salvagnini
america

Salvagnini America, Inc.
27 Bicentennial Court
Hamilton, OH 45015 - USA

Tel. (513) 874-8284 - Fax (513) 874-2229

May 16, 1995

Mr. Rob Rider
VULCAN-HART COMPANY
3600 North Point Blvd.
Baltimore, MD 21222

SUBJECT: Salvagnini S4.30 Punching/Shearing System #3

QUOTATION: RB137/95 - Specifications only - Per the final agreement and configuration as outlined in the January 24, 1995 letter to Peter Dow from Eugenio Venturato. All pricing and terms can be found in the the aforementioned document.

Dear Rob:

Thank you for the opportunity to present the following specifications for a Salvagnini S4.30 Punching/Shearing System.

This system is designed to maximize your throughput efficiency of precision punched, sheared, sorted and stacked sheet metal components in low, medium and high volume requirements. The system can operate in a world class factory environment with its automated and efficient material handling, advanced controls, and interactive software for programming and production management.

SYSTEM DESCRIPTION

The Salvagnini S4.30 Punching/Shearing System consists of a storage/retrieval system for raw material, automated loading station, punching machine with an integral right angle shearing system, a dual bin sorting system (optional eight bin sorting station), an automated sorting and stacking station with adjacent roller cues, an exit conveyor, system software, integrated controls and peripheral items.

The raw material loading system consists of a complete Autostorage and Retrieval System (AS/RS). Upon program command the proper material is automatically placed in the loading position from the AS/RS's vertical storage tower. The AS/RS will also prestage the next sheet to be run and has an integrated inventory control system.

The sheet is automatically transferred from the pre-load roller surface table onto the S4's nylon brush worktable, precisely positioned against retractable references and then gripped by a series of thirteen (13) stationary workholders on the CNC sheet manipulator. The sheet is then processed producing single, multiple or dynamically nested parts (with the AUTONEST software) in one of two preprogrammed methods. One method is to punch all parts contained within the sheet and then shear, sort and stack the individual parts on the unloading station. (Precut blanks would simply be loaded, punched, offloaded and stacked, or offloaded and transferred downstream - if connected to a P4 Forming System).

An alternative processing method is to intermix the punching and shearing sequence so that parts can be sheared from the sheet after all of the required hits of an individual part are completed. This method may be advantageous for two reasons. First, when a sheet contains a large number of holes there is a high probability of induced stress during the punching process contributing to finished part distortion and potential inaccuracies. Since the Salvagnini Punch Head has multiple live stations, which eliminate the necessity to rotate a turret, we can sequentially punch and shear individual parts without sacrificing productivity. The second reason the punch/shear alternative is desirable, is to more evenly balance the system when the S4 is producing multiples of the same part to be transferred to a P4 Forming System.

Once the parts are punched and sheared, they are automatically conveyed to a standard unloading station which precisely sorts and stacks the workpieces, or they may be transferred directly to the loading station of a P4 Forming cell - if connected inline.

A series of motorized roller surfaces and adjacent roller cues are applied to four scissors tables beneath the sorting and stacking module. During the nesting process, stacks of parts will be accumulated directly on the roller surfaces. Upon completion of the stacking process for a particular part, the roller surface will actuate to move the pack to the adjacent roller cue. The roller cue will hold the pack. It can also pass the pack to a trolley or another transfer device for downstream processing.

Additionally, an eight bin system is incorporated before the sorting and stacking module to collect small parts and an exit conveyor is incorporated after the sorting and stacking module to collect parts that are not designated to be sorted or stacked.

Part changeover from one part to a different part occurs under computer control with most operations totally automatic. Typical production changeover time is less than five minutes including tooling changes on the S4.

An internal production control system automatically manages the raw material handling and loading, punching, shearing, transferring, sorting and stacking of all jobs being run. The result is a very efficient and automated production process to take raw material and turn it into finished punched and sheared parts - in a fraction of the time that conventional process would require.

