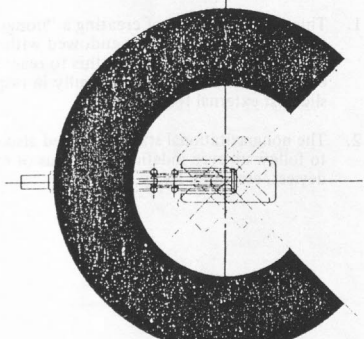
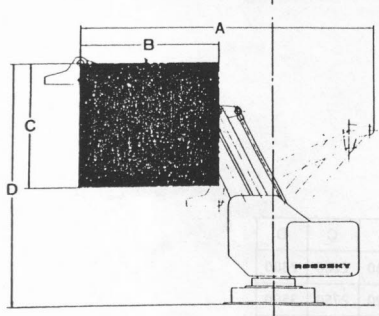
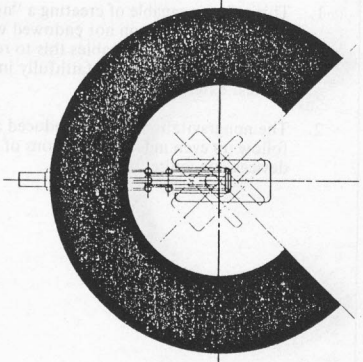
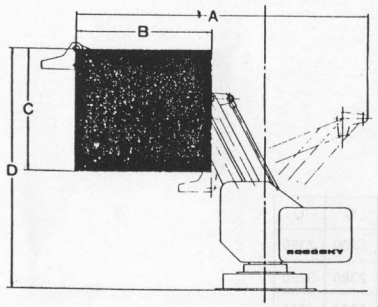
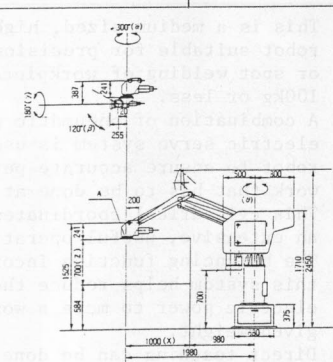
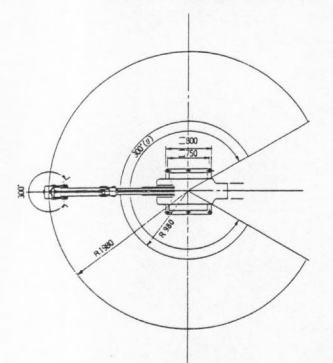


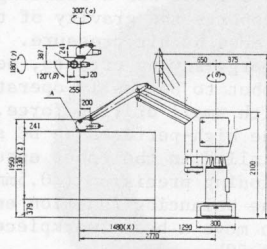
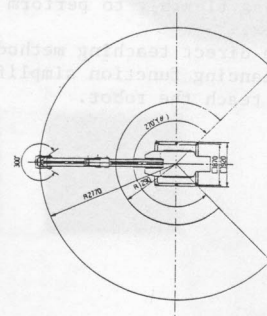
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		16-13, Nishi-shinjuku, 6-chome, Shinjuku-ku, Tokyo Tel. (03) 348-6311																					
Model Name		ROBOSKY SD-250		Main applications		Heavy duty handling, palletizing, tool change																					
Classification		a. Input information and teaching mode		Variable sequence robot		Degree of freedom of motion																					
		b. Motion form		Cylindrical coordinates robot		Load capacity																					
Axes		Operating space		Speed		Axes																					
Arm		Right-left traverse		350°		Right-left swing																					
		Right-left turning				Up-down swing																					
		Up-down traverse		210°		Right-left traverse																					
		Up-down turning				Up-down traverse																					
		In-out		Revolution		In-out																					
		Revolution		120°		Finger		Clamp																			
Travelling						Remarks																					
Repeatability (Positioning precision)		± 0.5 mm		Allowable environmental conditions		0°C ~ 40°C																					
Moving control function		Sequential mode		Teaching functions		Sequential mode																					
		Positioning				Matrix switch																					
		Miscellany				Position and speed																					
Power-External-Internal		Hydraulics, Pneumatics, DC servo motor		Memory mode		Memory capacity																					
Internal measuring ability		P.T.P.		Miscellany		1000 steps																					
External measuring/Recognizing ability		Potentiometer		Auxiliary functions, options etc.																							
Outward figure		Operation space		Characteristics of the robot																							
(plan)				<ol style="list-style-type: none"> 1. This robot is capable of creating a "non-gravitational state (balance)", a function not endowed with the conventional manipulators, which enables this to react sharply to the external motion and acts faithfully in response to the slightest external force. 2. The nongravitational state produced also enables this robot to follow up even indefinite motions of external machines, devices, etc. quite freely. 																							
(side view)																											
				<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>SD-250-51</td> <td>1570</td> <td>960</td> <td>1375</td> <td>1750</td> </tr> <tr> <td>SD-250-71</td> <td>2230</td> <td>1440</td> <td>1925</td> <td>2450</td> </tr> <tr> <td>SD-250-91</td> <td>2890</td> <td>1920</td> <td>2475</td> <td>3150</td> </tr> </tbody> </table>					A	B	C	D	SD-250-51	1570	960	1375	1750	SD-250-71	2230	1440	1925	2450	SD-250-91	2890	1920	2475	3150
	A	B	C	D																							
SD-250-51	1570	960	1375	1750																							
SD-250-71	2230	1440	1925	2450																							
SD-250-91	2890	1920	2475	3150																							

Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		16-13, Nishi-shinjuku 6-chome, Shinjuku-ku, Tokyo Tel. (03) 348-6311		
Model Name		ROBOSKY SD-350		Main applications		Heavy duty handling, palletizing, tool changing		
Classification		a. Input information and teaching mode		Variable sequence robot		Degree of freedom of motion		
		b. Motion form		Cylindrical coordinates robot		Load capacity 350 kg		
Axes		Operating space		Speed		Axes		
Arm	Right-left traverse				Right-left swing			
	Right-left turning		180°		Up-down swing			
	Up-down traverse				Right-left traverse			
	Up-down turning		210°		Up-down traverse			
	In-out				Revolution			
	Revolution		90°		Finger		Clamp	
Travelling		300 mm		Remarks				
Repeatability (Positioning precision)		± 0.5 mm		Allowable environmental conditions		0°C ~ 40°C		
Moving control function	Sequential mode				Sequential mode			
	Positioning		Hydraulic, DC servo motor		Position and speed			
	Miscellany		P.T.P.		Memory mode			
Power-External -Internal		Potentiometer		Teaching functions		Memory capacity 250 steps		
Internal measuring ability				Miscellany				
External measuring/ Recognizing ability				Auxiliary functions, options etc.				

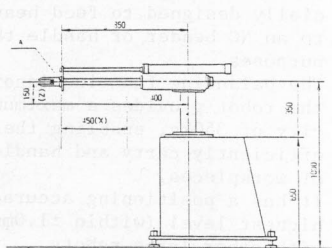
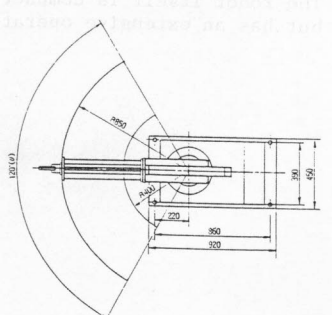
Outward figure	Operation space	Characteristics of the robot																				
<p>(plan)</p>  <p>(side view)</p> 		<ol style="list-style-type: none"> 1. This robot is capable of creating a "nongravitational state (balance)", a function not endowed with the conventional manipulators, which enables this to react sharply to the external motion and acts faithfully in response to the lightest external force. 2. The nongravitational state produced also enables this robot to follow up even indefinite motions of external machines, devices, etc. quite freely. 																				
		<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>SD-350-51</td> <td>2230</td> <td>1360</td> <td>1700</td> <td>2350</td> </tr> <tr> <td>SD-350-71</td> <td>3170</td> <td>2040</td> <td>2380</td> <td>3290</td> </tr> <tr> <td>SD-350-91</td> <td>4110</td> <td>2720</td> <td>3060</td> <td>4230</td> </tr> </tbody> </table>		A	B	C	D	SD-350-51	2230	1360	1700	2350	SD-350-71	3170	2040	2380	3290	SD-350-91	4110	2720	3060	4230
	A	B	C	D																		
SD-350-51	2230	1360	1700	2350																		
SD-350-71	3170	2040	2380	3290																		
SD-350-91	4110	2720	3060	4230																		

