ENGINEERED SAMPLING SYSTEMS

RAMSEY by SRO TECHNOLOGY

SWEEP ARM SAMPLER
WITH SELF-CONTAINED SAMPLING UNIT

TABLE OF CONTENTS

KEY TO MODEL NUMBERS

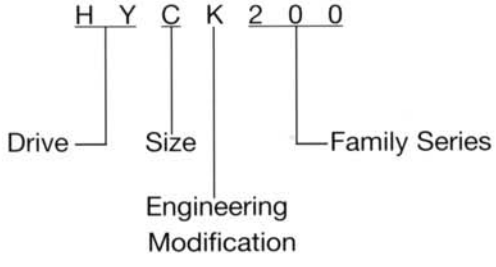
DRIVE TYPES:

HY = Hydraulic
PN = Pneumatic
GM = Gearmotor
CS = Chain & Sprocket
SX = Special
RS = Rotary Drive
SWAX = Sweep Sampler

SIZE DESIGNATION:

A = Light Duty
(Hydraulic = $1^1/_2$" Bore Cylinder)
B = Medium Duty
(Hydraulic = 2" Bore Cylinder)
C = Heavy Duty
(Hydraulic = $2^1/_2$" Bore Cylinder)

EXAMPLE:



INTRODUCTION

Proper collection of a representative sample requires an understanding of the physical characteristics of the material to be sampled and determination of the minimum number and size of increments to be taken in order to produce the overall sampling precision that is required. The task of obtaining a sample of reasonable weight or volume and truly representative of an entire lot (or consignment) necessitates the use of proven and accepted procedures.

Over the years, a number of standards have been generated, by various groups and agencies, that delineate the proper procedures for the collection of samples. Some of these groups are:

1. American Society For Testing and Materials (A.S.TM.).
2. International Organization for Standardization (I.S.O.).
3. Japanese Industrial Standards (J.I.S.).
4. Nuclear Regulatory Agency (uranium only).

SRO Technology Ramsey sampling machines and engineered sampling systems are available to meet or exceed any or all of these standards. While indi-vidual standards have been devel-oped for application on specific materials, the procedures are generally applicable to a wide variety of bulk materials and/or slurries. Perhaps the most universally accepted standards are those delineated in A.S.T.M. Specification D-2234.

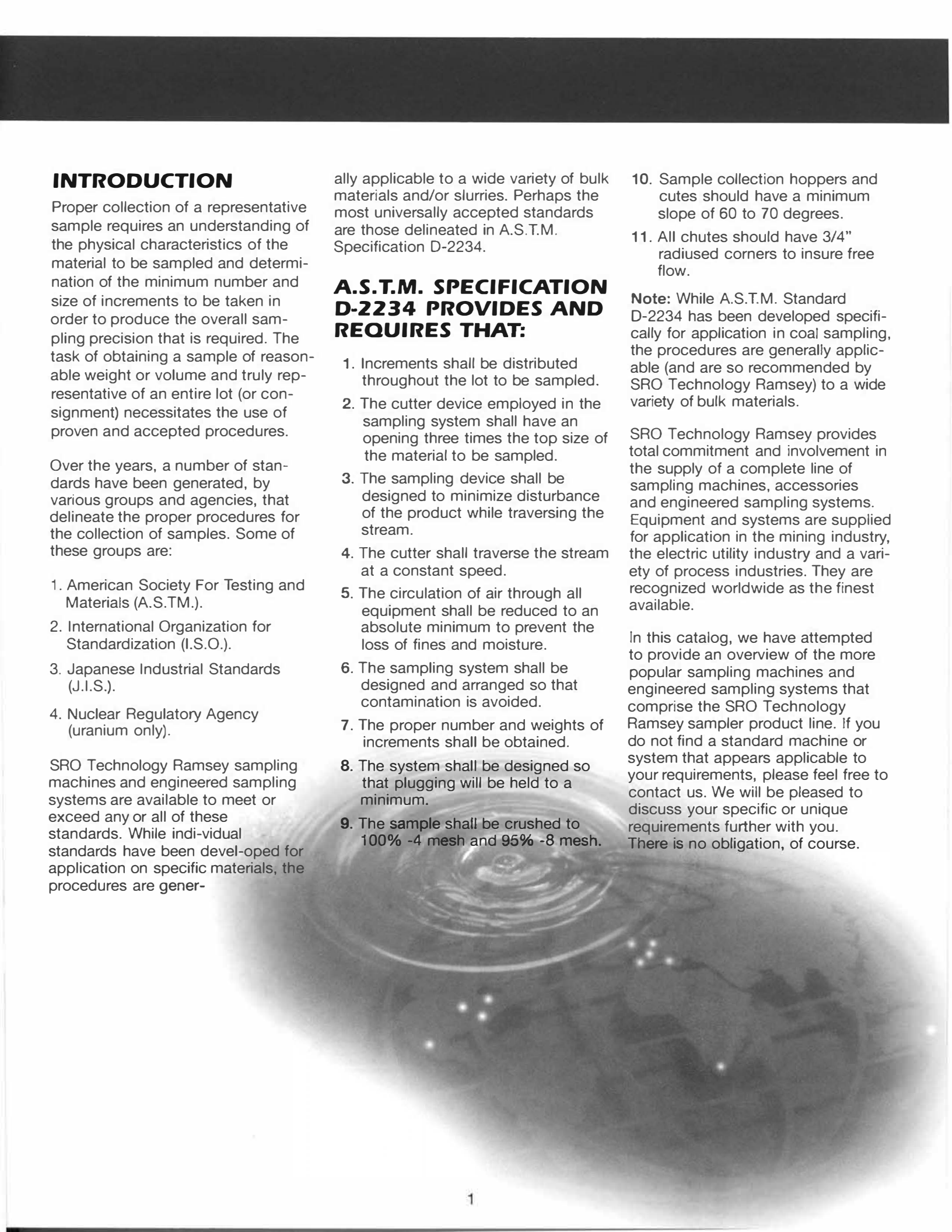
A.S.T.M. SPECIFICATION D-2234 PROVIDES AND REQUIRES THAT:

1. Increments shall be distributed throughout the lot to be sampled.
2. The cutter device employed in the sampling system shall have an opening three times the top size of the material to be sampled.
3. The sampling device shall be designed to minimize disturbance of the product while traversing the stream.
4. The cutter shall traverse the stream at a constant speed.
5. The circulation of air through all equipment shall be reduced to an absolute minimum to prevent the loss of fines and moisture.
6. The sampling system shall be designed and arranged so that contamination is avoided.
7. The proper number and weights of increments shall be obtained.
8. The system shall be designed so that plugging will be held to a minimum.
9. The sample shall be crushed to 100% -4 mesh and 95% -8 mesh.
10. Sample collection hoppers and cutes should have a minimum slope of 60 to 70 degrees.
11. All chutes should have 3/4" radiused corners to insure free flow.

Note: While A.S.T.M. Standard D-2234 has been developed specifically for application in coal sampling, the procedures are generally applicable (and are so recommended by SRO Technology Ramsey) to a wide variety of bulk materials.

SRO Technology Ramsey provides total commitment and involvement in the supply of a complete line of sampling machines, accessories and engineered sampling systems. Equipment and systems are supplied for application in the mining industry, the electric utility industry and a variety of process industries. They are recognized worldwide as the finest available.

In this catalog, we have attempted to provide an overview of the more popular sampling machines and engineered sampling systems that comprise the SRO Technology Ramsey sampler product line. If you do not find a standard machine or system that appears applicable to your requirements, please feel free to contact us. We will be pleased to discuss your specific or unique requirements further with you. There is no obligation, of course.



PRIMARY SWEEP TYPE SAMPLING SYSTEMS

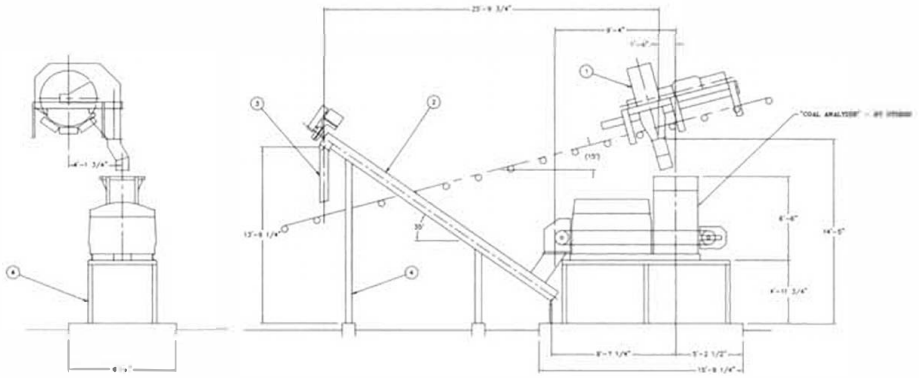
SRO Technology Model SWAX-7000 Sweep Type Sampling Machine, sometimes referred to by others as a "Hammer Sampler", offers an economical, simple means to procure a representative sample directly from a main stream of material. Direct increments are obtained from in-motion, horizontal or inclined conveyors.

The SWAX-7000 Sampler can be used as a stand-alone sampling device to extract a cross belt cut to a sample container, or as a primary (first stage cutter) in a multi-stage mechanical sampling system.

