Application Guide of Robot

for injection moulding machine

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SHINI

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1. Preface

In order to help customers choose the right products, customer service staff should let customers more accurate understanding this application, improve application level of the product. So compile this “Application Guide of Robot for injection moulding machine", following, short for application.

Purpose

This application guide is for SHINI robot, which describes SHINI robot classification, scope of application, selection methods and attentions.

Target Group

This guide is applicable for professionals and customer service personnel who face the clients directly and need choose appropriate products as requested.

Related Information

This application is reference media for helping customer service for the customer selection, it only for the initial selection for robot, when the product type changes, please order the type listed in “product catalog”. If the customer demands is not clear or for other reasons unable to provide selection services, please let the customers fill in “Selection Form” truthfully the contents listed. Before ordering, please contact with SHINI customer service staff to ensure that the selection is correct.

Notice

This guide is used for preliminary model selection of SHINI’s robots series products. It is recommended the client contact our customer service personnel before giving an order to ensure correct selection and avoid unwanted loss.

If you need any further information of SHINI products, please contact us:

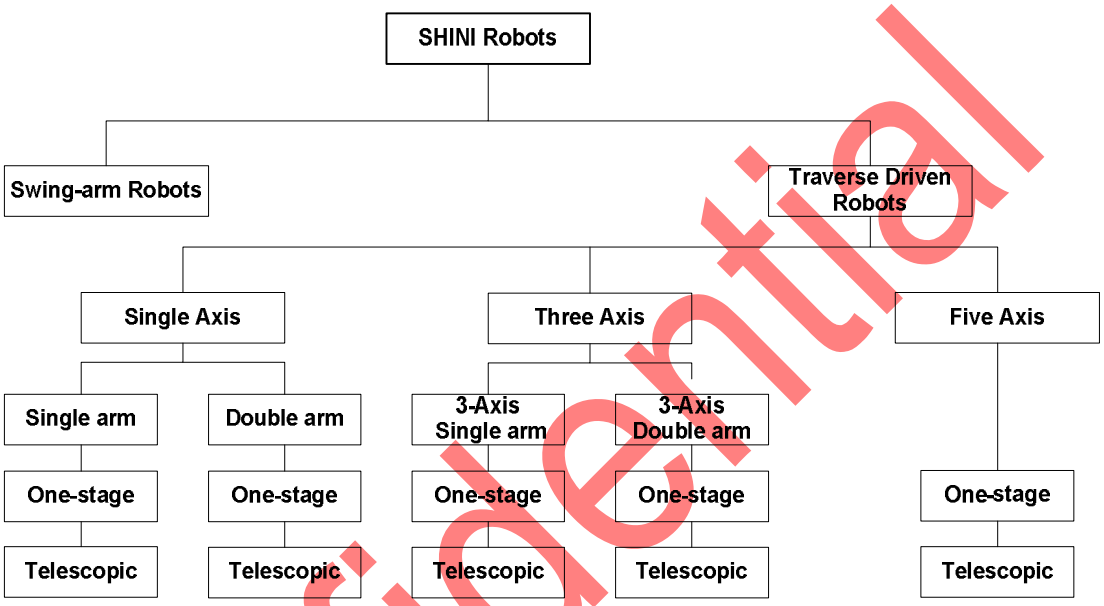
Dial direct China service hotline: +86 800-999-3222

Log on SHINI Group website: www.shini.com

Send eMail to us: shini@shini.com

2. Product Classification

Divide the SHINI robot into swing-arm and traverse robot by method of operation. There are having one axis servo driven, three axes servo driven and five axes servo driven.

