

# United Service Company

Sales and Service  
Newington, CT 06111  
(860) 667-4403  
[www.unitedservice.us](http://www.unitedservice.us)

Certified to ISO/IEC 17025 by L-A-B



Member of ASTM International



Proudly providing superior  
sales and service since 1975

We Accept:



# Our History

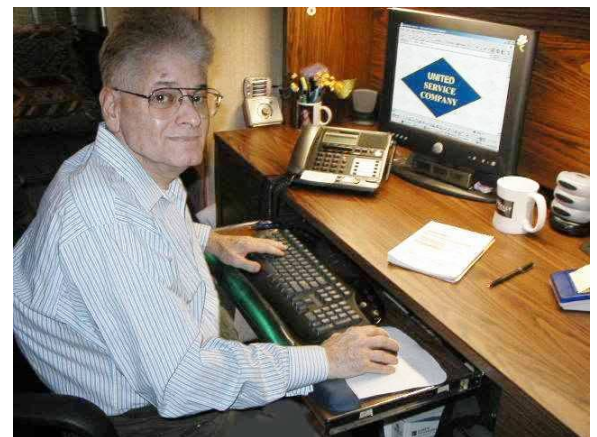
In September, 1975, after working for a small Michigan manufacturer of hardness testing equipment and related accessories for several years, I founded United Service Company with two employees consisting of my wife and myself. Our goal was to provide an alternate choice to the major manufacturer by providing high quality testing equipment, accessories, maintenance, and calibration to ASTM specifications. Along with Paul Stumpf, Frank Blanchard, John Elder, our son, Grant, and daughter, Rebecca, have joined the company to carry on the tradition.

We continue to work hard to build a solid base of customers consisting of the major aircraft, automotive, electronic manufacturers, machine shops, heat treaters, and laboratories by providing quick response service and high quality equipment to 500 plus companies in the New England area. Over the past years we have established ourselves with most of the major manufacturers of hardness testing equipment and accessories. This allows us to have the ability to recommend the best piece of equipment, new and used, for your application at the most competitive price.

Our major objective is to supply our customers the best products, advice, and on-time service possible. As we embark on the new millennium and the next generation, we will strive to provide the same high quality service and equipment.

**“Can we be of service to you?”**

Gary Gatzen  
Founder  
United Service Company



# Meet The Team



**Grant Gatzen** - General Manager, Sales and Service  
Grant is a current member of ASM and ASTM. Grant graduated Nichols college with a degree in Small Business Management.



**Rebecca Gatzen** - Office Manager, Quality Manager  
Rebecca's duties vary from answering your phone calls to ensuring the products we supply are top quality. She is a Bryant College graduate.



**Frank Blanchard** - Sales and Service  
Frank has been with United Service Company since 1984. Frank is a past Chairman and current Treasurer of the ASM Worcester chapter.



**John Elder** - Sales and Service  
John has an extensive background with computers and computer related equipment. John is a member of ASM Hartford.



**Paul Stumpf** - Sales and Service  
With over 45 years of experience, Paul brings another level of expertise to United Service Company. He is a past Chairman of ASM Hartford.

# Rockwell Testers

## Clark CLC-200



The Clark CLC-200R is one of the most versatile and easy to use testers available. It uses direct loading, state of the art load cell technology and direct linear displacement that's activated by simple touch screen operation.

## Clark CR Series



The CR Series are sleek and durable Rockwell testers that are built for high volume testing with precise accuracy. Available in standard, superficial and twin models, the CR Series can accommodate many testing situations

## Newage Indentron



The Indentron is used worldwide to provide the highest level of accuracy and repeatability. In addition to maintaining the exception precision, the Indentron has capabilities that are unmatched by any other tester on the market. The Indentron's load system is in a unique configuration which provides an exceptional view of the indenter and test location

## Newage Versitron



The Versitron is a very accurate and quick machine unaffected by dirt, oil or vibration, while still conforming to A.S.T.M. E-18. This tester has the ability to "clamp" pieces, large and small, and hold them still while performing the test. This is done through test-surface referencing. Because of their speed and tolerances to dirt and oil they are commonly found in companies that do large numbers of tests or have harsher environments.

## Newage ME-2



The ME-2 uses a resilient dynamic compression load system to provide significant advantages over competing hardness testers. Using this technology the ME-2 reduces the number of critical friction points found in traditional dead-weight testers so it is less prone to deviate from specified load tolerances. The ME-2 can apply the load faster than deadweight instruments without the danger of the impact effect.