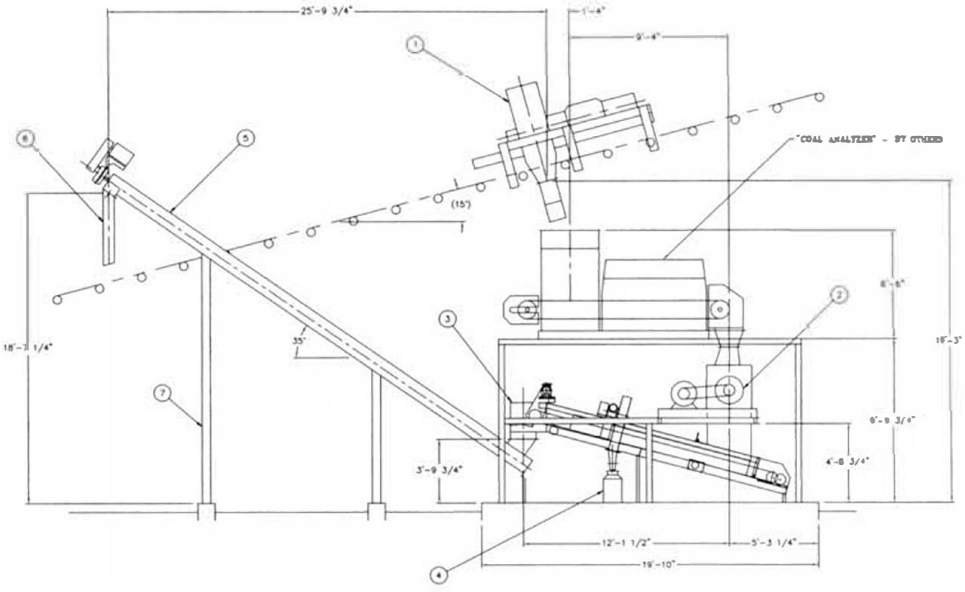
SRO Technology Ramsey's Sweep Type Sampling Machine has been subject-ed to rigorous in-the-field testing with an extensive research and development program. The Model SWAX-7000 machine meets A.S.T.M. Specification D-2234.

Designed and manufactured by SRO Technology Ramsey, the Model SWAX- 7000 machine is ideally suited for the sampling of coal, coke, limestone, sand, gravel, ferrous and non-ferrous ores. Because of installation ease, the Sweep Type Sampler is easily retrofitted to existing bulk material belt conveyor systems.

FEEDING ON LINE ANALYZER



FEEDING ON LINE ANALYZER AND 2-STAGE ASTM SYSTEM

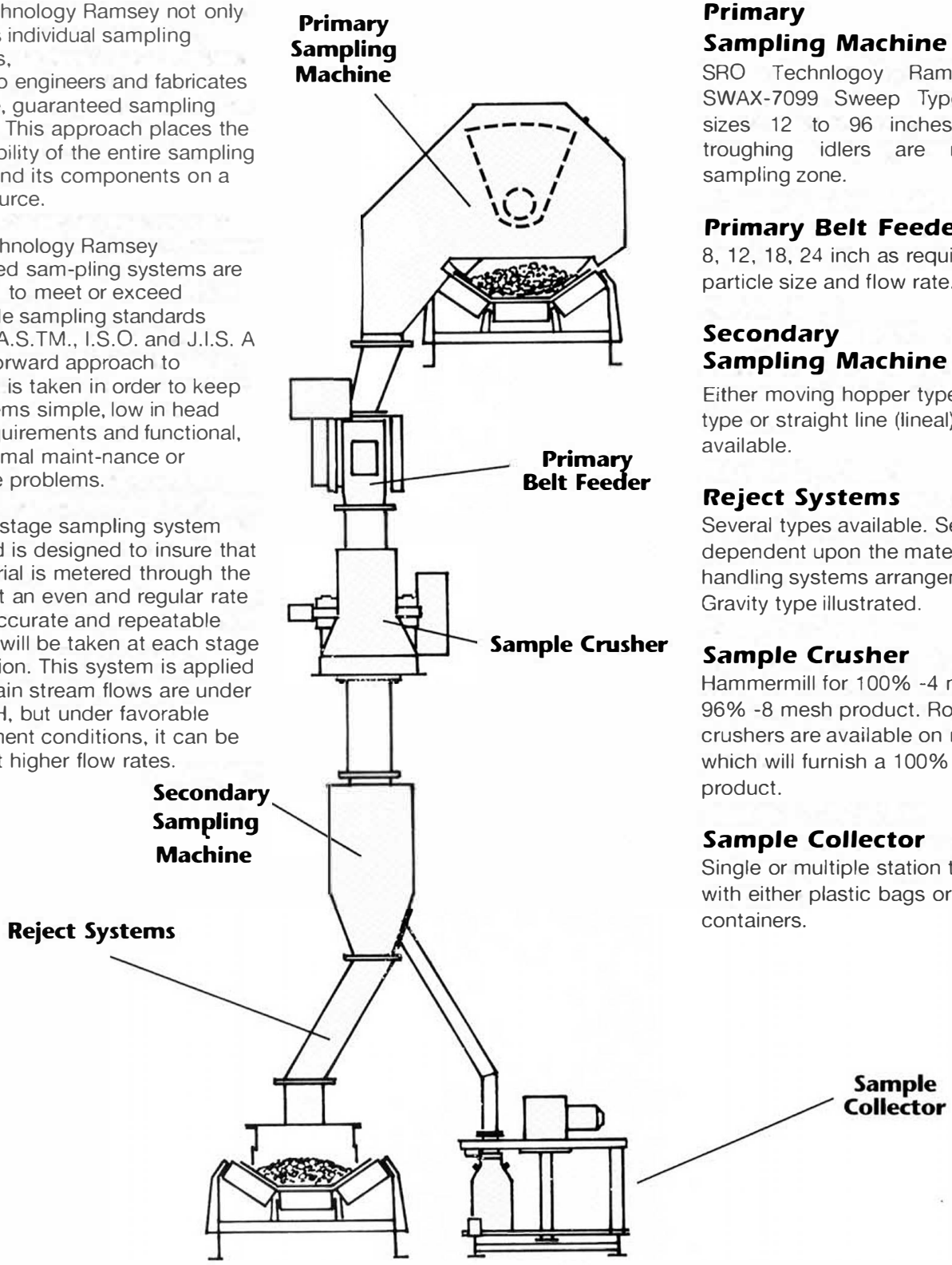


TWO-STAGE SWEEP SYSTEM

SRO Technology Ramsey not only furnishes individual sampling machines,
but it also engineers and fabricates complete, guaranteed sampling systems. This approach places the responsibility of the entire sampling system and its components on a single source.

SRO Technology Ramsey engineered sam-pling systems are designed to meet or exceed applicable sampling standards such as A.S.TM., I.S.O. and J.I.S. A straightforward approach to sampling is taken in order to keep the systems simple, low in head room requirements and functional, with minimal maint-nance or pluggage problems.

The two-stage sampling system illustrated is designed to insure that the material is metered through the system at an even and regular rate so that accurate and repeatable samples will be taken at each stage of reduction. This system is applied where main stream flows are under 4000 TPH, but under favorable consignment conditions, it can be utilized at higher flow rates.



Primary Sampling Machine

SRO Technlogoy Ramsey Model SWAX-7099 Sweep Type. For belt sizes 12 to 96 inches wide. 35° troughing idlers are required in sampling zone.

Primary Belt Feeder

8, 12, 18, 24 inch as required by particle size and flow rate.

Secondary Sampling Machine

Either moving hopper type, sweep type or straight line (lineal) types available.

Reject Systems

Several types available. Selection is dependent upon the material handling systems arrangement. Gravity type illustrated.

Sample Crusher

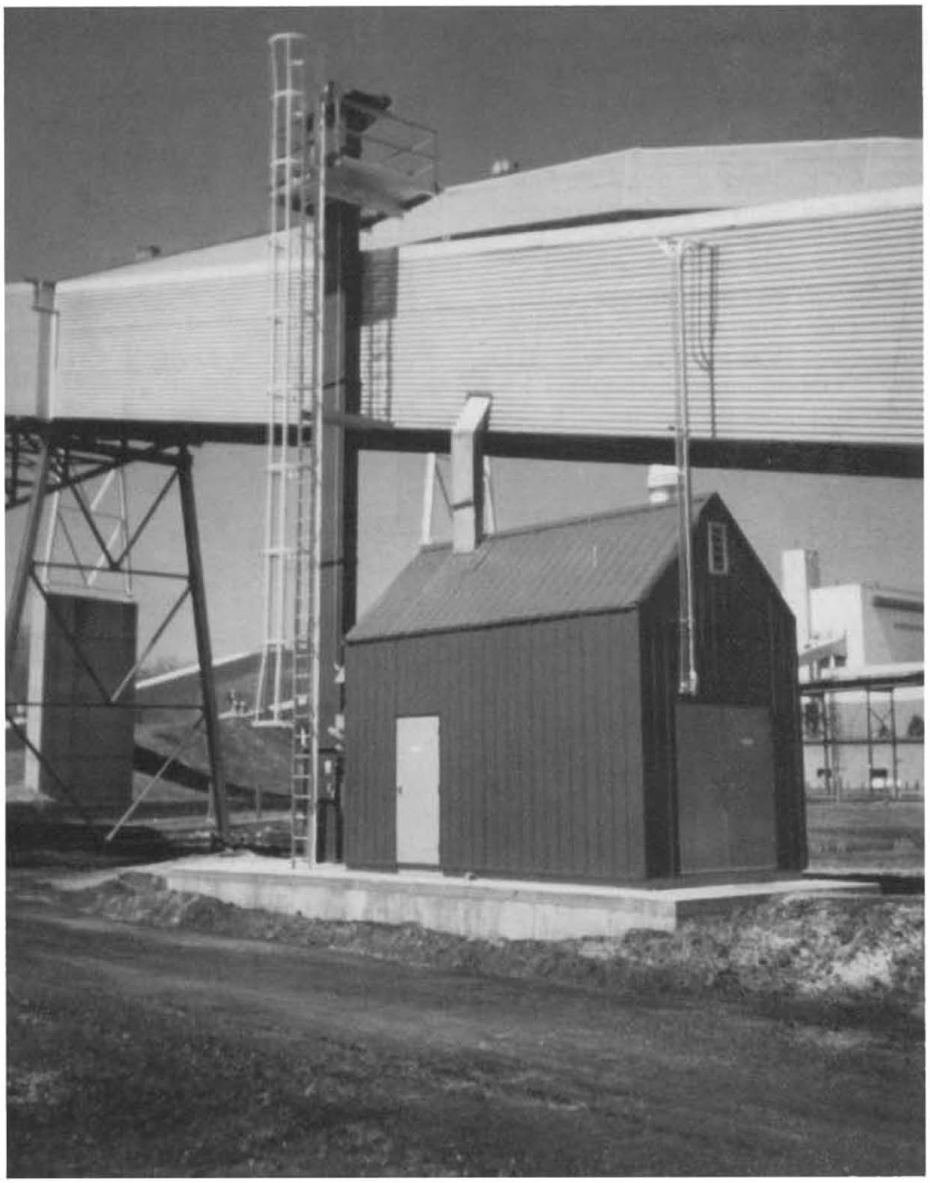
Hammermill for 100% -4 mesh, 96% -8 mesh product. Roll and jaw crushers are available on request, which will furnish a 100% -3/8 product.

