

Action Summary – 13 September 2019

Analyst Theodore R. O'Neill *is initiating coverage of BELF Class A (BELFA) with a Buy rating and a \$23.50 price target*

- **Looking through the current environment, BELF EPS could reach an annualized run rate >\$3.** This can occur under circumstances that have occurred in past cycles.
- **Company executing on worldwide review of cost structure.** Market not focusing on internal cost realignment effects that will lever earnings coming out the other side of the current macro environment.
- **Tariffs created a mess and generated knock-on effects but the situation appears stable now.** To avoid tariffs, we saw that one of its distributors (Arrow – ARW-NR) encouraged customers to buy all it needed in advance. It did this by offering to calculate the expected impact of future tariffs on component prices. Many customers responded to this, but did not see that the escalating trade war would result in slower growth saddling customers with excess inventory.
- **Shares appear to us to more than discount these well-known issues with a valuation significantly below peers on multiple measures**
- This report is being issued simultaneously with a similar report on the Class B shares which has a different EPS, price target and dividend. Class A shares have all the right to vote at the annual meeting. Class B shares have no voting rights.

Intra-day share price: \$14.61	Market cap: \$185 million	2020 P/E: 17	EV/2020 Sales: 0.43
Shares outstanding: 2.2 million	Insider ownership: 23.0%	Avg. trading volume: 1,000	Dividend/Yield: \$0.24/1.6%

GAAP estimates (EPS in dollars – Revenue in millions)

Period	EPS	Revenue	Op Margin
1Q18A	\$(0.11)	\$118.3	0.4%
2Q18A	\$0.52	\$140.7	7.6%
3Q18A	\$0.89	\$146.5	7.2%
4Q18A	<u>\$0.31</u>	<u>\$142.7</u>	<u>5.6%</u>
FY18A	<u>\$1.62</u>	<u>\$548.2</u>	<u>5.4%</u>
1Q19A	\$0.08	\$125.4	2.2%
2Q19A	\$0.23	\$127.4	3.9%
3Q19E	\$(0.06)	\$120.0	0.6%
4Q19E	<u>\$(0.01)</u>	<u>\$125.0</u>	<u>1.3%</u>
FY19E	<u>\$0.24</u>	<u>\$497.8</u>	<u>2.0%</u>
1Q20E	\$0.05	\$120.0	2.1%
2Q20E	\$0.21	\$140.0	3.6%
3Q20E	\$0.30	\$140.0	4.6%
4Q20E	<u>\$0.27</u>	<u>\$130.0</u>	<u>4.6%</u>
FY20E	<u>\$0.84</u>	<u>\$530.0</u>	<u>3.8%</u>

Note: Numbers may not add due to rounding. See our full model in the back of this report.

Cash balance (in millions)

• 2018A	• \$53.9
• 2019E	• \$70.0
• 2020E	• \$72.4

Debt (in millions)

• 2018A	• \$110.7
• 2019E	• \$110.0
• 2020E	• \$110.0

Adj. EBITDA (in millions)

• 2018A	• \$49.6
• 2019E	• \$29.1
• 2020E	• \$38.0

Risks/Valuation

- Risks include: Highly competitive business; changes in customer demand
- Trading volume is low. The three-month average is 50,000 shares/day
- Our \$25 target is derived using a discounted future earnings model

Company description: Founded in 1949, Bel designs, manufactures and markets a broad array of products that power, protect and connect electronic circuits.

Figure 1 – Bel Fuse Inc. - Trading snapshot



Source: Thomson Reuters Eikon

Investment Thesis

Looking through the current environment, BELF EPS could reach an annualized run rate >\$3. The potential to generate this can occur under circumstances that have occurred in past cycles. The company reported quarterly revenue of \$156 million in 3Q14 and gross profit margin of 22% in 3Q17 and 4Q17. We believe that with revenue similar to 3Q14 and gross profit similar to 4Q18 (21.3%), BELF could earn >\$0.80/quarter.

Company executing on worldwide review of cost structure. Market not focusing on internal cost re-alignment effects that will lever earnings coming out the other side of the current macro environment. The company has identified a total of \$3.5 million in annualized savings that it expects to put in place in 3Q19 in the U.S. and 4Q19 in Asia.

Tariffs created a mess and generated knock-on effects but the situation appears stable now. To avoid tariffs, we saw that one of its distributors (Arrow – ARW-NR) encouraged customers to buy in advance. It did this by offering to calculate the expected impact of future tariffs on component prices. Many customers responded to this, but did not see that the escalating trade war would result in slower growth. As you can imagine, the combination of early ordering and slowing growth left customers with excess inventory which its customers are working through. Like many of its peers and channel partners, escalating trade wars and inventory issues are dampening business activities

Shares appear to us to more than discount these well-known issues with a valuation significantly below peers on multiple measures

Valuation Methodology

We believe BELF is undervalued and we support that belief with a series of valuation techniques. We use four different techniques, below. For the purposes of determining our price target we use a discounted future earnings model. The following valuation techniques are being used:

