

Manufacturing

BRAND REPORT



FOR THE 6 MONTH PERIOD ENDED DECEMBER 2022

No attempt has been made to rank the information contained in this report in order of importance, since BPA Worldwide believes this is a judgment which must be made by the user of the report.

SME 1000 Town Center, Suite 1910 Southfield, MI 48075 Tel. No.: (313) 425-3000 Fax No.: (313) 425-3400 Website: www.sme.org

SME MEDIA is a leading source for news and in-depth technical information about advanced manufacturing in North America. While our roots are in traditional metalworking and shop operations, we distinguish ourselves by remaining on the cutting edge and keeping our eyes on what's next, covering everything from metalworking to 3D printing.

MAGAZINE CHANNEL FORMAT – PRINT AND DIGITAL ISSUES

MANUFACTURING ENGINEERING is produced in print and digital formats. The editorial for the print copy is the same for all recipients. The digital format is written and designed for the digital reading experience, accessed by a computer, mobile phone, or tablet. Digital formats include advertiser links to their website or videos, and other opportunities for user interaction with the brand.

BRAND REPORT PURPOSE

The Brand Report provides a deeper understanding and identification of all audited touch points with customers that have interest in the brand. It is designed to present analysis of all communication channels, including a brand's unique users within each channel of, but not across, multiple media platforms. This non-integrated report contains data for each separate media channel as indicated in the Executive Summary. No attempt has been made to identify or eliminate duplication that may exist across media channels.

CHANNELS



EXECUTIVE SUMMARY

Below are the average contacts per occurrence, including frequency per period reported.

	Non-Paid	Paid	Average
MANUFACTURING ENGINEERING PRINT AND DIGITAL MAGAZINE (6 issues in the period)	85,744	-	85,744
a. Print	75,446	-	75,446
b. Digital	10,298	-	10,298
(See Paragraph 3b for Source)			
MANUFACTURING ENGINEERING E-NEWSLETTER			
Manufacturing Weekly (39 issued in the period)	29,935	-	29,935
SME/MANUFACTURING ENGINEERING WEBSITE (Monthly Users with 139,518 average Pageviews)	60,412	-	60,412
MANUFACTURING ENGINEERING SOCIAL MEDIA*			
a. Twitter followers	22,943	-	22,943
b. Facebook likes	7,800	-	7,800
c. You Tube subscribers	2,340	-	2,340
d. You Tube views	1,133	-	1,133

*Social Media claims are cumulative figures, not averages, except for You Tube Views which are the latest monthly view figure.

MAGAZINE CHANNEL FORMAT: This magazine is produced in print and digital formats.

No attempt has been made to identify or eliminate duplication that may exist across media channels.

MAGAZINE CHANNEL

FIELD SERVED

MANUFACTURING ENGINEERING serves manufacturing industries with primary focus on metalworking industries. Industries include primary metal, fabricated metal products, machinery (except electrical), electric & electronic equipment, transportation equipment, instruments & related equipment, and misc. manufacturing industries. Wholesale trade, professional, scientific & technical services, and other manufacturing industries as described in Paragraph 3a also served.

DEFINITION OF RECIPIENT QUALIFICATION

Qualified recipients are corporate executives, owners and managers, manufacturing production management and department, manufacturing engineering management and department, quality assurance & control management and department, product design/R&D management, engineers and department, factory automation management and department, and purchasing professionals. Also qualified are sales/marketing professionals and others allied to the field.

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(AVERAGE NON-QUALIFIED CIRCULATION		
	Non-Qualified Not Included Elsewhere	Copies	
	Other Paid Circulation	70	
	Advertiser and Agency	2,031	
	Allocated for Trade Shows and Conventions		
	All Other	4,150	
	TOTAL	6,251	

	Total Q	ualified	Qualified	Non-Paid	Qualifi	ed Paid
Qualified Circulation	Copies	Percent	Copies	Percent	Copies	Percent
ndividual	85,450	99.7	85,450	99.7	-	-
ponsored Individually ddressed	-	-	-	-	-	-
lembership Benefit	294	0.3	294	0.3	-	-
/ulti-Copy Same ddressee	-	-	-	-	-	-
ingle Copy Sales	-	-	-	-	-	-

2022 Issues	Print	Digital	Total Qualified
ıly	79,469	10,675	90,144
ugust	79,732	10,937	90,669
September	79,524	10,568	90,092
Dctober	79,625	10,564	90,189
lovember	67,414	9,700	77,114
December	66,914	9,342	76,256

3a. BUSINESS/OCCUPATIONAL BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2022 This issue is 11.8% or 10,356 copies below the average of the other 5 issues reported in Paragraph 2. (See Additional Data) North American Industry Classification System -- Business & Industry Codes -- were introduced in 1997, and last updated in 2022. The NAICS system has evolved from the Standard Industrial Classification (SIC) numerical coding system last updated in 1987.