Also included within the System is an on-line computer for production programming, editing, machine control and self diagnostics. Safety fences and optical barriers are provided for general security and a system chiller is provided to keep the hydraulic oil and the inside of the control cabinets at a consistent operating temperature.

Additional material handling and forming equipment can be offered based on your eventual requirements. Please consult Salvagnini for specific details.

TECHNICAL SPECIFICATIONS S4.30 SYSTEM

The Salvagnini S4 System specified herein is a Flexible Fabrication System for the punching, shearing, sorting and stacking of precision sheet metal parts. This System will be comprised of the following components:

MD3015.12	**Automatic Storage/Retrieval System w/12 levels**
S4.30.DF.RF	**Punching/Shearing System**
H6	**48 Station Punch Head**
CC	**Integral Right Angle Shear**
EI05	**Embossing Station**
BU30 & BU31	**Embossing Stations**
PU32 & PU33	**Punching Stations**
P2R34/35	**Dual Auto-Index Stations**
SSA	**Scrap Conveyor to the rear of the machine**
SC115.COF3015	**Dual Bin Sorting System and Part Transfer**
IMS4015.RIU	**Transfer/Sorting/Stacking System**
(4) T15095.PRC1408D.CF/CM	**Scissors Tables with Interlocks and Roller Surfaces**
(4) RL1708.BB	**Adjacent Roller Surface Cues**
SSR3	**Exit Conveyor and Part Collector**
TAE101	**System Chiller**
Safety	**Safety Fences and Light Curtain Devices**
Software	**CAMS4, AUTONEST, SIMULS4 and HISTORY for the SysCon System**

SysCon Control System:

The system control is contained within a hermetically sealed power cabinet provided with an automatic device for the ventilation and air conditioning of the cabinet. This is accomplished via an integral cooling system and system chiller.

The system control is a high performance control system distributed on (3) levels:

* Elaboration unit for managing and supervising the machine (including machine diagnostics, operator interface and local data elaboration). The unit is composed of a DIGITAL DEC 3000/300LX workstation equipped with the following:

  ALPHA AXP 64 bit processor with RISC architecture;
  125 MHz clock;
  512 Mbyte disk;
  32 Mbyte RAM;
  16" color monitor with 2D graphics accelerator and 1024/1280 pixel resolution;
  (1) EIA 232 serial port;
  Thin and twisted wire ETHERNET interface that can also be used for company integration;
  OSF/1 operating system (UNIX according to the new standard);
  Window's type user interface based on the OSF/Motif standard;

This unit communicates with the following level through ETHERNET.

* Real time control unit based on the MOTOROLA 68030 processor and real time pSOS+ operating system completely dedicated to carrying out the automation logic of the machine. This unit communicates with the following level through a high-performance proprietary bus.

* Interface section towards peripheral devices (hydraulic motors, solenoid valves, sensors, etc.) that includes advanced functionality of axis control.

Also included within the SysCon control are the following features:

* Graphic diagnostic on the monitor (in real time) with simple functionality - allowing for quick solutions of any malfunction during the production cycle.

* Machine monitoring with machine diary and production diary. The machine diary records the movements of the machine devices subject to wear - such as the manipulator, the hydraulic presses, the shear blades, etc. The production diary records for each work day, the code and quantity of the parts produced. The data will be stored on the local hard drive and can be transferred to other computer systems by using an optional software package.

* Programming with a high level language (geometrical and synthetical) directly on the ALPHA workstation. The typical programming functions do not require the stopping of the current work cycle and can be carried out from remote terminals connected in ETHERNET. The post-processor (SDE) is included. It analyses the syntax and the geometry of the programming macroinstructions; automatically sets the proper repositioning; optimizes the manipulator path and it estimates the cycle time.