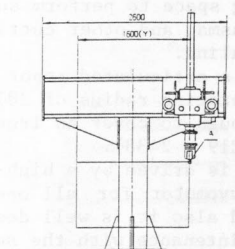
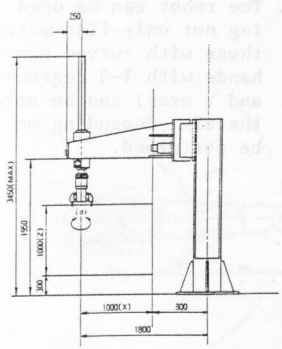
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		16-13, Nishi-shinjuku, 6-chome, Shinjuku-ku, Tokyo Tel. (03) 348-6311																					
Model Name		ROBOSKY SD-500		Main applications		Heavy duty handling, palletizing, tool change																					
Classification		a. Input information and teaching mode		Variable sequence robot		Degree of freedom of motion																					
		b. Motion form		Cylindrical coordinates robot		Load capacity 500 kg																					
Axes		Operating space		Speed		Axes																					
Arm	Right-left traverse				Hand		Right-left swing 180°																				
	Right-left turning		300°				Up-down swing																				
	Up-down traverse						Right-left traverse																				
	Up-down turning						Up-down traverse 210°																				
	In-out						Revolution 90°																				
	Revolution				Fin-ger		Clamp																				
Travelling				Remarks																							
Repeatability (Positioning precision)		Stroke: ± 0.5% ~ 2%		Allowable environmental conditions		0°C ~ 40°C																					
Moving control function	Sequential mode				Teaching functions	Sequential mode Matrix switch																					
	Positioning		Hydraulics, DC-servo motor			Position and speed																					
	Miscellany		P.T.P. (C-P)			Memory mode																					
Power-External -Internal		Potentiometer		Memory capacity		32 steps																					
Internal measuring ability				Miscellany																							
External measuring/ Recognizing ability				Auxiliary functions, options etc.																							
Outward figure		Operation space		Characteristics of the robot																							
(plan)				<ol style="list-style-type: none"> This robot is capable of creating a "nongravitational state (balance)", a function not endowed with the conventional manipulators, which enables this to react sharply to the external motion and acts faithfully in response to the slightest external force. The nongravitational state produced also enables this robot to follow up even indefinite motions of external machines, devices, etc. quite freely. 																							
(side view)																											
				<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>SD-500-4I</td> <td>2960</td> <td>1440</td> <td>2200</td> <td>2800</td> </tr> <tr> <td>SD-500-5I</td> <td>3780</td> <td>1920</td> <td>2750</td> <td>3500</td> </tr> <tr> <td>SD-500-6I</td> <td>4600</td> <td>2400</td> <td>3300</td> <td>4200</td> </tr> </tbody> </table>					A	B	C	D	SD-500-4I	2960	1440	2200	2800	SD-500-5I	3780	1920	2750	3500	SD-500-6I	4600	2400	3300	4200
	A	B	C	D																							
SD-500-4I	2960	1440	2200	2800																							
SD-500-5I	3780	1920	2750	3500																							
SD-500-6I	4600	2400	3300	4200																							

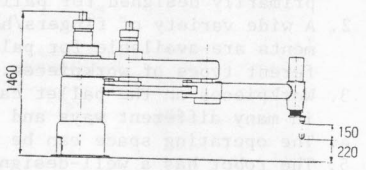
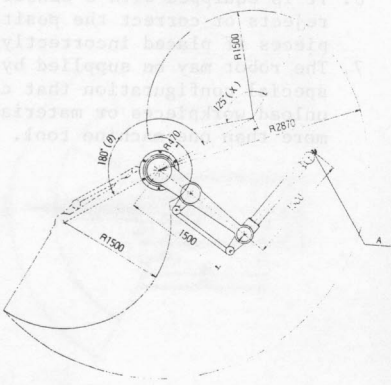
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581			
Model Name		BA-1440		Main applications		Handling, palletizing, assembly, loading and arc welding			
				Weight of robot itself		800kg			
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion			
		b. Motion form		Cylindrical coordinates robot		Load capacity			
						6			
						50kg(Max.)			
Axes		Operating space		Speed		Axes			
						Operating space			
						Speed			
Arm		Right-left traverse				Right-left swing			
		Right-left turning		$\pm 150^\circ$		60°/sec		Up-down swing	
		Up-down traverse		700mm		600mm/sec		Hand	
		Up-down turning						Right-left traverse	
		In-out		100mm		600mm/sec		Up-down traverse	
		Revolution						Revolution	
						Finger			
						Clamp			
Travelling						Remarks			
Repeatability (Positioning precision)		$\pm 0.5\text{mm}$		Allowable environmental conditions		0 - 45°C			
Moving control function		Sequential mode		Microcomputer		Teaching functions			
		Positioning		Electric DC servo		Sequential mode			
		Miscellany		CP control/various interpolating functions		Position and speed			
						Direct teaching with input through the teaching box			
						- do -, speed can be set at any of 8 levels.			
						Memory mode			
						IC memory			
						Memory capacity			
						1000 steps (Max.3000 steps)			
Power-External -Internal		AC200/220V 50/60Hz 2.0kVA 6.5kg/cm ² G 3500N ℓ /min		Miscellany		PTP teaching			
Internal measuring ability		Optical shaft encoder		Auxiliary functions, options etc.		Self-diagnostic function			
External measuring/ Recognizing ability									
Outward figure		Operation space		Characteristics of the robot					
(plan)				<ol style="list-style-type: none"> 1. This robot has a balancing function that supports the gravity of the arm and workpieces by air pressure. This produces energy-saving effects, permitting the robot to be easily operated by a motor with small driving force. 2. The high-performance DC servomotor installed in the robot ensures high positioning precision ($\pm 0.5\text{mm}$). 3. The balancing function enables the robot to move a heavy workpiece weighing up to 50kg. 4. The robot has a "muscular" system that moves flexibly to perform any type of work. 5. The direct teaching method using the balancing function simplifies the work to teach the robot. 					
(side view)									

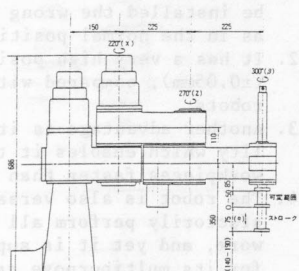
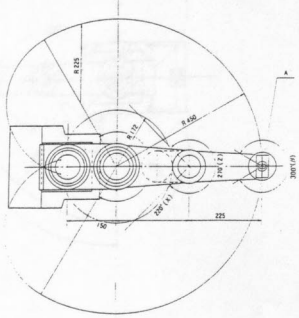
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581				
Model Name		BA-2600		Main applications		Handling, palletizing, arc welding				
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion				
		b. Motion form		Cylindrical coordinates robot		Load capacity				
						6				
						100kg (Max.)				
Axes		Operating space		Speed		Axes				
						Operating space				
						Speed				
Arm	Right-left traverse				Right-left swing		±150°			
	Right-left turning		±135°		Up-down swing		+30° - -90°			
	Up-down traverse		1330mm		600mm/sec		Hand	Right-left traverse		
	Up-down turning							Up-down traverse		
	In-out		1480mm		600mm/sec		Revolution		±90°	
	Revolution						Finger		Clamp	
Travelling						Remarks				
Repeatability (Positioning precision)		±1.0mm		Allowable environmental conditions		0 - 45°C				
Moving control function	Sequential mode		Microcomputer		Teaching functions	Sequential mode		Direct teaching with input through the teaching box		
	Positioning		Electric DC servo			Position and speed		- do -, speed can be set at any of 8 levels.		
	Miscellany		CP control/various interpolat- ing functions			Memory mode		IC memory		
Power-External -Internal		AC200/220V 50/60Hz 2.0kVA 6.5kg/cm ² G 150N $\frac{1}{2}$ /min		Memory capacity		1000 steps (Max.3000 steps)				
Internal measuring ability		Optical shaft encoder		Miscellany		PTP teaching				
External measuring/ Recognizing ability				Auxiliary functions, options etc.		Self-diagnostic function				
Outward figure		Operation space		Characteristics of the robot						
(plan)				<ol style="list-style-type: none"> 1. This is a medium-sized, high-quality robot suitable for precision handling or spot welding of workpieces weighing 100kg or less. 2. A combination of pneumatic power and electric servo system is used for the robot to ensure accurate performance of work that has to be done at a high speed. 3. This cylindrical coordinates robot has an extensive, useful operating space. 4. The balancing function incorporated in this system helps reduce the required electric power to move a workpiece of given weight. 5. Direct teaching can be done by the balancing function. 						
(side view)										