- 1) The discounted value of all future earnings was used for our price target (see Figure 2)
- 2) Valuation relative to peers
- 3) Recent M&A transactions
- 4) Sum of the parts

Discounted Future Earnings – Used for Price Target

We are initiating coverage of Bel Fuse Class B with a BUY rating and a 12-month price target of \$23.50, which is based on a discounted earnings model. For valuation purposes, we sum up all future earnings discounted at 7%. We assume approximately 10% growth for earnings which steps down to GDP after 5-7 years. Our valuation model is shown in Exhibit 2 below. Note, this model understates future new products and growth through acquisitions and probably understates the tax benefits, but offsetting that, the earnings never have a down year. The implied share price is \$23.41 which we round up to \$23.50. This is approximately a 60% increase over the current price. We would point out that the stock has traded slightly higher in the last year. This method produced the most conservative target.

Figure 2 – Bel Fuse Inc. – Price Target Calculation (\$000 except per share and share count)

Class A Valuation				
		Sum of all future Discounted Net Income	Share Count	Implied Share Price
		50,920	2,175	\$23.41
Year	Forecast Net Income	Discounted Net Income		
1	\$529	\$529		
2	1,829	1,597		
3	2,200	1,796		
4	2,500	1,907		
5	2,600	1,854		
Terminal Value		\$43,237		

Source: Litchfield Hills Research LLC

Valuation Relative to Peers

In Figure 3 we look at a summary of BELF peers according to market cap. It is clear that on average, the multiples get better with increased market cap. If we compare BELF to a simple average of its peers, the shares sell at a significant discount on all measures except PE ranging from 24% to 73%. The way we look at the seeming disparity in what appears to be a premium on PE is to say that our EPS estimate for next year is still well below what we believe BELF can achieve. The remaining metrics indicate the stock price should be somewhere between 30% to more than 100% higher. Details on each of the peers can be found in Figure 17 near the back of the report.

Figure 3 – Bel Fuse Inc. – Discount to Peers

Market Cap Range	Price/Book	2020 EV/Revenue	2019 Sales Multiple	2020 EV/EBITDA	2020 PE
>\$5 billion	3.36	2.34	2.4	10.29	18.44
\$1-5 Billion	2.43	1.93	2.26	8.91	16.75
<\$1 Billion	1.05	0.51	0.52	5.35	11.59
Average	2.28	1.59	1.73	8.18	15.59
BELF	0.88	0.43	0.46	6.21	16.51
Discount to peers	-61%	-73%	-73%	-24%	+6%

Source: Litchfield Hills Research LLC and Thomson Reuters Eikon data

Recent M&A Transactions

We compiled a list of recent M&A transactions that were completed by BELF peers (Figure 4). We made no effort to limit the transactions for this analysis except that they have occurred in the last three years. However, we did not find valuation metrics for all of them. This list is simply the 11 transactions where we were able to identify valuation metrics.

Of the 11 transactions, the sales multiple ranged from 0.6x to 3.0x and averaged 1.89. This average multiple is statistically identical to the average 2019 Sales Multiple (1.73) for BELF peers we calculated in Figure 3. This also supports our price target, albeit suggesting it be much higher.

Figure 4 – Bel Fuse Inc. – Recent M&A Transactions

Firm	Date Announced	Price	Implied Revenue	Stated Revenue	Sales Multiple
First Sensor AG	5/26/2019	342		172	1.99
Embedded Power Business of Artesyn	5/15/2019	400	580		0.69
SSI Controls	11/27/2018	400		180	2.22
LumaSense Technologies	7/30/2018	85		60	1.42
Griswold LLC	7/9/2018	81	30		2.70
Trek Holding Co. Ltd.	2/1/2018	12	20		0.60
Ethertronics, Inc.	1/3/2018	150	88		1.70
IXYS	8/28/2017	873	397		2.20
Meggitt, PLC	7/26/2017	85	53		1.60
Diversified Silicone Products	1/6/2017	60	20		3.00
Amphenol Phitek Ltd.	12/8/2016	60	22		2.70
	Average				1.89

Sources: Litchfield Hills Research LLC, Press Releases, S&P Cap IQ and offering documents

Sum-of-the-Parts Valuation

The company reports in three segments and reports quarterly revenue for each. We took the peers from our Comp Table, Figure 17 and sorted them to match the segments BELF reports: Connectivity Solutions; Magnetic Solutions and; Power Solutions. We averaged the 2019 Sales Multiples by segment and applied each segment multiple to each of the three segments sales estimates for the year. The Sum-of-the-Parts Valuation implies a stock price more than 100% higher than the current share price (See Figure 5). Note: We eliminated Vicor from the analysis, although it belonged in the Power peers because of the richness of its valuation. We did the same for Amphenol and TE

Connectivity because its market cap was so much larger. Despite the market cap we left in Murata because it lowered the average.