# Microhardness Testers

## ARS 9000



The ARS 9000 is a fully automatic testing system capable of programming, indenting, viewing and recoding in one convenient location. By configuring the ARS to your specifications, the CM-Series performs micro indentations from 10 to 1000 gf in either Vickers or Knoop, or both using the optional dual indenter system.

## Newage HMV-2 With C.A.M.S



The Newage HMV-2 is an advanced microhardness tester with touch pad control. It features automatic load change and application. With an optional auto-turret, move from test to measurement position automatically. When paired with C.A.M.S it can be a fully automated solution to your microhardness testing needs.

## C.A.M.S Upgrade



Upgrade your Vickers or Knoop tester - with a computer. C.A.M.S will retrofit almost all models of microhardness testers for less than buying new. C.A.M.S even upgrades competitors high-end automatic micro systems. C.A.M.S eliminates or reduces operator influence with automatic or manual on-screen measurement. It significantly improves productivity with its high speed operation.

# Portable Testers



## Clark CPT Series

Convenience and reliability is what the Clark portable tester provides the user. It has the ability to test both inside and outside surfaces at any angle without affecting accuracy. Quick change indenter, easy to read dial indicators, and finger tip loading make the CPT a handy and efficient way to testing large and inaccessible parts.



## Ames Portable

For over 30 years thousands of Ames hardness tester have been giving outstanding performance in both large and small plants. Ames hardness testers are direct reading, measurements are taken from the barrel dial without extra calculating. The readings are true Rockwell and the penetrations are of correct width and depth.



## CDR Portable

The CDR is ideal for on-site LEEB hardness testing of large, non-transportable parts in hard to reach places. With versatility in hand, the CDR can be used in any position, at any angle and on several different materials making for a great portable testers whether you are in your lab, workshop or production line.

# Brinell Testers



In a situation where low to medium Brinell testing is required, the Clark DTLC-3000 is the smart choice. Measuring test forces by using an enclosed load cell, this Brinell testers provides accurate and efficient tests every time. With its stylish cast-iron enclosure and affordable price, you'll find the DTLC-3000 to be the perfect fit for your shop or laboratory.



The 7000 Series Brinell tester from Newage Industries provides a lot a capability in a Brinell tester package. The tester uses a hydraulic load system controlled by a load cell to monitor the test load with the greatest level of accuracy. The four inch stroke eliminates much of the time spent raising and lowering the elevating screw.



On the market for over 60 years, King Brinell hardness testers are lightweight, easy to maneuver and require only one operator, making them ideal for use as portable or bench units. Versatile enough to test virtually any size and shape of metal specimen, King testers are easy to use. The tester applies up to a 3,000 kg load on a 10mm ball.



The Newage HiLight Scope uses built in high efficiency LEDs to illuminate the Brinell impressions. The LEDs are ideally positioned to provide an even and consistent definition of the Brinell impression's edge. Optimized surface illumination with a sharp 20x magnification helps insure more reliable results when measuring Brinell impressions.



The King Brinell Microscope is constructed from stainless steel, rugged and optically reliable as well as one of the most versatile on the market today. Featuring a 20x pre-focused lens, the microscope has a narrow nosepiece which easily fits into tight recesses, resulting in less grinding on castings, billets and dies.

# Reconditioned Testers



We have a variety of reconditioned testers in stock. Our reconditioned testers come with a certification and a 6 month warranty. Visit us on the web at [www.unitedservice.us](http://www.unitedservice.us) to view our latest selection.

# Accessoires

We sell Rockwell, Micro and Brinell test blocks, anvils for every application, Diamond and Ball penetrators, conversion charts, dust covers, jack stands, light sources and much much more! Give us a call today and let us help fulfill your every hardness testing need.