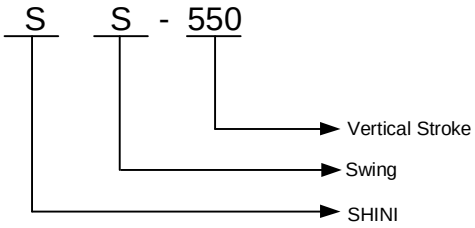


Picture 2-1: Robot Classification

3. Product Introduction

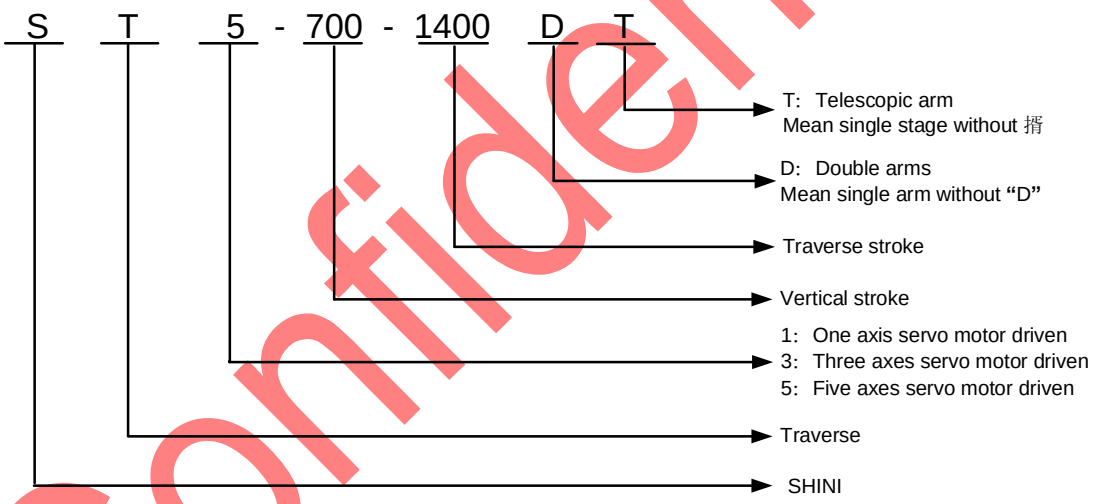
3.1 Coding Principle

3.1.1 Swing-arm Robot



SS-550 shows the 550mm vertical stroke of the Swing-arm robots.

3.1.2 The Principle of the Traverse Robots Coding



ST5-700-1400DT: It show the 700mm vertical stroke and 1400 traverse stroke of five axes servo telescopic type traverse robot and with double arms.

3.2 Products Model

3.2.1 Swing-arm Robot SS Series

Picture 3-1: Swing-arm Robot SS Series

Designed for rapid and precise removal of sprue or runner for recycling after injection moulding, it can also carry out simple removal function for moulding parts providing the optional vacuum suction fixture is additionally fitted. Eye-catching appearance and compact as rigid structure design compact structure, stable and easy to operate. The rotating machinery is unique mechanism, arm rotating slowly and smoothly. Adjusting the machine to go forward and backward by hand wheel, easy to operate; high speed fixed device control the machine rotation, change mold quickly, there are using the proximity switch and the magnetic switch in the cylinder rotation position. Adopting the import pneumatic cylinder components to ensure the operation with zero defects and increase of service life. With good quality and interchange ability.

3.2.2 One Axis Servo Driven Robot ST1 Series

Picture 3-2: One axis servo driven robot ST1 Series

The series of robot design with compact and attractive appearance. The robots are used for rapid and precise removal of sprue or runner for recycling after injection moulding, finished products lay aside in the position where needed. This series robot can also offer the telescopic arm type and single arm type for customers' requirements. It used for hot runner and 3-plate mold. When the arm stroke is more than 900mm, we can offer the telescopic type for using in low plant.

3.2.3 Three Axes Servo Driven Robot ST3 Series

Picture 3-3: Three Axes Servo Driven Robot ST3 Series

The series of robot design with compact and attractive appearance, they are the brand new fully servo motor products. The robots are used for rapid and precise removal of sprue or runner for recycling after injection moulding, finished products lay aside in the position where needed. This series robot can also offer the telescopic arm type and single arm type for customers' requirements. It used for hot runner and 3-plate mold. When the arm stroke is more than 900mm, we can offer the telescopic type for using in low plant.

3.2.4 Five Axes Servo Driven Robot ST5 Series

Picture 3-4: Five Axes Servo Driven Robot ST5 Series

The series of robot design with compact and attractive appearance, they are the brand new fully servo motor products. This series offer the telescopic arm type. According to client's request, we may choose only one arm, which is suitable for the double mold, hot runner mold and 3-plate mold. When the arm stroke is more than 900mm, we can offer the telescopic type for using in low plant.