Figure 5 – Bel Fuse Inc. – Sum-of-the-Parts Valuation Table

Ticker	Company Name	Intra-day 9/12/2019	Market Cap \$M	2019 Sales Multiple
Power Solutions Peers				
AEIS.O	Advanced Energy Industries Inc	\$57.06	2,216.53	4.10
6981.T	Murata Manufacturing Co Ltd	¥5,030.00	31,530.90	2.18
6707.T	Sanken Electric Co Ltd	¥2,142.00	498.66	0.31
				2.20
2019 Sales for BELF Power Solutions (\$165 million)				
Implied Value	\$362 million			
Connectivity Solutions				
RFIL.O	RF Industries Ltd	\$8.30	76.10	NA
HUBB.N	Hubbell Inc	\$136.83	7,443.69	1.59
6963.T	Rohm Co Ltd	¥8,520.00	8,693.07	2.43
AVX	AVX Corp	\$15.80	2,610.79	1.70
				1.91
2019 Sales for BELF Connectivity Solutions (\$168 million)				
Implied Value	\$320 million			
Magnetic Solutions				
6976.T	Taiyo Yuden Co Ltd	¥2,388.00	2,884.35	1.07
KEM	KEMET Corp	\$18.68	1,074.63	0.81
ROG.N	Rogers Corp	\$151.15	2,721.58	2.88
2327.TW	Yageo Corp	TWD 231.00	3,176.58	2.37
AVX	AVX Corp	\$15.80	2,610.79	1.70
6996.T	Nichicon Corp	¥979.00	708.30	0.61
6999.T	Koa Corp	¥1,369.00	514.02	1.08
				1.50
2019 Sales for BELF Magnetic Solutions (\$165 million)				
Implied Value	\$248 million			
Sum of parts valuation total		\$930 million		

Source: Litchfield Hills Research LLC and Thomson Reuters Eikon

Forecast, Growth Factors and Guidance

Current Business Environment Drives Near-Term Results

According to multiple sources, demand for components deteriorated on a global basis in the second quarter. BELF experienced lower demand across all products and regions year-over-year but only saw a sequential slowdown in both Europe and in Connectivity Solutions. Because sales of components are highly correlated with expected future GDP, its customers brace for slowing demand by reducing inventories and ordering fewer parts. The escalating trade war with China, the on-again-off again ban on sales to one large global customer, excess inventory with one or more customers and the grounding of a new airplane; BELF exposure to any one of these developments in isolation is not material, however, taken together is having broad based dampening effects on near-term business.

The good news is that the company is executing on internal cost reductions so that when these issues (which we believe are more than factored into the current stock price) are resolved, the company is even more levered to the upside.

Growth Factors

Multiple positive factors point to strong growth going forward.

- Current market is stabilizing
- Continued consolidation in the industry. The market is moving towards fewer larger players and BELF is a consolidator in the sector
- Internet of things – more sophisticated and semi-sophisticated electronics in a greater number of things from appliances, to robots to consumer electronics drive need for more electronic components
- 5G – this will lead to an increase in the electronics to communicate wirelessly
- Electric Vehicles – electric vehicles use 10x-100x more electronic components (our estimates) than an internal combustion driven vehicle
- Infrastructure – the infrastructure needed to accommodate a changeover to EVs will require a re-wiring of the entire national utility grid which we believe will drive more electronic component demand

Guidance

Company provided guidance for 3Q19 and for longer-term annual savings. Guidance for 3Q19 is for revenue to be flat to down sequentially while it expects an uptick in gross margin. It is also rationalizing some production in both the U.S., with annual savings expected to generate \$2.1 million beginning in 3Q19 and in Asia with annual savings expected to generate \$1.4 million beginning in 4Q19.

Company Overview

Bel Fuse, Inc. (the "company" or "Bel") is a global provider of products, services, and solutions to industrial and commercial customers that power, protect and connect electronic circuits. It designs, manufactures and markets a broad array of products primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets among others.

Utilizing its engineering expertise, Bel has reliably demonstrated the ability to succeed in a variety of product areas across a global platform. The Company has a track record of technical innovation working with the engineering teams of market leaders to specify BELF products into their new designs. Bel has proven itself a valuable supplier to world-class companies by developing new products with cost effective solutions as it helps industrial and commercial customers introduce innovative products, reduce their time to market, and enhance their overall competitiveness.

Bel's diverse worldwide customer base consists of original equipment manufacturers (OEMs), value-added resellers (VARs), contract manufacturers (CMs), other commercial and government customers. These customers in turn include manufacturers of industrial equipment (such as machine tools, factory automation, and robotic equipment) and consumer products serving industries ranging from telecommunications, automotive and transportation, aerospace and defense, medical and consumer electronics markets among others.

Bel's three reportable operating segments, North America, Asia and Europe, manufacture and sell, or participate in the manufacturing and sale of, the following products: Connectivity Solutions (34% of sales); Magnetic Solutions (33% of sales) and Power Solutions & Protection (33% of sales). Quarterly sales by segment are shown in Figure 6.

Figure 6 – Bel Fuse Inc. – Quarterly sales by segment by quarter 2017-present (\$000)



Source: Litchfield Hills Research and Company filings

Connectivity Solutions

Bel offers a comprehensive line of high speed and harsh environment copper and optical fiber connectors and integrated assemblies, which provide connectivity for a wide range of applications across multiple industries including commercial aerospace, military communications, network infrastructure, structured building cabling and several industrial applications. Typical applications shown in Figure 7 and Product Map in Figure 8.