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C	A	D	15-N	30-N	45-N	Vickers	Knoop	Brinell
68	85.6	76.9	93.2	84.4	75.4	940	920	-
67	85.0	76.1	92.9	83.6	74.2	900	895	-
66	84.5	75.4	92.5	82.8	73.3	865	870	-
65	83.9	74.5	92.2	81.9	72.0	832	846	(739)
64	83.4	73.8	91.8	81.1	71.0	800	822	(722)
63	82.8	73.0	91.4	80.1	69.9	772	799	(705)
62	82.3	72.2	91.1	79.3	68.8	746	776	(688)
61	81.8	71.5	90.7	78.4	67.7	720	754	(670)
60	81.2	70.7	90.2	77.5	66.6	697	732	(654)
59	80.7	69.9	89.8	76.6	65.5	674	710	(634)
58	80.1	69.2	89.3	75.7	64.3	653	690	615
57	79.6	68.5	88.9	74.8	63.2	633	670	595
56	79.0	67.7	88.3	73.9	62.0	613	650	577
55	78.5	66.9	87.9	73.0	60.9	595	630	560
54	78.0	66.1	87.4	72.0	59.8	577	612	543
53	77.4	65.4	86.9	71.2	58.6	560	594	525
52	76.8	64.6	86.4	70.2	57.4	544	576	512
51	76.3	63.8	85.9	69.4	56.1	528	558	496
50	75.9	63.1	85.5	68.5	55.0	513	543	481
49	75.2	62.1	85.0	67.6	53.8	498	526	469
48	74.7	61.4	84.5	66.7	52.5	484	510	455
47	74.1	60.8	83.9	65.8	51.4	471	495	443
46	73.6	60.0	83.5	64.8	50.3	458	480	432
45	73.1	59.2	83.0	64.0	49.0	446	466	421
44	72.5	58.5	82.5	63.1	47.8	434	452	409
43	72.0	57.7	82.0	62.2	46.7	423	438	400
42	71.5	56.9	81.5	61.3	45.5	412	426	390
41	70.9	56.2	80.9	60.4	44.3	402	414	381
40	70.4	55.4	80.4	59.5	43.1	392	402	371
39	69.9	54.6	79.9	58.6	41.9	382	391	362
38	69.4	53.8	79.4	57.7	40.8	372	380	353
37	68.9	53.1	78.8	56.8	39.6	363	370	344
36	68.4	52.3	78.3	55.9	38.4	354	360	366
35	67.9	51.5	77.7	55.0	37.2	345	351	327

DO NOT CONVERT ACROSS THIS SPACE

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B	A	F	15T	30T	45T	Vickers	Knoop	Brinell
100	61.5	-	93.1	83.1	72.9	240	251	240
99	60.9	-	92.8	82.5	71.9	234	246	234
98	60.2	-	92.5	81.8	70.9	228	241	228
97	59.5	-	92.1	81.1	69.9	222	236	222
96	58.9	-	91.8	80.4	68.9	216	231	216
95	58.3	-	91.5	79.8	67.9	210	226	210
94	57.6	-	91.2	79.1	66.9	205	221	205
93	57.0	-	90.8	78.4	65.9	200	216	200
92	56.4	-	90.5	77.8	64.8	195	211	195
91	55.8	-	90.2	77.1	63.8	190	206	190
90	55.2	-	89.9	76.4	62.8	185	201	185
89	54.6	-	89.5	75.8	61.8	180	196	180
88	54.0	-	89.2	75.1	60.8	176	192	176
87	53.4	-	88.9	74.4	59.8	172	188	172
86	52.8	-	88.6	73.8	58.8	169	184	169
85	52.3	-	88.2	73.1	57.8	165	180	165
84	51.7	-	87.9	72.4	56.8	162	176	162
83	51.1	-	87.6	71.8	55.8	159	173	159
82	50.6	-	87.3	71.1	54.8	156	170	156
81	50.0	-	86.9	70.4	53.8	153	167	153
80	49.5	-	86.6	69.7	52.8	150	164	150
79	48.9	-	86.3	69.1	51.8	147	161	147
78	48.4	-	86.0	68.4	50.8	144	158	144
77	47.9	-	85.6	67.7	49.8	141	155	141
76	47.3	-	85.3	67.1	48.8	139	152	139
75	46.8	99.6	85.0	66.4	47.8	137	150	137
74	46.3	99.1	84.7	65.7	46.8	135	147	135
73	45.8	98.5	84.3	65.1	45.8	132	145	132
72	45.3	98.0	84.0	64.4	44.8	130	143	130
71	44.8	97.4	83.7	63.7	43.8	127	141	127
70	44.3	96.8	83.4	63.1	42.8	125	139	125
69	43.8	96.5	83.0	62.4	41.8	123	137	123
68	43.3	95.6	82.7	61.7	40.8	121	135	121
67	42.8	95.1	82.4	61.0	39.8	119	133	119

United Service Company is an ISO/IEC 17025 accredited company. Knoop and Vickers values are using 500 grams of force and greater. Brinell values are using 3000Kgf with a 10 mm ball. Brinell values in parentheses are outside of recommended ranges. Reprinted, with permission, from ASTM E140-07 and Appendices A.5 and A.6 from E18-07, copyright ASTM International, 100 Bar Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM ([www.astm.org](http://www.astm.org)).  
 This chart available for download at [www.unitedservice.us](http://www.unitedservice.us)