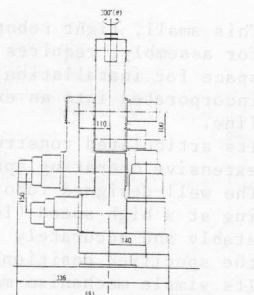
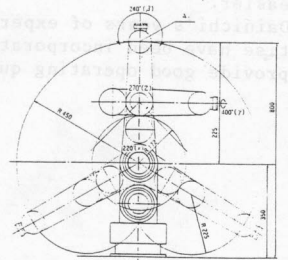
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581					
Model Name		BA-4700	Main applications	Heavy duty material handling, palletiz- ing	Weight of robot itself	3200kg					
Classification		a. Input information and teaching mode	Playback robot		Degree of freedom of motion	6					
		b. Motion form	Cylindrical coordinates robot		Load capacity	350kg(Max.)					
Axes		Operating space		Speed		Axes					
Arm		Right-left traverse		Right-left swing		±135° 45°/sec					
		Right-left turning		±135° 40°/sec		Up-down swing		±60° 45°/sec			
		Up-down traverse		1350mm 400mm/sec		Hand		Right-left traverse			
		Up-down turning						Up-down traverse			
		In-out		1480mm 400mm/sec				Revolution		180° 45°/sec	
		Revolution				Fin- ger		Clamp			
Travelling				Remarks							
Repeatability (Positioning precision)		±1.0mm		Allowable environmental conditions		0 - 45°C					
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box					
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 8 levels.					
	Miscellany	CP control/various interpolating functions			Memory mode	IC memory					
Power-External -Internal	AC200/220V 50/60Hz 45kVA 7.0kg/cm ² G 600Nℓ/min		Memory capacity	1000 steps (Max.3000 steps)							
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching							
External measuring/ Recognizing ability			Auxiliary functions, options etc.	Self-diagnostic function							
Outward figure		Operation space		Characteristics of the robot							
<p>(plan)</p> <p>(side view)</p>				<ol style="list-style-type: none"> 1. This is a large, high-grade robot specially designed to feed heavy workpieces to an NC bender or handle them for other purposes. 2. The balancing function incorporated in the robot provides a maximum load capacity of 350kg, enabling the robot to efficiently carry and handle all types of workpieces. 3. It has a positioning accuracy of the highest level (within ±1.0mm), compared with other large robots. 4. Good operating qualities are provided by the playback system. 5. The robot itself is compactly designed but has an extensive operating space. 							

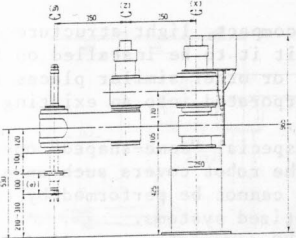
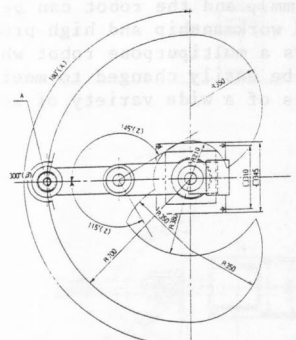
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		HANBOT		Main applications		Loading/unloading of workpieces	
Classification		a. Input information and teaching mode		Variable sequence robot		Weight of robot itself	
		b. Motion form		Cylindrical coordinates robot		Degree of freedom of motion	
						3	
						Load capacity	
						10kg(Max.)	
Axes		Operating space		Speed		Axes	
						Operating space	
						Speed	
Arm	Right-left traverse		150mm		Max.600mm/sec		Hand
	Right-left turning		±60°		Max.90°/sec		
	Up-down traverse						
	Up-down turning						
	In-out		450mm		Max.600mm/sec		
	Revolution						Finger
						Clamp	
Travelling						Remarks	
						Swing and swivel functions of the hand available by option	
Repeatability (Positioning precision)		±0.2mm		Allowable environmental conditions		0 - 45°	
Moving control function	Sequential mode		Sequential control with the program controller		Teaching functions	Sequential mode	
	Positioning		Mechanical stopper			Position and speed	
	Miscellany		(Electric servo available by option)			Memory mode	
				Memory capacity			
Power-External -Internal		AC200/220V 50/60Hz 0.5kVA 6.0kg/cm ² G 300N&/min		Miscellany			
Internal measuring ability				Auxiliary functions, options etc.			
External measuring/ Recognizing ability							
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. This is a cylindrical coordinates, single-purpose, adaptable robot. 2. Many versions are available because different mixes of modules can be added to the standard model, depending on the user's requirements. 3. Many different combinations of driving systems, such as a pneumatic linear actuator, rotary actuator, and electric servo, are available for the robot. 4. Some additional arms and multi-axis hands can be readily attached to the robot as necessary. 5. All driving forces are supplied by the pneumatic system which has a simple mechanical construction for easy maintenance. 			
(side view)							

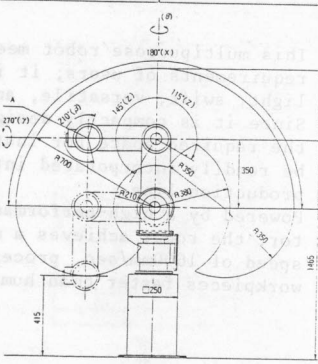
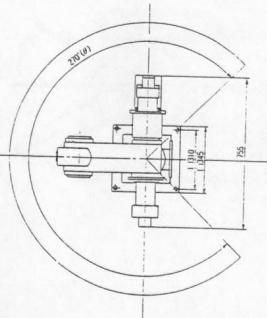
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PALEBOT 150		Main applications		Palletizing/depalletizing, sorting by type and class, and separation of rejects	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Cartesian coordinates robot		Load capacity	
						1800kg	
						4	
						150kg(Max.)	
Axes		Operating space		Speed		Axes	
Operating space		Speed		Axes		Operating space	
Speed		Axes		Operating space		Speed	
Arm	Right-left traverse	1600mm	600mm/sec	Hand	Right-left swing		
	Right-left turning				Up-down swing		
	Up-down traverse	1000mm	600mm/sec		Right-left traverse		
	Up-down turning				Up-down traverse		
	In-out	1000mm	600mm/sec		Revolution		
	Revolution	90°(or 180°)	60°/sec	Finger	Clamp		
Travelling				Remarks		Bending function of the hand available by option	
Repeatability (Positioning precision)		±1.0mm		Allowable environmental conditions			
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric servo			Position and speed	- do -, speed can be set at any of 8 levels	
	Miscellany	CP control/various interpolating functions			Memory mode	IC memory	
Power-External -Internal	AC200/220V 50/60Hz 3.5kVA		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching			
External measuring/ Recognizing ability			Auxiliary functions, options etc.	Self-diagnostic function			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. This is a cartesian coordinates robot primarily designed for palletizing. 2. A wide variety of fingers/hands and attachments are available for palletizing different types of workpieces. 3. Workpieces on the pallet can be arranged in many different ways and combinations. 4. The operating space can be easily changed. 5. The robot has a well-designed construction with linear motion characteristics which is capable of conveying workpieces at a high speed. 6. It is equipped with a sensor to separate rejects or correct the position of workpieces if placed incorrectly. 7. The robot may be supplied by option in a special configuration that can load and unload workpieces or materials to and from more than one machine tool. 			
(side view)							