Figure 7 – Bel Fuse Inc. – Connectivity Product Applications and Sample Connector



Source: Bel Fuse Inc. presentation

Figure 8 – Bel Fuse Inc. – Connectivity Solutions Product Map

Product Line	Function	Applications	Brands
Expanded Beam Fiber Optic Connectors, Cable Assemblies and Active Optical Devices (transceivers and media converters)	Harsh-environment, high-reliability, flight-grade optical connectivity for high-speed communications.	Military/aerospace, oil and gas well monitoring and exploration, broadcast, communications, RADAR	Stratos®, Fibreco®
Copper-based Connectors / Cable Assemblies-FQIS	Harsh-environment, high-reliability connectivity and fuel quantity monitoring (FQIS).	Avionics, smart munitions, communications, radar and various industrial equipment	Cinch®
RF Connectors, Cable Assemblies, Microwave Devices and Low Loss Cable	Connectors and cable assemblies designed to provide connectivity within radio frequency (RF) applications.	Military/aerospace, test and measurement, high-frequency and wireless communications	Johnson, Trompeter, Midwest Microwave™, Semflex®
RJ Connectors and Cable Assemblies	RJ45 and RJ11 connectivity for data/voice/video transmission.	Largely Ethernet applications including network routers, hubs, switches, and patch panels; and emerging internet-of-things (IoT) applications	Stewart Connector

Source: Bel Fuse Inc. presentations and Litchfield Hills Research, LLC

Magnetic Solutions

Bel's Magnetics offers industry leading products. The Company's ICM products integrate RJ45 connectors with discrete magnetic components to provide a more robust part that allows customers to substantially reduce board space and inventory requirements. Power Transformers include standard and custom designs for use in industrial instrumentation, alarm and security systems, motion control, elevators, and medical products. Typical applications shown in Figure 9 and Product Map in Figure 10.

Figure 9 – Bel Fuse Inc. – Magnetic Solution Applications and Sample Image



Source: Bel Fuse Inc. presentation

Figure 10 – Bel Fuse Inc. – Magnetic Solutions Product Map

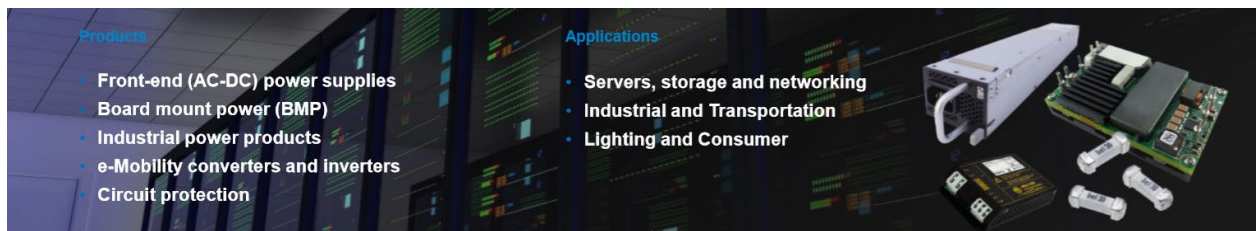
Product Line	Function	Applications	Brands
Integrated Connector Modules (ICMs)	Condition, filter, and isolate the electronic signal to ensure accurate data/voice/video transmission and provide RJ45 and USB connectivity.	Network switches, routers, hubs, and PCs used in multi-speed Gigabit Ethernet, Power over Ethernet (PoE), PoE Plus and home networking applications.	Bel, TRP Connector®, MagJack®
Power Transformers	Safety isolation and distribution.	Power supplies, alarm, fire detection, and security systems, HVAC, lighting and medical equipment. Class 2, three phase, chassis mount, and PC mount designs available.	Signal
SMD Power Inductors & SMPS Transformers	A passive component that stores energy in a magnetic field. Widely used in analog electronic circuitry.	Switchmode power supplies, DC-DC converters, LED lighting, automotive and consumer electronics.	Signal
Discrete Components-Telecom	Condition, filter, and isolate the electronic signal to ensure accurate data/voice/video transmission.	Network switches, routers, hubs, and PCs used in multi-speed Gigabit Ethernet and Power over Ethernet (PoE).	Bel

Source: Bel Fuse Inc. presentations and Litchfield Hills Research, LLC

Power Solutions & Protection

Bel's power conversion products include AC-DC power supplies, DC-DC converters and battery charging solutions. The primary AC-DC product lines consist of front ends and shelves, industrial, railway and eMobility products. The DC-DC product offering consists of standard and custom isolated and non-isolated DC-DC converters designed specifically to power low voltage silicon devices or provide regulated mid-bus voltages. The DC-DC converters are used in data networking equipment, distributed power architecture, and telecommunication devices, as well as data storage systems, computers and peripherals. Opportunities for the DC-DC products also extend into industrial applications. Bel circuit protection products include board level fuses (miniature, micro and surface mount), and Polymeric PTC (Positive Temperature Coefficient) devices, designed for the global electronic and telecommunication markets. Typical applications shown in Figure 11 and Product Map in Figure 12.