MD3015.12 AUTOMATIC STORAGE/RETRIEVAL SYSTEM

The MD3015.12 is an automatic store for packs of sheet metal. It is constructed as a vertical tower with (12) levels - 1 for loading and 11 for material packs. The system can feed a single sheet to the S4 upon command from the system control as well as manage the inventory of raw material in a compact and isolated area.

The system loads all shelves from the a single load shelf (the bottom level in the tower). The operator places a skid of material on this shelf then instructs the control as to material type and thickness. The system then automatically transfers the material (sheet by sheet) to the appropriate storage level (during the active working cycle of the S4 and in masked time). This transfer/storage process automatically updates an inventory file in the control. The result is that the system knows at all times, what and how much material is in the tower and at what location.

Each sheet is lifted from above via a series of suction cups on a transfer arm. The transfer arm travels vertically down the tower, to the load position. It then actuates and moves horizontally into the load shelf. The suction cups actuate and lift the top sheet off the pack. The transfer arm then moves out of the load shelf and rises vertically to the appropriate storage shelf. The transfer arm then moves into the storage shelf and place the sheet on the shelf surface or existing pack of material.

As a result, both ferrous and non ferrous materials can be stored. All material is lifted from above thereby eliminated any scratching or marring of delicate finishes (stainless or prepaint). No pallets are required in the storage levels of the tower - allowing for more material to be stored.

The MD3015.12 storage system has the following characteristics:

Maximum Sheet Dimensions that can be stored	120" x 60"
Minimum Sheet Dimensions that can be transferred	40" x 40"
(Note: All intermediate sizes can be stored and transferred. Sheets smaller then the above minimum or wider than the above maximum can be loaded into the S4 by the operator.)	
Maximum Pack Height per level	5"
Maximum Pack Weight per level	6600 lbs.
Maximum Weight of a single sheet	300 lbs.
Transfer time to load a sheet from the highest level	41 sec.
Transfer time to load a sheet from the lowest level	26 sec.
(Note: This process is done in masked time during the active S4 cycle. The next sheet (to be processed) is prepositioned at the edge of the S4's work table. The actual time to automatically load and reference a prepositioned sheet into the manipulator clamps of the S4 is 5 seconds.	

Additional equipment included with the MD3015.12 system:

* A motorized roller surface with a centering and stop device to preposition the sheet adjacent to the feeding pincher of the S4;
* Double Sheet detection is incorporated;
* Integrated control system with the S4, inventory control of individual levels, device for counting sheet picked up from each level;
* Safety devices;

S4.30-H6 PUNCHING/SHEARING MACHINE

Sheet Capacity:

Length	Max.	120.00	inches	(3048 mm)
	*Min.	14.57	inches	(370 mm)
Width	Max.	71.00	inches	(1803 mm)
	*Min.	11.80	inches	(300 mm)
Diagonal	Max.	116.60	inches	(2963 mm)

* Please note: These numbers represent the minimum size for incoming blanks. Parts which are smaller than this can be run as a multiple or nest. Realistically, there is no minimum part size.

Sheet thickness:

CRS	Max.	0.138	inches	(3.5 mm)
	Min.	0.020	inches	(0.5 mm)
Aluminum	Max.	0.197	inches	(5.0 mm)
	Min.	0.020	inches	(0.5 mm)

Tool Stations: The H6 tool head is composed of 48 standard and 6 auxiliary - independently actuated stations:

- Eight (8) 30 Ton Punching Stations -
  (8) 3.54" x 2.76" capacity (90mm x 70mm)
  (or (4) 3.54" x 3.54" and (4) 3.54" x 2.76" capacity)

- Forty (40) 1.30" diameter capacity (33mm) 8 Ton Punching Stations including one (1) EI Embossing Station in position 5 of the H6 Head.

- P2R Dual Auto/Index Unit with (2) 2.35" diameter capacity, 12 Ton Punching Stations.

- (2) BU Embossing Stations with 2.35" diameter capacity, 8 Ton down & 7 Ton up.