Sample Collector

Single or multiple station types with either plastic bags or plastic containers.

SELF-CONTAINED SAMPLING UNIT (S.C.S.U.)

SRO Technology Ramsey's S.C.S.U. provides a modular approach to sampling. Available with all required equip-ment, except the primary sampler, pre-mounted and wired, ready to hoist into place onto a concrete pad. The S.C.S.U. and Sweep Type Model SWAX-7000 primary sampler can be placed at any convenient location along a suitable conveyor.
It does not require an expanded transfer tower or expensive sampling tower, which minimizes installation costs. Optional equipment include a roof, siding (insulated or non), ventilation fan and heating.



Self-Contained Sampling Unit (S.C.S.U.)

Compact design is ideally suited for low headroom installations. Enclosed equipment completely pre-wired to PLC control panel and motor control center is available.

Primary Sampling Machine

Primary Sweep type illustrated in conjunction with self-contained unit.

Primary Belt Feeder

Exclusively used to insure uniform flow and to reduce dust and plugging problems.

Sample Crusher

The Thermo Ramsey sample crusher is designed to reduce the product to required size.

Secondary Sampling Machine

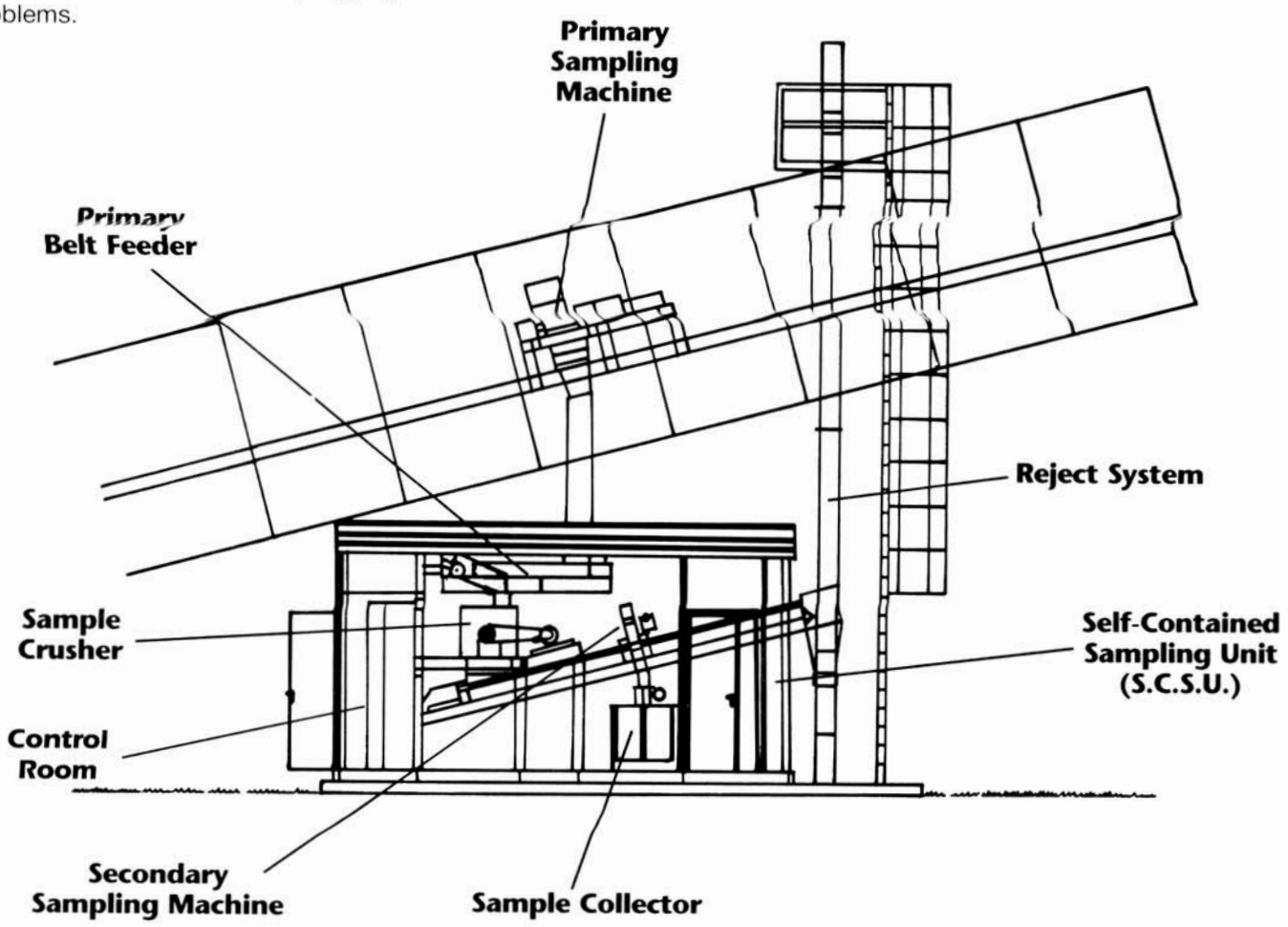
The secondary sample reduction is handled by Thermo Ramsey's Model SWAX-7000 Sweep Type Sampler.

Sample Collector

The rejected material is contained in a dust/moisture-proof collector.

Reject Systems

The rejected material is returned to the mainstream by a bucket elevator (as illustrated). Many options are available per operating requirements.



AUGER TYPE SAMPLING SYSTEMS

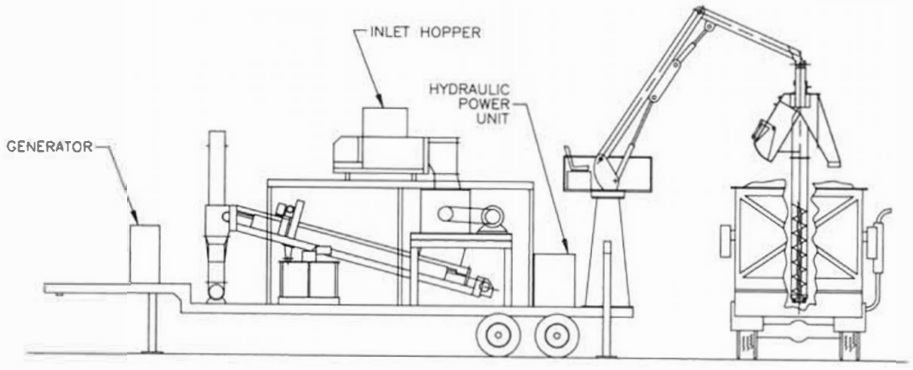
The object of collecting a sample of coal is to obtain a portion that represents the whole of a shipment or consignment, which is then analyzed to determine characteristics such as B.T.U., ash, sulphur and moisture. These analytical results are used in determining contract prices, plant operating efficiency and compliance with environmental agency emission standards.

Normally, coal consists of particles of varied shapes and sizes which may have different physical characteristics, chemical properties and residual ash content. Therefore, it is of economic significance that a true representative sample be taken.

Stationary coal sampling in the past has been a very slow and expensive procedure. Today with escalated coal costs and regulatory and environmental pressures, the need to improve sampling of stationary coals became very vital.

SRO Technology Ramsey's Auger Type Sampling Systems solve the problems associated with stationary coal whether it be stock piles, barges, trucks or railcars. SRO Technology Ramsey's Auger samplers are designed for extraction of reliable samples whenever required of stationary coal.
These sampling systems are backed with SRO Technology Ramsey's many years of experience and knowledge in coal sampling.

Several models are available that add to the flexibility of SRO Technology Ramsey auger type samplers. A fixed, hydrauli-cally operated auger is height adjustable to accommodate various truck loads (as shown).The entire system performs a complete cycle at the push of a button. A full-time operator is not necessary to operate this type of system.



MOBILE AUGER SYSTEM

Primary Sampling Machine
A fixed, hydraulically operated auger collects a vertical cross section sample. The auger is height adjustable to accommodate various truck loads.

