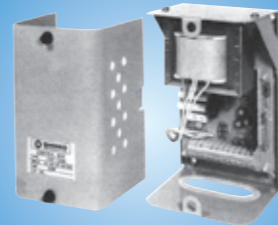


POWER BOX AND CONTROLLER

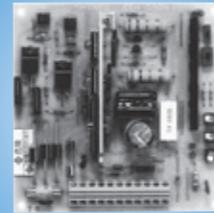
DMP TYPE POWER BOX



EMP TYPE CONTROLLER
DOUBLE OVEREXCITATION



CSM TYPE CONTROL BOARD
QUADRUPLE OVEREXCITATION
PRINTED CIRCUIT TYPE



**MICRO DEVIATION
AUTOMATIC TENSION
CONTROL SYSTEM
PCF TYPE**



**ROLL DIAMETER
PROPORTIONAL TYPE
AUTOMATIC TENSION
CONTROL SYSTEM
PCD TYPE**



**CONSTANT VOLTAGE/
CONSTANT CURRENT
POWER SOURCE
PS TYPE**



ELECTROMAGNETIC CLUTCHES AND BRAKES



For safe and reliable operation, it is essential to read the user's manual carefully before using this equipment.

We have a new slogan in Japan; "ECOing" a combination of "eco" and "ing". This is to promote eco-friendly technological development and manufacturing. Our ecological activities are of course not limited to Japan and practiced in many countries around the world.

SINFONIA TECHNOLOGY CO., LTD. continually upgrades and improves its products. Actual features and specifications may therefore differ slightly from those described in this catalog.

Formerly SHINKO ELECTRIC CO., LTD.

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E70-001

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SINFONIA
SINFONIA TECHNOLOGY CO., LTD.
Former SHINKO ELECTRIC CO., LTD.

ELECTROMAGNETIC CLUTCHES AND BRAKES

We are an all-around maker of electromagnetic clutches and brakes, amply meeting all kinds of requirements of its customers on a firm technological basis, allowing the development and production of superlative clutches and brakes.

Our clutches and brakes used in various equipment including industrial equipment, information equipment and recreation facilities play an important part in automation or motion control systems in terms of power transmission and control.

Clutches and Brakes: SBR, ERS, SBM, TZ, NC-H, JC, MP, BO, BB, POC, PTB, HO, PMC, TB.

Industrial Machinery: Painting robot, Carrier robot, Copy machine, Automatic assembling machine, Welding robot, Robot/Assembling machine, Office equipment/IT device, Paper processing/printing machinery, Textile machinery, Others.

Printing and Paper Processing: Gravure printing machine, Laminator, Offset printer, Automatic paper folding machine, Slitter.

Textile Machinery: Spool supplying device, Draw false twist texturing machine, Automatic pipe winding machine, Automatic spinning machine, Pleating, Elevator, Wood cutting machine.

Medical and Welfare Equipment: Index table, Vending machine, Elevating unit for stairways, MRI, Welfare vehicle.

Clutches and Brakes: SBM, SBS, JC, SF, TZ, SE, SFC, TZ, SBS, EP/EPS, JEP, JCC, NC-T, POB, TB, JEP, EPR, JCC, ERS, AR, SBM, POB, SBS, NC, SBR, SBM, ERS, BO.

Industrial Machinery: Automatic screw cutting lathe, Engine lathe, Machining center, Drilling machine, NC machine tool, Flying sheu, Press, Mills, Rolling mills, Shearing machine, Labelling device, Bottle filling machine, Bag elaborating machine, Packaging machine, Conveyor, Crane, Forklift, Automated guided vehicle (AGV), X-ray device, Welfare vehicle.

Medical and Welfare Equipment: Elevating unit for stairways, MRI, Welfare vehicle.

CLUTCHES AND BRAKES

For Automation of All Kinds of Mechanisms

SELC&B DRY, SINGLE-PLATE CLUTCHES/BRAKES

- Spring drive with auto-gap device.
- Highly responsive and accurate in action.
- Distinguished in heat dissipation.
- Silent construction with no squeal noise.
- Asbestos-free facing.