- (2) PU Punching Stations with 2.35" diameter capacity, 12 Ton.

Additional Features:

CNC setting of the sheet positioning references.
CNC setting of the positioning pusher.
CNC setting of the conveyors.
Automatic manipulator repositioning during punching and shearing cycle.
Automatic/Programmable sheet rotations in 90 degree increments.
Fiber Brush worktable fully supports the sheet during the production process, prevents marring, and significantly reduces ambient noise.
On-line machine diagnostics.

Numerical Control:

The control system designed specifically for this application is a multiprocessor peripheral system used for:

-Power interfacing to electrical and electromechanical devices
-Axis control and sensor input/output

CC RIGHT ANGLE SHEAR

Two (2) independent shear blades of 15.75 inches length are located at a 90 degree orientation in the S4 Punching machine, adjacent to the punching head. Automatic setting of the shear stroke and blade clearance is done during the part setup based on material thickness. Maximum material thickness is .137 inches for the S4. Each blade has an unlimited cutting length capacity in either axis. For the last cut, the independent blades cycle simultaneously at the 90 degree corner to provide a perfectly square corner on the desired part.

EMBOSSING UNITS - EI SERIES

One (1) lower cylinder is applied to die stations within the standard punching head (position 5) for upward embossing. As a result, embossing or other tools producing upward geometry will have a die height that is flush with the standard punching dies. The die surface will not interfere with the manipulation of material through the punching area.

At the proper time in the production cycle, the lower cylinder of the EI station will be actuated to produced the required geometry.

P2R DUAL AUTO/INDEX STATION

Rotating double punching units composed of two single-action hydraulic presses, in each unit, with a force of 12 tons, each one able to receive a tool with a figure which can be inscribed in a 2.35" (60 mm) diameter circle. The two punches and the two dies rotate simultaneously, controlled by a single NC device and can assume a large number of angular positions at 2'42" intervals. They are supplied with two adapters so that tools used in the (40) 8 ton positions, with a figure contained in a 1.30" (33 mm) diameter circle, can be used. The rotating double punch unit will be installed on the front of the operating head in positions 34 & 35 providing for a total of two (2) auto index punching stations.

EMBOSSING STATIONS - BU SERIES

Embossing configurations within a 2.35" (60mm) circular dimension can be produced by this double action embossing press located on the front of the S4 Punching Head. This unit will have a maximum double acting force of 8 ton downward and 7 ton upward. Maximum stroke of the cylinder is .630". The units will be applied to positions 30 & 31 of the H6 Head.

PUNCHING STATIONS - PU SERIES

These 12 ton, 2.36" diameter capacity (60mm) stations are applied to the front of the S4 head in positions 32 & 33.

Note: A total of six auxiliary stations (PU, BU or P2R stations) can be placed on the front of the H6 head.

SSA SCRAP CONVEYOR

The SSA is used to automatically remove scrap from the S4 punching stations and shearing area. The conveyor is located under the S4 table surface and exits the S4 to the rear. Small parts to be sheared and collected will be dropped below the shear blades, automatically deflected across the scrap conveyor and into a single collection bin.

SC115.COF3015 DUAL BIN SORTING SYSTEMand PART TRANSFER

This module is located adjacent to the S4's exit table. It allows for punched and sheared parts to be collected or transferred to an adjacent sorting and stacking device (or downstream to an inline P4) via an overhead conveyor belt.

The SC115 is composed of two 31" x 23" bins located in line and adjacent to the S4 - below the overhead conveyor belt. Sheared parts will be automatically collected in either of the two bins or they will be transfer straight through the module. The front bin can collect parts via a conveyor under the S4 worksurface and shear chute.

The system computer will advise the operator when the collection of a particular part is complete so that he may unload the bin. An additional COF3015 conveyor has been added to the SC115 module to allow for the space requirement of a future SC815 (8) bin sorting system.