No. Description Sector Sect		nuaru muustriai Glassification (SiC) numerica					Manufa	acturing					
International product of a sector of a sect						Proc		-	neering				
31.1 Prinkary Metrika Markardingkon 32.2 Prinkary Markardingkon Prinkar					Management, Corporate Executives and Purchasing	Manage- ment		ment	Department	Assurance Control	Design Research and Development	Sales	
111 Immuniferm Mine Andermaning Manufactors 360 100 101	-	5	Qualified	of Total	(B, L)	(C, R)	(D, S)	(E)	(F, G)	(P, Q)	(H,I,J)	(M)	(N)
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333 Processing Processing 335 0.4 1.4 40 0.0 0.5 0.0 0.4 0.0 3343 Processing 305 0.4 0.3 0.3 0.0 0.5 0.0 </td <td></td> <td>-</td>													-
BATH and Processing Add Col Add	3313	Processing	325	0.4	114	40	20	62	28	10	34	16	1
Sub-Total NARGE 331 1,55 2.0 4,87 2.0 8,23 2.89 2.10 6,5 1.27 1.47 3221 Cately and Samping 1.485 1.9 52.1 2.0 88 308 30.3 47 3.0 1.53 2.3 90 2.5 8.35 3.5 1.23 2.8 90 4.3 4.3 1.532 4.03 90 4.3 4.3 1.532 4.03 90 4.3 4.3 .2 7.4 32321 Power block and AHE Exchange Manufacturing 2.2 0.3 845 5.5 2.7 3.0 4.3 1.5 .2 3.3 4.3 1.5 .2 3.3 4.3 1.5 .2 3.3 4.3 1.5 .2 3.3 4.3 1.3 .2		and Processing											-
Base1 Finging and Samparing 1.465 1.9 521 210 88 300 403 47 400 410 Base21 Cheng and Hondton Munchardung 3220 All 3.234 4.3 1.532 482 366 423 69 50 122 54 67 75 322 54 67 76 322 54 67 75 322 54 67 75 323 54 67 75 53 4 30 - - 32242 Mean Truk (new Gauge Manufacturing 22 0.01 26 133 77 25 54 40 0 2 - 32241 Mean Truk (new Manufacturing 490 0.6 103 120 120 133 141 130 141 140 14 160 131 133 131 130 131 130 131 130 131 130 141 141 140 140 <td< td=""><td>3315</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	3315												
3221 Curley and Handbackung 32 0.5 1.2 3.8 2.3 0.6 8.8 3.5 4.8 1.2 3224 Preak Notes and Paintodes Intrum Monketung 3.244 4.3 1.42 8.64 2.66 4.93 6.95 6.82 1.45 1.26 1.45 1.66 1	332	FABRICATED METAL PRODUCT MANUFACTURING											
Bate Work and Exploring Products 3.324 4.3 1.52 4.42 3.66 4.93 9.66 8.2 1.45 1.15 33224 Ornamental and Architectural Metal Products 3.040 3.9 1.488 4.54 2.67 1.32 5.4 9.7 9.9 4. 33244 Meal Intel Exchanger Manufacturing 5.2 0.1 3.85 1.7 5.8 4.4 3.8 1.7 - 33244 Meal Intel Exchanger Manufacturing 6.29 0.1 2.5 1.3 7 2.5 8.4 4.0 1.0 2.7 - 33241 Gauge Manufacturing 4.99 0.6 1.56 6.6 2.8 9.3 4.1 1.0 2.4 1.6 1.0 1.4 1.0 2.4 1.0 3.2 1.1 1.0 1.4 1.0 1.4 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	33211	Forging and Stamping	1,456	1.9	521	210	88	308	103	47	102	74	3
Askad Manufacturing 1.3.2 1.3.32 <th1.332< th=""> <th1.3.32< th=""> 1.3.3</th1.3.32<></th1.332<>	33221	Cutlery and Handtool Manufacturing	352	0.5	122	35	23	69	25	8	35	34	1
Manufacturing 3.0.0 3.0.3 1.4.43 4-9 2.0 1.0 1.0 9.0 9.0 9.0 32241 Power Boler and Heat Exchanger Munufacturing 2.2 0.0 3.0 10 2 10 3 4 8 1.0 - 32242 Metal Tank (Heav) Cauge Manufacturing 2.0 3.0 10 2.0 1.0 6 1.0 7 2.5 5 4 1.0 2.2 3221 Metal Tank (Head) Cautainer (Light 4.0 90 0.0 1.06 60 2.8 9.3 3.4 1.1 3.0 2.8 3221 Metal Screw, Nat and Boh 3.46 0.5 1.00 666 1.0 7.7 66 2.7 1.9 1.1 <td>33231</td> <td></td> <td>3,324</td> <td>4.3</td> <td>1,532</td> <td>482</td> <td>366</td> <td>493</td> <td>96</td> <td>82</td> <td>145</td> <td>125</td> <td>3</td>	33231		3,324	4.3	1,532	482	366	493	96	82	145	125	3
32424 Metal Tank Hewy Gauge Manufacturing 224 0.3 85 9.5 27 9.8 14 8 12 7 33243 Metal Can, Box of Ohren Metal Container (Light Gauge Manufacturing 90 0.1 26 1.8 7 25 5 4 100 2 33251 Hardware Manufacturing 366 1.6 609 28 303 3.4 1.1 30 2.8 33261 Bardware Manufacturing 116.82 5.1 9.00 666 4.03 7.0 9.8 1.4	33232		3,040	3.9	1,438	454	287	475	132	54	97	99	4
Metal Can, Box and Other Metal Container (Light) 92 0.1 26 13 7 25 5 4 10 2 . 33251 Spring and Murcheturing 360 0.4 99 39 21 68 25 8 35 11 33271 Machine Shops 11.652 15.1 9.009 666 403 7.30 392 14.1 130 25 14 134 166 11 32271 Manchastruing, Engraving Healt Trading and Alind 721 0.0 121 120 1 1 1 1 1 1 229 66 155 16 10 27 1 3 1 1 22 1 1 1 <td< td=""><td>33241</td><td>Power Boiler and Heat Exchanger Manufacturing</td><td>62</td><td>0.1</td><td>30</td><td>10</td><td>2</td><td>10</td><td>3</td><td>4</td><td>3</td><td>-</td><td>-</td></td<>	33241	Power Boiler and Heat Exchanger Manufacturing	62	0.1	30	10	2	10	3	4	3	-	-
Savia Gauge) Manufacturing So U.1 20 U.1 20 T 30 5 4 U.0 Z Soling and Wire Product Manufacturing 366 0.4 99 39 21 66 25 8 35 11	33242	Metal Tank (Heavy Gauge) Manufacturing	224	0.3	85	35	27	36	14	8	12	7	-
Spring and Nice Product Manufacturing 459 0.6 11.62 9.00 666 403 7.00 332 1.11 30 2.8 1.1 32211 Maxime Product and Scow, Nut and Boit 14.66 0.5 1.20 57 27 66 27 10 1.1 1.8 33 7.3 332 33211 Maxime Product and Scow, Nut and Boit 721 0.9 341 9.1 4.3 9.1 3.1 1.8 3.3 7.3 - 33221 Maximeturing 741 0.2 5.2 1.2 1.4 1 1 - <td>33243</td> <td></td> <td>92</td> <td>0.1</td> <td>26</td> <td>13</td> <td>7</td> <td>25</td> <td>5</td> <td>4</td> <td>10</td> <td>2</td> <td>-</td>	33243		92	0.1	26	13	7	25	5	4	10	2	-
33211 Machine Shoge 11,652 15.1 9,009 666 403 730 392 14.1 134 16 11 33212 Turne Product and Scew, Nut and Bolt 348 0.5 120 57 27 66 27 19 11 148 33 72 32321 Meat New Manufacturing 721 0.9 341 11 12 38 14 0.0 329 333 18 40 0.3 72 7 7 323291 Meat New Manufacturing 714 0.2 20 12 11 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13 13	33251	Hardware Manufacturing	306	0.4	99	39	21	68	25	8	35	11	-
33272 Turnel Product and Sorew, Nut and Bolt 348 0.5 120 57 27 66 27 19 11 18 3 33281 Cooting, Engrwing, Heat Treating and Alled 721 0.9 341 91 43 91 31 18 33 73 - 33281 Metal Valve Maunfacturing 784 1.0 255 88 55 133 81 40 103 29 -		Spring and Wire Product Manufacturing											-
Manufacturing SHS U.S LO SI Zi BS Zi IS IS IS 32321 Machifecturing TPAI 0.9 341 91 31 18 33 73 32321 Machifecturing TAI 0.9 341 91 31 18 33 51 0.9 32 33 61 0.0 32 91 0.0 32 0.1 1 1 0.0 32 0.1 0.1 1 1 1 0.0 0.0 0.1 0.1 1 1 1 0.0	33271		11,652	15.1	9,009	666	403	730	392	141	134	166	11
3.2.4.4. Activities	33272	Manufacturing	348	0.5	120	57	27	66	27	19	11	18	3
332991 Bal and Role Bearing Manufacturing 141 0.2 11 29 36 8 15 9 1 32992 Small Arms Ammunition (except Small Arms) Manufacturing 8 - 1 1 2 - - 1 3 - - 32999 Small Arms Manufacturing (p) 83 0.1 15 7 9 14 18 4 15 1 - <td< td=""><td></td><td></td><td>721</td><td>0.9</td><td>341</td><td>91</td><td>43</td><td>91</td><td>31</td><td>18</td><td>33</td><td>73</td><td>-</td></td<>			721	0.9	341	91	43	91	31	18	33	73	-
332292 Small Arms Manufacturing 8 - 4 1 1 1 1 1 1 - - - 32393 Ammunition (except Small Arms) Manufacturing 83 0.1 15 7 9 14 18 44 15 1 - 32399 Fabricated Pipe and Pipe fitting Manufacturing 33 0.4 127 43 33 66 25 16 19 7 - 32399 All Oter Miscellaneous Fabricated Metal Product 922 1.2 387 1.4.8 1.50 2.8.6 1.0 5.6 33 2 33111 Farm Machinery and Equipment Manufacturing (n) 1.3.77 1.8 5.1 2.4.8 1.50 2.8.6 1.9 7.3 423 2.03 3.1 1.01 2.0 2 33112 Construction Manufacturing 1.510 2.0 458 1.99 7.3 423 2.03 3.1 1.01 2.0 2 33120 Construction Manufacturing 1.510 2.0 478 4.6 1.4 7.4		-											-
332993 Ammunition (except Small Arms) Manufacturing (b) 83 0.1 1 2 - - 1 3 - - 332994 Small Arms Manufacturing (p) 83 0.1 15 7 9 14 18 4 15 1 - 332994 All Other Macellaneous Fabricated Metal Product 922 1.2 387 135 668 160 57 15 665 3.3 2 Subtrotal Mole Sale Colspan="4">Subtrotal Manufacturing (p) 3.27 1.8 1.105 4.88 867 7.1 1.8 1 33311 Machinery and Equipment Manufacturing (p) 1.377 1.8 513 2.26 89 2.44 1.28 3.1 7.7 1.8 1 33312 Construction Manufacturing 1.510 2.0 458 1.99 7.3 423 2.03 3.1 1.01 2.0 2.3 333120 Construction Manufacturing 1.510 2.0 4.78 1.49 7.4 39 9 2.6 9 2.7 2.33324 3.1001 <td></td> <td></td> <td></td> <td>0.2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>8</td> <td>15</td> <td>9</td> <td>1</td>				0.2						8	15	9	1
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S2299 Manufacturing (pt) S22 L2 S81 L35 G8 L60 L51 L50 L51 L63 L50 L50 <thl50< th=""> L50 L50</thl50<>													
333 MACHINERY MANUFACTURING 333111 Farm Machiney and Equipment Manufacturing (pt) 1.377 1.8 513 236 89 284 128 31 77 18 1 333112 Gardnen Factor and Home Lawn and Garden Equipment Manufacturing 1.510 2.0 458 199 73 423 203 21 101 200 2 - 333121 Gardnen Equipment Manufacturing 1.510 2.0 458 199 73 423 203 31 101 200 2 333121 Mining Machinery and Equipment Manufacturing 1.510 2.0 458 199 73 423 203 31 101 200 2 2 333121 Mining Machinery and Equipment Manufacturing 2.99 0.4 78 46 145 71 5 11 5 19 4 - 333242 Semiconductor Machinery Manufacturing 19 0.1 38 18 10 12 9 .6 5 .7 333242 Semiconductor Machinery Manufacturing 5	332999	Manufacturing (pt)											
