



- NOTES:**
1. ALL DIMENSIONS SHOWN ARE REFERENCE ONLY.
 2. GENERAL INSTALLATION SEQUENCE:
 - A. LOCATE, LEVEL AND LAG ALL EQUIPMENT.
 - B. ASSEMBLE FENCE.
 - C. CONNECT CABLES.
 - D. LOCATE OPERATOR STATION FOR OPERATOR CONVENIENCE WITHIN MAXIMUM REACH OF MOTOMAN SUPPLIED CABLES.
 3. RESTRICT S-AXIS LIMITS OF THE ROBOTS AS SHOWN USING ROBOT BASE HARD STOPS.
 4. ALL DIMENSIONS ARE REFERENCE ONLY. DO NOT POUR CONCRETE OR MAKE OTHER PERMANENT PLANT MODIFICATIONS UNTIL AFTER THE ADVANCED LAYOUT IS APPROVED AND ALL EQUIPMENT HAS BEEN FULLY DEFINED.

CYCLE TIME ANALYSIS
 MOTOMAN HAS ESTIMATED CYCLE TIMES FOR EACH OF THE THREE ASSEMBLIES, WITH FOUR EACH OF THE FEET/LEG SUBASSEMBLIES: ACCESSORY BIN, 246 SECONDS SHORT RACK, 306 SECONDS AND LONG RACK, 340 SECONDS. ALL ESTIMATES ARE BASED ON 100% EFFICIENCY AND THE ASSUMPTION THAT THE OPERATOR(S) CAN UNLOAD AND LOAD PARTS WITHIN THE MACHINE CYCLE AND THAT WELDS CAN BE EVENLY BALANCED BETWEEN THE ROBOTS CONSTRUCTION PRODUCTS MUST VALIDATE THIS ASSUMPTION, WELD LOCATIONS, QUANTITY OF WELDS, AND DAILY THROUGHPUT REQUIREMENTS WERE BASED ON A MEETING BETWEEN MOTOMAN AND MR. BREITBACH.

IN SUMMARY, MOTOMAN ESTIMATES THAT THE DUAL-ROBOT SYSTEM WILL BE 109% UTILIZED WELDING THE RACK CORNER POST SUB-WELDEMENTS (CALCULATED AT 85% EFFICIENCY.)

- OPERATION SEQUENCE**
1. THE OPERATOR WILL LOAD TWO PRE-WELDED POST/FOOT ASSEMBLIES AND MANUALLY CLAMP THEM INTO PLACE.
 2. THE OPERATOR WILL LOAD THREE OR FIVE CROSS TUBES, DEPENDING ON THE PART BEING WELDED.
 3. THE OPERATOR WILL LOAD ONE SIDE MEMBER.
 4. THE OPERATOR WILL STEP CLEAR OF THE LIGHT CURTAIN SAFETY ZONE AND INITIATE CYCLE START TO CLAMP THE PARTS AND ROTATE THE POSITIONER 180°.
 5. THE OPERATOR WILL LOAD ONE SIDE MEMBER.
 6. THE OPERATOR WILL LOAD FOUR FEET AND FOUR LEGS INTO SUBASSEMBLY FIXTURES AT EACH END OF THE POSITIONER AND MANUALLY CLAMP THEM INTO PLACE.
 7. THE OPERATOR WILL STEP CLEAR OF THE LIGHT CURTAIN SAFETY ZONE AND INITIATE CYCLE START TO CLAMP THE PARTS.
 8. THE ROBOTS WILL WELD THE FRAMES, WITH POSITIONER MOTION AS NECESSARY, AND WELD THE FOUR FEET/LEG SUBASSEMBLIES.
 9. DURING THE WELD SEQUENCE, THE OPERATOR WILL REPEAT STEPS 1-9 AT THE OTHER STATION.
 10. WHEN THE WELD SEQUENCE IS COMPLETE, THE OPERATOR WILL UNLOAD THE COMPLETED PART.
 11. THE ROBOTS WILL WELD AT THE OPPOSITE STATION DURING THE UNLOAD/LOAD SEQUENCE.
 12. THE ABOVE STEPS WILL REPEAT TO CONTINUE PRODUCTION.