SC815 (8) BIN CAROUSEL SORTING SYSTEM (*optional*)

The SC815 is an automated carousel with (8) bins that can sort and collect punched and sheared parts from the S4.

The SC815 is composed of two transfers in series at the same level as the S4 exit conveyor. They can transfer sheets from left to right. The transfers are hinged on the right and are raised independently of each other, via pneumatic cylinders, allowing parts to drop into a preselected bin.

Below the transfers, there is a carousel with eight collections bins (bins supplied by the customer). The carousel can rotate in both clockwise and counterclockwise directions to position the proper bin underneath one of six unloading positions with the minimum rotation.

In addition to the two transfers at the S4 table level, punched and sheared parts can be collected via a belt conveyor below the shear area. The belt conveyor will transfer the sheared part to a preselected bin on the SC815 that has been automatically rotated into a position adjacent to the S4 exit table.

Parts that are not collect will be transferred through the SC815 and passed to an adjacent stacking unit.

The SC815 can accommodate bins with a maximum dimension of 19.5" x 31.5". Parts can be collected with a maximum size not to exceed 13.75" x 25.5".

IMS4015.RIU UNIVERSAL STACKER/TRANSFER

The unloading station is placed at the right hand side of the SC815. It is provided with three magnetic transfers: the central one is in a fixed position, while the two side ones are numerically controlled and automatically assume the most suitable position with regards to the width of the part to be stacked and/or transferred.

The IMS4015 is able to transfer to an adjacent machine, or to sort and stack, punched and sheared parts made of magnetic and non-magnetic sheet metal. The stacking area dimensions are 157" x 60". The minimum stackable part size is 5.9" x 2.0".

A series of rollers, installed on two numerically controlled rails (.RIU) are placed beneath the two outside transfers of the unloader. These rails are automatically activated during the transfer and stacking cycle, if the parts are made of non-magnetic material and have a minimum dimension of 9.5" x 5.9".

Multiple stacks of parts (which are 2.4" apart from each other and with a stacking precision of +/- 0.75") can be created along the transfer length of 157". It is possible to program the exact position of each stack, along the stacking length, selecting among the available positions or the computer will select an appropriate location during the production elaboration.

(4) T15095A.PRC1408D.CF/CM SCISSORS TABLES

Located below the IMS4015 sorting/stacking module are four motorized roller surfaces with dimensions of 55" x 32" (1400 x 800mm), arranged perpendicular to the transfer direction of the sheet, assembled on scissors tables with dimensions of 60" x 35" (1500 x 900mm) and with a vertical stroke of 21.5" (550mm). The units are able to motorize the roller surfaces adjacent to the short side in order to carry out the transfer of a pack of metal sheets or a pallet.

Minimum dimensions of the pack of sheets to be moved: 4" x 10" (100 x 250mm)
Maximum dimensions of the pack of sheets to be moved: 60" x 35" (1500 x 900mm)

These tables can automatically interlock together according to the dimensions of the panel that has to be stacked.

(4) RL1708.BB ADJACENT ROLLER SURFACE CUES

Four surfaces with rollers that can be motorized from both sides, fixed to the floor, and each with dimensions of 67" x 32" (1700 x 800mm). They are able to transfer a pallet or a pack of metal sheets from a roller-surface on an adjacent table to another roller surface or roller surface/trolley on its opposite side.

SSR3 EXIT CONVEYOR and PART COLLECTOR

This unit is placed at the end of the IMS4015 stacking module to allow for parts that do not require stacking to be offloaded and held for operator retrieval. The unit consists of a ball bearing table surface that is at the same height as the transfer conveyor of the IMS4015.

TAE101 SYSTEM CHILLER

Industrial rated water cooling system with the capacity to cool the water requirement of an S4 System configuration.

EQUIPMENT PAINT COLOR

The basic color of the fixed parts is DARK GREY. The basic color of movable parts is LIGHT GREY or WHITE.