C	A	D	15-N	30-N	45-N	Vickers	Knoop	Brinell
34	67.4	50.8	77.2	54.2	36.1	336	342	319
33	66.8	50.0	76.6	53.3	34.9	327	334	311
32	66.3	49.2	76.1	52.1	33.7	318	326	301
31	65.8	48.4	75.6	51.3	32.5	310	318	294
30	65.3	47.7	75.0	50.4	31.3	302	311	286
29	64.8	47.0	74.5	49.5	30.1	294	304	279
28	64.3	46.1	73.9	48.6	29.0	286	297	271
27	63.8	45.2	73.3	47.7	27.8	279	290	264
26	63.3	44.6	72.8	46.8	26.7	272	284	258
25	62.8	43.8	72.2	45.9	25.5	266	278	253
24	62.4	43.1	71.6	45.0	24.3	260	272	247
23	62.0	42.1	71.0	44.0	23.1	254	266	243
22	61.5	41.6	70.5	43.2	22.0	248	261	237
21	61.0	40.9	69.9	42.3	20.7	243	256	231
20	60.5	40.1	69.4	41.5	19.6	238	251	226

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B	A	F	15T	30T	45T	Vickers	Knoop	Brinell
66	42.3	94.5	82.1	60.4	38.7	117	131	117
65	41.8	93.9	81.8	59.7	37.7	116	129	116
64	41.4	93.4	81.4	59.0	36.7	114	127	114
63	40.9	92.8	81.1	58.4	35.7	112	125	112
62	40.4	92.2	80.8	57.7	34.7	110	124	110
61	40.0	91.7	80.5	57.0	33.7	108	122	108
60	39.5	91.1	80.1	56.4	32.7	107	120	107
59	39.0	90.5	79.8	55.7	31.7	106	118	106
58	38.6	90.0	79.5	55.0	30.7	104	117	104
57	38.1	89.4	79.2	54.4	29.7	103	115	103
56	37.7	88.8	77.9	53.7	28.7	101	114	101
55	37.2	88.2	78.5	53.0	27.7	100	112	100
54	36.8	87.7	78.2	52.4	26.7	-	111	-
53	36.3	87.1	77.9	51.7	25.7	-	110	-
52	35.9	86.5	77.5	51.0	24.7	-	109	-
51	35.5	86.0	77.2	50.3	23.7	-	108	-
50	35.0	85.4	76.9	49.7	22.7	-	107	-
49	34.6	84.8	76.6	49.0	21.7	-	106	-
48	34.1	84.3	76.2	48.3	20.7	-	105	-
47	33.7	83.7	75.9	47.7	19.7	-	104	-
46	33.3	83.1	75.6	47.0	18.7	-	103	-
45	32.9	82.6	75.3	46.3	17.7	-	102	-
44	32.4	82.0	74.9	45.7	16.7	-	101	-
43	32.0	81.4	74.6	45.0	15.7	-	100	-
42	31.6	80.8	74.3	44.3	14.7	-	99	-
41	31.2	80.3	74.0	43.7	13.6	-	98	-
40	30.7	79.7	73.6	43.0	12.6	-	97	-
39	30.3	79.1	73.3	42.3	11.6	-	96	-
38	29.9	78.6	73.0	41.6	10.6	-	95	-
37	29.5	78.0	72.7	41.0	9.6	-	94	-
36	29.1	77.4	72.3	40.3	8.6	-	93	-
35	28.7	76.9	72.0	39.6	7.6	-	92	-
34	28.2	76.3	71.7	39.0	6.6	-	91	-
33	27.8	75.7	71.4	38.3	5.6	-	90	-
32	27.4	75.2	71.0	37.6	4.6	-	89	-
31	27.0	74.6	70.7	37.0	3.6	-	88	-
30	26.6	74.0	70.4	36.3	2.6	-	87	-

Minimum Thickness Requirements										
Specimen		Standard			Superficial					
Inches	Millimeters	C	A	B	15N	30N	45N	15T	30T	45T
0.006	0.15	-	-	-	92	-	-	-	-	-
0.008	0.20	-	-	-	90	-	-	-	-	-
0.010	0.25	-	-	-	88	-	-	91	-	-
0.012	0.30	-	-	-	83	82	77	86	-	-
0.014	0.36	-	-	-	76	78.5	74	81	80	-
0.016	0.41	-	86	-	68	74	72	75	72	71
0.018	0.46	-	84	-	66	68	68	64	62	63
0.020	0.51	-	82	-	57	63	-	55	53	54
0.022	0.56	69	79	-	47	58	-	45	43	44
0.024	0.61	67	76	94	-	-	51	-	34	31
0.026	0.66	65	71	87	-	-	37	-	-	18
0.028	0.71	62	67	80	-	-	20	-	-	4
0.030	0.76	57	60	71	-	-	-	-	-	-
0.032	0.81	52	-	62	-	-	-	-	-	-
0.034	0.86	45	-	52	-	-	-	-	-	-
0.036	0.91	37	-	40	-	-	-	-	-	-
0.038	0.96	28	-	28	-	-	-	-	-	-
0.040	1.02	20	-	-	-	-	-	-	-	-