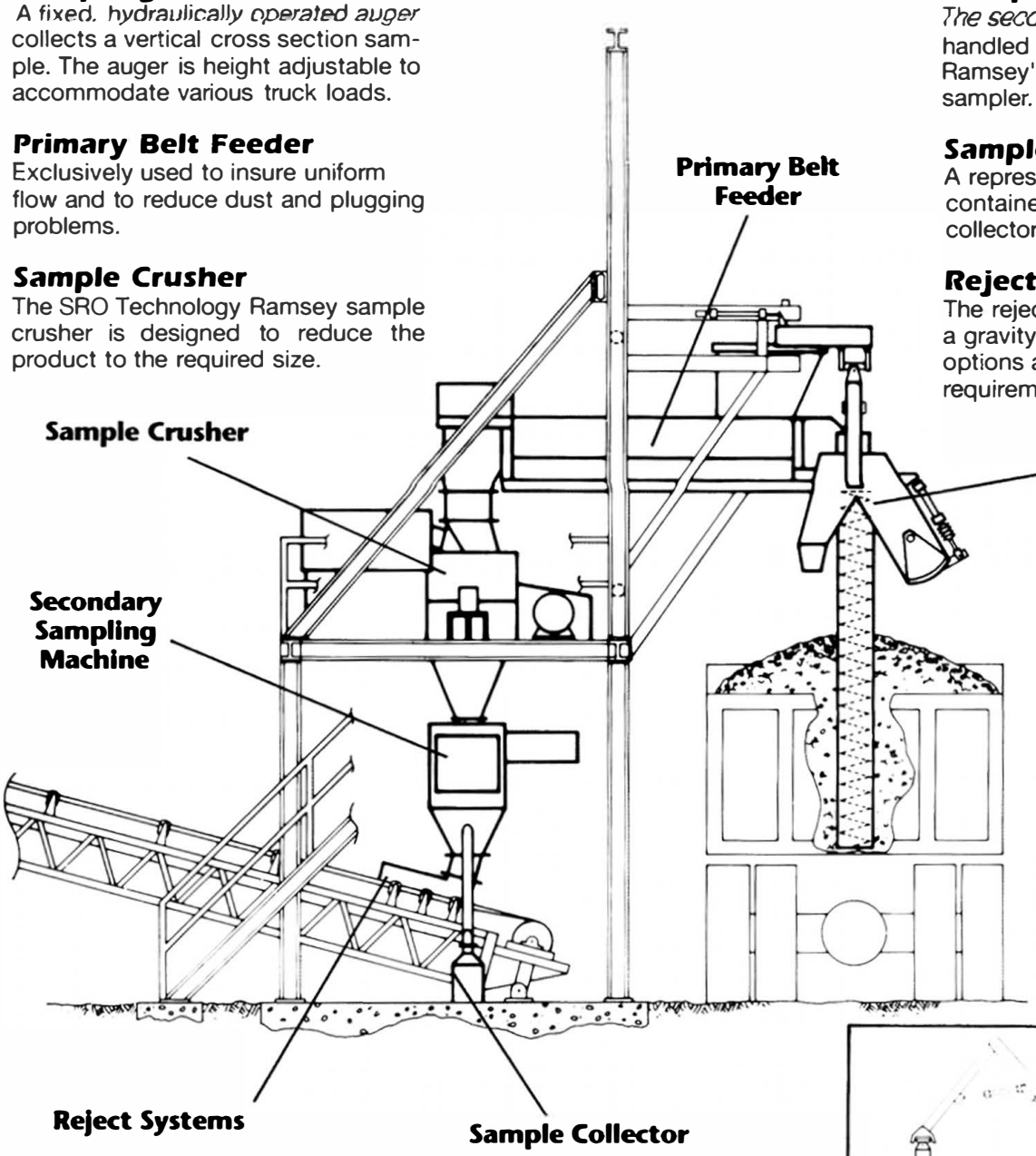
Primary Belt Feeder
Exclusively used to insure uniform flow and to reduce dust and plugging problems.

Sample Crusher
The SRO Technology Ramsey sample crusher is designed to reduce the product to the required size.

Secondary Sampling Machine
The secondary sample reduction is handled by SRO Technology Ramsey's C-200 self-contained sampler.

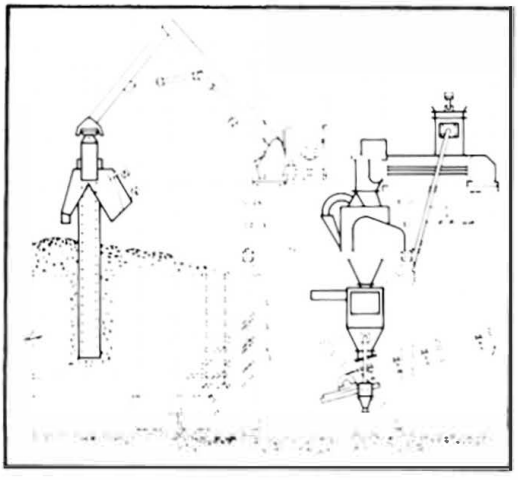
Sample Collector
A representative sample is contained in a dust/moisture-proof collector.

Reject Systems
The rejected material is illustrated as a gravity fall type, though many options are available per operating requirements.



A boom arm arrangement with greater reach is another type. It may be fixed or mounted to a mobile trailer or truck bed.

The boom arm model is equipped with a fully enclosed cabin for complete comfort for operator in all types of weather conditions.



CONVENTIONAL TWO-STAGE SAMPLING

Primary Sampling Machine

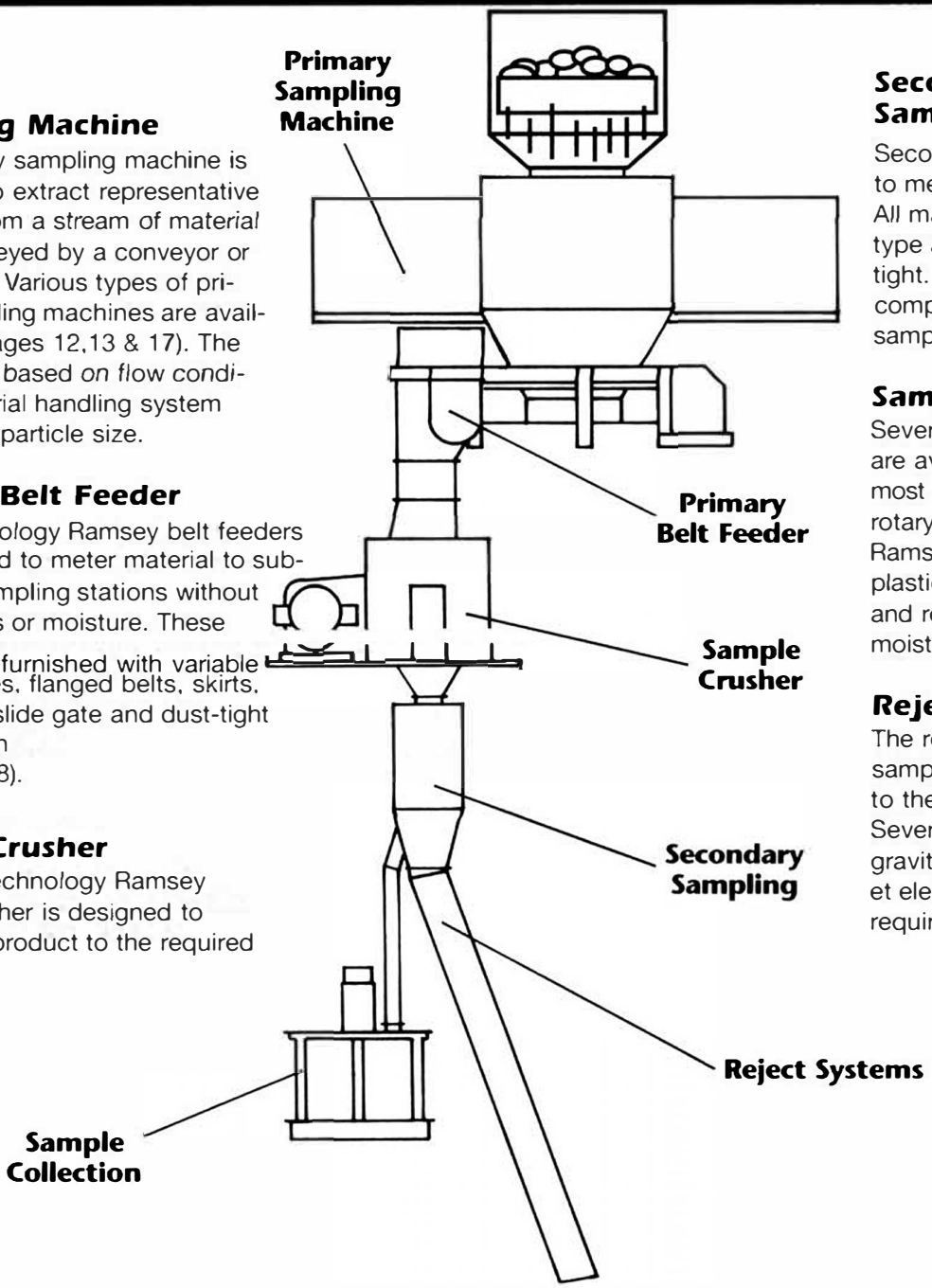
The primary sampling machine is designed to extract representative samples from a stream of material being conveyed by a conveyor or by a chute. Various types of primary sampling machines are available (ref. pages 12,13 & 17). The selection is based on flow conditions, material handling system design and particle size.

Primary Belt Feeder

SRO Technology Ramsey belt feeders are designed to meter material to subsequent sampling stations without loss of fines or moisture. These feeders are furnished with variable speed drives, flanged belts, skirts, adjustable slide gate and dust-tight construction (ref. page 18).

Sample Crusher

The SRO Technology Ramsey sample crusher is designed to reduce the product to the required size.



Secondary Sampling Machine

Secondary machines are selected to meet each sampling requirement. All machines are of the modular type and are dust and moisture-tight. Materials of construction are compatible with the material being sampled (ref. pages 13 & 14).

Sample Collection

Several types of sample collectors are available (ref. page 18). The most popular is the eight station, rotary model. All SRO Technology Ramsey sample collectors, either plastic bag or can models, collect and retain the sample in a dust and moisture-tight condition.

Reject Systems

The rejected material from the sampling system must be returned to the main stream of material. Several methods are employed: gravity fall, screw conveyor or bucket elevator, as dictated by operating requirements.