SOFTWARE (already supplied on the existing System and office computer)

CAMS4

The CAMS4 is a software package, for the S4, that automatically converts a CAD program of the desired flat pattern, saved in the .DXF file format, into the Salvagnini S4 Programming language. This powerful conversion package is designed to work as a stand alone S4 program or within the Salvagnini AUTONEST software package. Included with the CAMS4 software is PRO-TOOL allowing for the management of the punch head tooling and layout.

AUTONEST

AUTONEST is a software package which consists of nesting software allowing the user to run dynamically on a just-in-time basis. The user inputs a list of part numbers and quantity of pieces to meet his production needs. The nesting software then orients the parts onto a starting sheet minimizing the volume of scrap. The user has the ability to define the starting sheet size or allow the software to define the dimensions of the optimal starting sheet.

The AUTONEST software writes the complete punching and shearing program to produce only the required production parts, whether on a daily, monthly, or as needed basis. This program can then be transferred to the S4 punching machine via ETHERNET or floppy disk.

SIMULS4

SIMULS4 is a software package which is able to show a part programmed in the S4 language, displaying the position and the shape of the punches, notches, embosses and cuts. Furthermore, it allows the precise survey of the coordinates of each geometric feature for an easy and swift comparison with the original drawing.

It is possible to quickly visualize a distance between any two points of the part to verify the dimension to the original drawing without the need for calculations. It is also possible to visualize, by enlarging them, some areas of the part for easier checking of the shape of the single punch geometry, the relative coordinates and dimensions.

SIMULS4 can simulate the punching and shearing sequence for a part, as well as, displaying the holes punched and the cuts made by the shear. The program also displays the devices which pick up, reposition and rotate the sheet (manipulator pinchers and rotator clamp) in the order in which they activate during the machine cycle.

This software is useful for anticipating possible problems due to repositioning hold-down devices interfering with embossments on the sheet, or the sheet being lost because the rotator is positioned in an open area of the sheet. It is also useful for verifying the correct nibbling sequence to avoid stray scrap inside the S4 punching head.

Signed Russell K Branton Date 5/16/95

Russell K. Branton
Northeast Regional Manager

cc: E. Venturato, Salvagnini America, Inc.

6

salvagnini

Salvagnini America, Inc.
27 Bicentennial Court
Hamilton, OH 45015 USA
Tel. (513)874-8284 • Telefax (513)874-2229

January 24, 1995

Mr. Peter A. Dow
Vulcan-Hart Company
Foodservice Equipment Group
711 Pennsylvania Ave.
Troy, Ohio 45374

Dear Pete:

Following our meeting in Baltimore on January 20, 1995, we confirm the details of our final proposal for the S4 Punching and Shearing Systems #2 and #3.

The proposal is structured according to the following list of contents:

salvagnini america, inc.

S4 SYSTEM #2 CONFIGURATION AND PRICES (ACCORDING TO QUOTE RB 126/94)

MD3015.6	
S4.30.DF.RF	
H2	
CC	
EI05	
BU31	
BU32	
PU33	
PU34	
P2R36	
S6A	
SC115R	
COF3015	
IMS4015.RIU	
(4)TL21095.CM.CF	
SSR3	
TAE101	
SAFETY GUARD	
CAMS4	
AUTONEST	
S1MULS4	
HISTORY	
SUB TOTAL A	$880,000.00
Additional Shelves for MD3015	
(2) M3	$4,200.00
SUB TOTAL B	**$884,200.00**
Differential for Addditional Roller	$47,120.00
Differential for SC815 (8 bins carousel) instead of SC115	$65,600.00
TOTAL SYSTEM PRICE	**$996,920.00**

salvagnini america, inc.