Round Correction for 15T, 30T, and 45T Scales							
Hardness Value	1/8 in. 3.2 mm	1/4 in. 6.4 mm	3/8 in. 10 mm	1/2 in. 13 mm	5/8 in. 16 mm	3/4 in. 19 mm	1 in. 25 mm
20	13.0	9.0	6.0	4.5	4.5	3.0	2.0
30	11.5	7.5	5.0	3.5	3.5	2.5	2.0
40	10.0	6.5	4.5	3.5	3.0	2.5	2.0
50	8.5	5.5	4.0	3.0	2.5	2.0	1.5
60	6.5	4.5	3.0	2.5	2.0	1.5	1.5
70	5.0	3.5	2.5	2.0	1.5	1.0	1.0
80	3.0	2.0	1.5	1.5	1.0	1.0	0.5
90	1.5	1.0	1.0	0.5	0.5	0.5	0.5



Round Correction for C, A and D Scales									
Hardness Value	1/4 in. 6.4 mm	3/8 in. 10 mm	1/2 in. 13 mm	5/8 in. 16 mm	3/4 in. 19 mm	7/8 in. 22 mm	1 in. 25 mm	1-1/4 in. 32 mm	1-1/2 in. 38 mm
20	6.0	4.5	3.5	2.5	2.0	1.5	1.5	1.0	1.0
25	5.5	4.0	3.0	2.5	2.0	1.5	1.0	1.0	1.0
30	5.0	3.5	2.5	2.0	1.5	1.5	1.0	1.0	0.5
35	4.0	3.0	2.0	1.5	1.5	1.0	1.0	0.5	0.5
40	3.5	2.5	2.0	1.5	1.0	1.0	1.0	0.5	0.5
45	3.0	2.0	1.5	1.0	1.0	1.0	0.5	0.5	0.5
50	2.5	2.0	1.5	1.0	1.0	0.5	0.5	0.5	0.5
55	2.0	1.5	1.0	1.0	0.5	0.5	0.5	0.5	0.0
60	1.5	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.0
65	1.5	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.0
70	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0
75	1.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0
80	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
85	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
90	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Round Correction for B, F and G Scales							
Hardness Value	1/4 in. 6.4 mm	3/8 in. 10 mm	1/2 in. 13 mm	5/8 in. 16 mm	3/4 in. 19 mm	7/8 in. 22 mm	1 in. 25 mm
0	12.5	8.5	6.5	5.5	4.5	3.5	3.0
10	12.0	8.0	6.0	5.0	4.0	3.5	3.0
20	11.0	7.5	5.5	4.5	4.0	3.5	3.0
30	10.0	6.5	5.0	4.5	3.5	3.0	2.5
40	9.0	6.0	4.5	4.0	3.0	2.5	2.5
50	8.0	5.5	4.0	3.5	3.0	2.5	2.0
60	4.0	5.0	3.5	3.0	2.5	2.0	2.0
70	6.0	4.0	3.0	2.5	2.0	2.0	1.5
80	5.0	3.5	2.5	2.0	1.5	1.5	1.5
90	4.0	3.0	2.0	1.5	1.5	1.5	1.0
100	3.5	2.5	1.5	1.5	1.0	1.0	0.5

Round Correction for 15N, 30N, and 45N Scales						
Hardness Value	1/8 in. 3.2 mm	1/4 in. 6.4 mm	3/8 in. 10 mm	1/2 in. 13 mm	3/4 in. 19 mm	1 in. 25 mm
20	6.0	3.0	2.0	1.5	1.5	1.5
25	5.5	3.0	2.0	1.5	1.5	1.0
30	5.5	3.0	2.0	1.5	1.0	1.0
35	5.0	2.5	2.0	1.5	1.0	1.0
40	4.5	2.5	1.5	1.5	1.0	1.0
45	4.0	2.0	1.5	1.0	1.0	1.0
50	3.5	2.0	1.5	1.0	1.0	0.5
55	3.5	2.0	1.5	1.0	0.5	0.5
60	3.0	1.5	1.0	1.0	0.5	0.5
65	2.5	1.5	1.0	0.5	0.5	0.5
70	2.0	1.0	1.0	0.5	0.5	0.5
75	1.5	1.0	0.5	0.5	0.5	0.0
80	1.0	0.5	0.5	0.5	0.0	0.0
85	0.5	0.5	0.5	0.5	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0