

# Components for Solar Battery Manufacturing Process

### Glass floatation system

Corresponding for transfer, process and inspection for glass board by precise floatation system

**GFM series products**

Series variation	Applications	*3 Floatation volume [μm]	*1 Air consumption L/min. (abs) (at 0.1MPa)				
			0	5	10	15	20
GFM-A	Positioning	over 10 [μm]	3	10			
GFM-RF Series	Transfer	over 250 [μm]				15	20
GFM-RS Series	Loader and unloader	over 150 [μm]				15	20
GFM-P	Processes	30 [μm]	2	3			

\*1 This for reference flow.  
 \*2 Number changes by positive pressure/negative pressure flow combination.  
 \*3 glass thickness: For 0.7mm.

### Direct drive actuator

**Precise/high-function**  
 Absolute type high-precision DD motor which is available to set up any indexing angle, any rotation moving and combination

**Applications: Turntable**

**High Flexibility & Intelligence**

**Function which is kind to environment**  
 Available to develop environment-friendly equipment which are energy-saving, save space, oilless and reuse so on

**Network**  
 Corresponding for Network by serial transmission system

**Related products**

- Lifter cylinder which developed by Absodex manufacturer CKD
- Lifter cylinder LFC-KL Series

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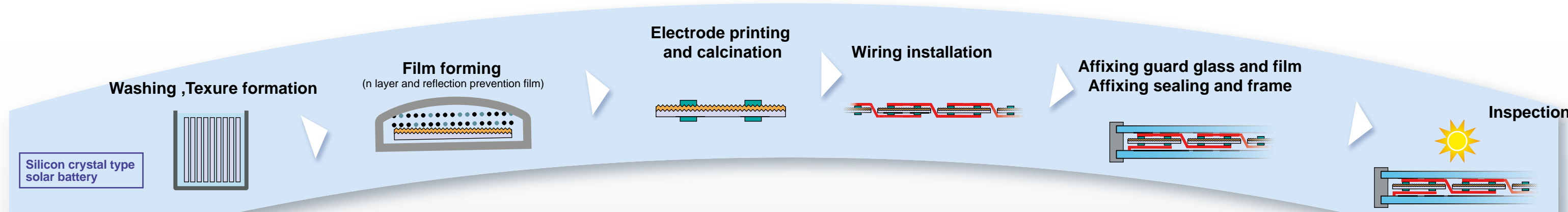
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# CKD product line-up for solar battery manufacturing process

## Components meet each process needs



**Reliable for in compact chemical liquids**  
**Fluorine resin chemical liquid valve**  
**AMD/MMD Series**

**The water-hammer which reduction occurs depending on the valve open and close.**  
**Water hammerless valve**  
**AMD L Series**

**Safe by large bore size, large flow rate and high pressure compatible.**  
**High pressure chemical liquid valve**  
**AMD/MMD H Series**

**Fusion of Chemical valve and General purpose valve.**  
**Clean cylinder valve**  
**LAD Series**

**Air and for clean purge N2 supply by oil-prohibited specifications.**  
**Oil-prohibition regulator**  
**RC2000 Series**

**Body material can be selected from Aluminum or SUS by application**  
**Vacuum control valve**  
**AVB/MVB Series**

**CKD known as the pioneer, presents high-reliability**  
**Valve for process gas**  
**AGD/MGD/OGD Series**

**It combine high responsibility and reliability**  
**Regulator for process gas**  
**PGM Series**

**Leakage amount of a vacuum sealing contact  $1.3 \times 10^{-8} \text{Pa} \cdot \text{m}^3/\text{s}$  He or less is achieved.**  
**Cylinder for vacuum**

**Be suitable for actuator around chamber**  
**Many model available such as guided and space saving**  
**Heat resistance cylinder**

**Suitable for operation of acuator around chamber. Wide variation such as Guide type and space-saving and so on.**  
**Solenoid valve for pneumatic**  
**MN3E/4E Series**

**For damage-free handling**

- Full surface suction by using porous resin without any damage  
**Precise suction plate**  
**PVP Series (white)**  
**PVP-B Series (black)**
- Pressure constant in stroke length  
**Amazing magnetic spring**  
**Magnetic spring buffer**  
**FBU2 Series**
- Wide range application for from large modular component to fine parts  
**Components for vacuum Series**

**For high precision positioning**

- Firm positioning high-precision and high-rigidty  
**Linear guided cylinder**  
**LCG Series**
- With both downsized caused by integrated of linear guide, and precise/high rigidity  
**Linear slide cylinder**  
**LCM Series**
- Suitable for downsizing of tranferring system. Space saving mounting style and cylinder switch is available.  
**Small direct mounting cylinder**  
**MDV Series**

**For automatic control with flow and pressure**

- For pressure control as high-precision and high-responsibility, like tension control of film  
**Digital electro-pneumatic regulator**  
**EVD Series**
- Suitable for remote control of air flow to supply non-contact transferring chuck.  
**Flow controller**  
**FCM Series**

**For visual management**

- Flow rate is visible by number of needle turn.  
**Needle valve**  
**DVL Series**
- Suitable for management of energy of equipment and factory such as purge air and cooling water.  
**Flow sensor (air/water)**  
**PFD/WFK Series**
- Accurate and precise flow sensing is available by comapact design and quick response.  
**Small size flow sensor**  
**FSM2 Series**
- "Current figures" and " set-point " monitor ring with dual digital display at the same time  
**Pneumatic pressure switch**  
**PPX Series**

**For creation of a clean environment**

- Clean air compact supply purge and air blow dry  
**Clean air unit**  
**CAU30 Series**
- Purge air precise filtration in compact light in weight, large flow rate  
**Inline clean filter**  
**FCS Series**
- No bronze specification make it possible to supply cleaner air.  
**Speed control valve and joint**  
**SC3P/ZSP Series**