S4 SYSTEM #2 FINAL CONFIGURATION

MD3015.6
(2) M3
S4.30.DF.RF
H2
CC
EI05
BU31
BU32
PU33
PU34
P2R36
SSA
SC815
1MS4015.RIU
(4) T15095A.PRC1408D.CF/CM
(4) RL1708.BB
SSR3
TAE101
SAFETY GUARD
CAMS4
AUTONEST
SIMULS4
HISTORY

TOTAL SYSTEM PRICE **$996,920.00**

salvagnini america, inc.

S4 SYSTEM #3 CONFIGURATION AND PRICES

MD3015.6
(2) M3
S4.30.DF.RF
  H3/H6
  CC
  EI05
  BU31
  BU32
  PU33
  PU34
  P2R36
  SSA
SC11SR
COF3015
IMS4015.RIU
  (4) T15095A.PRC1408D.CF/CM
  (4) RL1708.BB
SSR3
TAE101
SAFETY GUARD
CAMS4
AUTONEST
SIMULS4
HISTORY

TOTAL SYSTEM #2 PRICE **$1,064,870.00**

salvagnini america, inc.

QUOTATION FOR SYSCON CONTROL UPGRADE ON S4 SYSTEM #1

- Supply a new Power Cabinet	$43,000.00
- Credit for old Power Cabinet	($8,000.00)
HARDWARE TOTAL	**$35,000.00**
SOFTWARE REVISION/INSTALLATION:	
1 person for 8 days at parent company - Labor	$6,500.00
1 person for 1 week at Vulcan Hart - Labor	$8,500.00
1 person round trip Europe/USA	$1,500.00
1 person meals, lodging ($105/day)	$840.00
SOFTWARE TOTAL	**$17,340.00**
- Packaging/Shipping of new cabinet	$2,300.00
- Packaging/Shipping of old cabinet back to Italy	$2,300.00
- Customs (4.5%)	$1,950.00
CUSTOMS/FREIGHT TOTAL	**$6,550.00**
- INSTALLATION:	
Disconnect old cabinet, Rewire majority of connections to the machine, Replace connectors, Install new cabinet, Test and start up	
2 Technicians for about 2 weeks - Labor total 192 Hours ($50.00/hour)	$9,600.00
2 Technicians for about 2 weeks - Lodging/Meals ($105.00/day)	$2,940.00
2 Technicians round trip Europe/USA	$3,000.00
1 Rental car for 3 people ($45.00/day)	$630.00
INSTALLATION TOTAL	**$16,170.00**
GRAND TOTAL	**$75,060.00**

salvagnini america, inc.

PROPOSAL FOR PURCHASE ORDER OF S4 SYSTEM #2 ONLY

	1994 LIST PRICE	1995 LIST PRICE	NET TO VULCAN-HART
System	$884,200.00	$979,540.00	$840,000.00
Differential for Rollers	$47,120.00	$50,560.00	$40,200.00
Differential for 8 bins Carousel	$65,600.00	$70,700.00	$62,320.00
SUBTOTAL	$996,920.00	$1,100,800.00	**$942,520.00**
Spares	$15,000.00	$15,000.00	Consignment
History Software for S4 + P4 System #1	$13,200.00	$13,200.00	N/C
TOTAL	$1,025,120.00	$1,129,000.00	**$942,520.00**

salvagnini america, inc.

PROPOSAL FOR COMMITMENT ON S4 SYSTEM #2 AND S4 SYSTEM #3

	1994 LIST PRICE	1995 LIST PRICE	NET TO VULCAN-HART
S4 System #2	$1,025,120.00	$1,129,000.00	$942,520.00
Additional 3% discount			($28,275.00)
S4 System #2 Revised Total			**$914,245.00**
S4 System #3		$1,064,870.00	**$958,383.00**
S4 #1 Syscon Upgrade		$75,060.00	* **$16,170.00**

* **Salvagnini charges only the installation costs**

TOTAL **$1,888,798.00**

salvagnini america, inc.