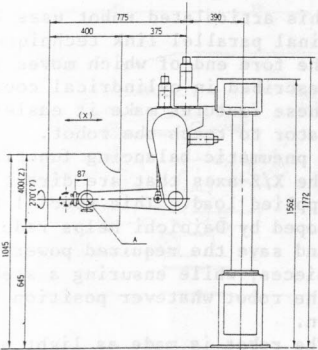
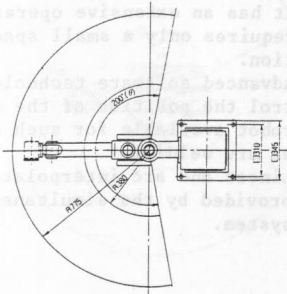
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		FACEROBO FR-10		Main applications		Automatic gas cutting, sealing, and assembly	
		Weight of robot itself		500kg			
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Articulated robot		Load capacity	
		3		10kg(Max.)			
Axes		Operating space		Speed		Axes	
		Operating space		Speed		Operating space	
Right-left turning		$\pm 90^\circ$		45°/sec		Right-left swing	
Right-left turning		$\pm 65^\circ$		45°/sec		Up-down swing	
Up-down traverse		150mm		100mm/sec		Right-left traverse	
Up-down turning						Up-down traverse	
In-out						Revolution	
Revolution						Clamp	
Travelling						Remarks	
						Swing and swivel functions of the hand available by option	
Repeatability (Positioning precision)		$\pm 0.5\text{mm}$		Allowable environmental conditions		0 - 45°C	
Moving control function		Sequential mode		Microcomputer		Sequential mode	
		Positioning		Electric DC servo		Position and speed	
		Miscellany		CP control/various interpolating functions		Memory mode	
						Direct teaching with input through the teaching box	
						- do -, speed can be set at any of 32 levels.	
						IC memory	
						Memory capacity	
						1000 steps (Max.3000 steps)	
Power-External -Internal		AC200/220V 50/60Hz 2.0kVA 6.0kg/cm ² G		Miscellany		PTP teaching	
Internal measuring ability		Optical shaft encoder		Auxiliary functions, options etc.		Sensing function	
External measuring/Recognizing ability							
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. The robot primarily covers a plane operating space to perform such work as gas, plasma, and other cutting operations and sealing. 2. This articulated robot has a maximum operating radius of 2870mm which is long enough to cover an iron plate of 4 x 8 (1219 x 2438). 3. It is driven by a high-performance DC servomotor for all operations or motions, and also it is well designed for easy maintenance with the servomotor, solenoid brakes, tacho-generator, and encoder put together into one unit. 4. The robot can be used for cutting or sealing not only flat workpieces but also those with curved surfaces because modular hands with 1-3 degrees of freedom (α, β, and γ axes) can be attached to the end of the arm, depending on the type of job to be performed. 			
(side view)							

Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PT-200H		Main applications		Assembly, sealing, and conveyance	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Articulated robot		Load capacity	
Weight of robot itself		45kg					
Degree of freedom of motion		4					
Load capacity		2kg(Max.)					
Axes		Operating space		Speed		Axes	
Operating space		Speed		Axes		Operating space	
Speed		Axes		Operating space		Speed	
Arm	Right-left turning	(θ) ±120°	120°/sec	Hand	Right-left swing		
	Right-left turning	(X) ±135°	120°/sec		Up-down swing		
	Up-down traverse	75mm	120mm/sec		Right-left traverse		
	Up-down turning				Up-down traverse		
	In-out				Revolution		
	Revolution	±150°	120°/sec	Finger	Clamp		
Travelling				Remarks			
Repeatability (Positioning precision)		±0.05mm		Allowable environmental conditions		0 - 45°C	
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 8 levels	
	Miscellany	CP control/various interpolat- ing functions			Memory mode	IC memory	
Power-External -Internal	AC200/220V 50/60Hz 45kVA (6.5kg/cm ² G 25N&/m)		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching			
External measuring/ Recognizing ability			Auxiliary functions, options etc.	Self-diagnostic function			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. This small, light robot, primarily designed for assembly, requires only a very small space for installation; it can be easily incorporated into an existing production line. 2. Its articulated construction provides an extensive operating space. 3. The well-designed robot, even while operating at a high speed (1400mm/sec), works stably and accurately (within ±0.05mm of the specified position). 4. Its simple mechanism makes maintenance work easier. 5. Dainichi's years of experience and expertise have been incorporated in the robot to provide good operating qualities. 			
(side view)							

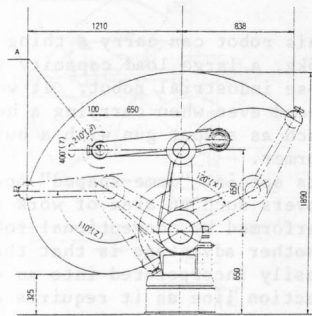
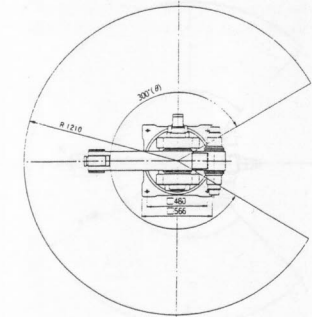
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581			
Model Name		PT-200V		Main applications		Assembly, sealing and loading			
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion			
		b. Motion form		Articulated robot		Load capacity			
Weight of robot itself		50kg		Degree of freedom of motion		5			
Load capacity		2kg(Max.)		Degree of freedom of motion		5			
Axes		Operating space		Speed		Axes			
Operating space		Speed		Axes		Operating space			
Speed		Axes		Operating space		Speed			
Arm	Right-left traverse				Hand	Right-left swing			
	Right-left turning		$\pm 150^\circ$			Up-down swing		$\pm 120^\circ$	
	Up-down turning		$\pm 120^\circ$			Right-left traverse		120°/sec	
	Up-down turning		$\pm 135^\circ$			Up-down traverse			
	In-out					Revolution			
	Revolution		$\pm 200^\circ$		240°/sec		Finger	Clamp	
Travelling						Remarks			
Repeatability (Positioning precision)		$\pm 0.05\text{mm}$		Allowable environmental conditions		0 - 45°C			
Moving control function	Sequential mode		Microcomputer		Teaching functions	Sequential mode		Direct teaching with input through the teaching box	
	Positioning		Electric DC servo			Position and speed		- do -, speed can be set at any of 8 levels	
	Miscellany		CP control/various interpolat- ing functions			Memory mode		IC memory	
Power-External -Internal		AC200/220V 50/60Hz 45kVA		Memory capacity		1000 steps (Max.3000 steps)			
Internal measuring ability		Optical shaft encoder		Miscellany		PTP teaching			
External measuring/ Recognizing ability				Auxiliary functions, options etc.		Self-diagnostic function			
Outward figure		Operation space		Characteristics of the robot					
(plan)				<ol style="list-style-type: none"> 1. This is a very small, light robot which can be installed the wrong way around as well as in the normal position. 2. It has a very high positioning accuracy ($\pm 0.05\text{mm}$), compared with other assembly robots. 3. Another advantage is its high-speed capability which enables it to properly handle workpieces faster than human workers. 4. The robot is also versatile enough to satisfactorily perform all types of assembly work, and yet it is supplied at a low price for its multipurpose capabilities. 					
(side view)									