333111Farm Machinery and Equipment Manufacturing (p) 1.377 1.8 513 236 89 284 128 31 77 18 1 333112Garden Equipment Manufacturing 266 0.3 95 52 11 53 29 4 20 2 -1 333120Construction Machinery Manufacturing 1.510 2.0 478 199 73 423 203 31 101 20 22 333131Mining Machinery and Equipment 999 0.8 141 128 26 145 81 24 32 200 2 333241Food Product Machinery Manufacturing 238 0.3 87 43 17 52 11 5 19 4 -1 33242Semiconductor Machinery Manufacturing 19 $ 5$ 2 1 3 4 1 3 $ -$ 33243Savenductor Machinery Manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 33343Manufacturing 531 0.7 152 70 41 127 51 11 43 20 -1 33344Hother industrial machinery manufacturing 515 0.7 152 70 41 127 51 11 43 20 -1 33341Industrial and Commercial Fan and Blower 299 0.4 88 31 20 <td>333</td> <td></td> <td>24,510</td> <td>51.5</td> <td>14,200</td> <td>2,440</td> <td>1,501</td> <td>2,001</td> <td>1,100</td> <td>400</td> <td>007</td> <td>710</td> <td>20</td>	333		24,510	51.5	14,200	2,440	1,501	2,001	1,100	400	007	710	20
333112 Lawn and Garden Tractor and Home Lawn and Carden and Blower 154 141 158 15 16 17 141 157 11 143 20 - 333411 Odd O			1.377	1.8	513	236	89	284	128	31	77	18	1
333120 Construction Machinery Manufacturing 1,510 2.0 458 199 73 423 203 31 101 20 2 333131 Mining Machinery and Equipment 295 0.4 78 46 14 74 39 9 26 9 - 333132 Dil and Gas Field Machinery and Equipment 599 0.8 141 128 26 145 81 24 32 20 22 333241 Food Product Machinery Manufacturing 238 0.3 87 43 17 52 11 5 19 4 - 33242 Semiconduct Machinery Manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 33243 All other industrial machinery manufacturing 531 0.7 152 70 41 127 51 11 43 20 - 333413 Manufacturing 134 0.3 84 22 21 47 21 10 21 8 .		Lawn and Garden Tractor and Home Lawn and											-
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333132 Oil and Gas Field Machinery and Equipment 599 0.8 141 128 26 145 81 24 32 20 2 333241 Food Product Machinery Manufacturing 19 - 5 2 1 3 4 1 3 - - 333242 Semiconductor Machinery Manufacturing 19 - 5 2 1 3 4 1 3 - - 33243 Sawmill, Woodworking and Paper Machinery 98 0.1 38 18 10 12 9 - 6 5 - 33248 All other industrial machinery manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 33310 Commercial and service industry machinery 515 0.7 152 70 41 127 51 11 43 20 - 333413 Industrial and Commercial Fan and Blower 299 0.4 88 31 20 69 17 6 31 37 - <td></td> <td>, ,</td> <td></td> <td>-</td>		, ,											-
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333242 Semiconductor Machinery Manufacturing 19 - 5 2 1 3 4 1 3 - - 333243 Sawnill, Woodworking and Paper Machinery Manufacturing 98 0.1 38 18 10 12 9 - 6 5 - 333243 All other industrial machinery manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 333243 All other industrial machinery manufacturing 515 0.7 152 70 41 127 51 11 43 20 - 333413 Industrial and Commercial Fan and Blover Manufacturing (pt) 299 0.4 88 31 20 69 17 6 31 37 - 333413 Industrial machinery manufacturing 234 0.3 84 22 21 47 21 100 21 8 - 333415 Air-Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8	333241	-	238	03	87	43	17	52	11	5	19	4	_
333243 Sawmill, Woodworking and Paper Machinery 98 0.1 38 18 10 12 9 6 5 . 333243 All other industrial machinery manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 333310 Commercial and service industry machinery manufacturing 515 0.7 152 70 41 127 51 11 43 20 . 333413 Industrial and Commercial Fan and Blower Manufacturing (xtop) 299 0.4 88 31 20 69 17 6 31 37 . 333413 Industrial Mode Manufacturing (xtop) 234 0.3 84 22 21 47 21 10 21 8 . 333413 Air-Conditioning and Warm Air Fuening Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Machine Tool Accessory 464 0.6 167 44 35 81 33 11 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td></t<>												-	-
333248 All other industrial machinery manufacturing 531 0.7 184 77 41 85 37 11 54 41 1 33310 Commercial and service industry machinery manufacturing 515 0.7 152 70 41 127 51 11 43 20 - 333413 Industrial and Commercial Fan and Blower Manufacturing 299 0.4 88 31 20 69 17 6 31 37 - 333414 Heating Equipment (except Warm Air Furnaces) Manufacturing (pt) 234 0.3 84 22 21 47 21 10 21 8 - 333415 Air Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333515 Special Die and Tool, Die Set, Jig, and Fixture 695 0.9 304 76 49 117		Sawmill, Woodworking and Paper Machinery		0.1								5	
333310 Commercial and service industry machinery 515 0.7 152 70 41 127 51 11 43 20 . 333413 Industrial and Commercial Fan and Blower Manufacturing 299 0.4 88 31 20 69 17 6 31 37 . 333413 Industrial and Commercial Fan and Blower Manufacturing (pt) 234 0.3 84 22 21 47 21 10 21 8 . 333414 Heating Equipment (except Warm Air Furnaces) Manufacturing (pt) 234 0.3 84 22 21 47 21 10 21 8 . 333415 Air-Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 . 333515 Special Die and Tool, Die Set, Jig, and Fixture 695 0.9 304 76 49 117	333248	-	531	0.7	184	77	41	85	37	11	54	41	1
333413 Industrial and Commercial Fan and Blower 299 0.4 88 31 20 69 17 6 31 37 - 333413 Heating Equipment (except Warm Air Furnaces) 234 0.3 84 22 21 47 21 10 21 8 - 333414 Heating Equipment (except Warm Air Furnaces) 234 0.3 84 22 21 47 21 10 21 8 - 333415 Air-Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333513 Special Die and Tool, Die Set, Jig, and Fixture 695 0.9 304 76 49 117 42 14 51 40 2 333515 Cutting Tool and Machine Tool Accessory 464 0.6 167 44 35 81 33 11 32		Commercial and service industry machinery											-
333414 Heating Equipment (except Warm Air Furnaces) Manufacturing (pt) 234 0.3 84 22 21 47 21 10 21 8 - 333415 Air Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333512 Special Die and Tool, Die Set, Jig, and Fixture Manufacturing 695 0.9 304 76 49 117 42 14 51 40 2 333515 Cutting Tool and Machine Tool Accessory Manufacturing 464 0.6 167 44 35 81 33 11 32 59 2 333517 Machine Tool Maufacturing Manufacturing 776 1.0 277 68 44 128 61	333413	Industrial and Commercial Fan and Blower	299	0.4	88	31	20	69	17	6	31	37	
333415 Air-Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333415 Air-Conditioning and Warm Air Heating Equipment 461 0.6 119 57 43 137 36 8 44 16 1 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333513 Special Die and Tool, Die Set, Jig, and Fixture 695 0.9 304 76 49 117 42 14 51 40 2 333515 Cutting Tool and Machine Tool Accessory 464 0.6 167 44 35 81 33 11 32 59 2 333517 Machine Tool Maufacturing 776 1.0 277 68 44 128 61 12 70 110	333414	Heating Equipment (except Warm Air Furnaces)	234	0.3	84	22	21	47	21	10	21	8	-
333511 Industrial Mold Manufacturing 148 0.2 78 12 5 20 11 4 9 9 - 333511 Industrial Mold Manufacturing 695 0.9 304 76 49 117 42 14 51 40 2 333514 Special Die and Tool, Die Set, Jig, and Fixture 695 0.9 304 76 49 117 42 14 51 40 2 333515 Cutting Tool and Machine Tool Accessory Manufacturing 464 0.6 167 44 35 81 33 11 32 59 2 333517 Machine Tool Manufacturing 776 1.0 277 68 44 128 61 12 70 110 6 333519 Rolling Mill and other Metalworking Machinery Manufacturing 236 0.3 76 26 16 32 25 3 25 32 1 333611 Turbine and Turbine Generator Set Unit 206 0.3 64 17 12 40 34 8 28 </td <td></td> <td>1</td>													1
333514 Manufacturing	333511		148			12				4	9		-
333515 Manufacturing 464 0.6 167 44 35 81 53 11 52 59 2 333517 Machine Tool Manufacturing 776 1.0 277 68 44 128 61 12 70 110 6 333519 Rolling Mill and other Metalworking Machinery Manufacturing 236 0.3 76 26 16 32 25 3 25 32 1 333611 Turbine and Turbine Generator Set Unit 206 0.3 64 17 12 40 34 8 28 3 3	333514		695	0.9	304	76	49	117	42	14	51	40	2
Rolling Mill and other Metalworking Machinery 236 0.3 76 26 16 32 25 3 25 32 1 333519 Manufacturing Turbine and Turbine Generator Set Unit 206 0.3 64 17 12 40 34 8 28 3 3	333515		464	0.6	167	44	35	81	33	11	32	59	2
333319 Manufacturing 236 0.3 76 26 16 32 25 3 25 32 1 333611 Turbine and Turbine Generator Set Unit 206 0.3 64 17 12 40 34 8 28 3	333517	-	776	1.0	277	68	44	128	61	12	70	110	6
	333519	Manufacturing	236	0.3	76	26	16	32	25	3	25	32	1
	333611		206	0.3	64	17	12	40	34	8	28	3	-