SPECIFICATIONS OF SUPPLY

Machine color
The colors of our systems are:
- light Gray RAL 7004 for the structure, the covering around the operating head, the mobile parts of the machine and the power cabinets;
- bluish dark gray for the work-surfaces covering, the safety guards and the feeding and unloading connections;
- yellow zinc plating for the safety guards.

Voltage
460 Volts - 60 Hz.

Safety guards
The system is equipped with safety guards according to current norms, and are composed of the following:
- wire netting 75 inches (1.90 metres) high, or more, depending on the distance from the parts in movement of the system;
- closing devices provided with fool-proof position switches assembled on the access doors and gates on the fences;
- optical barriers at several levels, assembled in correspondence to mobile scissor tables, mobile trolleys and to feeders and unloaders;
- electrical circuits and relative functioning cycles controlled by the computer.

Technical documentation
The system will be supplied with the necessary technical documentation and manuals to correctly program, carry out production and to provide to the system maintenance. This documentation is available in five languages: English, Italian, Spanish, French and German.

CONDITIONS OF SUPPLY

Systems
- Configuration of S4 System #2 is intended to be final.
- Configuration of S4 System #3 has to be confirmed by June 30,1995.

Terms of Payment
20% with Purchase Order
50% exit works Sarego (Italy)
15% upon delivery, Baltimore
15% upon acceptance, Baltimore

- Letter of Intent plus $20,000 non refundable deposit to be released by January 27, 1995, to secure delivery of both Systems #2 and #3.
- Purchase Order for System #2 plus 20% down payment issued no later than March 15, 1995.
- After receiving the Purchase Order for System #2 the $20,000.00 deposit will be retained to secure delivery on System #3 until final Purchase Order and down payment for the same system will be received by Salvagnini America.
- Purchase order plus balance of 20% down payment for System #3 to be released no later than June 30, 1995.

salvagnini america, inc.

Delivery
- S4 System #2 is reserved for test run in Sarego (Italy) at middle of June 1995.
- S4 System #3 is reserved for test run in Sarego (Italy) at middle of November 1995.

Tests
At the test carried out in our works your representative will sign a test report stating that the equipment is as specified. This signature will function as acceptance of the equipment, for invoicing and for the respective payment.

The test will consist of producing a maximum of three different parts from your range.

Transportation
Salvagnini America takes care of transportation from the port of entry to your facility at the above mentioned address. The cost is included on the system price.

Packing
If a specific packing is requested this will be invoiced at cost price.
Our standard preparation for transport by truck is included in the price.

Training
The programming course will last two days.

The course for maintenance and use of the machine will be held at your works by one of our technicians in charge of the installation of the machine, after the starting up of the system.

The maintenance course will last three days.

All of the above are included in the price

Installation/On-site instructions
During the installation and start-up you will put at our disposal, even over week-ends, and free of charge:
- auxiliary manpower
- suitable lifting facilities
- normal work tools
- electricity, compressed air and water
- telephone, telex and telefax lines

as necessary for carrying out the work in the best possible manner.

Exclusions
The price quoted here does not include:
- oil for the first filling up of the hydraulic system
- connection to your electric and compressed air supply systems (and the cooling water circuit if necessary)
- pipe for the connection between the machine and the self-contained cooling unit, if present
- foundations or any other site modifications
- special machining and modifications to the machine; in the case that during the feasibility study of the panels these modifications come out as necessary, they will be quoted separately
- any other additional goods, work or services not explicitly mentioned in

salvagnini america, inc.

the description of the goods to be supplied
- unloading and rigging of the system from the truck to its final position on the shop-floor.

We trust that the above is according to our discussion and we thank you very much for the kind cooperation in this business opportunity that you are offering to our company.

Please do not hesitate to contact us for any clarification you may require.

Sincerely,

Eugenio Venturato
President

cc: Henry Coletti, Vulcan Hart
Russ Branton, Salvagnini America

EV/mg