

# Minebea's Strategy

## Mechanical Assembly Business Unit

The Mechanical Assembly Business Unit dates back to the 1960s. Along with rod-end bearings for aerospace applications and stepping motors, mechanical assemblies are representative of Minebea's early diversification efforts. Products in this business unit include differential gears, which contain Minebea ball bearings, tape guides and other high-precision processed components. In the early 1990s, the unit saw sales in the PC market rise sharply along with demand for pivot assemblies for use in the swing arms of HDDs. Today, Minebea controls a 65% share of the global market for pivot assemblies, making it the number one manufacturer.

**Interviewer:** Hitoshi Nakajima and Yasuhiro Mohri from the Mechanical Assembly Business Unit have agreed to be interviewed for this year's special feature. Thank you both for coming.

**Mohri, Nakajima:** Thank you. It's our pleasure.

**Interviewer:** The Mechanical Assembly Business Unit began with the production of precision mechanical parts containing ball bearings. In the early 1990s, however, sales of pivot assemblies took off, increasing to the point where they accounted for almost 100% of the business unit's sales.

**Nakajima:** Yes, pivot assemblies currently account for approximately 90% of business unit sales. However, sales are essentially for one application only. Such a high degree of dependence on one market is really not a good situation. Nonetheless, keeping abreast of growth in the PC market has become our business unit's top priority. Fortunately we have succeeded in maintaining our leading share of the global market.

**Interviewer:** Despite having the top share of the global market, the Mechanical Assembly Business Unit is not extraordinarily profitable today. Why is that?

**Mohri:** Last year, we were hit hard by the appreciation of the baht. Our principal manufacturing base is in Thailand and our poor results reflected this factor. That said, Thailand is the principal manufacturing base for many Minebea products, so it's not that we felt the negative impact of the strong Thai currency more than any other business unit.

**Interviewer:** Minebea's management has outlined an ambitious new vision, that of a company which leads the competition through manufacturing excellence. What does that mean to you?

**Mohri:** That is exactly the right message. When this new vision was announced, it was a real wake-up call. During the past two years, we had already begun to rethink the basics of manufacturing, so the challenges that have been set are exactly what we have been doing.

**Nakajima:** The Mechanical Assembly Business Unit uses nearly half of the ball bearings manufactured by Minebea for internal use. For this reason, we have always been of the opinion that we were still contributing to the business of the Minebea Group, even if our profitability was low. Looking back now, we were a little nonchalant about it all.

### Hitoshi Nakajima

Employee since April 1982  
Senior Manager in Charge  
of Manufacturing  
Engineering, Section 1,  
Karuzawa Pivot Assembly  
Manufacturing Department  
Mechanical Assembly  
Business Unit



### Yasuhiro Mohri

Employee since April 1983  
Manager, Engineering Section,  
Karuzawa Pivot Assembly  
Manufacturing Department  
Mechanical Assembly  
Business Unit





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**Mohri:** We are engaged in a thorough reexamination of all processes. It's crucial that we change our thinking. A pivot assembly consists of a pair of ball bearings in a flanged housing. The housing is manufactured on a cutting line. We cut the inner and outer rings of the ball bearings in just a few seconds today, whereas we previously took six or seven times longer. At the moment, we are taking decisive steps to shorten the cycle time.

**Nakajima:** We received a lot of helpful advice from employees regarding plant layout. We had grown so quickly and expanded as necessary to meet demand, so revamping the layout has greatly improved workflow.

**Interviewer:** I see. That makes a lot of sense. You have indicated a number of challenges that will be addressed. Does this mean that we can expect to see an improvement in the Mechanical Assembly Business Unit's income performance?

**Mohri:** Reviewing our manufacturing processes enabled us to rediscover where our real strengths lie. Right now, we are working hard to revive our precision mechanical assembly (PMA) business. As Mr. Nakajima said earlier, we've always understood the danger of relying so heavily on a single market, but we just didn't have the resources to attempt anything new. It's strange, really—taking on all these issues and striving to improve how we work has inspired us to seek out new challenges. The PMA is where this whole business started, but it is really a challenge for ultrahigh precision machining technologies.

**Nakajima:** Saying we are the inheritors of Minebea's tradition of technological excellence sounds a bit over the top, but the people who brought Minebea's PMAs to their technological zenith were many generations before either of us. It may appear as if PMAs have been eclipsed by pivot assemblies, but we plan to expand sales of these products to ensure this technological legacy is passed on and to promote the growth of the PMA business.

**Interviewer:** With the new challenges you are taking on, it seems likely we can look forward to significant growth in the future. Thank you again for your cooperation.

**Mohri, Nakajima:** Thank you. We will continue to press ahead with reforms.

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**Precision Mechanical Assemblies**

The term mechanical assemblies encompasses pivot assemblies and PMAs. Minebea's PMAs are assembled from its miniature ball bearings and precision mechanical parts utilizing its miniature ball bearing machining technologies. Minebea supplies PMA units—until now usually assembled by users from parts purchased—as finished products. This approach offers three key merits for users:

- Engineering: Reduces need for charts and diagrams and simplifies management
- Purchasing: Reduces ordering and administrative burden
- Manufacturing: Reduces need for post-assembly inspections

Going forward, Minebea will continue to focus on expanding PMA sales.