					Prod	Manufa		eering				
				Company Management, Corporate Executives					Quality	Product Design Research		Other
NAICS	Business and Industry	Total Qualified	Percent of Total	and Purchasing (B, L)	Manage- ment (C, R)	Department (D, S)	Manage- ment (E)	Department (F, G)	Assurance Control (P, Q)	and Development (H,I,J)	Marketing/ Sales (M)	Qualified Personnel (N)
	Speed Changer, Industrial High-Speed Drive, and	-										(14)
333612	Gear Manufacturing	83	0.1	12	11	9	15	15	3	11	7	-
333613	Mechanical Power Transmission Equipment Manufacturing	122	0.2	37	11	9	19	24	4	9	9	-
333618	Other Engine Equipment Manufacturing (pt)	151	0.2	57	8	7	34	18	5	17	5	-
333912	Air and Gas Compressor Manufacturing	184	0.2	61	28	10	28	17	4	13	21	2
333914	Measuring, Dispensing, and other Pumping Equipment Manufacturing	373	0.5	117	49	14	88	46	6	38	15	-
333921	Elevator and Moving Stairway Manufacturing	44	-	18	3	4	11	5	-	2	1	-
333922	Conveyor and Conveying Equipment Manufacturing (pt)	395	0.5	129	61	47	68	20	6	33	29	2
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing (pt)	73	0.1	27	13	6	10	7	3	5	2	-
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	214	0.3	71	30	17	52	21	2	18	3	-
333991	Power-Driven Handtool Manufacturing	87	0.1	21	7	4	19	8	2	18	8	-
333992	Welding and Soldering Equipment Manufacturing	219	0.3	82	15	19	24	15	7	15	41	1
333993	Packaging Machinery Manufacturing	164	0.2	49	30	24	23	15	2	20	-	1
333994	Industrial Process Furnace and Oven Manufacturing	162	0.2	55	17	13	31	11	2	17	15	1
333995 333996	Fluid Power Cylinder and Actuator Manufacturing	94 101	0.1 0.1	26 19	14 13	3 5	19 12	10 21	3 3	10 19	9 9	-
	Fluid Power Pump and Motor Manufacturing All Other Miscellaneous General Purpose Machinery											-
333999	Manufacturing (pt)	905	1.2	357	99	73	151	64	26	72	62	1
	Sub-Total NAICS 333	12,338	16.0	4,146	1,633	832	2,533	1,189	281	1,009	689	26
334	COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING											
3341	Computer and Peripheral Equipment Manufacturing	192	0.2	55	11	5	21	23	8	45	24	-
3342	Communications Equipment Manufacturing	201	0.3	54	22	11	36	16	6	49	7	-
3343	Audio and Video Equipment Manufacturing	33	-	8	2	1	10	6	1	4	1	-
3344	Semiconductor and Other Electronic Component Manufacturing	598	0.8	153	56	22	138	76	24	82	44	3
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	719	0.9	155	135	14	167	112	61	62	9	4
334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing	1,740	2.3	187	228	66	530	477	73	166	9	4
334512	Automatic Environmental Control Manufacturing for Residential, Commercial and Appliance Use	168	0.2	54	21	9	41	25	2	13	3	-
334513	Instruments and Related Products Manufacturing for Measuring, Displaying and Controlling Industrial Process Variables	306	0.4	62	32	35	49	47	11	50	19	1
334514	Totalizing Fluid Meter and Counting Device Manufacturing	34	-	8	7	5	8	1	-	3	2	-
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	127	0.2	31	11	10	31	15	2	22	4	1
334516	Analytical Laboratory Instrument Manufacturing	213	0.3	68	15	12	44	27	12	26	9	-
334517	Irradiation Apparatus Manufacturing	100	0.1	28	12	2	9	23	4	21	1	-
334519	Other Measuring and Controlling Device Manufacturing	516	0.7	189	48	34	107	49	16	48	24	1
3346	Manufacturing and Reproducing Magnetic and Optical Media	12	-	4	2	1	2	-	-	1	2	-
	Sub-Total NAICS 334	4,959	6.4	1,056	602	227	1,193	897	220	592	158	14
335	ELECTRICAL EQUIPMENT, APPLIANCE, AND COMPONENT MANUFACTURING											
33513	Electric Lighting Equipment Manufacturing	349	0.5	133	38	15	78	19	7	45	14	-
33521	Small Electrical Appliance Manufacturing	45	0.1	12	1	3	16	2	1	5	5	-
33522	Major Appliance Manufacturing	103	0.1	9	7	12	40	7	6	22	-	-
33531	Electrical Equipment Manufacturing	1,050	1.4	330	113	82	241	104	25	96	58	1
33591	Battery Manufacturing	31	-	9	4	-	4	6	-	6	2	-
33592	Communication and Energy Wire and Cable Manufacturing	76	0.1	22	8	1	18	9	6	8	3	1
33593	Wiring Device Manufacturing	194	0.2	40	35	18	41	22	3	30	5	-
33599	All Other Electrical Equipment and Component Manufacturing	397	0.5	122	41	28	60	36	6	60	42	2
	Sub-Total NAICS 335	2,245	2.9	677	247	159	498	205	54	272	129	4