Sample Chutes

All chutes within the sampling system should have a minimum angle of 60 degrees. They are fabricated with a 3/4 inch minimum radius in the corners, with no internal welds, and weld spatter or penetration is ground from the internal surfaces. Materials of construction are dependent upon the type of material being sampled and conveyed.

Sampling Machine Drives

SRO Technology Ramsey furnishes various types of sampling machine drives (ref. pages 15 - 16) dependent on sampling require-ments and user preference. Available are: variable speed hydraulic, pneumatic or electro-mechanical. Fixed-speed electro-mechanical drives are also available.

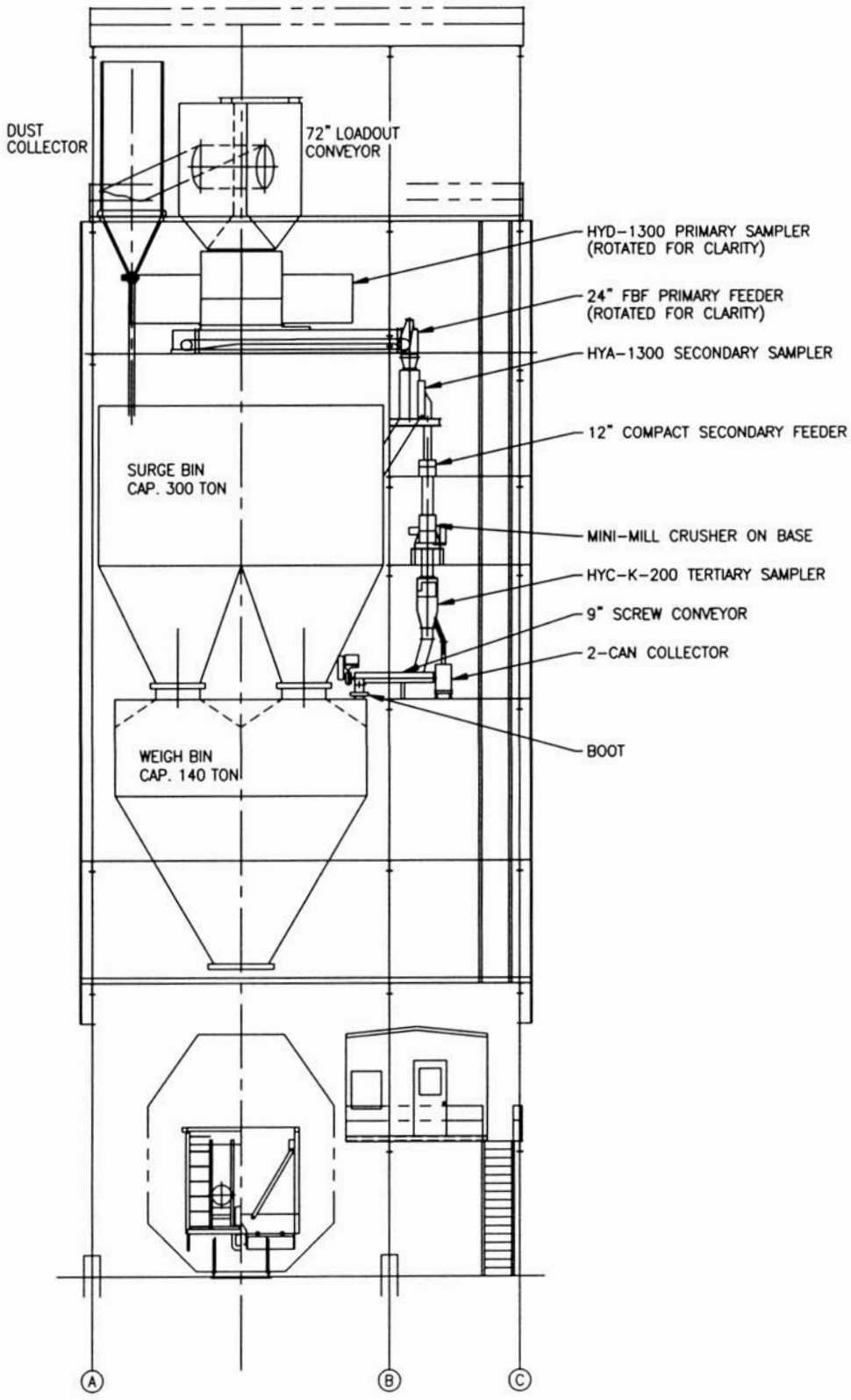
Electrical Controls

Electrical controls, ranging from individual machine control boxes to complete control systems, with attached motor control centers are available (ref. page 19).

THREE-STAGE SAMPLING

Three-stage sampling systems are usually employed when flow rates exceed 3000 tons per hour and/or when product size exceeds 3".

Good sampling practice dictates that the primary and secondary sampling machines perform their respective tasks before the material is crushed. The crusher is then required to reduce a smaller amount of material than if it were placed between the primary and secondary sampling machines. Generation of fines is reduced, which minimizes the danger of plugging in the balance of the system.



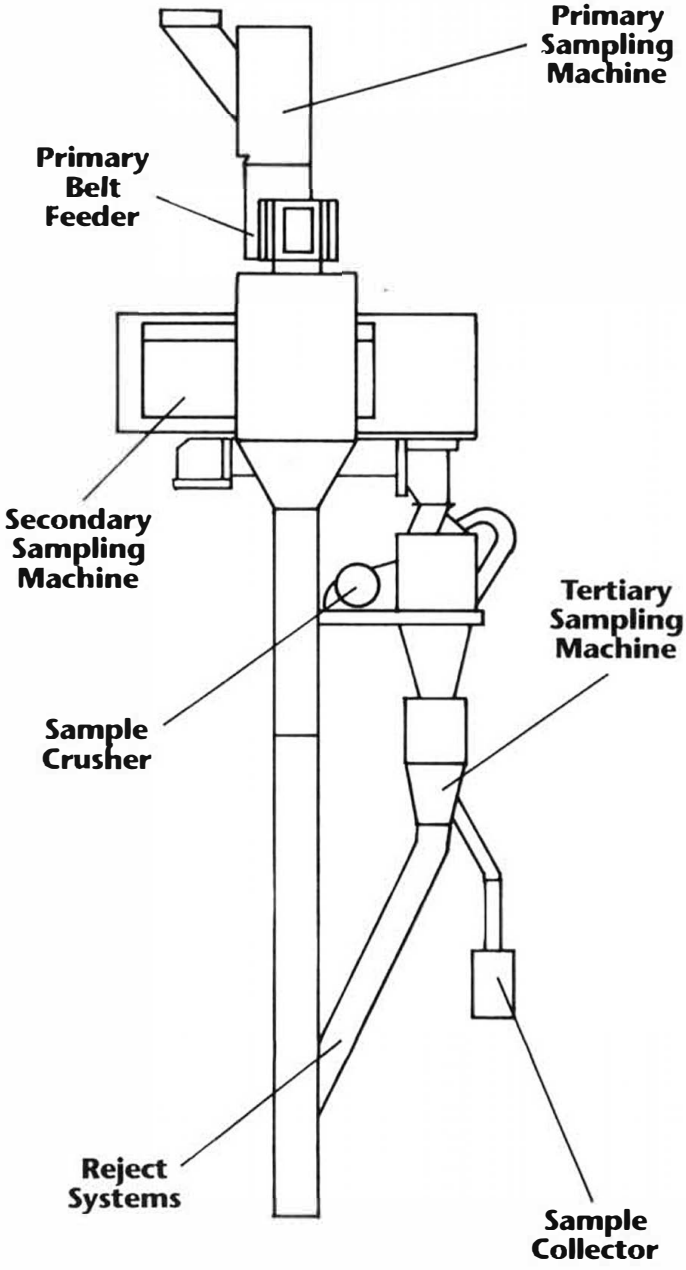
THREE-STAGE SAMPLING

Primary Sampling Machine
The primary sampling machine is designed to extract representative samples from a stream of materi- al being conveyed by a conveyor or by a chute. Various types of primary sampling machines are available (ref. pages 12,13 & 17). The selection is based on flow conditions, material handling system design and particle size.

Primary Belt Feeder
SRO Technology Ramsey belt feeders are designed to meter material to subsequent sampling sta-tions without loss of fines or moisture. These feeders are furnished with variable speed drives, flanged belts, skirts, adjustable slide gates and dust-tight construction (ref. page 18).

Secondary Sampling Machine
The SRO Technology sampling machine illustrated (also ref. page 14) is a complete modular unit, which incorporates a standard secondary machine with an integral belt feeder. Also included are OSHA guards and module supports. This module is of dust and moisture-tight construction to insure that sample integrity is maintained.

Sample Chutes
All chutes within the sampling system should have a minimum angle of 60 degrees. They are fabricated with 3/4 inch minimum radius in the corners, with no internal welds, and welds spatter or penetration is ground from the internal surfaces. Materials of construction are dependent upon the type of material being sampled and conveyed.



Sample crusher
The SRO Technology Ramsey sample crusher is designed to reduce the product to the required size.

Tertiary Sampling Machine
Tertiary sampling machines are selected to meet each sampling requirement. All machines are of the modular type and are dust and moisture-tight. Materials of construction are compatible with the material being sampled (ref. page 14).

Sample Collector
Several types of sample collectors are available (ref. page 18). The most popular is the eight station, rotary model. All SRO Technology Ramsey sample collectors, either plastic bag or can models, collect and retain the sample in a dust and moisture-tight condition.

