm



When Ordering Specify: Inch or Metric Dial Indicators. SPC-Compatible Digital Indicators priced on request. All gage probe sizes are calibrated to dimensions and tolerances as specified and are traceable to the N.I.S.T. National Institute of Standards and Technology.

## #9052 12-POINT PENETRATION GAGES

DIN34824 / VW01043

FOR MULTIPOINT-SOCKET PROFILE RECESS HEAD SCREWS  
DIN34824, & VW01043 STANDARDS

PART NUMBER	DRIVE SIZE
9052-04-DIN	M4
9052-04	M4
9052-05	M5
9052-06	M6
9052-08	M8
9052-10	M10
9052-12	M12
9052-14	M14
9052-16	M16
9052-18-DIN	M18
9052-18	M18



When Ordering Specify: Inch or Metric Dial Indicators. SPC-Compatible Digital Indicators priced on request. All gage probe sizes are calibrated to dimensions and tolerances as specified and are traceable to the N.I.S.T. National Institute of Standards and Technology.

## #9053 12-POINT GO-NOGO GAGES

DIN34824 / VW01043

FOR MULTIPOINT-SOCKET PROFILE RECESS HEAD SCREWS  
DIN34824, & VW01043 STANDARDS

PART NUMBER	DRIVE SIZE
9053-04-DIN	M4
9053-04	M4
9053-05	M5
9053-06	M6
9053-08	M8
9053-10	M10
9053-12	M12
9053-14	M14
9053-16	M16
9053-18-DIN	M18
9053-18	M18



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

## #9055 HEXAGON GO-NOGO GAGES

ASME/ANSI B18.3

FOR SOCKET CAP, SHOULDER, SET SCREWS & HEX KEYS  
ASME/ANSI B18.3 STANDARDS

PART NUMBER	HEXAGON SIZE
9055-06	1/16"
9055-07	5/64"
9055-09	3/32"
9055-10	7/64"
9055-12	1/8"
9055-14	9/64"
9055-15	5/32"
9055-18	3/16"
9055-21	7/32"
9055-25	1/4"
9055-31	5/16"
9055-37	3/8"
9055-43	7/16"
9055-50	1/2"
9055-56	9/16"
9055-62	5/8"
9055-75	3/4"



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

## #9060 SPLINE GO-NOGO GAGES

ASME/ANSI B18.3

FOR SPLINE SOCKET CAP, SHOULDER & SET SCREWS  
ASME/ANSI B18.3 STANDARDS

PART NUMBER	SPLINE SIZE
9060-033	0.033
9060-048	0.048
9060-060	0.060
9060-069	0.069
9060-072	0.072
9060-076	0.076
9060-096	0.096
9060-111	0.111
9060-133	0.133
9060-145	0.145
9060-168	0.168
9060-183	0.183
9060-216	0.216
9060-251	0.251
9060-291	0.291
9060-372	0.372
9060-454	0.454
9060-595	0.595
9060-620	0.620
9060-689	0.698
9060-790	0.790



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

# #9065 METRIC SPLINE GO-NOGO GAGES

ASME/ANSI B18.3.1,6M

FOR SPLINE SOCKET CAP, SHOULDER & SET SCREWS  
ASME/ANSI B18.3.1M, & 6M STANDARDS

PART NUMBER	SET SCREW SPLINE SIZE	S.h.C.S. SPLINE SIZE
9065-084	0,84	
9065-122	1,22	
9065-152	1,52	
9065-182		1,829
9065-243		2,438
9065-244	2,44	
9065-281		2,819
9065-282	2,82	
9065-337		3,378
9065-368	3,68	
9065-405	4,05	
9065-464		4,648
9065-549	5,49	
9065-548		5,486
9065-638	6,38	
9065-739		7,391
9065-954	9,54	
9065-1153	11,53	
9065-1511	15,11	



