amhoist AMERICAN HOIST & DERRICK COMPANY ST PAUL, MINNESOTA

HARRIS PRESS AND SHEAR, INC.
63 South Robert Street
St. Paul, Minnesota 55107

PROPOSAL SPECIFICATION: 850422

AUTOMATIC BALER-SHEAR MODEL: ABS-800A

GENERAL LAYOUT DRAWING: 3A-8650

APPLICATION: Steel mill scrap, shapes, pipe and plate--No. 2 heavy melting scrap--No. 1 heavy melting scrap--selected sections of freight car and ship scrap less than 34" wide.

A	CAPACITY AND RATING:	
A1	HOPPER LOADING AREA:	75" wide x 230" long
A2	SHEAR BOX DIMENSIONS:	
A2.1	OPEN FOR CHARGING:	62" wide x 42" deep x 240" long
A2.2	CLOSED FOR SHEARING:	34" wide x 24" deep x 240" long
A3	SHEAR THROAT:	36" wide x 24" high
A4	SHEARING FORCE:	803 tons
A5	CLAMP FORCE:	201 tons
A6	SHEARING CAPACITY: (MILD STEEL MATERIAL)	6" 5" 3" x 34"
A7	PRODUCTION RATE:	10 - 18 tons/hr.
A8	CUTS PER MINUTE:	3-1/2 - 4 - rated plate. 5 - avg. cut, 2" plate or equiv. 9 - crosshead only, full stroke.
B	COMPONENTS:	
B1	ELECTRIC MOTORS:	
B1.1	MAIN SYSTEM:	Two (2) 100 HP, 1750 RPM, 230/460 volt, 3 phase, 60 Hz., protected enclosure.
B1.2	PILOT SYSTEM:	One (1) 10 HP, 1750 RPM, 230/460 volt, 3 phase, 60 Hz., protected enclosure.
B1.3	FILTER SYSTEM:	One (1) 3 HP, 3500 RPM, 230/460 volt, 3 phase, 60 Hz., protected enclosure.

Scanned with CamScanner

B1 ELECTRIC MOTORS: (Continued)

B1.4 COOLING SYSTEM: One (1) 7-1/2 HP, 3500 RPM, 230/460 volt, 3 phase, 60 Hz., protected enclosure.

B2 ELECTRIC CONTROL SYSTEM:

B2.1 One (1) NEMA XII control panel to include across-the-line motor starters for 440 to 600 volt power with overload protection, circuit breaker, control circuit transformer and cycle control system wired to terminal strips.

B2.2 One (1) operator's station enclosure to include oil tight control switches and signal lights, wired to terminal strips.

B3 HYDRAULIC SYSTEM:

B3.1 MAIN PUMPS: Four (4) 50 GPM @ 3550 p.s.i.
Two (2) 100 GPM @ 1000 p.s.i.
Two (2) 100 GPM @ 1800 p.s.i.

B3.2 PILOT PUMP: One (1) 12 GPM @ 900 p.s.i.

B3.3 FILTER PUMP: One (1) 60 GPM @ 20 p.s.i.

B3.4 COOLING PUMP: One (1) 120 GPM @ 50 p.s.i.

B3.5 VALVES: Harris or equal

B3.5.1 Individual relief valves protect each pump from overload pressure.

B3.5.2 Directional valves are electrically controlled and hydraulically operated.

B3.6 CYLINDERS: Harris double acting all places; Teflon protected pistons in honed bores; rods flame hardened, ground and polished; standardized rod wipers, rod packing and "O" ring gaskets.

B3.6.1 SHEAR CYLINDER: One (1) 24" bore, 803 tons

B3.6.2 CLAMP CYLINDER: One (1) 12" bore, 201 tons

B3.6.3 FEED CYLINDER: One (1) 6" bore, 50 tons

B3.6.4 BOX CYLINDER: Three (3) 6" bore, 150 tons

B3.6.5 ARM CYLINDER: Two (2) 6" bore, 100 tons

B3.6.6 HOPPER CYLINDER: One (1) 6" bore, 50 tons

Scanned with CamScanner

B4 FILTERING AND COOLING SYSTEM:

B4.1 Filtering is by combination of screens, tank magnets, and replaceable cartridge type micronic filters.

B4.2 Circulation through filter and heat exchangers provides maximum efficiency.

B4.3 Oil to air heat exchangers are standard.

B5 LUBRICATING SYSTEM:

B5.1 Automatic force feed lubricant to crosshead and clamp ways.

C OPERATION:

C1 Scrap for each charge is normally loaded on the hopper during the shearing phase.

C2 Scrap is charged into the open compression box. The box is manually operated to compress and confine the scrap. The feed ram positions the charge for the first cut and the shear is put in the automatic mode.

C3 The clamp engages the scrap, the crosshead makes the shearing stroke and both retract. The feed ram moves the scrap forward to a pre-adjusted length beyond the knives for the next cut. This automatic cycle repeats until the box is empty, then the crosshead, clamp and feed ram retract and the box is opened automatically to receive the next charge of scrap.

D CONSTRUCTION:

D1 The ABS-800A design follows established Harris standards and incorporates all current improvements.

D2 Major sub-assemblies are heavy plate and structural weldments, stress relieved before machining to design dimensions.

D3 Final assembly is bolted and keyed.

D4 KNIVES:

D4.1 One set of knives is shipped with machine and these knives are keyed in hardened seats.

D4.2 Hardened knife seats are provided for new and first regrind knives.

D4.3 All four (4) edges are usable.

D4.4 Bed knife: Horizontal

D4.5 Crosshead knife: 10 degree guillotine angle.

Scanned with CamScanner

D5 Crosshead gib adjustment compensates for knife and slide surface wear.

D6 Crosshead guide plates are aluminum bronze. Frame guide plates are hardened alloy steel.

D7 Compression box and shear throat are lined with abrasion resistant plate.

D8 All wear plates are sectional design and securely fastened.

D9 Hopper is single weldment from steel plate and structurals.

D10 Box hinges are leaf type, SAE-1035 steel castings fitted with bronze bushings and hardened steel pins.

D11 All pipe is electrically welded and securely anchored.

D12 Pipe flanges are steel, bolted type, with "O" ring gaskets.

D13 Each Harris machine is completely assembled, operated and tested before shipment.

D14 Standard paint is machinery enamel over primer coat.

D15 GROSS WEIGHT: 110 tons, approx.

E GENERAL:

E1 Layout and foundation prints show above grade dimensions and conditions. Below grade soil conditions, piers, piling, footings and associated components are matters of local determination for which Harris can accept no responsibility. MACHINE IS DESIGNED FOR FLAT SLAB INSTALLATION.

E2 Harris technical services are available on a free advisory basis to assist in determining the location and material flow conditions best suited to utilize the high production of Harris equipment.

E3 This proposal also includes the services of a qualified installation specialist for five (5) eight-hour working days. He will supervise the unloading and assembling of the shear, place the shear in operation and instruct your operator in recommended operating and maintenance procedures. (Transportation and sustenance outside the continental United States is for the purchaser's account.)

F EXPENSES ASSUMED BY THE PURCHASER TO COMPLETE THE MACHINE INSTALLATION:

F1 Railroad freight from Cordele to destination.

F2 Preparation of foundation.

F3 Unloading and assembing shear.

F4 Wiring from power source to shear electric control panel.

Scanned with CamScanner