Figure 11 – Bel Fuse Inc. – Power Solutions & Protections Applications and Sample Image



Source: Bel Fuse Inc. Presentation

Figure 12 – Bel Fuse Inc. – Connectivity Solutions Product Map

Product Line	Function	Applications	Brands
Front-End Power Supplies	Provides the primary point of isolation between AC main line (input) and the low-voltage DC output that is used to power all electronics downstream	Servers, telecommunication, network and data storage equipment	Bel Power Solutions
Board-Mount Power Products	These are designed to be mounted on a circuit board. These converters take input voltage and provide localized on-board power to low-voltage electronics.	Telecommunication, networking and a broad range of industrial applications	Bel Power Solutions, Melcher™
Industrial Power Products	Converts between AC main line inputs and a wide variety of DC output voltages.	Rail, transportation, automation, test and measurement, medical, military and aerospace applications.	Bel Power Solutions, Melcher™
Module Products	Condition, filter, and isolate the electronic signal to ensure accurate data/voice/video transmission within a highly integrated, reduced footprint.	Broadband equipment, home networking, set top boxes, and telecom equipment supporting ISDN, T1/E1 and DSL technologies. Industrial applications include Smart Meters, Smart Grid communication platforms, vehicle communications and traffic management.	Bel
Circuit Protection	Protects devices by preventing current in an electrical circuit from exceeding acceptable levels.	Power supplies, cell phone chargers, consumer electronics, and battery protection.	Bel

Source: Bel Fuse Inc. presentations and Litchfield Hills Research, LLC

Customers

BELF sells 75% of its products directly to the customers, or its customer's contract manufacturer and 25% through distributors. Sixty percent of direct sales go to customers in the Networking or Cloud sector. The remaining 40% of direct sales is split evenly between the Military/Aerospace sector and the Industrial sector. Of the 25% of sales to distributors, those sales span the range from small orders to early stage startups to smaller commercial enterprises to large OEMs developing new products. Sales in the distribution channel span multiple industries. Characteristics of each channel are summarized in Figure 13 below while customers specific to each channel are identified in Figure 14:

Bel Fuse Inc.

BELFA Class A-Buy-\$23.50 PT

Figure 13 – Bel Fuse Inc. – Two Main Sales Channels

- | | |
|--|--|
| <p>Direct to customer ~75% of Sales</p> <ul style="list-style-type: none"> • Work with customer to determine exact part specifications – which also locks out competitors if BELF is sole source • Specify delivery and pricing through contract • Ship parts on agreed upon schedule to customer or contract manufacturer on behalf of customer | <p>Through distribution ~25% of Sales</p> <ul style="list-style-type: none"> • Parts are stocked with distributors worldwide • Customers choose product from distributor’s catalog • Customer pricing determined by volume |
|--|--|

Source: Litchfield Hills Research LLC

Figure 14 – Bel Fuse Inc. – Customer Map



Source: Bel Fuse Inc. presentation

Production

BELF maintains a responsive, flexible production environment. It operates manufacturing facilities in China, Czech Republic, Dominican Republic, Mexico, Slovakia, the United Kingdom and the U.S.

On-going long-term strategy

In addition to organic growth, the company has a history of being a consolidator in the industry. Since 1998, it has completed 15 acquisitions (see Figure 15)

Figure 15 – Bel Fuse Inc. – Completed Acquisitions

Acquired Company	Year	Products	Revenue	Purchase
BCMZ Precision Engineering Limited	2018	Connectivity	\$3M	\$2.6M
Emerson's Network Power Connectivity Solutions*	2014	Connectivity	\$78M	\$98M
ABB's Power-One Power Solutions*	2014	Power	\$194M	\$117M
TE's Coil Wound Magnetics Business*	2013	Magnetics	\$75M	\$22.4M
Array Connector	2013	Connectivity	\$10M	\$10M
GigaCom Interconnect	2012	Connectivity	\$2M	\$2.7M
Fibreco Limited	2012	Connectivity	\$7M	\$13.7M
Powerbox Italia S.R.I.	2012	Power	\$4M	\$3M
Safran's Cinch Connectors*	2010	Connectivity	\$52M	\$37.5M
Galaxy Power	2005	Power	\$18M	\$18M
Netwatch s.r.o	2005	Connectivity	\$2M	\$1.5M
Insilco's Passive Components Group*	2003	Magnetics	\$70M	\$35M
APC UK	2003	Power	\$5M	\$5.5M
E-Power/Current Concepts	2001	Power	\$3M	\$6.2M
Lucent's Transformers + Inductor Group*	1998	Magnetics	\$35M	\$30M

Source: *Bel Fuse Inc. presentation*

Competition

BELF's business is highly competitive. The principal bases on which it competes include technology, price, performance, reputation, delivery, and quality. Its principal competitors are listed in Figure 16:

The company operates in a highly competitive environment, both in the United States and internationally. The company competes with other large multinational and national electronic components and enterprise computing solutions distributors, as well as numerous other smaller, specialized competitors who generally focus on narrower markets, products, or particular sectors.