SELC&B CLUTCH JC SERIES

THROUGH SHAFT TYPE
Rated Torque: 6~400Nm



SELC&B CLUTCH JCC SERIES

SPRIT SHAFT TYPE
Rated Torque: 6~400Nm



SELC&B BRAKE JB SERIES

Rated Torque: 6~400Nm



SELC&B UNIT JEP SERIES

EASILY MOUNTED CLUTCH/BRAKE UNIT
Rated Torque: 6~400Nm



SELC&B UNIT WITH MOTOR JEM SERIES

Rated Torque: 6~50Nm



WARNER DRY, SINGLE-PLATE CLUTCHES/BRAKES

- Equipped with an auto-gap device which eliminates the need for troublesome adjustment during whole life.
- Extremely accurate; in response and quick permit wide torque control.
- Large heat-radiation capacity and can withstand exceedingly frequent operation and heavy use.
- Compact and easy to install; long life ensured by their unique construction and materials.
- Easy to use and easy to install; can be readily mounted on the machine.
- No need for combination design, machining or centering.
- Wide variety of compound product series which combine motor, reduction gear, speed change gear, etc. into single units.

WARNER CLUTCH SFC SERIES

BUFF SHAFT TYPE
Rated Torque: 7~1800Nm



WARNER CLUTCH SF SERIES

THROUGH SHAFT TYPE
Rated Torque: 7~1800Nm



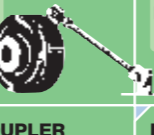
WARNER BRAKE PB/RF SERIES

FRICTION DISC UNTITTED WITH FIELD
Rated Torque: 7~1800Nm



ARM-BRAKE AR SERIES

SHAFT MOUNTED BRAKE WITH HOLDING ARM
Rated Torque: 7~180Nm



ELECTRO-SHEAVE ES SERIES

SHAFT MOUNTED CLUTCH WITH PULLEY
Rated Torque: 70~650Nm



ELECTRO-PACK EP SERIES

EASILY MOUNTED CLUTCH/BRAKE UNIT
Rated Torque: 7~1800Nm



CLUTCH-COUPLER CLC SERIES

EASILY MOUNTED CLUTCH UNIT
Rated Torque: 7~1800Nm



REVER-PACK RP SERIES

NORMAL AND REVERSAL DRIVE UNIT WITH BEVEL GEARS
Rated Torque: 7~28Nm



CYCLO-PACK CHHCM SERIES

MOTORIZED CLUTCH/BRAKE UNIT WITH CYCRO REDUCER
Motor Capacity: 0.2~7.5kW



PAN-CAKE TYPE DRY, SINGLE-PLATE CLUTCHES/BRAKES

- Very slim type with reduced width.
- Leaf-spring drive type with quick response and no back-lash.
- Outstanding durability ensured by a unique clover-shape leaf spring.
- Easy to install; a variety of convenient multifunction units available.

PAN-CAKE TYPE CLUTCH NC SERIES

Rated Torque: 3~200Nm



PAN-CAKE TYPE BRAKE NB SERIES

Rated Torque: 3~200Nm



ENGINE DRY, SINGLE-PLATE CLUTCHES/BRAKES

- Feature a leaf-spring construction especially developed for engines.
- Strong against impact loads and vibrations, outstanding in durability and reliability.
- So compact that little installation space is needed.
- Coil rest type which requires minimal maintenance and inspection.

ENGINE CLUTCH SF SERIES

Rated Torque: 130~3000Nm



MICRO DRY, SINGLE-PLATE CLUTCHES/BRAKES

- Smallest of all dry, single-disk clutches.
- Quick in response and extremely accurate; no drag torque.
- Need no adjustment and maintain stable characteristics for a long time.
- Feature most suitable for highly frequent operation.

MICRO CLUTCH BO SERIES

Rated Torque: 0.25~15Nm



MICRO BRAKE BB SERIES

Rated Torque: 0.25~15Nm



MINI PACK MP SERIES

MICRO CLUTCH/BRAKE UNIT
Rated Torque: 0.5~15Nm



FAIL-SAFE BRAKES/HOLDING BRAKES

- Non-exciting electromagnetic brakes.
- ERS series features permanent magnet; SBR is spring-activated.
- ERS are dry, single-face brakes; SBR are dry, dual-plate brakes.
- Most suitable as emergency brakes, safety brakes, or holding brakes for motors and robots.