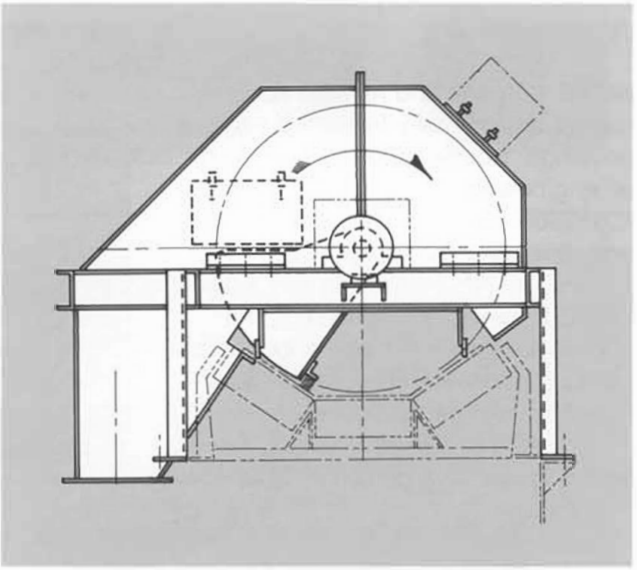
Reject Systems
The rejected material from the sampling system must be returned to the main stream of material. Several methods are employed: gravity fall, screw conveyor or bucket elevator, as dictated by operating requirements.

Sampling Machine Drives
SRO Technology Ramsey furnishes various types of sampling machine drives (ref. pages 15 - 16) dependent on sampling requirements and user preference. Available are: variable speed hydraulic, pneumatic or electro-mechanical. Fixed-speed electro-mechanical drives are also available.

Electrical Controls
Electrical controls, ranging from individual machine control boxes to complete control systems, with attached motor control centers are available (ref. page 19).

SWEEP TYPE SAMPLING MACHINES

SRO Technology Ramsey's Model SWAX-7000 Sweep Type Sampling Machine, sometimes referred to by others as a "Hammer Sampler," offers an economical, simple means to procure a representative sample directly from a main stream of material. Direct increments are obtained from in-motion, horizontal or inclined conveyors.



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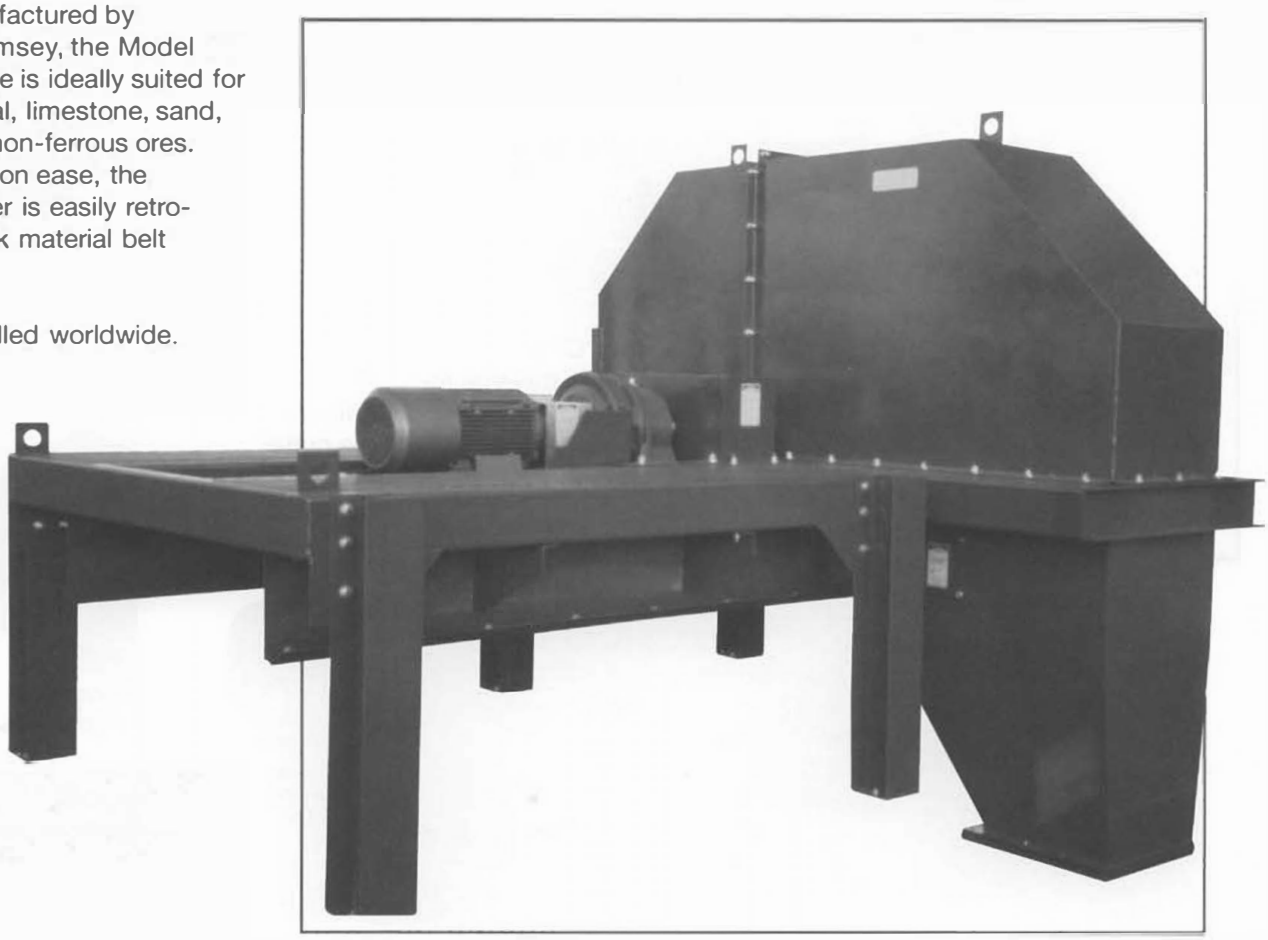
Designed and manufactured by SRO Technology Ramsey, the Model SWAX-7000 machine is ideally suited for the sam-pling of coal, limestone, sand, gravel, ferrous and non-ferrous ores. Because of installation ease, the Sweep Type Sampler is easily retrofitted to existing bulk material belt conveyor systems.

Over 600 units installed worldwide.



CONVENTIONAL SAMPLING CUTTERS

REVERSE DISCHARGE SAMPLE CUTTERS

Reverse cutters may be used at any belt speed over 400 fpm. The cutter opening should be arranged to intersect the material trajectory at a ninety (90) degree angle.

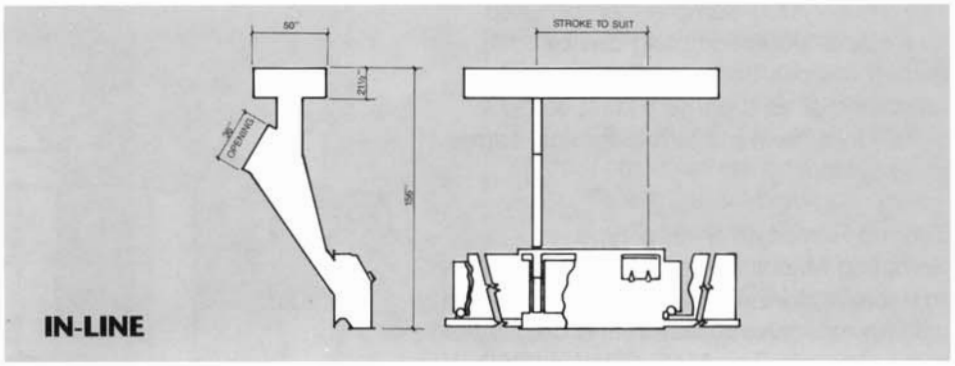
NOTE 1: In-line and reverse spoon cutters are normally furnished without housings. Housings are available on an engineered, special order basis. (Complete details of headframe design and dimensions are required.)

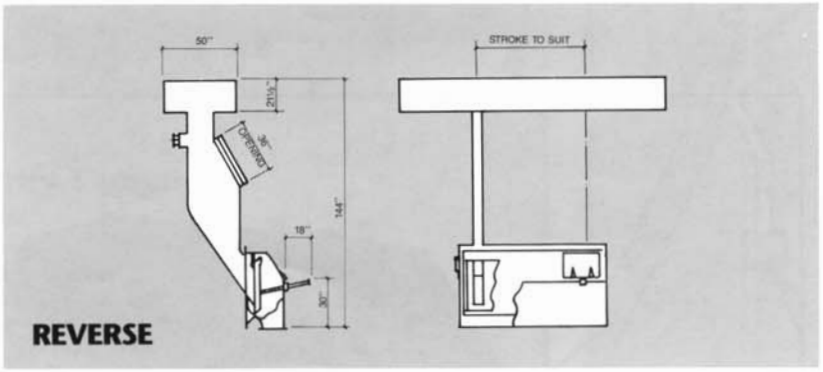
NOTE 2: In-line and reverse spoon cutters are furnished with a fixed cutter opening and with replaceable cutter lips cast from 440 stainless steel.

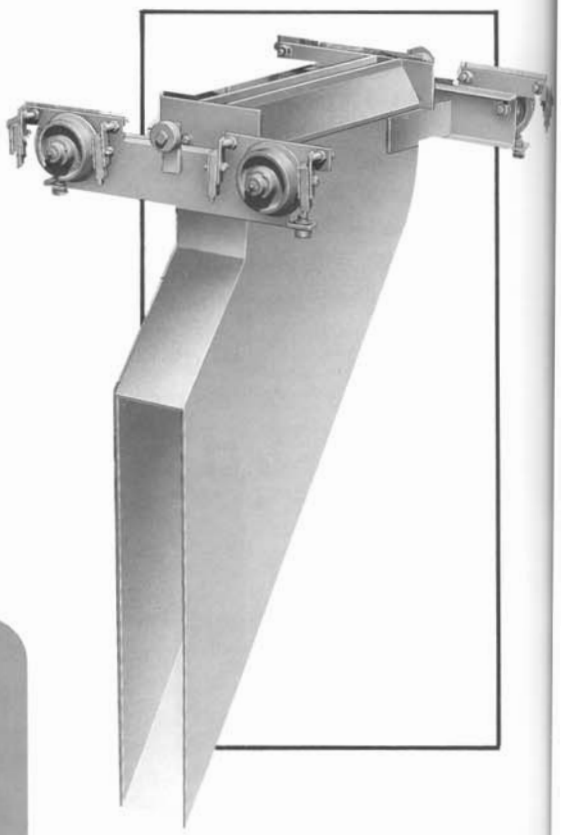
NOTE 3: See drive section for capacities.