Figure 16 – Bel Fuse Inc. – Competitive Landscape

	Power Solutions	Circuit Protection	Connectivity Solutions	Magnetic Solutions
Bel	●	●	●	●
Delta	●	○	●	●
TE Connectivity	○	○	●	○
Molex	○	○	●	●
Pulse Electronics (Yageo)	○	●	●	●
Bussmann (EATON)	●	●	○	●
Amphenol	○	○	●	○
Littelfuse	○	●	○	○
Artesyn	●	○	○	○
Murata	●	○	○	●

Source: Company Presentation

Management

Daniel Bernstein, President. Mr. Bernstein has served the Company as President since June 1992 and as Chief Executive Officer since May 2001. He previously served as Vice President (1985-1992) and Treasurer (1986-1992) and has served as a Director since 1986. He has occupied other positions with the Company since 1978. He is currently a director of Bel Fuse Inc., Cinch Connectors, Inc., Bel Transformer Inc., Bel Power Inc. and Bel Stewart GmbH.

Craig Brosious, Vice President – Finance. Mr. Brosious has served in various finance and accounting roles at Bel and its subsidiaries or acquired properties since 1994, and began his career with KPMG as a staff auditor in 1978. He joined Dentsply International, a multi-national manufacturer of dental supplies and equipment, in 1982 as a Senior Internal Auditor, responsible for financial and internal control audits of the North American locations. In 1984, he joined Ferranti International, a global provider of defense and security systems and technology, as Cost Accounting Manager, and later, was promoted to Controller of the Defense Systems Division. He joined the ESCOD Industries division of Insilco Corporation as the Controller in 1994, and in 1998 was appointed the Controller of the Stewart Connector Systems division. In 2000, he was promoted to Director of Finance of the Insilco Technologies Group, the parent company of Stewart and ESCOD, a position he held until Bel's acquisition of the group in 2003. Since that time, Mr. Brosious has been responsible for Bel's financial accounting operations at Bel locations worldwide, and has been active in Bel's M&A activities and tax strategy development. In May 2017, Mr. Brosious was named Vice President of Finance, Treasurer and Secretary.

Dennis Ackerman, Vice President, President Bel Power Solutions. Mr. Ackerman joined the Company in 1986 and has held the positions of Customer Service Manager, Sales Manager, Purchasing Manager and Operations Manager. In 2001, he was named Vice President of Operations and in June 2014, he was named President of Bel Power Solutions, Inc. In addition, Mr. Ackerman is currently a director of Dongguan Transpower Electric Products Co., Ltd. Mr. Ackerman has an MBA from Fairleigh Dickinson University.

Raymond Cheung, Vice President – Asia Operations. Mr. Cheung joined the Company in 1990 and has served as a Regional Sales Manager and as Director of Sales for Asia. In October 2007, he was appointed Vice President - Asia Operations. Mr. Cheung is currently a director of Bel Fuse (Macao Commercial Offshore) Limited and TRP Connector B.V. Prior to joining the Company, Mr. Cheung worked as a Design and Project Engineer at Astec Power Computer Products, and as a Technical Sales Manager at Asian Sources Magazine.



Bel Fuse Inc.

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Peter Bittner III, Vice President, President Bel Connectivity Solutions. Mr. Bittner began his career in 1991 at Stewart Connector Systems. He joined Insilco Technologies, Stewart Connector's parent company, in 1999, serving as Industry Marketing Manager. Following Insilco's acquisition by Bel in 2003, Mr. Bittner was named General Manager of Stewart Connector. Mr. Bittner assumed responsibility for the acquired businesses of Cinch Connectors, Gigacom Interconnect, Array Connector and Fibreco from their respective dates of acquisition. In May 2015, Mr. Bittner was named President of Bel Connectivity Solutions. He holds a Bachelor of Science degree in Business Management.