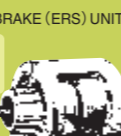
FAIL SAFE BRAKE ERS SERIES

Rated Torque: 2~350Nm



SER-PACK EPR SERIES

CLUTCH (SFC) /BRAKE (ERS) UNIT
Rated Torque: 7~650Nm



HOLDING BRAKE SBR SERIES

Rated Torque: 0.3~53Nm



Electromagnetic Clutches and Brakes

DRY TYPE MULTIPLE-DISC CLUTCHES/BRAKES

- Small in size, yet large in torque capacity.
- Most suitable for cases where clutch/brake installation space is limited.
- Most suitable for cases where clutch/brake dimensions are limited.

DRY TYPE, MULTIPLE-DISC LARGE SIZE CLUTCH SE SERIES

NON-EXCITING DRIVE TYPE
ROTATING COIL TYPE
Rated Torque: 1250~16600Nm



DRY TYPE, MULTIPLE-DISC BRAKE SBS SERIES

SPRING ENGAGED TYPE
Rated Torque: 15~1500Nm



DRY TYPE, MULTIPLE-DISC BRAKE SBM SERIES

SPRING ENGAGED TYPE
Rated Torque: 2~37Nm



TOOTHED CLUTCHES

- Toothed clutches/brakes small in size yet capable of transmitting great torque reliably.
- No drag torque; no drag or heat generation even under light load.
- Trapezoidal tooth profile ensures smooth coupling and outstanding ON/OFF characteristics.
- Single-position type which simplifies coupling at a fixed position.

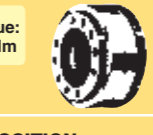
TOOTHED CLUTCH TO SERIES

STATIONARY COIL TYPE
Rated Torque: 20~800Nm



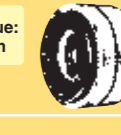
TOOTHED CLUTCH TR SERIES

ROTATING COIL TYPE
Rated Torque: 20~50000Nm



SINGLE-POSITION CLUTCH SPO SERIES

STATIONARY COIL TYPE
Rated Torque: 20~800Nm



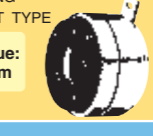
SINGLE-POSITION CLUTCH TZ SERIES

BALL BEARING ATTACHMENT TYPE
Rated Torque: 63~400Nm



SINGLE-POSITION CLUTCH STZ SERIES

BALL BEARING ATTACHMENT TYPE
Rated Torque: 63~1600Nm



HYSTERESIS CLUTCHES/BRAKES

- Constant in torque regardless of the number of slip speed.
- No shock when coupling; outstanding in torque repeatability.

HYSTERESIS CLUTCH HO SERIES

STATIONARY COIL TYPE
Rated Torque: 0.06~1Nm



HYSTERESIS BRAKE HB SERIES

Rated Torque: 0.06~1Nm



PARTICLE CLUTCHES/BRAKES

- Permit wide-range, high-accuracy torque control through current control.
- Outstanding in response and highest in constant-torque characteristic regardless of slip speed.
- Available in continuous slip operation and most suitable for highly frequent operation.
- Long life because of their excellent durability.
- No shock when coupling or braking; outstanding in torque repeatability.

PARTICLE CLUTCH POC SERIES

NATURAL COOLING WITH SHAFT
Rated Torque: 3~800Nm



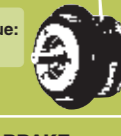
PARTICLE CLUTCH PHC-R SERIES

SELF-VENTILATION WITH HOLLOW SHAFT
Rated Torque: 6~200Nm



MICRO TYPE PARTICLE CLUTCH PMC SERIES

STATIONARY COIL
Rated Torque: 1~4Nm



PARTICLE BRAKE POB SERIES

NATURAL COOLING WITH SHAFT
Rated Torque: 3~800Nm



PARTICLE BRAKE PHB SERIES

NATURAL COOLING WITH HOLLOW SHAFT
Rated Torque: 6~200Nm



PARTICLE BRAKE PTB SERIES

HEAT PIPE COOLING TYPE
Rated Torque: 25~200Nm



PARTICLE BRAKE PRB-H SERIES

NATURAL COOLING BRAKE (WITH SIDE FIN)
Rated Torque: 12~200Nm



TENSION BRAKES

- Incorporate a friction disk and an armature for slip service.
- Feature great durability and fully withstand continuous slip service.
- Permit wide-range torque control, and hence highly accurate control.
- Various types of control systems available so that outstanding tension control systems can be designed.

TENSION BRAKE TB SERIES

PIN DRIVE TYPE OPTIMUM FOR WINDING BRAKE
Rated Torque: 3~380Nm

