

35 MM SOUND PROJECTORS – MADE IN JAPAN

A LOOK BACK AT SOME THEATER PROJECTION EQUIPMENT

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Although we know Japan as one of the largest manufacturers of electronic and automotive products in the modern world, the country has a long history of producing excellent products for motion picture applications. These include cine projectors – especially for 16 mm and 8 mm formats – which are well known everywhere. The projectors made for movie theaters around the world are not as familiar. The most widely used brands in Japan are Fuji Central, Tokiwa and Cineforward. These companies offer high-quality products, as is Japanese tradition. Even though Fuji Central is one of the oldest brands and Cineforward offers interesting mechanical design, Tokiwa is the most famous brand both in Japan and abroad. This article focuses on these three companies.

Tokiwa

Tokiwa is a brand of Tokiwa Co., Ltd. (originally Tokiwa Seiki, or K.K. Tokiwa Seiki Seisakusho in Japanese), which has its head office and factory in Tokyo. The company was established in 1951, and their first model was the T-54 portable 35 mm projector, primarily exported to India. It had an incandescent light source that was refitted with a carbon arc bulb for use in theatres. In 1958, the first TS theater-type 35 mm projector (enclosed with a separately attached soundhead) was introduced and

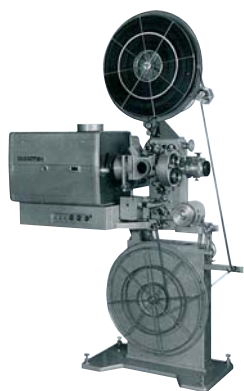
exported to Korea, Taiwan and Southeast Asia, where it gained 80% market share.

The light source of the portable model was changed from incandescent to halogen in 1960, and the T-60 portable model was released. At that time, this type of lamp was not standard and had to be specially ordered. Halogen is not as bright as Xenon, so introducing Xenon made the portable units suitable for theater use as well. The TSS line followed the TS type with carbon arc illumination, and later a Xenon lamp. The TSS remained on

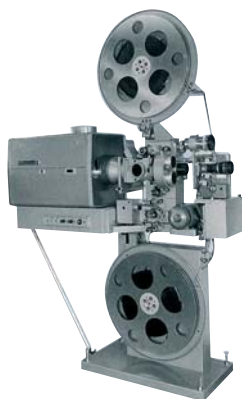
the market for a long time, until the 1990s, while the open type (or so-called European type) TSR was introduced at the end of 1960s by removing the door and combining the separate soundhead of the TSS type. The TSR has an open magazine with 3000 and 6000 ft. reel capacity, while the TSS initially had a 3000 ft enclosed magazine. The TSS had a single lens holder and was adapted to take 6000 ft. with open reels later on. The take-up magazines of the TSS model are mounted on pedestals, while most TSR models are mounted on the

head, except the TSRS model, which is the same as the TSS. Later, all magazines were replaced with less attractive reel arms for economic reasons.

In 1985, the shutter of the TSR was changed from cylindrical to conical. The TSR line includes a dual format model for 16/35 mm that employs a separate attached 16 mm projector made by Elmo. The TSR-MINI is a miniaturized version of the TSR, although the head is the same as the TSR and it is intended for portable applications. The first automatic model



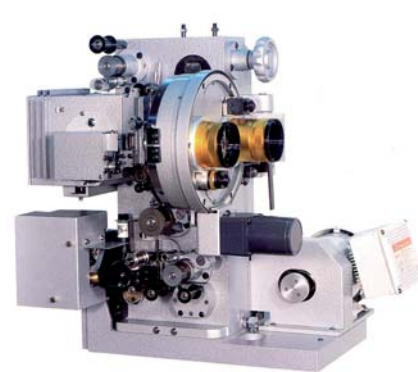
Tokiwa TSR-6000A



Tokiwa TSR-6000B



Tokiwa TSR-Mini



The latest Tokiwa TSR head

was the TSR-MARK II with auto (motorized) two-lens turret and coaxial 12,000 ft. reel capacity.

These products are exported mainly to Korea, Taiwan, Singapore and the USA. Vision System Co., Ltd. in Korea, under name Vavision, and Shanghai August 1st Precision Machinery Co., Ltd. in China have licensed the patents to manufacture the TSR model, and Vavision offers different configurations. Tokiwa was also marketed under the TP brand by Toshiba Denko Co., Ltd. And the Xebex brand by Xebex Inc. and Ushio U-Tech Corp.

The company still employs about 25 people and manufactures portable and theater projectors as well as numerous accessories. They offer a variety of manual, semi-automatic and full automatic models. They also sell a portable model made by Shanghai August 1st Precision Machinery Co., Ltd., and

some remaining types of Shinkyo projectors after Shinkyo Electric Industrial Co., Ltd., a Japanese portable 35 mm projector manufacturer, went out of business.