Figure 17 – Bel Fuse Inc. – Comp Table

Ticker	Company Name	Intra-day 9/12/2019	Market Cap \$M	EV \$M	Price to Book	2020 EV / Revenue	2019 Sales Multiple	2020 EV / EBITDA	2020 PE
TEL	TE Connectivity Ltd	\$97.49	32,246.43	35,736.43	3.04	2.61	2.40	11.55	16.60
6981.T	Murata Manufacturing C	¥5,030.00	31,530.90	30,371.12	1.99	1.97	2.18	7.70	16.10
APH	Amphenol Corp	\$93.39	27,216.51	30,246.61	6.56	3.62	3.42	14.64	22.92
6963.T	Rohm Co Ltd	¥8,520.00	8,693.07	6,170.59	1.16	1.61	2.43	6.40	20.86
HUBB.N	Hubbell Inc	\$136.83	7,443.69	9,019.39	<u>4.05</u>	<u>1.87</u>	<u>1.59</u>	<u>11.13</u>	<u>15.70</u>
	AVERAGE				3.36	2.34	2.40	10.29	18.44
LFUS.OQ	Littelfuse Inc	\$181.22	4,473.22	4,685.48	2.97	2.98	2.93	13.46	23.41
2327.TW	Yageo Corp	TWD 231.00	3,176.58	3,230.26	2.18	1.96	2.37	5.16	7.85
6976.T	Taiyo Yuden Co Ltd	¥2,388.00	2,884.35	2,935.20	1.43	1.03	1.07	4.52	10.85
ROG.N	Rogers Corp	\$151.15	2,721.58	2,748.81	3.03	2.68	2.88	12.15	19.72
AVX	AVX Corp	\$15.80	2,610.79	1,820.50	1.08	1.15	1.70	5.97	14.70
VSH	Vishay Intertechnology	\$17.86	2,553.80	2,284.76	1.71	0.87	0.96	5.26	14.01
AEIS.O	Advanced Energy Indus	\$57.06	2,216.53	1,857.25	3.38	2.79	4.10	11.89	16.93
DELTf.SG	Delta Electronics Thaila	\$1.41	2,019.14	1,620.71	1.90				
KN.N	Knowles Corp	\$20.97	1,939.85	2,068.25	1.58	2.29	2.26	10.14	16.86
VICR.O	Vicor Corp	\$34.00	1,368.64	1,297.61	7.06	3.94	4.93	21.52	31.01
6967.T	Shinko Electric Industri	¥931.00	1,167.29	781.69	0.90	0.52	0.86	2.91	20.57
KEM	KEMET Corp	\$18.68	1,074.63	1,169.42	1.59	0.86	0.81	3.74	6.30
CTS	CTS Corp	\$33.05	1,070.56	1,014.74	<u>2.71</u>	<u>2.03</u>	<u>2.25</u>	<u>10.25</u>	<u>18.81</u>
	AVERAGE				2.43	1.93	2.26	8.91	16.75
6996.T	Nichicon Corp	¥979.00	708.30	705.82	0.85	0.56	0.61	6.13	13.79
6999.T	Koa Corp	¥1,369.00	514.02	380.46	0.85	0.76	1.08	5.21	14.66
6707.T	Sanken Electric Co Ltd	¥2,142.00	498.66	1,140.91	0.91	0.69	0.31	5.44	12.96
6844.T	Shindengen Electric Ma	¥3,415.00	327.50	279.38	0.59	0.30	0.37		11.20
RFIL.O	RF Industries Ltd	\$8.30	76.10	62.24	2.57				
CUI.O	CUI Global Inc	\$0.75	21.51	30.63	<u>0.54</u>	<u>0.24</u>	<u>0.21</u>	<u>4.64</u>	<u>5.36</u>
	AVERAGE				1.05	0.51	0.52	5.35	11.59
	Simple Industry Average				2.28	1.59	1.73	8.18	15.59
BELFB	Bel Fuse Inc	\$14.53	174.49	229.80	0.88	0.43	0.46	6.21	16.51
	Bel Fuse Premium/(Discount) to peers				-61%	-73%	-73%	-24%	6%

Source: Litchfield Hills Research LLC

Figure 18 – Bel Fuse Inc. – Income Statement

(\$ in thousands except per share)												
December ending year	2017 Year	2018 Year	2019E				2019E Year	2020E				2020E Year
			Q1A	Q2A	Q3E	Q4E		Q1E	Q2E	Q3E	Q4E	
Total revenue	\$491,611	\$548,184	\$125,389	\$127,416	\$120,000	\$125,000	\$497,805	\$120,000	\$140,000	\$140,000	\$130,000	\$530,000
<i>Growth</i>	-2%	12%	6%	-9%	-18%	-12%	-9%	-4%	10%	17%	4%	6%
Cost of Goods	389,262	438,414	101,829	107,532	100,200	104,375	413,936	98,400	113,400	112,000	104,000	427,800
Gross Profit	102,349	109,770	23,560	19,884	19,800	20,625	83,869	21,600	26,600	28,000	26,000	102,200
Gross Margin	20.8%	20.0%	18.8%	15.6%	16.5%	16.5%	16.8%	18.0%	19.0%	20.0%	20.0%	19.3%
SG&A	\$84,655	\$79,937	\$19,798	\$18,764	\$19,000	\$19,000	\$76,562	\$19,000	\$21,500	\$21,500	\$20,000	\$82,000
% of total revenue	17.2%	14.6%	15.8%	14.7%	15.8%	15.2%	15.4%	15.8%	15.4%	15.4%	15.4%	15.5%
Restructuring & Other One-Time Items	\$308	\$222	\$946	(\$3,833)	\$50	\$50	(\$2,787)	\$50	\$50	\$50	\$50	\$200
Total Operating Expenses	84,963	80,159	20,744	14,931	19,050	19,050	73,775	19,050	21,550	21,550	20,050	82,200
Operating Income	17,386	29,611	2,816	4,953	750	1,575	10,094	2,550	5,050	6,450	5,950	20,000
Operating Margin	3.5%	5.4%	2.2%	3.9%	0.6%	1.3%	2.0%	2.1%	3.6%	4.6%	4.6%	3.8%
Total Other Items	(7,743)	(5,995)	(1,646)	(1,565)	(1,600)	(1,600)	(6,411)	(1,600)	(1,600)	(1,600)	(1,600)	(6,400)
Pre-Tax Income	9,643	23,616	1,170	3,388	(850)	(25)	3,683	950	3,450	4,850	4,350	13,600
Pre-Tax Margin	2.0%	4.3%	0.9%	2.7%	-0.7%	0.0%	0.7%	0.8%	2.5%	3.5%	3.3%	2.6%
Taxes (benefit)	21,540	2,907	39	421	(170)	(5)	285	190	690	970	870	2,720
Tax Rate	223.4%	12.3%	3.3%	12.4%	20.0%	20.0%	7.7%	20.0%	20.0%	20.0%	20.0%	20.0%
Net Income (loss)	(11,897)	20,709	1,131	2,967	(680)	(20)	3,398	760	2,760	3,880	3,480	10,880
Net Margin	-2.4%	3.8%	0.9%	2.3%	-0.6%	0.0%	0.7%	0.6%	2.0%	2.8%	2.7%	2.1%
EPS Class A	(0.97)	1.62	0.08	0.23	(0.06)	(0.01)	0.24	0.05	0.21	0.30	0.27	0.84
EPS Class B	(0.99)	1.73	0.09	0.24	(0.05)	0.00	0.28	0.06	0.22	0.31	0.28	0.88
Class A diluted shares	2,175	2,175	2,175	2,175	2,175	2,175	2,175	2,175	2,175	2,175	2,175	2,175
Class B diluted shares	9,857	9,939	10,089	10,112	10,150	10,200	10,138	10,250	10,250	10,300	10,300	10,275