IN-LINE DISCHARGE SAMPLE CUTTERS

In-line cutters are generally employed if belt speed is in the 400 to 500 fpm range with the cutter arranged to intersect the material trajectory at a ninety (90) degree angle. (This type of cutter is not recommended if belt speed is in the 500 to 700 fpm range as material will impinge on the baffle plate.) At belt speeds above approximately 700 fpm and with the cutter perpendicular to the material trajectory, there is no interference with the baffle plate.







"C" TYPE CUTTERS

Some sampling requirements cannot be accommodated by standard, modular machines and may require a "C" type cutter assembly with an independent, non-integral drive.

The type "C" sample cutter is designed to traverse the discharge of a conveyor belt or a feed chute and cut the free-falling stream. The cutter may be direct suspended or carriage mounted. It is equipped with replaceable, wear-resistant cutter lips.

CONDENSED SPECIFICATIONS

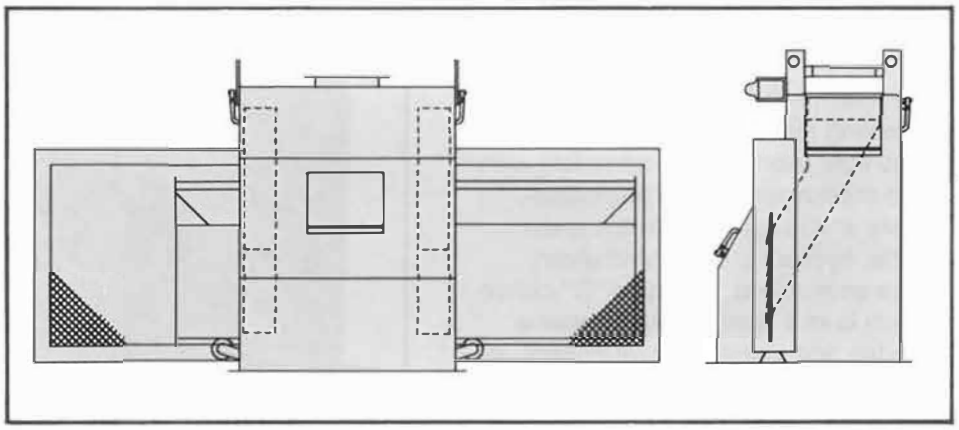
Capacity:	To 15,000 tph (nominal)
Particle Size:	To 12" x 0" (nominal)
Stroke:	Limited only by drive
Cutter Style:	"C" with adjustable lips
Drive Speeds:	Hydraulic to 30" per second; Mechanical Chain 6, 12 or 18 in/sec
Drives:	Hydraulic or Mechanical Chain

CONVENTIONAL SAMPLING MACHINES

MODEL 1300 SERIES

The Model 1300 SRO Technology Ramsey Sampling Machines are normally used for secondary sampler service. They are designed and constructed to con-nect directly to the discharge chute from a belt feeder or from a sample crusher. (For material flow rates to 10,000 tph, the machines may also be used as primary samplers.)

Construction features include a dust tight housing, travelling baffle plate with dust seals, adjustable cutter lips, removable access panels (bolted and gasketed) and flanged chute connections.



SELECTION CHART

Size	Capacity	Max Size	Stroke
A	350 tph	2"	22"
B	1000 tph	3"	34"
C	2000 tph	4"	54"
D	10000 tph	6"	84"

CONDENSED SPECIFICATIONS

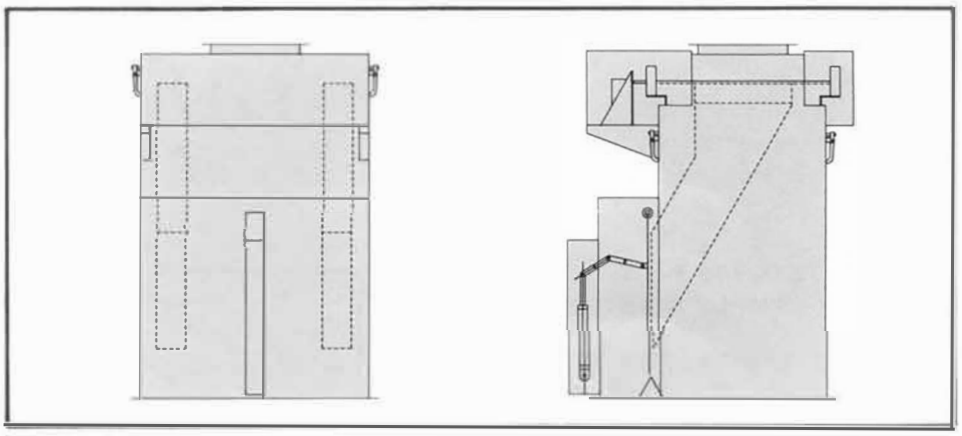
Capacity: To 10,000 tph
Particle Size: To 6" top size
Cutter Stroke: As required
Cutter Type: "C" type with baffle attached pneumatic, hydraulic or mechanical chain
Drive Speeds: Pneumatic, to 30 in/sec
Hydraulic to 30 in/sec
Mechanical Chain 6, 12 or 18 in/sec

MODEL 800 PRIMARY SAMPLING MACHINES

The Model 800 primary sampling machines are complete modules designed and constructed to connect directly to the head pulley discharge chute of conveyors transporting medi-um to heavy burdens (to 7,000 tph).

Construction features include a dust tight housing, sample cutter with adjustable cutter lips, removable access plates (bolted and gasketed) and flanged chute connections.

The Model 800 utilizes a dust door operated by cylinders on each end to isolate the sample chamber. Both machines are available with either a hydraulic or electric chain drive.



CONDENSED SPECIFICATIONS

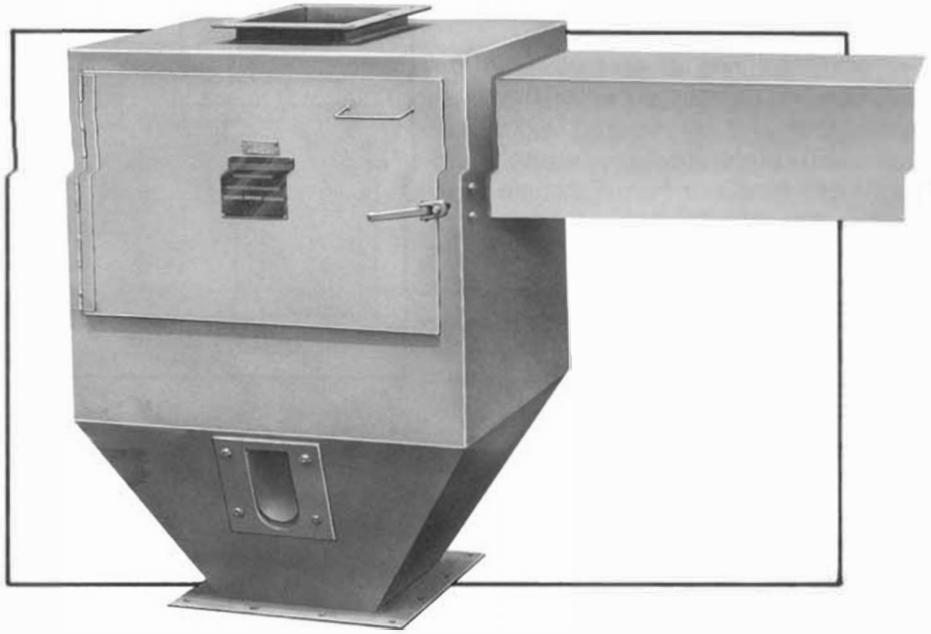
Capacity: To 7,000 tph
Particle Size: Up to 6" top size
Cutter Stroke: As required
Cutter Type: "C" type with stream baffles pneumatic, hydraulic or mechanical chain
Drive Speeds: Pneumatic, to 30 in/sec
Hydraulic to 30 in/sec
Mechanical Chain 6, 12 or 18 in/sec

CONVENTIONAL SAMPLING MACHINES

MODEL K-200 SAMPLING MACHINE

The SRO Technology Ramsey Model K-200 sampling machine is a self-contained, dust-tight modular unit complete with mild steel housing with inspection doors and is supplied with a pneumatic, hydraulic, or electric chain drive as required. The type "C" cutter, which is in a fixed position under a moving 304 stainless steel hopper, is fabricated of 304 stainless steel, with adjustable cutter lips from 0-3", and is sealed against dust between increments.

This sampler can be used in a single machine application within its capacity and is generally utilized as the final stage of sampling in a sampling system.