Fuji Central

Fuji Central was a brand of Hiraoka Kogyo Co., Ltd. in Saitama prefecture. This company made projector heads, Hi Central brand lamphouses and JVC Victor soundheads. Fuji Central was the best known projector brand after World War II throughout Japan. Unfortunately, the company no longer exists.

The first model was perfected and announced around 1948, and after that the F-4 and F-5 types were the most common complete systems throughout Japan, followed by the F-6, F-6CW (in the 1950s) and the F-7 types (1960s). At that time, they were manufacturing 60% of the projectors in Japan.

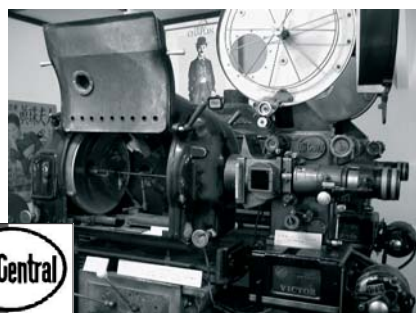
The Victor MI-9040 (PG-390) soundhead (colored black – from the 1950s) was the revised domestic production type of the MI-9030, which was sold by the Photophone division of American RCA. Later, the Victor SH-500 and SH-750 soundheads (white – from the 1960s) were introduced based on the RCA patent. Later on, the separate soundheads were combined with the projector heads.

The last projector models were the F-V300 (replacing the F-300), F-V300AR with 13000ft reel capacity, and the F-V300PTH 16/35 mm dual format unit, which employed an attached 16 mm projector made by Eiki. They all used conical shutters. These models were distributed by the Victor Sound Equipment Co., Ltd. (later renamed Victor Arcs Co., Ltd.), part of the JVC Group in Tokyo.

CINEFORWARD

Cineforward is a brand of Japan Electronic Optical Industry Co., Ltd. (known as Nippon Denshi Kogaku Kogyo Co., Ltd. or KK in Japanese, originally known in English as Cine Service, Ltd., under the old Royal brand name). Its head office is in Tokyo, with a factory in Saitama prefecture. The company was established in 1966 and one of their first 35 mm theater models was the Royal Falcon Deluxe. This projector was an enclosed model with a separately attached soundhead.

The company followed up with the FC and FCT enclosed models with combined soundhead and open magazines with 3000 and 6000 ft. reel capacity. There were also 12000 ft. options. The FC has a single lens holder, while the FCT has either a three lens manual or two lens auto turret. Each was offered as a 16/35 mm dual format



One of the Fuji Central F series



Fuji Central F-V 300 head



Fuji Central F-V300 set at work



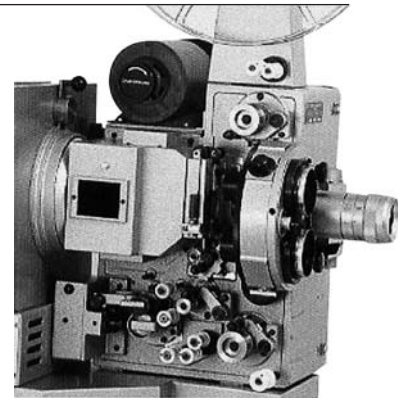
Tokiwa TSR-8000 Full Automatic



Cineforward FX 5570 head



Cineforward FX 3000 CA IV



Cineforward FX 20 head

model by employing a separately attached 16 mm projector made by Elmo. Later, the doors on these units were removed and they were converted to open models which retained the same model names.

There were numerous portable variants using the same projector heads.

The projector heads employ a mechanical design that features a V-

belt, gear train and chain roller together, possibly for noise reduction. The FC-20 has its motor on the upper left side – an unusual arrangement that might have been intended to gain space in tight rooms.

The company's latest models include the fully automatic FX-3000CA IV (with FCT head), which is state-of-the-art and stylish equip-

ment, and the FX5570 series (FCT type, but with reverse operation). They use conical shutters. The company also manufactures 35/70 mm dual format projectors upon special order, as well as projectors for old-fashioned Telecine and special applications.

Cineforward still manufactures projectors, lamphouses, numerous accessories and has a variety of manual and full automatic models.

Unfortunately, the Fuji Central and Cineforward brands are not as widely known as Tokiwa throughout the world. Maybe this is because of marketing, the high value of the Yen or parts availability, but it is not a matter of quality. I had the opportunity to visit the Tokiwa factory in 1995, and was their agent in Turkey that same year. I regret having to exclude some other manufacturers from this article, like Nichion Company Ltd. in Osaka – which had many agents around the world in the 1960s – because of extremely limited information.

I would like to thank the following people for their invaluable assistance over the years: T. Ikegami of Tokiwa; H. Takahashi of Nippon Denshi Kogaku; Y. Ariyaso of Victor Arcs; A. Ishii and S. Yasuda of Toshiba Denko; N. Hito of Ushio U-Tech; O. Kaminaga of Xebex; T. H. Yu of Elephant Holdings, Hong Kong and many others. ■