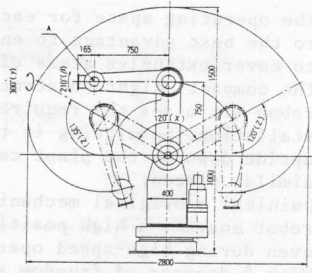
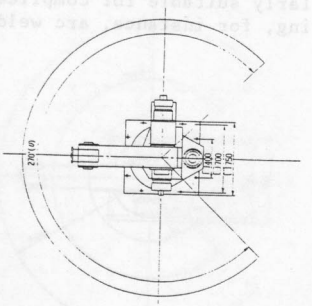
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581		
Model Name		PT-300H		Main applications		Weight of robot itself		
				Assembly, sealing, chamfering, loading, screw driving, and boring		125kg		
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion		
		b. Motion form		Articulated robot		4		
						Load capacity		
						5kg(Max.)		
Axes		Operating space		Speed		Axes		
Arm	Right-left turning		(θ) ±90°		90°/sec		Right-left swing	
	Right-left turning		(X) +145° -115°		90°/sec		Up-down swing	
	Up-down traverse						Hand	
	Up-down turning						Right-left traverse	
	In-out		100mm		100mm/sec		Up-down traverse	
	Revolution		±150°		90°/sec		Finger	
						Revolution		
						Clamp		
Travelling						Remarks		
Repeatability (Positioning precision)		±0.1mm		Allowable environmental conditions		0 - 45°C		
Moving control function	Sequential mode		Microcomputer		Teaching functions	Sequential mode		
	Positioning		Electric DC servo			Direct teaching with input through the teaching box		
	Miscellany		CP control/various interpolating functions			Position and speed		
				- do -, speed can be set at any of 8 levels				
Power-External -Internal		AC200/220V 50/60Hz 45kVA		Memory mode		IC memory		
Internal measuring ability		Optical shaft encoder		Memory capacity		1000 steps (Max.3000 steps)		
External measuring/ Recognizing ability				Miscellany		PTP teaching		
				Auxiliary functions, options etc.		Self-diagnostic function		
Outward figure		Operation space		Characteristics of the robot				
(plan)				<ol style="list-style-type: none"> 1. This multipurpose robot meets nearly all requirements of users; it is compact, light, swift, versatile, and inexpensive. 2. Since it is compactly designed to minimize the required space for installation, it can be readily incorporated into an existing production line. 3. Powered by a high-performance DC servomotor, the robot achieves a maximum resultant speed of 1600mm/sec, processing or handling workpieces faster than human workers. 				
(side view)								

Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PT-300V		Main applications		Assembly, handling, arc welding and sealing	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Articulated robot		Load capacity	
						155kg	
						5	
						5kg(Max.)	
Axes		Operating space		Speed		Axes	
Operating space		Speed		Axes		Operating space	
Speed		Axes		Operating space		Speed	
Arm	Right-left traverse				Right-left swing		
	Right-left turning	(θ) $\pm 135^\circ$	90°/sec	Hand	Up-down swing	$\pm 105^\circ$	90°/sec
	Up-down turning	(X) $\pm 90^\circ$	90°/sec		Right-left traverse		
	Up-down turning	(Z) $+145^\circ$ -115°	90°/sec		Up-down traverse		
	In-out				Revolution	$\pm 135^\circ$	90°/sec
	Revolution			Finger	Clamp		
Travelling				Remarks			
Repeatability (Positioning precision)		$\pm 0.1\text{mm}$		Allowable environmental conditions		0 - 45°C	
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 8 levels	
	Miscellany	CP control/various interpolat- ing functions			Memory mode	IC memory	
Power-External -Internal	AC200/220V 50/60Hz 45kVA (6.5kg/cm G)		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching			
External measuring/ Recognizing ability			Auxiliary functions, options etc.	Self-diagnostic function			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. The compact, light structure of the robot permit it to be installed on the plant ceiling or other similar places and readily incorporated into an existing production line. 2. The special "dome-shaped" operating space of the robot covers such an area of work that cannot be performed by conventional robotized systems. 3. The DC servomotor installed in the robot ensures fast, accurate operation (within $\pm 0.1\text{mm}$), and the robot can be relied on for good workmanship and high product quality. 4. It is a multipurpose robot whose program can be easily changed to meet the requirements of a wide variety of work. 			
(side view)							

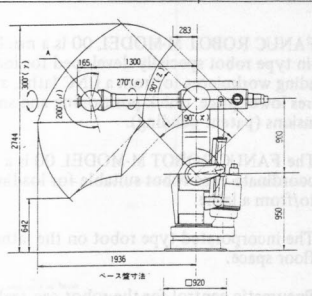
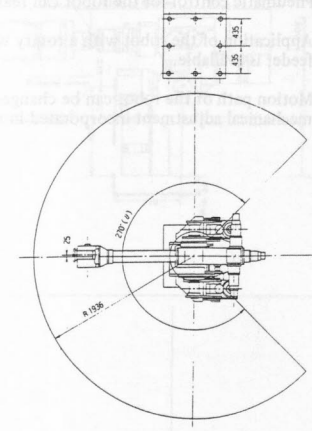
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PT-500		Main applications		Handling, assembly and arc welding	
Weight of robot itself		180kg		Degree of freedom of motion		4	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Cylindrical coordinates robot		Load capacity	
						5kg(Max.)	
Axes		Operating space		Speed		Axes	
Operating space		Speed		Axes		Operating space	
Speed		Axes		Operating space		Speed	
Arm	Right-left traverse			Hand	Right-left swing		
	Right-left turning	$\pm 100^\circ$	$75^\circ/\text{sec}$		Up-down swing		
	Up-down traverse	400mm	400mm/sec		Right-left traverse		
	Up-down turning				Up-down traverse		
	In-out	400mm	400mm/sec		Revolution	$\pm 135^\circ$	$75^\circ/\text{sec}$
	Revolution			Finger	Clamp		
Travelling				Remarks			
Repeatability (Positioning precision)		$\pm 0.2\text{mm}$		Allowable environmental conditions		0 - 45°C	
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 32 levels	
	Miscellany	CP control/various interpolating functions			Memory mode	IC memory	
Power-External -Internal	AC200/220V 50/60Hz 2.0kVA 6.0kg/cm ² G		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching			
External measuring/Recognizing ability			Auxiliary functions, options etc.	Sensing function			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. The robot itself is compactly designed to minimize the required space for installation. Its well devised mounting flange allows it to be installed in any position desired. 2. The robot can be taught very easily exactly how to move and what to do because of the balancing function incorporated in it. 3. A couple of these robots combined properly will work efficiently just like the two arms of a human worker with each of them handling a workpiece independently of the other. This will enable the robotized system to perform those difficult jobs, such as fitting, insertion, and combination of workpieces, which have been considered too complex for a robot to do. 4. Its sensor, combined with other excellent functions, can perform a complicated job of product inspection, removing rejects or separating defective products from acceptable ones more efficiently and reliably than the human visual sense. 			
(side view)							

Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581						
Model Name		PT-550		Main applications		Arc welding, as- sembly, handling and sealing						
Weight of robot itself		350kg		Degree of freedom of motion		5						
Classification	a. Input information and teaching mode		Playback robot		Load capacity		7kg(Max.)					
	b. Motion form		Cylindrical coordinates robot									
Axes		Operating space		Speed		Axes		Operating space		Speed		
Arm	Right-left traverse						Hand		Right-left swing			
	Right-left turning		$\pm 135^\circ$		60°/sec				Up-down swing		$\pm 105^\circ$ 90°/sec	
	Up-down traverse		500mm		500mm/sec				Right-left traverse			
	Up-down turning								Up-down traverse			
	In-out		600mm		500mm/sec				Revolution		$\pm 200^\circ$ 180°/sec	
	Revolution						Fin- ger		Clamp			
Travelling								Remarks				
Repeatability (Positioning precision)		$\pm 0.2\text{mm}$		Allowable environmental conditions		0 - 45°C						
Moving control function	Sequential mode		Microcomputer		Teaching functions		Sequential mode		Direct teaching with input through the teaching box			
	Positioning		Electric DC servo				Position and speed		- do -, speed can be set at any of 32 levels			
	Miscellany		CP control/various interpolat- ing functions				Memory mode		IC memory			
Power-External -Internal		AC200/220V 50/60Hz 2.0kVA 6.0kg/cm ² G				Memory capacity		1000 steps (Max.3000 steps)				
Internal measuring ability		Optical shaft encoder		Miscellany		PTP teaching						
External measuring/ Recognizing ability				Auxiliary functions, options etc.		Sensing function						
Outward figure			Operation space			Characteristics of the robot						
(plan)						<ol style="list-style-type: none"> 1. This articulated robot uses Dainichi's original parallel link technique for its arm, the fore end of which moves in a manner as described in cylindrical coordinates. These features make it easier for the operator to teach the robot. 2. A pneumatic balancing function is used for the X/Z-axes that are directly affected by applied load. This special technique developed by Dainichi helps reduce applied load and save the required power to move work-pieces, while ensuring a stable motion of the robot whatever position the arm may be in. 3. The robot is made as light and rigid as possible so that it can operate at a high speed (1000mm/sec). 4. It has an extensive operating space but requires only a small space for installation. 5. Advanced software technology used to control the position of the wrist makes the robot available for such complicated jobs as arc welding. 6. Linear and arc interpolating functions are provided by the simultaneous 5-axis control system. 						
(side view)												