International properties Description Description <thdescriptio< th=""><th></th><th></th><th></th><th></th><th>– Company Management,</th><th>Prod</th><th>Manufac uction</th><th></th><th>eering</th><th>-</th><th>Product</th><th></th><th></th></thdescriptio<>					– Company Management,	Prod	Manufac uction		eering	-	Product		
Base Structure (Figure Etri Autor 2004) Terms of the figure Etri Autor 2004 and major vehicle and autor 2004 and major 2004 and aut	NAICS	Business and Industry			Corporate Executives and Purchasing	ment		ment		Assurance Control	Design Research and Development	Sales	Personnel
303100 manufacturing 0.1 0.0 0.00 0.0 0.00		TRANSPORTATION EQUIPMENT	Quannea	orrotar	(0, 1)	(0, 11)	(8, 8)	(Ľ)	(1, 0)	(1, 2)	(11,1,5)	(111)	(11)
338101 Meary Day, Tronk Manufacturing 434 0.6 90 67 12 121 127 127 120 137 12 130 12 170 130 12 17 13 130 140 140 140 140 140 140 140 140 140 <t< td=""><td>336110</td><td></td><td>515</td><td>0.7</td><td>130</td><td>81</td><td>18</td><td>127</td><td>79</td><td>15</td><td>62</td><td>2</td><td>1</td></t<>	336110		515	0.7	130	81	18	127	79	15	62	2	1
335212 Truck Theire Manufacturing 399 0.5 163 70 22 79 4 75 13 22 7 335213 Macro Tealmer Manufacturing 10 2.8 0.4 1.90 46 88 37 2.8 5 1.3 1.1 335213 Macro Venish Eaco Change Manufacturing 100 2.2 2.6 3.4 5 0.9 1.2 2.2 1.8 3.4 5 9 2.2 1.8 3.4 5 9 2.2 1.8 3.4 5 9 2.2 1.1 1.5 1.0 2.2 2.1 1.5 .6 0.1 1.2 1.0 2.2 1.1 8.3 3.9 1.4 1.0 1.5 3.35 9 1.4 1.0 1.5 1.0 1.0 1.5 1.0 1.2 1.0 2.2 2.1 1.0 1.2 1.0 1.2 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 <t< td=""><td>336120</td><td>-</td><td>434</td><td>0.6</td><td>90</td><td>67</td><td>12</td><td>121</td><td>90</td><td>15</td><td>37</td><td>2</td><td>-</td></t<>	336120	-	434	0.6	90	67	12	121	90	15	37	2	-
39301 Moor Home Manufacturing 40 - 12 7 1 15 3 - 2 - 393014 Twait Manufacturing 178 0.2 66 34 5 0.0 22 9 22 - - 39302 Moor Vehick Scalen and Exemine 178 0.0 121 8 35 0.0 22 9 22 - - 39303 Moor Vehick Scalen and Supersion 0.0 122 10 2 11 5 8 0.0 1 12 10 2 11 5 8 0.0 10 <td></td> <td>1</td>													1
383614 Tawle Trailer and Gamper Manufacturing 288 0.4 190 46 8 37 28 5 1.0 20 338101 Motical and Samper and Faire		-											-
338.10 Moor Vendo Segme Engine and Engine 178 0.2 56 34 5 40 2.2 9 1.2 338.20 Moor Vendo Segme Engine and Engines 386 0.5 89 95 9 1.12 6.2 1.8 4.3 4.5 9 2.2 1.5 6.6 3.363.00 Moor Vendo Segme Engines 6.6 0.1 1.2 1.0 2.2 1.5 6.6 0.1 1.2 1.0 2.2 1.0		-											
AltACU Essement Manufacturing (pt) ABB 0.3 B3 1.1 C I.B A B 33330 Mater Vehicle Stepristion 97 0.1 121 18 3 5 1.4 5 9 2 1.5 - 6 - 33330 Mater Vehicle Stepristion 172 0.2 33 2.5 9 4.0 39 9 - 4 1.1 2 33330 Mater Vehicle Stepristion 171 0.6 1.09 7.7 20 1.41 5.1 1.8 9 - - 3.86 0.4 4.4 8.12 5.40 1.2 5.8 1.6 1.8 9 - - 3.363 3.35 1.4 8.4 8.4 1.2 1.0 1.5 1.1 1.5 1.3 1.5 1.3 1.5 1.3 1.5 1.3 1.5 3.34 1.2 1.0 3.36 1.7 2.3 1.7 2.3 1.3 1.5 1.4 1.3 1.5 1.5 1.5 1.5 1.5 <td< td=""><td></td><td>Motor Vehicle Gasoline Engine and Engine</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<>		Motor Vehicle Gasoline Engine and Engine										-	
336340 Components (sever) Simple Municaturing 0 0 14 0 0 0 10 12 11 0 0 10 12 11 0 10 12 11 10 12 11<	336320		386	0.5	89	56	9	112	62	18	34	6	-
336300 Mean Vehicle Transmission and Power Train 112 0.2 333 2.6 9 4.0 3.9 9 1.4 1 1.1 336800 Motor Vehicle Seating and Interior Trim 1.18 0.2 2.33 7.7 20 1.41 8.1 1.6 1.8 9 - 3368100 Motor Vehicle Seating and Interior Trim 3.38 4.4 6.12 6.40 1.28 8.28 6.6 6 <td>336330</td> <td></td> <td>97</td> <td>0.1</td> <td>21</td> <td>8</td> <td>3</td> <td>35</td> <td>14</td> <td>5</td> <td>9</td> <td>2</td> <td>-</td>	336330		97	0.1	21	8	3	35	14	5	9	2	-
Sesses Parts Manufacturing 11 12 12 13 13 10 13 10 11										-		-	-
335300 Munufacturing " I.B U.Z 23 23 10 14.4 0 3 9		Parts Manufacturing										1	1
338390 All Other Model Vehicle Parts Manufacturing 3.382 4.4 612 540 123 652 516 176 288 666 52 338411 Aircraft Manufacturing 1.13 1.55 119 445 39 243 312 53 140 4 44 338412 Aircraft Manufacturing (p) 687 1.1 155 119 45 216 226 58 466 127 338413 Outer Arcraft Parts and Axallary Equipment 2.892 3.7 687 428 103 592 595 245 0.03 37 2 338414 Outer Culder Massine and Space Vehicle Parts 233 0.3 51 24 9 32 70 17 17 17 2 1 33661 Ship Building & Scok Manufacturing 208 0.3 70 21 6 45 28 14 23 1 2 33661 Ship Building & Scok Manufacturing 208 0.5 70		Manufacturing										-	-
approximate approximate <thapproximate< th=""> <thapproximate< th=""></thapproximate<></thapproximate<>		All Other Motor Vehicle Parts Manufacturing											9
Sabella Manufacturing (m) 6/7 1.1 1.13 1.13 1.13 2.18 2.28 3.58 1.12 33641.3 One-Alvarch Evan and Aulling Equipment 2.892 3.7 687 428 1.03 592 595 2.45 2.03 3.7 2 33641.5 Guided Missile and Space Vehicle 2.45 0.3 1.7 3.2 1.7 5.6 8.3 7 3.3 - 33641.5 Guided Missile and Space Vehicle Propulsion 1.83 0.2 2.1 1.7 5 4.2 7.4 8 1.5 1.1 33651.5 Det Guided Missile and Space Vehicle Propulsion 1.83 0.2 7.0 1.7 1.1 4.3 2.2 7 2.2 2 1.1 33651.5 Bote Manufacturing 3.20 0.4 1.5 4.6 9 6.2 2.2 7 2.2 2 1.1 33691 Motoryole, Bycyke and Parts Manufacturing 3.20 0.4 1.1 1.1													4
336413 Manufacturing C.892 3.1 0.87 4.26 0.03 592 995 2.45 2.03 3.1 2 336414 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing 245 0.3 17 56 83 7 33 - 336413 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing 223 0.3 51 24 9 32 70 17 17 72 2 336510 Ratioca Roing Stock Manufacturing 208 0.3 70 21 6 45 28 14 23 1 336612 Boto Building & Repaining 332 0.5 98 50 40 81 47 10 25 1 1 336612 Boto Building & Repaining 332 0.4 152 46 9 62 22 7 22 7 1 336991 Motorycitel Broyce Manufacturing 161 2.08 587	336412		877	1.1	155	119	45	216	226	58	46	12	-
Solar Ling Year of the conditional production of the conditional production of the conditional production of the conditional production of the conditional productional productinal productional produc	336413	Manufacturing	2,892	3.7	687	428	103	592	595	245	203	37	2
Sector Unit and Propulsion Unit Parts Manufacturing 1.03 0.02 2.1 1.1 9 4.2 1.4 6 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.2 1.3 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.1 1.3 1.3 1.4 1.1 1.4 1.3 1.1 1.4 1.3 1.1 1.1 1.3 1.1 1.1 1.3 1.1 1.1 1.3 1.1 1.1 1.3 1.1 1.3 1.3 1.1 1.3 1.3 <td>336414</td> <td>Manufacturing</td> <td>245</td> <td>0.3</td> <td>17</td> <td>32</td> <td>17</td> <td>56</td> <td>83</td> <td>7</td> <td>33</td> <td>-</td> <td>-</td>	336414	Manufacturing	245	0.3	17	32	17	56	83	7	33	-	-
33619 and Axuliany Equipment Minufacturing 243 0.3 5.1 24 9 3.2 70 17 17 21 6 45 28 1.4 23 1 23 1 33610 Rainod Rolling Stock Manufacturing 332 0.5 98 50 40 61 47 10 25 1 33611 Ship Building & Repairing 332 0.4 152 46 9 62 22 7 22 2 1 33699 Motorycle, Bickle, and Park Manufacturing (pt) 137 0.2 41 11 4 33 17 18 11 2 2 6 14 1 2 7 7 11 43 3 17 18 11 2 2 7 12 63 14 7 23 - 7 7 11 43 64 263 14 7 23 - 7 7 11 10 33 11 10 337 Nicher Calibra Murdacturing 3 3 11 1 10 3	336415	Unit and Propulsion Unit Parts Manufacturing	183	0.2	21	17	5	42	74	8	15	1	
336611 Ship Buiking & Repaing 352 0.5 98 50 40 81 47 10 25 1 336612 Boat Buiking Bayes 0.4 152 46 9 62 22 7 22 2 2 3 336991 Motorcycle, Bicycle, and Parts Manufacturing (p) 137 0.2 41 11 43 322 6 1.4 1 2 3 336999 Miltary Armored Vehicle, Tank, and Tank (pi) 137 0.2 41 11 4 33 17 18 11 2 2 3 336999 Miltary Armored Vehicle, Tank, and Tank (pi) 0.3 64 2.7 12 63 1.4 7 23 - - 310 Childrer Tansportation Equipment Manufacturing 2.0 3.541 2.085 587 3.345 2.632 755 1.149 162 20 337 FURNTURE AND RELATED PRODUCT ManuFacturing field manu		and Auxiliary Equipment Manufacturing											1