3.3 Field of Application

3.3.1 SS Series

There are five two models SS-550，SS-700 available for the use with plastics injection moulding machine 150Tand under250T. This series are used for double-mold, removal sprue with runner, also used for 3-plate, removal sprue. If with sucker, they can be used for double mold or 3-plate mold.

3.3.2 ST1 Series

There are five models ST1-550-1000，ST1-700-1400，ST1-900-1600 and ST1-1100-1800 available for the use with plastics injection moulding machine 100T、200T、300Tand under 450T. This series can also offer the double-arm type and single arm type for customers' requirements, single arm type is suitable for the 2-plate mold users and hot runner mold plate users.

3.3.3 ST3 Series

There are five models ST3-550-1000，ST3-700-1400，ST3-900-1600 and ST3-1100-1800 available for the use with plastics injection moulding machine 100T、200T、300T and under 450T. This series are used for hot runner mold, double mold, and 3-plate mold.

3.3.4 ST5 Series

There are five models ST5-550-1000D，ST5-700-1400D，ST5-900-1600D and ST5-1100-1800D available for the use with plastics injection moulding machine 100T、200T、300T and under 450T。Customers may choose only one arm, which is suitable for the double broad mold or the hot runner mold.

4. Model Selection Method

4.1 Selecting Robot Stroke Depend on the Specification of IMM.

Arm stroke 550mm for 0-100T IMM

Arm stroke 700mm for 100-200T IMM

Arm stroke 900mm for 200-300T IMM

Arm stroke 1100mm for 300-450T IMM

4.2 Selecting Suitable Models Depend on Mould Type

The axes is chosen for the hot runner mold; If cycle time is more than 5s, the customer can choose single servo driven with single arm.

Single servo telescopic arm type (five axes servo driven) is chosen for 3-plate mold.

Single servo single arm (three axes servo driven) is chosen by telescopic arm, the injection moulding machine with force under 250T can choose swing–arm series.

4.3 According to the Height of Workshop and Crown to Choose Single-stage and Telescopic Arm Type

Please choose telescopic or single-stage when the height of crown is enough high. Please only choose telescopic when the height of crown is shortage.

4.4 According to Injection Molding Machine's Specifications to Define the Dimensions of Robot

According to the distance between the installation face and upside of safety door defined the height of the adapter.

The mounting dimensions in adapter bottom according to the hole on the installation face or plan view size on mold plate.

According to the number of products which form in one piece and the distance between the products, defined the dimensions of suckers jig.

5. Attention

- The robot is limited to use in plastic injection moulding machine.
- Machine work pressure must be kept between 0.6MPa ± 0.1MPa range.
- The machine can not be used in air, which including oil-containing phosphate, organic solvents, sulfurous gas, chlorine, acids, as well as deterioration compressor oil.
- Different brands of injection molding machine signals have different signals, so before selecting, please provide the injection molding machine brand.
- Different specifications for the injection moulding machine need different strokes, so before selecting, must know the injection molding machine specifications.
- Choosing single-stage or telescopic robot based on the height of the ceiling.
- The distance between robot and up position of safe depends whether need install the rotation seat, because when height is too high, it will hit the safe gate.
- Hole dimensions of robot installation face is the dimensions of robot installation, if the size makes mistake, the robot could not be installed.
- Different shapes of products need different jigs. Please provide products in order to choose a different shape of the jigs.

Version

NO.	(P) (C)	Directions	Date Dept./Name
1		New Document	2009-12-30 Automation/Aivi
2			2010-07-20 Automation/Aivi
2		New brand image	2013-04-28 TM/Gavin

Feedback Form

Thank you very much for taking time to read this application guide. We have been committed to assisting sales staffs to select proper products for customers and improve their application proficiency. Editors are eager for your precious opinions and suggestions to perfect the contents and forms of this application guide, which is also a spur for us.

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1. Your general feeling about this manual:

☐ Perfect ☐ Common ☐ Not good

2. Your opinion about format and layout of this manual:

☐ Perfect ☐ Common ☐ Not good

3. Do you think this manual is helpful for model selection and application?

☐ Of great help ☐ Not much ☐ Not at all

4. Which content is of great help for you?

5. What should be added to this manual?

6. From what aspects does this journal need to be improved?

Your Name: _____ Contact Information: _____

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