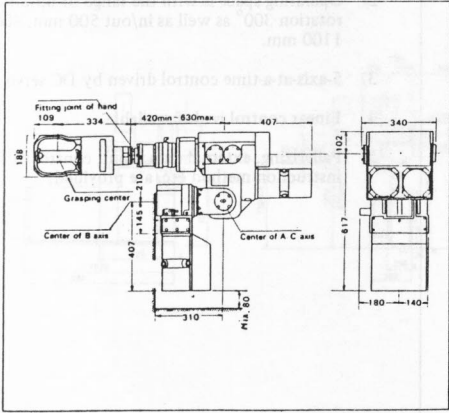
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581		
Model Name		PT-600		Main applications		Arc welding, as- sembly and hand- ling		
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion		
		b. Motion form		Articulated robot		Load capacity		
						360kg		
						5		
						12kg(Max.)		
Axes		Operating space		Speed		Axes		
Operating space		Speed		Axes		Operating space		
Speed		Axes		Operating space		Speed		
Arm	Right-left traverse				Right-left swing			
	Right-left turning		$\pm 150^\circ$		Up-down swing		$\pm 105^\circ$	
	Up-down turning		$\pm 60^\circ$		Right-left traverse			
	Up-down turning		$\pm 60^\circ$		Up-down traverse			
	In-out				Revolution		$\pm 200^\circ$	
	Revolution				Clamp		180°/sec	
Travelling				Remarks				
Repeatability (Positioning precision)		$\pm 0.1\text{mm}$		Allowable environmental conditions		0 - 45°C		
Moving control function	Sequential mode		Microcomputer		Teaching functions	Sequential mode		
	Positioning		Electric DC servo			Direct teaching with input through the teaching box		
	Miscellany		CP control/various interpolat- ing functions			- do -, speed can be set at any of 32 levels		
Power-External -Internal		AC200/220V 50/60Hz 2.0kVA 6.0kg/cm G		Memory mode		IC memory		
Internal measuring ability		Optical shaft encoder		Miscellany		Memory capacity		
External measuring/ Recognizing ability				Auxiliary functions, options etc.		1000 steps (Max.3000 steps)		
						PTP teaching		
						Sensing function		
Outward figure		Operation space		Characteristics of the robot				
(plan)				<ol style="list-style-type: none"> 1. The operating space for each axis is used to the best advantage to enable the robot to cover extensive areas of work. 2. The compact, light construction of the robot minimizes the required space for installation, permitting it to be installed upside down on the plant ceiling or other similar places. 3. Dainichi's original mechanism used for the robot ensures a high positioning accuracy even during high-speed operation. 4. With 5 degrees of freedom and a wrist capable of moving freely, the robot is particularly suitable for complicated jobs including, for instance, arc welding. 				
(side view)								

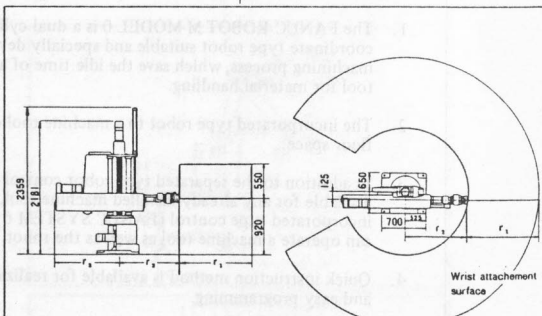
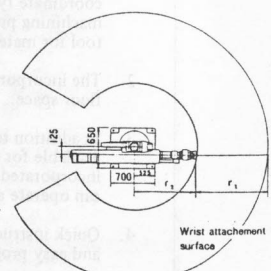
Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PT-800		Main applications		Handling, spot arc welding, automatic gas cutting, and sealing	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Articulated robot		Load capacity	
						5	
						25kg(Max.)	
Axes		Operating space		Speed		Axes	
Right-left traverse						Right-left swing	
Right-left turning		$(\theta) \pm 135^\circ$		60°/sec		Up-down swing	
Up-down turning		$(X) \pm 60^\circ$		60°/sec		$\pm 105^\circ$	
Up-down turning		$(Z) \begin{matrix} +135^\circ \\ -120^\circ \end{matrix}$		60°/sec		Hand	
In-out						Right-left traverse	
Revolution						Up-down traverse	
						Revolution	
						$\pm 150^\circ$	
						90°/sec	
						Finger	
						Clamp	
Travelling						Remarks	
Repeatability (Positioning precision)		$\pm 0.5\text{mm}$		Allowable environmental conditions		0 - 45°C	
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 8 levels	
	Miscellany	CP control/various interpolating functions			Memory mode	IC memory	
Power-External-Internal	AC200/220V 50/60Hz 45kVA (6.5kg/cm ² G, 100N/m)		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany	PTP teaching			
External measuring/Recognizing ability			Auxiliary functions, options etc.	Self-diagnostic function			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<ol style="list-style-type: none"> 1. This robot can carry a thing weighing up to 25kg, a large load capacity for a multipurpose industrial robot. It works at a high speed even when carrying a heavy assembly such as a spot gun with a built-in transformer. 2. Its special "dome-shaped" operating space covers such an area of work that cannot be performed by conventional robots. 3. Another advantage is that the robot can be easily incorporated into an existing production line as it requires only a small space for installation. 			
(side view)							

Name of company/ Department in charge		Dainichi Kiko Co., Ltd.		Address/ Telephone		Kosai Industrial Complex, Kosaimachi, Nakakoma-gun, Yamanashi 05528(2)5581	
Model Name		PT-1000		Main applications		Handling, spot arc welding, automatic gas cutting, assembly and sealing	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Articulated robot		Load capacity	
						1000kg	
						6	
						30kg(Max.)	
Axes		Operating space		Speed		Axes	
Operating space		Speed		Axes		Operating space	
Speed		Axes		Operating space		Speed	
Arm	Right-left traverse			Hand	Right-left swing		
	Right-left turning	(θ) $\pm 135^\circ$	60°/sec		Up-down swing	$\pm 105^\circ$	90°/sec
	Up-down turning	(X) $\pm 45^\circ$	60°/sec		Right-left traverse		
	Up-down turning	(Z) $\pm 45^\circ$	60°/sec		Up-down traverse		
	In-out				Revolution	$\pm 150^\circ$	90°/sec
	Revolution	$\pm 135^\circ$	90°/sec	Fin-ger	Clamp		
Travelling				Remarks			
Repeatability (Positioning precision)		$\pm 0.5\text{mm}$		Allowable environmental conditions		0 - 45°C	
Moving control function	Sequential mode	Microcomputer		Teaching functions	Sequential mode	Direct teaching with input through the teaching box	
	Positioning	Electric DC servo			Position and speed	- do -, speed can be set at any of 8 levels	
	Miscellany	CP control/various interpolating functions			Memory mode	IC memory	
Power-External -Internal	AC200/220V 50/60Hz 45kVA (6.5kg/cm ² G, 250N /m)		Memory capacity		1000 steps (Max.3000 steps)		
Internal measuring ability	Optical shaft encoder		Miscellany		PTP teaching		
External measuring/ Recognizing ability			Auxiliary functions, options etc.		Self-diagnostic function		