336612 Beat Building 323 0.4 152 46 9 62 22 7 22 2 1 336991 Motorycle, Bicycle, and Parts Manufacturing (p) 114 0.2 70 17 11 43 22 6 14 1 - 336992 Military Armered Vehicle, Tank, and Tank (p) 137 0.2 41 11 4 33 17 18 11 2 - 336999 All Other Transportation Equipment Manufacturing 14,279 18.5 3,641 2,088 587 3,345 2,632 755 1,149 162 20 337 FURTURE ANDEXDED PRODUCT MANUFACTURING 287 0.4 114 31 28 54 13 3 33 11 - 3371 Mousehold and Institutional Furtiture and Kitchen Cabinet Manufacturing 315 0.4 105 43 46 61 11 10 32 6 17 2 3371 Mousehold and Ke													-
Motorycle, Bicycle, and Parts Manufacturing (pt) 184 0.2 70 17 11 43 22 6 14 1 336992 Military Armored Vehicle, Tank, and Tank Component Manufacturing (pt) 137 0.2 441 11 4 33 17 18 11 2 2 336999 Multer Armored Vehicle, Tank, and Tank Component Manufacturing (pt) 137 0.2 441 11 4 33 17 18 11 2 5 14.9 16.2 2 337 Multer Armored Vehicle, Tank, and Tank Manufacturing 14.279 18.5 3.541 2.088 554 13 3 33 11 2 3371 FURNITRE AND RELATED PRODUCT 11 31 28 54 13 3 33 11 2 6 13 3370 Office Furniture Rolated Product 11 - 3 3 - 1 - 2 - 1 339112 Surgical And Micelial Instrument Manufacturing													- 1
336992 Military Armored Vehicle, Tank, and Tank, Component Manufacturing (pt) 137 0.2 41 11 4 33 17 18 11 2 336999 All Other Transportation Equipment Manufacturing 210 0.3 64 27 12 63 14 7 23 . . 337 FURNITURE AND RELATED PRODUCT 3.5 3.541 2.088 567 3.345 2.632 755 1.149 162 200 3371 FURNITURE AND RELATED PRODUCT .		Motorcycle, Bicycle, and Parts Manufacturing											-
Manufacturing Manufacturing Main facturing Main fact	336992		137	0.2	41	11	4	33	17	18	11	2	-
337 FURNTURE AND RELATED PRODUCT MANUFACTURING 3371 Household and Institutional Furniture and Kitchen Cabinet Manufacturing 287 0.4 114 31 28 54 13 3 33 11 3372 Office Furniture (including Fixtures) 315 0.4 105 43 46 61 11 10 32 6 1 3379 Office Furniture Related Product Manufacturing 11 . 3 3 1 1 2 3379 Other Furniture Related Product Manufacturing 11 3 3 1 1 2 1 339113 Surgical Appliance and Supplies Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 1 339113 Surgical Appliance and Supplies Manufacturing 1.176 1.5 379 1.89 29 191 168 112 97 9 2 339114 Dental Equipment and Supplies Manufacturing	336999		210	0.3	64	27	12	63	14	7	23	-	-
MANUFACTURING 3371 Household and Institutional Furniture and Kitchen Cabinet Manufacturing 287 0.4 114 31 28 54 13 3 33 11 3372 Office Furniture (including Fixtures) 315 0.4 105 43 46 61 11 10 32 6 11 3379 Other Furniture (including Fixtures) 11 3 3 - 1 1 - 2 - 14 Manufacturing Sub-Total NAICS 337 613 0.8 222 77 74 116 25 13 67 17 2 339112 Surgical and Medical Instrument Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 339113 Surgical Appliance and Supplies 1,176 1.5 379 189 29 191 168 112 97 9 2 339114 Dental Equipment and Supplies	337	FURNITURE AND RELATED PRODUCT	14,279	18.5	3,541	2,088	587	3,345	2,632	755	1,149	162	20
Notice (including Fixtures) 315 0.4 105 43 46 61 11 10 32 6 1 3379 Office Furniture (including Fixtures) 11 - 3 3 - 1 1 - 2 - 1 3379 Other Furniture (including Fixtures) 11 - 3 3 - 1 1 - 2 - 1 339 Sub-Total NAICS 337 613 0.8 222 77 74 116 25 13 67 17 2 339112 Surgical and Medical Instrument Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 1 339113 Surgical Appliance and Supplies Manufacturing 1,176 1.5 379 189 29 191 168 112 97 9 2 339114 Dental Equipment and Supplies Manufacturing 305 0.4		Household and Institutional Furniture and	207	0.4	111	21	20	54	10	2	22	11	
Manufacturing 11 - - - - -		5											1
Sub-Total NAICS 337 613 0.8 222 77 74 116 25 13 67 17 23 339 MISCELLANEOUS MANUFACTURING 3,656 4.7 769 607 82 717 675 428 356 21 1 339112 Surgical and Medical Instrument Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 339113 Surgical Appliance and Supplies Manufacturing 1,176 1.5 379 189 29 191 168 112 97 9 2 339114 Dental Equipment and Supplies Manufacturing 305 0.4 105 48 6 52 38 25 29 1 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 980 1.3 39		Other Furniture Related Product											1
339 MISCELLANEOUS MANUFACTURING 339112 Surgical and Medical Instrument Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 339112 Surgical Appliance and Supplies Manufacturing 1.176 1.5 379 189 29 191 168 112 97 9 22 339113 Dental Equipment and Supplies Manufacturing 305 0.4 105 48 6 52 38 25 29 1 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 980 1.3 392 121 82 155 40 18 113 56 33 339 Other Miscellaneous Manufacturing 980 1.3 392 121 82 155 40 18 113 56 33 399 1.6 98 85 1.867 1.046 219 1.161 947 602 <t< td=""><td>5518</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td></t<>	5518	-											2
333112 Manufacturing 3,656 4.7 769 607 82 717 675 428 356 21 1 339113 Surgical Appliance and Supplies Manufacturing 1,176 1.5 379 189 29 191 168 112 97 9 2 339114 Dental Equipment and Supplies Manufacturing 305 0.4 105 48 6 52 38 25 29 1 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339116 Dental Laboratories 242 0.3 163 32 13 19 4 2 9 - - 3399 Other Miscellaneous Manufacturing 980 1.3 392 121 82 155 40 18 113 56 3 325<	339												
339113 Manufacturing 1,176 1.5 379 189 29 191 168 112 97 97 97 27 339114 Dental Equipment and Supplies Manufacturing 305 0.4 105 48 6 52 38 25 29 1 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 242 0.3 163 32 13 19 4 2 9 - 3391 Dental Laboratories 242 0.3 163 322 13 19 4 2 9 - - 3399 Other Miscellaneous Manufacturing 980 1.3 392 121 82 155 40 18 113 56 36 56 26 163	339112	Manufacturing	3,656	4.7	769	607	82	717	675	428	356	21	1
333114 Manufacturing 303 0.4 103 48 6 52 38 23 29 1 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339115 Ophthalmic Goods Manufacturing 190 0.3 59 49 7 27 22 17 6 2 1 339116 Dental Laboratories 242 0.3 163 32 13 19 4 2 9 - - 3399 Other Miscellaneous Manufacturing 980 1.3 392 121 82 155 40 18 113 56 33 3399 Other Miscellaneous Manufacturing 6549 8.5 1,867 1,046 219 1,161 947 602 610 89 88 325 Chemical Manufacturing 66,836 86.6 26,294 8,347 3,722 12,002 7,110 2,478 4,691 2,087 105 32 325 16	339113	Manufacturing	1,176	1.5	379	189	29	191	168	112	97	9	2
339116 Dental Laboratories 242 0.3 163 32 13 19 4 2 9 - 3399 Other Miscellaneous Manufacturing 980 1.3 392 121 82 155 40 18 113 56 339 Sub-Total NAICS 339 6,549 8.5 1,867 1,046 219 1,161 947 602 610 89 88 Sub Total Metalworking Manufacturing 66,836 86.6 26,294 8,347 3,722 12,002 7,110 2,478 4,691 2,087 105 325 Chemical Manufacturing 64,836 86.6 26,294 8,347 3,722 12,002 7,110 2,478 4,691 2,087 105 325 Chemical Manufacturing 642 0.6 96 39 33 59 31 16 96 69 39 326 Plastics and Rubber Products Manufacturing 227 0.3 70 27 20 40 13 6 20 31 31 36 20 3		Manufacturing											1
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						Manufac	turing					
					Produ	uction	Engir	eering	_			
NAICS	Business and Industry	Total Qualified	Percent of Total	Company Management, Corporate Executives and Purchasing (B, L)	Manage- ment (C, R)	Department (D, S)	Manage- ment (E)	Department (F, G)	Quality Assurance Control (P, Q)	Product Design Research and Development (H,I,J)	Marketing/ Sales (M)	Other Qualified Personnel (N)
111-115	Agriculture	1	-	-	-	-	-	-	-	-	-	1
211-213	Mining	6	-	2	1	-	-	-	-	-	-	3
221	Utilities	2	-	-	-	-	1	-	-	1	-	-
236-238	Construction	11	-	2	1	-	-	2	-	-	2	4
423-425	Wholesale Trade Durable Goods	5,200	6.8	1,974	385	328	553	194	75	389	1,248	54
441-459	Retail Trade	19	-	8	-	-	2	2	-	2	3	2
481-493	Transportation And Warehousing	4	-	-	-	1	1	-	1	-	-	1
511-562	Services	2,600	3.4	869	162	151	318	140	46	478	364	72
611	Educational Services	308	0.4	8	4	4	6	13	2	32	-	239
621-624	Health Care	7	-	1	2	-	1	-	-	1	-	2
711-713	Arts, Entertainment Recreation	2	-	-	-	-	1	1	-	-	-	-
721-722	Accomodations And Food	4	-	1	-	-	-	1	-	1	-	1
811-814	Other Services	34	-	6	2	-	4	-	1	6	3	12
921-928	Public Administration	167	0.2	12	11	19	38	33	13	34	2	5
	Sub Total Non-Manufacturing	8,365	10.8	2,883	568	503	925	386	138	944	1,622	396
	TOTAL QUALIFIED CIRCULATION	77,114	100.0	29,726	9,099	4,398	13,212	7,632	2,684	5,934	3,922	507