CUSTOM PAINT SCHEME:
 ALL NON-MOVING FABRICATED ITEMS EXCEPT THE FENCE ARE TO BE PAINTED "VISTA GREEN".
 SHERWIN WILLIAMS SPEC F63TXG15673-4311
 THESE ITEMS INCLUDE ROBOT RISERS, POSITIONERS, COMMON EQ BASE ASSY.

ALL MOVING PARTS ARE TO BE PAINTED MOTOMAN SAFETY YELLOW. THESE ITEMS INCLUDE DROP CENTER FIXTURE MOUNTING FRAME ASSY.

ROBOT PAINT SCHEME:
 VISTA GREEN: AXES S,L,U
 SAFETY YELLOW: AXES R,B,T (EXCEPT MOUNTING FACE OF T)
 REAR POWER MOUNTING PLATE OF ROBOT NOT TO BE PAINTED
CUSTOMER PARTS QUOTED FOR THIS CELL:
 ST-527-80 - SHORT RACK ASSY
 ST-527-81 - LONG RACK ASSY
 ST-527-88 - ACCESSORY BIN ASSY

PRELIMINARY SYSTEM LAYOUT
 THE PLANT FLOOR AND CUSTOMER EQUIPMENT DATA IN THIS LAYOUT DRAWING HAVE BEEN SPECIFIED BY THE CUSTOMER. THE INTEGRITY OF THE LAYOUT DEPENDS STRONGLY ON THE ACCURACY OF THIS INFORMATION. IT IS THE CUSTOMER'S RESPONSIBILITY TO REPORT ANY DISCREPANCIES TO THAT THE DRAWING MAY BE CORRECTED. IT IS ALSO THE CUSTOMER'S RESPONSIBILITY TO REPORT ANY ADDITIONAL PLANT OBSTRUCTIONS NOT INDICATED THAT COULD POSE AN OBSTACLE TO CELL FUNCTION. SIGNATURE APPROVAL INDICATES THAT THE CUSTOMER HAS DONE THIS AND THAT THE CUSTOMER APPROVES THE GENERAL EQUIPMENT, EQUIPMENT ARRANGEMENT, SEQUENCE OF OPERATIONS, AND ESTIMATED CYCLE TIME. WE ARE PROCEEDING WITH THE DESIGN OF THIS SYSTEM BASED ON THE MODELS THAT HAVE BEEN RECEIVED TO DATE. THE PRODUCT LIST IS REFERENCED ON THIS DRAWING.

SIGNATURE ACKNOWLEDGES AGREEMENT WITH SYSTEM APPROACH, CELL CONTENT, AND ALL NOTES PROVIDED TO ESTABLISH FINAL SYSTEM DEFINITION.

APPROVED BY: AS NOTED
 DATE: AS IS
APPROVAL BY 7/16/2008 IS NEEDED TO PREVENT A DELAY TO THIS SYSTEMS SCHEDULE

CHANGE RECORD				FILE NAME	DESIGNED	HOURL CODE
No	E.C.N.	DATE	APPROVAL	81896A300.dft	JC	610
1				MATERIAL	SHAWIN	
2				JC	JC	
3				FINISH	ORCROFT	
4						
5						
6						
7						
8						
9						
10						
11						
12						

MOTOMAN WEST CARROLLTON, OHIO 45449 USA
 a YASKAWA company

TITLE: PRELIMINARY LAYOUT
 CONSTRUCTION PRODUCTS

DATE: 7/16/2008
 SCALE: NA
 DWG NO: 81896A000
 SHEET 1 OF 1

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SECTION A-A