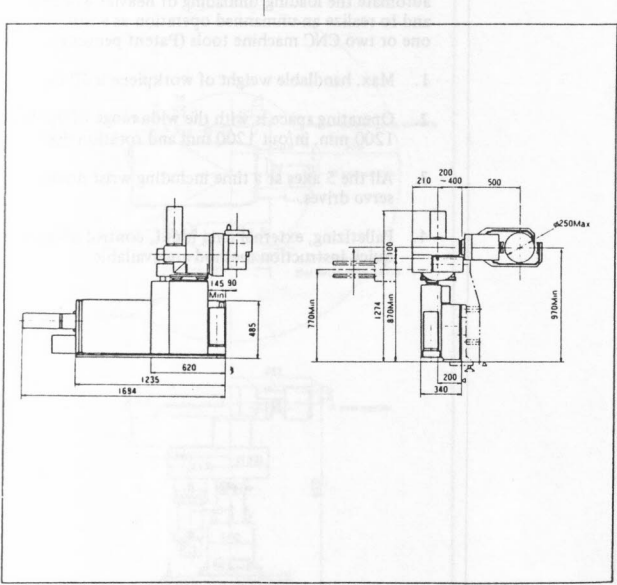
Outward figure	Operation space	Characteristics of the robot
<p>(plan)</p>  <p>(side view)</p> 		<ol style="list-style-type: none"> 1. Use of the "articulation coordinate" system for motion provides extensive operating spaces both in up-down and out-in directions, but the robot itself is compactly designed to minimize the required space for installation. 2. The pneumatic balancing function incorporated in X/Z-axis motions helps reduce the required power to operate the robot under applied load and the weight of the arm itself, while ensuring smooth operation by minimizing changes in load level that may occur from the arm's motion. 3. A high-performance DC servomotor is used to drive the robot on all axes. The robot is also compactly designed for easy maintenance with the motor, solenoid brakes, tacho-generator, and encoder put together into one unit. 4. With a positioning accuracy of $\pm 0.5\text{mm}$ and load capacity of 30kg, the robot can satisfactorily perform spot welding and other similar jobs. Particularly it is suitable for those jobs which require the robotized system to carry such heavy equipment as a welding gun with a built-in energy-saving transformer. 5. The wrist is also compactly designed with 3 degrees of freedom on α, β, and γ axes in addition to another 3 degrees of freedom on X, Z, and θ axes provided for the more essential part of the robot. These 6 degrees of freedom give the robot special capabilities to perform complex jobs or operate in an in-commodious place, an area of work that has been considered difficult to robotize in the past. 6. With the light, rigid arm and wrist, the robot works very quickly, achieving a maximum resultant speed of 2500mm/sec.

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111	
Model Name		FANUC ROBOT MODEL 00		Main applications		Unmanned machining	
						Weight of robot itself Arm 60 kg Workpiece feeder 100 kg	
Classification		a. Input information and teaching mode		Variable sequence robot		Degree of freedom of motion	
		b. Motion form		Cylindrical coordinate robot		Load capacity	
						3 (up to wrist)	
						Max. 20 kg at wrist	
Axes		Operating space		Speed		Axes	
Arm		Right-left traverse		150 mm (on-off)		500 mm/s	
		Right-left turning		(by workpiece feeder)		3s/pallet)	
		Up-down traverse		(by workpiece feeder 300 mm)		80 mm/s)	
		Up-down turning		60° (on-off)		90°/s	
		In-out					
		Revolution					
						Hand	
						Right-left swing	
						Up-down swing	
						Right-left traverse	
						Up-down traverse	
						Revolution	
						270° (4 positions)	
						90°/s	
						Finger	
						Clamp	
						Fanuc Hand D6/D7	
Travelling						Remarks	
Repeatability (Positioning precision)		±0.3 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 90% RH	
Moving control function		Sequential mode		Memory		Sequential mode	
		Positioning		Air cylinder, and DC motor		Variable	
		Miscellany		Palletizing function		Position and speed	
						Adjustable	
						Memory mode	
						C-MOS memory	
						Memory capacity	
						600 points	
Internal measuring ability		Limit switch, position sensor		Miscellany			
External measuring/Recognizing ability				Auxiliary functions, options etc.			
Outward figure		Operation space		Characteristics of the robot			
(plan)				<p>The FANUC ROBOT M-MODEL 00 is a machine tool built-in type robot specially developed for loading/unloading workpieces to/from a CNC lathe, and it features lower price, quick positioning and small outer dimensions (patent pending).</p> <ol style="list-style-type: none"> 1. The FANUC ROBOT M-MODEL 00 is a cylindrical coordinate type robot suitable for loading/unloading to/from a lathe. 2. The incorporated type robot on the lathe can save floor space. 3. Pneumatic control for the robot can realize lower price. 4. Application of the robot with a rotary workpiece feeder is available. 5. Motion path of the robot can be changed easily by mechanical adjustment incorporated in the robot. 			

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111	
Model Name		FANUC ROBOT M-MODEL 0		Main applications		Unmanned machining, handling	
		Weight of robot itself		Mechanical Unit 110 kg Control Unit 100 kg			
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Dual Cylindrical coordinate robot		Load capacity	
		Equivalent to 6 (up to wrist)		Max. 20 kg at wrist			
Axes		Operating space		Speed		Axes	
		Operating space		Speed		Operating space	
Arm		Right-left traverse		120 mm		Max. 500 mm/s	
		Right-left turning		120°		Max. 120°/s	
		Up-down traverse		150 mm		Max. 500 mm/s	
		Up-down turning		90°		Max. 120°/s	
		In-out					
		Revolution		180°		Max. 120°/s	
Hand		Right-left swing				Up-down swing	
Finger		Clamp		Various FANUC HANDs available		Revolution	
		-90°, 0, 90°, 180° (on-off)		Max. 90°/s			
Travelling						Remarks	
Repeatability (Positioning precision)		±0.5 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 90% RH	
Moving control function		Sequential mode		Memory		Sequential mode	
		Positioning		DC servo motors (Wrist and hand by air pressure)		Position and speed	
		Miscellany				Memory mode	
Power-External		AC 200 ~ 550 V, 3 φ, 2 kVA		Memory capacity		Max. 1320 points	
-Internal		Air supply 5 ~ 7 kg/cm ²		Miscellany			
Internal measuring ability		Pulse coder, limit switch, etc.		Auxiliary functions, options etc.		Bubble cassette (Max. 2700 points), Program control, quick instruction method, etc.	
External measuring/Recognizing ability							
Outward figure		Operation space		Characteristics of the robot			
(side view)				<p>The FANUC ROBOT M-MODEL 0 is an industrial robot to automate the loading/unloading of workpieces, etc. and to realize an unmanned operation as a machining cell to be attached to a CNC machine tool (patent pending).</p> <ol style="list-style-type: none"> 1. The FANUC ROBOT M-MODEL 0 is a dual cylindrical coordinate type robot suitable and specially developed for machining process, which save the idle time of a machine tool for material handling. 2. The incorporated type robot to a machine tool can save floor space. 3. In addition to the separated type robot control to be available for any already installed machine tool, the CNC incorporated type control (FANUC SYSTEM 6 series) can operate a machine tool as well as the robot. 4. Quick instruction method is available for realization of quick and easy programming. 			

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111																	
Model Name		FANUC ROBOTM-MODEL 1		Main applications		Unmanned machining Handling, etc.																	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion																	
		b. Motion form		Cylindrical coordinate robot		Load capacity																	
						Mechanical Unit 570 kg Control Unit 200 kg																	
						3 ~ 5 (up to wrist)																	
						Max. 47 kg at wrist																	
Axes		Operating space		Speed		Axes																	
Right-left traverse						Right-left swing																	
Right-left turning		300°		Max. 60°/s		Up-down swing																	
Up-down traverse		550 mm		Max. 500 mm/s		190°																	
Up-down turning						Max. 60°/s																	
In-out		500/800/1100 mm		Max. 1000 mm/s		Right-left traverse																	
Revolution						Up-down traverse																	
						Revolution																	
						300°																	
						Max. 90°/s																	
						Clamp																	
						Various FANUC HANDs available																	
Travelling						Remarks																	
Repeatability (Positioning precision)		±1 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 90% RH																	
Moving control function		Sequential mode		Memory		Sequential mode																	
		Positioning		DC servo motors, Hand by air pressure		Variable, teaching in any sequence																	
		Miscellany		Linear control, and Hand direction control (option)		Position and speed																	
						Variable																	
						Memory mode																	
						Bubble memory																	
						Memory capacity																	
						Max. 6000 points																	
Power-External -Internal		AC 200 ~ 550 V, 4 kVA, 3 φ Air supply 5 ~ 7 kg/cm ² for wrist B		Teaching functions																			
Internal measuring ability		Pulse coder, limit switch, etc.		Miscellany																			
External measuring/ Recognizing ability				Auxiliary functions, options etc.		Bubble cassette (Max. 2700 points), Palletizing C/D, Program control, Quick instruction method, Two machine control, etc.																	
Outward figure		Operation space		Characteristics of the robot																			
(side view)		(plan)		The FANUC ROBOT M-MODEL 1 is an industrial robot to automate the loading/unloading of workpieces etc. and to realize an unmanned operation as a machining cell to one or two CNC machine tools (patent pending).																			
				<ol style="list-style-type: none"> 1. Cylindrical coordinate type robot. 2. Operating space is with the range of up/down 550 mm, rotation 300° as well as in/out 500 mm, 800 mm or 1100 mm. 3. 5-axis-at-a-time control driven by DC servo motors. 4. Linear control is also available. 5. Palletizing, external data input, control of feeder and quick instruction method etc. are provided. 																			
		<table border="1"> <thead> <tr> <th>mm</th> <th>r₁</th> <th>r₂</th> <th>r₃</th> </tr> </thead> <tbody> <tr> <td>R500</td> <td>500</td> <td>547</td> <td>637</td> </tr> <tr> <td>R800</td> <td>800</td> <td>635</td> <td>849</td> </tr> <tr> <td>R1100</td> <td>1,100</td> <td>735</td> <td>1,049</td> </tr> </tbody> </table>		mm	r ₁	r ₂	r ₃	R500	500	547	637	R800	800	635	849	R1100	1,100	735	1,049				
mm	r ₁	r ₂	r ₃																				
R500	500	547	637																				
R800	800	635	849																				
R1100	1,100	735	1,049																				