Sources: Company reports and Litchfield Hills Research, LLC

Figure 19 – Bel Fuse Inc. – Balance Sheet

(\$ in thousands)					
December ending year	2020E	2019E	2018	2017	2016
Balance sheet					
Current Assets					
Cash and S.T.I.	\$72,445	\$69,959	\$53,911	\$69,354	\$73,411
Accounts receivable	92,000	88,000	91,939	78,808	74,416
Inventories	120,000	100,000	120,068	107,719	98,871
Other assets	20,000	20,000	24,591	10,218	8,744
Total Current Assets	304,445	277,959	290,509	266,099	255,442
Net PP&E	42,000	43,000	43,932	43,495	48,755
Other non-current assets	105,000	105,000	109,083	121,671	122,543
Total Assets	\$451,445	\$425,959	\$443,524	\$431,265	\$426,740
Current Liabilities					
Accounts payable	\$60,000	\$52,000	\$56,171	\$47,947	\$47,235
Accrued expenses	42,000	32,500	34,798	33,149	42,944
Other current liabilities	8,000	8,000	15,061	6,204	2,148
Total current liabilities	110,000	92,500	106,030	87,300	92,327
Long-term debt	110,000	110,000	111,705	120,053	129,850
Other non-current	45,000	45,000	49,319	65,952	46,129
Total Liabilities	265,000	247,500	267,054	273,305	268,306
Stockholders' Equity					
Preferred stock					
Total stockholders' equity	186,445	178,459	176,470	157,960	158,434
Total Liabilities and equity	\$451,445	\$425,959	\$443,524	\$431,265	\$426,740

Sources: Company reports and Litchfield Hills Research, LLC

Figure 20 – Bel Fuse Inc. – Cash Flow

(\$ in thousands)					
	2020E	2019E	2018	2017	2016
Net Income	\$10,880	\$3,398	\$20,709	(\$11,897)	(\$64,834)
Accounts receivable	(4,000)	3,939	(13,131)	(4,392)	11,852
Inventories	(20,000)	20,068	(12,349)	(8,848)	(361)
Other assets	0	4,591	(14,373)	(1,474)	1,909
PP&E	1,000	932	(437)	5,260	8,856
Other non-current	0	4,083	12,588	872	117,880
Accounts payable	8,000	(4,171)	8,224	712	(2,563)
Accrued expenses	10,000	(2,290)	1,782	(1,041)	(6,774)
Current maturities LTD	(500)	(8)	(133)	(8,754)	(13,377)
Other current liabilities	0	(7,061)	8,857	4,056	(6,811)
Long-term debt	0	(1,705)	(8,348)	(9,797)	(28,926)
Other non-current	0	(4,319)	(16,633)	19,823	(18,626)
Class A Common stock	0	0	0	0	0
Class B Common stock	5	1	23	1	15
Additional paid in capital	500	1,113	2,812	1,333	2,802
Accumulated other comp. loss	0	838	(5,213)	11,672	(9,421)
Dividend and tax adj.	(3,399)	(3,361)	179	(1,583)	(3,250)
Total Cash Flow	\$2,486	\$16,048	(\$15,443)	(\$4,057)	(\$11,629)

Source: Litchfield Hills Research, LLC

Disclosures:

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