(B) CORPORATE EXECUTIVE titles include Chairman, General Manager, Owner, Partner, President, Vice President.
 (C) MANUFACTURING PRODUCTION MANAGEMENT titles include Factory Manager, Machine Shop Manager, Manufacturing Manager, Manufacturing Production Manager, Plant Manager, Production Manager, Shop Manager, Tool Room Manager and Works Manager. Includes corporate titles in production department.

(D) MANUFACTURING PRODUCTION DEPARTMENT titles include Foreman, Department Supervisor, Manufacturing Supervisor, Master Mechanic, Plant Supervisor, Production Supervisor.

(E) MANUFACTURING ENGINEERING MANAGEMENT titles include Chief Tool Engineer, Chief of Manufacturing Development, Director of Manufacturing Engineering, Chief Methods Engineer, Manager of Process Engineering, Director of Production Engineering, Manager of Tool Design and Head of Tool Engineering. Includes corporate titles in engineering department.

(F) MANUFACTURING ENGINEERING (ENGINEERS) includes most engineering titles where the individual does not manage the department.

(G) MANUFACTURING (OTHER MANUFACTURING PERSONNEL) titles include Diemaker, Expediter, Leadman, Chief Machinist and Chief Toolmaker. (P) QUALITY ASSURANCE/CONTROL MANAGEMENT titles include Quality Assurance Manager, Quality Control Director, Chief of Quality Engineering. (Q) QUALITY ASSURANCE/CONTROL ENGINEERING titles include Quality Assurance Engineer, Quality Control Foreman, Quality Supervisor.

(H) PRODUCT DESIGN, RESEARCH AND DEVELOPMENT MANAGEMENT titles include Director of Design Engineering, Chief Draftsman, Manager of Product Engineering and Director of Research. (I) PRODUCT DESIGN, RESEARCH AND DEVELOPMENT ENGINEERING titles include Design Project Engineer, Development Engineer, Research & Design Engineer.

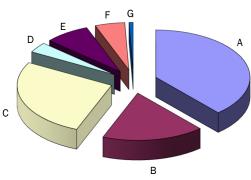
(J) PRODUCT DESIGN, RESEARCH AND DEVELOPMENT (OTHER DESIGN PERSONNEL) titles include Draftsman.

(R) FACTORY AUTOMATION MANAGEMENT titles include Factory Automation Manager, Chief Factory Automation Engineer, Manager of Systems Design, Chief Systems Engineer.
 (S) FACTORY AUTOMATION ENGINEERING titles include Factory Automation Engineer, Automation Foreman, Systems Designer, Systems Engineer.
 (L) PURCHASING titles include Buyer, Procurement Chief, and Purchasing Manager.