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111	
Model Name		FANUC ROBOT M-MODEL 2		Main applications		Unmanned machining	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Cylindrical coordinate robot		Load capacity	
						Mechanical Unit 550 kg Control Unit 120 kg	
Axes		Operating space		Speed		Axes	
Right-left traverse		500 mm		Max. 500 mm/s		Right-left swing	
Right-left turning						Up-down swing	
Up-down traverse		300 mm		Max. 500 mm/s		Hand	
Up-down turning		180°		Max. 60°/s		Right-left traverse	
In-out						Up-down traverse	
Revolution						Revolution	
						300°	
						Max. 90°/s	
Travelling						Finger	
						Clamp	
						Various FANUC HANDs available	
Repeatability (Positioning precision)		±1 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 90% RH	
Moving control function		Sequential mode		Memory		Teaching functions	
		Positioning		DC servo motors, Hand by air pressure		Sequential mode	
		Miscellany				Position and speed	
Power-External		AC 200 ~ 550 V, 3 φ, 2 kVA				Variable	
-Internal		Air supply 5 ~ 7 kg/cm ²				Variable	
Internal measuring ability		Pulse coder, limit switch, etc.				Memory mode	
						C-MOS memory	
External measuring/Recognizing ability						Memory capacity	
						Max. 840 points	
						Miscellany	
						Auxiliary functions, options etc.	
						Bubble cassette (Max. 2700 points), Program control, Quick instruction method, etc.	

Outward figure		Operation space		Characteristics of the robot	
(side view)				<p>The FANUC ROBOT M-MODEL 2 is an industrial robot to automate the loading/unloading of workpieces etc. and to realize an unmanned operation as a machining cell to be attached to a CNC machine tool (patent pending).</p> <ol style="list-style-type: none"> 1. The FANUC ROBOT M-MODEL 2 is a cylindrical coordinate type robot suitable and specially developed for machining process, which save the idle time of a machine tool for material handling. 2. The incorporated type robot to a machine tool can save floor space and serve operator's area. 3. Max. handleable weight of workpiece is 40 kg (20 kg × 2) 4. Quick instruction method is available for realization of quick and easy programming. 	

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111	
Model Name		FANUC ROBOT M-MODEL 3		Main applications		Machining, Handling, Heavy material transfer	
				Weight of robot itself		Mechanical unit 1600 kg Control unit 250 kg	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Cylindrical coordinate robot		Load capacity	
						5 (up to wrist)	
						Max. 80 kg at wrist	
Axes		Operating space		Speed		Axes	
Right-left traverse						Right-left swing	
Right-left turning		300°		Max. 60°/s		Up-down swing	
Up-down traverse		1200 mm		Max. 500 mm/s		190°	
Up-down turning						Max. 80°/s	
In-out		1200 mm		Max. 1000 mm/s		Right-left traverse	
Revolution						Up-down traverse	
						Revolution	
						300°	
						Max. 80°/s	
						Clamp	
						Variable FANUC HANDs available	
Travelling						Remarks	
Repeatability (Positioning precision)		±1 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 90% RH	
Moving control function		Sequential mode		Memory		Sequential mode	
		Positioning		DC servo motor, Air pressure for HAND		Variable, teaching in any sequence	
		Miscellany		Linear control, and hand direction control (option)		Position and speed	
						Variable	
						Memory mode	
						Bubble memory	
						Memory capacity	
						Max. 6000 points	
Power-External -Internal		AC 200 ~ 550 V, 3 φ, 15 kVA Air supply 5 ~ 7 kg/cm ²		Miscellany		Bubble cassette (Max. 2700 points) Palletizing C/D, Program control, Quick instruction method, Two machine control	
Internal measuring ability		Pulse coder, limit switches		Auxiliary functions, options etc.			
External measuring/Recognizing ability							
Outward figure		Operation space		Characteristics of the robot			
(plan)				<p>The FANUC ROBOT M-MODEL 3 is an industrial robot to automate the loading/unloading of heavier workpieces, etc. and to realize an unmanned operation as a machining cell to one or two CNC machine tools (Patent pending).</p> <ol style="list-style-type: none"> 1. Max. handleable weight of workpiece is 50 kg. 2. Operating space is with the wide range of up/down 1200 mm, in/out 1200 mm and rotation 300° 3. All the 5 axes at a time including wrist driven by DC servo drives. 4. Palletizing, external data input, control of feeder, quick instruction method are available. 			
(side view)							

Name of company/ Department in charge		FANUC LTD.		Address/ Telephone		5-1, Asahigaoka 3-chome, Hino-shi, Tokyo 191, Japan Tel. (0425) 84-1111	
Model Name		FANUC ROBOT A-MODEL 00		Main applications		Assembly, washing, sealing, etc.	
				Weight of robot itself		Mechanical unit 150 kg Control unit 250 kg	
Classification		a. Input information and teaching mode		Playback robot		Degree of freedom of motion	
		b. Motion form		Cylindrical coordinate robot		Load capacity	
						4 (up to wrist)	
						Max. 10 kg at wrist	
Axes		Operating space		Speed			
Right-left traverse						Right-left swing	
Right-left turning		300°		Max. 120°/s		Up-down swing	
Up-down traverse		150 mm		Max. 100 mm/s		Right-left traverse	
Up-down turning						Up-down traverse	
In-out		300 mm		Max. 1200 mm/s		Revolution	
Revolution						300°	
						Max. 120°/s	
Travelling						Remarks	
Repeatability (Positioning precision)		±0.05 mm		Allowable environmental conditions		0 ~ 45°C, 20 ~ 40% RH	
Moving control function		Sequential mode		Memory		Sequential mode	
		Positioning		DC servo motor		Position and speed	
		Miscellany		Linear control, hand direction control, circular control, High-speed circular control, etc.		Memory mode	
						Bubble memory	
Power-External-Internal		AC200 ~ 550 V, 3 φ, 1kVA		Teaching functions		Memory capacity	
						Max. 6000 points	
Internal measuring ability		Pulse coder, limit switch, etc.		Miscellany		Bubble cassette (Max. 2700 points) Palletizing C/D, Program control, etc.	
External measuring/Recognizing ability				Auxiliary functions, options etc.			

Outward figure		Operation space		Characteristics of the robot	
(plan)		(plan)		<p>FANUC ROBOT A-MODEL 00 is a small robot for assembly, washing, sealing, etc.</p> <ol style="list-style-type: none"> 1. Max. load capacity at wrist is 10 kg. 2. The robot has the sufficient work space for assembly; up/down 150 mm, in/out 300 mm, and right-left turning 300°. 3. Accurate repeatability of ±0.05 mm. 4. 4-axis-at-a-time control is possible. 5. Linear control, hand direction control, circular control, etc. are possible. 	
(side view)					