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

# #9075 METRIC HEXAGON GO-NOGO GAGES

ASME/ANSI B18.3.1M

FOR SOCKET CAP, SHOULDER, SET SCREWS & HEX KEYS  
ASME/ANSI 18.3.1M STANDARDS

PART NUMBER	HEX SIZE
9075-0.7	0,7mm
9075-0.9	0,9mm
9075-1.3	1,3mm
9075-1.5	1,5mm
9075-1.6	1,6mm
9075-2.0	2,0mm
9075-2.5	2,5mm
9075-3.0	3,0mm
9075-4.0	4,0mm
9075-5.0	5,0mm
9075-6.0	6,0mm
9075-8.0	8,0mm
9075-10	10mm
9075-12	12mm
9075-14	14mm
9075-16	16mm
9075-17	17mm
9075-19	19mm
9075-22	22mm
9075-24	24mm



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

FOR SOCKET CAP, SHOULDER, SET SCREWS & HEX KEYS  
ISO, JIS, DIN, BS, AND GB STANDARDS

PART NUMBER	hExAGON SIZE
9076-0.7	0.7mm
9076-0.9	0.9mm
9076-1.3	1.3mm
9076-1.5	1.5mm
9076-2.0	2.0mm
9076-2.5	2.5mm
9076-3.0	3.0mm
9076-4.0	4.0mm
9076-5.0	5.0mm
9076-6.0	6.0mm
9076-8.0	8.0mm
9076-10	10mm
9076-12	12mm
9076-14	14mm
9076-16	16mm
9076-17	17mm
9076-19	19mm
9076-22	22mm
9076-27	27mm
9076-32	32mm
9076-36	36mm
9076-41	41mm
9076-46	46mm



Universal's Gages are heat treated, thermally stabilized, and surface treated. This provides additional hardness for maximum wear. Gage probes are calibrated to dimensions and tolerances as specified and are traceable to N.I.S.T. National Institute of Standards and Technology.

## GAGE CROSS REFERENCE METRIC HEX SIZES

hExAGON NOMAL SIZE	ISO4762 (DIN912) JIS1176	ISO4762 (DIN7991) JIS1194	ISO 4026/4028 (DIN 913/916) JIS1177
0.7mm 0.9mm 1.3mm	- - M1.4	- - -	M1.4 / M1.6 / M1.8 M2 M2.5
1.5mm 2mm 2.5mm	M1.6 / M2 M2.5 M3	- M3 M4	M3 M4 M5
3mm 4mm 5mm	M4 M6 M6	M5 M6 M8	M6 M8 M10
6mm 8mm 10mm	M8 M10 M12	M10 M12 M14 / M16	M12 / M14 M16 M18 / M20
12mm 14mm 16mm	M14 M16 / M18 -	M18 / M20 M22 / M24 -	M22 / M24 - -
17mm 19mm 22mm 24mm	M20 / M22 M24 / M27 M30 M33	- - - -	- - - -



AUTOMATED PRODUCTION



PRECISION CRAFTSMANSHIP

- **Global Tooling Supplies** Universal Punch Corp. has the manufacturing experience to produce superior quality tooling with the highest structural integrity to withstand the severest cold or warm forming applications. We offer one of the largest world-wide stocking inventory programs of standard finished Hexalobular, Six-Lobe tooling and gages, which are available for immediate delivery in a variety of materials with high performance coatings. Our capabilities include producing custom and modified tooling to your specifications.



PRODUCTION GRINDING



HIGH PRECISION PROCESSES

## • Continuous Improvement

Universal Punch Corp. has been a global leader in the fastener industry for over 40 years with proven quality that is second to none. We are continually working on improvements to the existing Tooling and Gaging products through new processes and technologies, which will expand our capabilities into new markets and applications. We offer engineering and technical support services to companies worldwide.



**Universal Punch Corp.**, an ISO 9001:2008 registered company, has been a leader in the tooling, gaging and medical industries for nearly four decades. As part of our continuing commitment to providing precision and excellence in all of our products we have expanded into a new state of the art manufacturing facility. Our spacious new plant is equipped with modern machining processes, expanded heat treating facilities, hi-tech coatings and finish platings, increased inventory capacity and calibration and inspection laboratory. Our certified quality management system ensures that all products and specifications sold conform to the required standards. All measuring equipment and gaging masters are directly traceable to N.I.S.T. All certification processes and procedures conform to ISO 10012 and ISO guide 17025.



MEDICAL INSTRUMENTS



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**UNIVERSAL PUNCH CORP.**

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