(M) MARKETING/SALES

(N) OTHER QUALIFIED PERSONNEL

				fied Circulation by Fun oh 3a for Complete De
	Functions	Total Qualified	Percent of Total	
A.	Company Management, Corporate Executives and Purchasing	29,726	38.5	D
В.	Manufacturing Production: Management & Department	13,497	17.5	
C.	Manufacturing Engineering: Management & Department	20,844	27.0	
D.	Quality Assurance Control	2,684	3.5	c
E.	Product Design Research and Development	5,934	7.7	
F.	Marketing/Sales	3,922	5.1	
G.	Other Qualified Personnel	507	0.7	
	TOTAL QUALIFIED	77,114	100.0	



3b. QUALIFICATION SOURCE BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2022

Qualification Source	Print	Digital	Total Qualified	Percent
I. Direct Request:	38,845	9,595	48,440	62.8
II. Request from recipient's company:	5	-	5	-
III. Membership Benefit:	181	105	286	0.4
IV. *Communication (other than request):	10,323	-	10,323	13.4
V. TOTAL – Sources other than above (listed alphabetically):	18,060	-	18,060	23.4
Association rosters and directories	-	-		-
*Business directories	10,201	-	10,201	13.2
Manufacturer's, distributor's, and wholesaler's lists	-	-		-
*Other sources	7,859	-	7,859	10.2
VI. Single Copy Sales:	-	-	-	-
TOTAL QUALIFIED CIRCULATION	67,414	9,700	77,114	100.0
PERCENT	87.4	12.6	100.0	

*See Additional Data

Note: 5,993 copies or 7.8% of Total Qualified circulation is > 24 months.

GEOGRAPHICAL BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2022*

State	Total Qualified	Percent	State	Total Qualified	Percent
Maine	256		Kentucky	973	
New Hampshire	589		Tennessee	1,663	
Vermont	202		Alabama	1,292	
Massachusetts	2,436		Mississippi	360	
Rhode Island	312		EAST SO. CENTRAL	4,288	5.5
Connecticut	2,119		Arkansas	446	
NEW ENGLAND	5,914	7.7	Louisiana	526	
New York	2,263		Oklahoma	693	
New Jersey	1,254		Texas	4,508	
Pennsylvania	3,247		WEST SO. CENTRAL	6,173	8.0
MIDDLE ATLANTIC	6,764	8.8	Montana	127	
Ohio	4,824		Idaho	268	
Indiana	3,082		Wyoming	56	
Illinois	5,830		Colorado	730	
Michigan	5,501		New Mexico	201	
Wisconsin	3,532		Arizona	937	
EAST NO. CENTRAL	22,769	29.5	Utah	629	
Minnesota	2,349		Nevada	198	
Iowa	1,254		MOUNTAIN	3,146	4.1
Missouri	1,380		Alaska	37	
North Dakota	207		Washington	1,280	
South Dakota	321		Oregon	736	
Nebraska	493		California	8,142	
Kansas	951		Hawaii	35	
WEST NO. CENTRAL	6,955	9.0	PACIFIC	10,230	13.3
Delaware	121		UNITED STATES	76,953	99.8
Maryland	621		U.S. Territories	21	
Washington, DC	38		Canada	115	
Virginia	1,103		Mexico	1	
West Virginia	164		Other International	24	
North Carolina	2,034		APO/FPO	-	
South Carolina	1,389		···· •/ ··· •		
Georgia	2,818				400.0
Florida	2,426		TOTAL QUALIFIED CIRCULATION	77,114	100.0
SOUTH ATLANTIC	10,714	13.9			

E-NEWSLETTER CHANNEL

2022	Manufacturing Weekly	2022	Manufacturing Weekly
ULY		OCTOBER	
July 8	30,543	October 4	30,157
July 13	30,095	October 7	30,456
July 20	29,985	October 11	30,053
July 27	29,861	October 14	30,006
AUGUST		October 18	33,968
August 3	30,025	October 21	30,190
August 9	34,743	October 25	30,049
August 12	29,960	October 28	30,004
August 16	29,948	NOVEMBER	
August 19	29,705	November 1	28,856
August 23	29,949	November 4	28,828
August 26	29,952	November 8	28,817
August 30	29,937	November 11	28,789
SEPTEMBER		November 15	28,708
September 8	29,926	November 18	28,674
September 9	29,960	November 29	28,653
September 13	30,971	DECEMBER	
September 16	30,369	December 9	28,569
September 20	30,463	December 13	28,561
September 23	30,050	December 16	28,545
September 27	30,448	December 20	28,553
September 30	30,143	AVERAGE:	29,935

www.bpaww.com

WEBSITE CHANNEL

WWW.SME.ORG

2022	Pageviews	Sessions	Users	Average Session Duration
July	119,465	59,016	48,663	1:50
August	176,519	98,968	84,805	1:33
September	137,492	66,756	54,541	2:06
October	135,919	65,852	53,435	2:14
November	142,897	76,322	63,415	1:46
December	124,821	67,486	57,618	1:31
AVERAGE:	139,518	72,400	60,412	1:50

July - December 2022 data was provided by Google Analytics. All website activity is audited by BPA Worldwide.

WEBSITE GLOSSARY

Pageviews: A Pageview is recorded each time a page implanted with the JavaScript code (tag) is displayed in a browser window. This will occur whether the page is served directly from the web server, from a proxy, or from the browser's cache.

Sessions: A single continuous set of activity attributable to a cookied browser resulting in one or more pulled text and/or graphics downloads from a site. A period of 30 minutes of inactivity will terminate the session.

Users: An identified and unduplicated Cookied Browser that accesses Internet content or advertising during a measurement period.

Average Session Duration: The time visitors remain on a site per session.

SOCIAL MEDIA CHANNEL*

_	Manufacturing Engineering Social Media				
	Twitter followers	Facebook likes	You Tube Subscribers	You Tube Views	
2022	http:// twitter.com/ SMEMediaNews	https://www.facebook.com/ SMEMediaNews	http://www.youtube.com/ c/SMEMedia	http://www.youtube.com/ mfgengmedia	
Beginning Balance	23,014	7,392	2,310	1,612	
July	23,019	7,400	2,315	1,402	
August	23,038	7,500	2,320	1,264	
September	23,044	7,800	2,324	1,353	
October	23,030	7,800	2,330	1,214	
November	22,957	7,800	2,330	1,205	
December	22,943	7,800	2,340	1,133	
*Casial Madia alaima are sumulative figures, not everyges, event for Verture Views which are the latest monthly view figure					

*Social Media claims are cumulative figures, not averages, except for Youtube Views which are the latest monthly view figure.

ADDITIONAL DATA

MAGAZINE:

METHOD OF DISTRIBUTION:

All qualified circulation conforms to the field served and definition of recipient qualification, as reported. Print copies are distributed via postal services or other carriers. Recipients of the digital version are notified via email when the Version is available.

STATEMENT OF CONTENT PLATFORM:

Editorial Replica - If a print edition exists, editorial and design are unchanged from the original print edition. Each issue's content and design are identical to the original edition. Apart from minor updates, the content cannot change once the issue is made available.

PARAGRAPH 3a:

The November 2022 issue is 11.8% or 10,356 copies below the average of the other 5 issues reported in Paragraph 2.

PARAGRAPH 3b:

Communication (other than request) includes 1 source of circulation for a quantity of 10,323 copies or 13.4%, including SME Show Registrants. Business directories include 2 sources of circulation for quantities of 4,195 copies or 5.4% to 6,006 copies or 7.8%, including Data Axle. Other sources include 1 source of circulation for a quantity of 7,859 copies or 10.2%, including Pinpoint Technologies.

GEOGRAPHIC DISTRIBUTION:

Geographic data for E-Newsletter, Website and Social Media are not reported at the media owner's option.

PUBLISHER'S AFFIDAVIT						
We hereby make oath and say that all data set forth in this statement are true.						
Dave O'Neil, Vice President	Date signed	February 10, 2023				
Mary Venianakis, Audience Manager	State	Michigan				
(At least one of the above signatures must be that of an officer of the publishing company or its	County	Oakland				
authorized representative.)	Received by BPA Worldwide	February 10, 2023				
IMPORTANT NOTE:	Туре	BD				
This unaudited brand report has been checked against the previous audit report. It will be included in the annual audit made by BPA Worldwide.	ID Number	M018BRD22				

bout BPA Worldwide. PA Worldwide is in the business of nd the media industry to audit aud rusted resource for compliance and es of providing assurance. For 80+ years as a not-for-profit assurance service provider, BPA was originally created by advertisers, advertising agencie audience claims used in the buying and selling of advertising. Performing nearly 1,000 annual audits of media channels in 19 countries, BPA is a and assurance services.