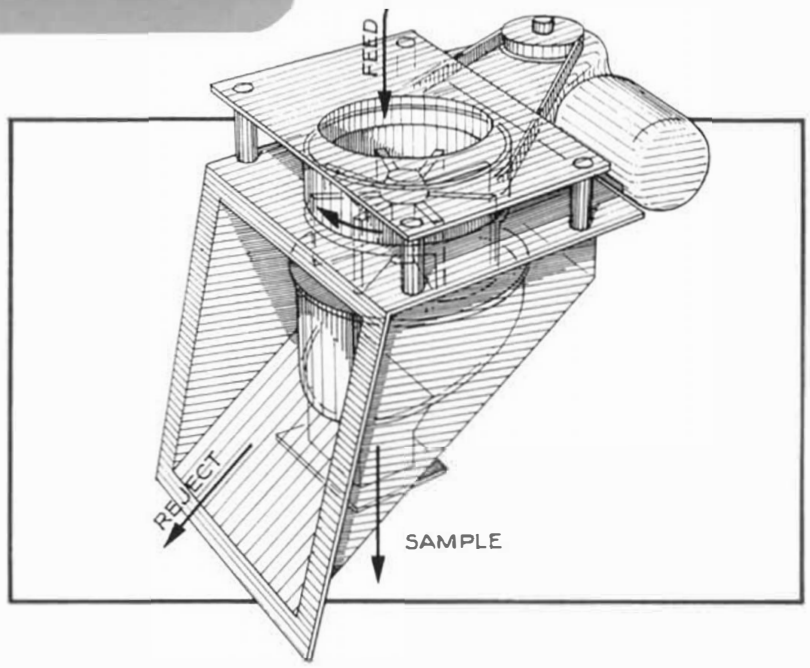


CONDENSED SPECIFICATIONS

Drive Type:	Hydraulic, Mechanical, Pneumatic
Stroke:	10 inches
Cutter:	Type "C"
Cutter Opening:	0-3"
Infeed:	12 1/2" x 8 1/4"
Capacity:	10 tph Coal, 20 tph Minerals
Particle Size:	To 1"

MODEL RSD-3400 ROTARY SAMPLE DIVIDER

The SRO Technology Ramsey patented Model RSD-3400 Divider is a self-contained machine capable of accurate division of a variety of materials. The divider's unique design allows stacking of mul-tiple units if a large degree of reduc-tion is required.



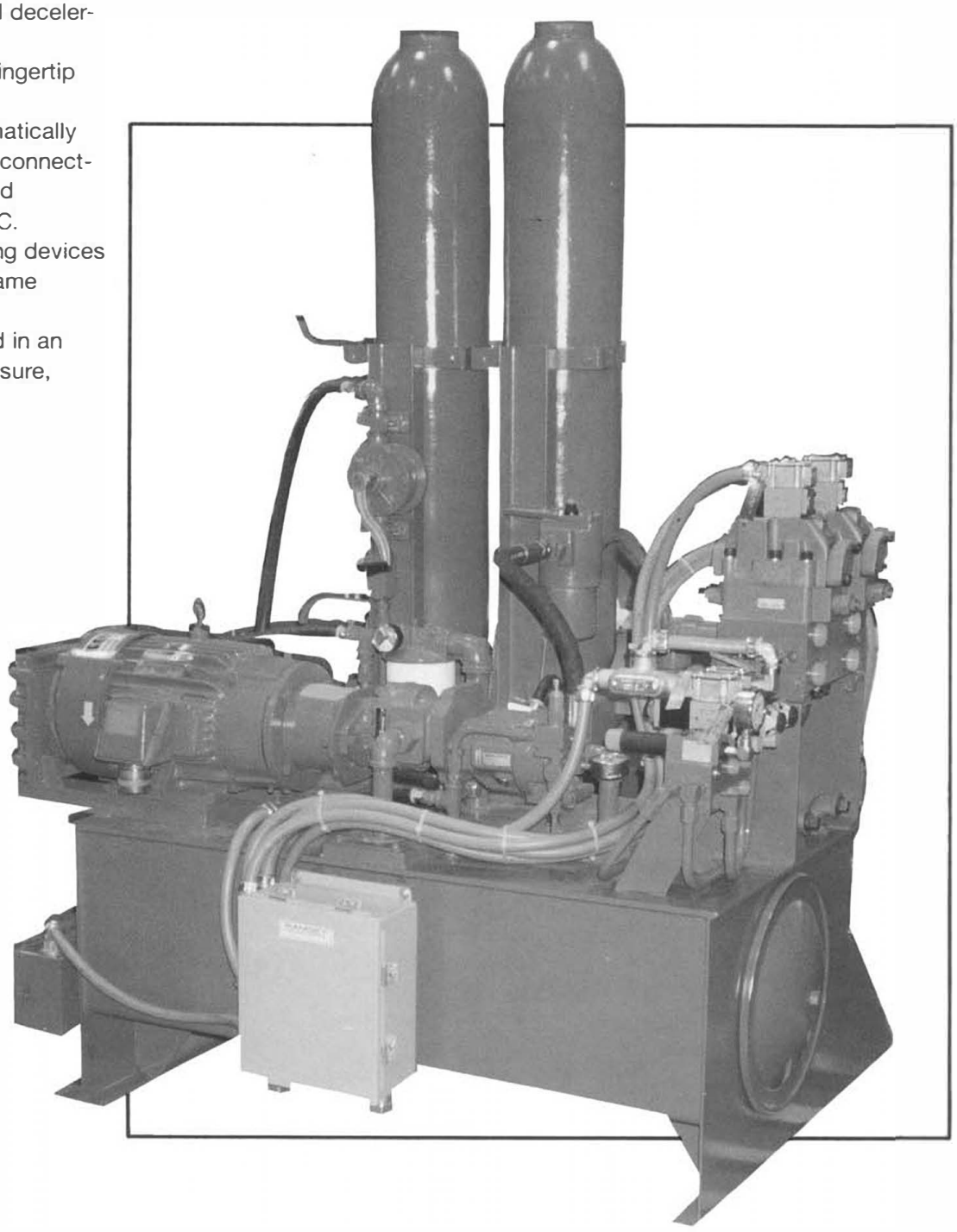
TYPES OF DRIVES

HYDRAULIC POWER UNIT

The SRO Technology Ramsey hydraulic drive has been engineered and developed to actuate medium and heavy duty cutters at moderate to high traverse speeds.

Features are:

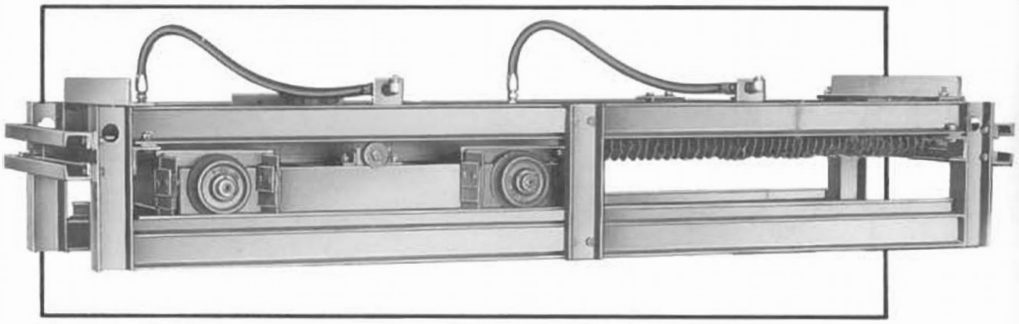
- Heavy loads accelerated and decelerated uniformly.
- Infinitely variable speeds at fingertip control.
- Cutter speeds may be automatically varied by a proportional link connected to speed control valve and on-stream belt scale via P.L.C.
- Other variable speed sampling devices may be operated from the same power source.
- Complete assembly mounted in an optional dust-resistant enclosure, piped and pre-tested.



TYPES OF DRIVES

MODEL 100 SERIES, PRIMARY SAMPLER OVERHEAD DRIVES

The 100 series of variable speed hydraulic drives or fixed-speed electro-mechanical drives are specifically designed and constructed for use with heavy sample cutters operating at high speed to accommodate high material flow rates, high belt speeds and/or large particle sizes.



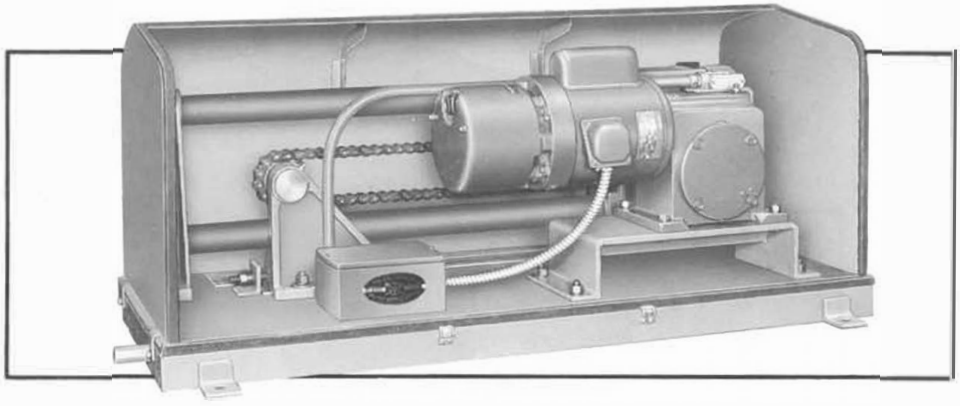
CONDENSED SPECIFICATIONS

	A-100	B-100	C-100
Capacity:	To 3000 tph	To 10,000 tph	To 20,000 tph
Particle Size:	4" x 0	12" x 0	12" x 0
Sampler Stroke:	36,42,48,54, 60,72"	48,60,72,84"	96,108,120"
Cutter Style:	In-Line Spoon, Reverse Spoon and Type "C"		
Drive Speeds: (Hydraulic)*	Variable to 30 in/sec	Variable to 30 in/sec	Variable to 30 in/sec
Drive Type:	Hydraulic or Mechanical		

***NOTE:** The electro-mechanical 100 drives have fixed speeds of 6, 12, 18, 24 or 30 in/sec.

MODEL CS-400 MECHANICAL CHAIN DRIVE

The SRO Technology Ramsey Model CS-400 drive is recommended for use with small, direct-mounted cutters. It may also be us with intermediate range cutters which are mounted on independent carriage assemblies. (Connection to drive by adjustable draw bar or cable.)



CONDENSED SPECIFICATIONS

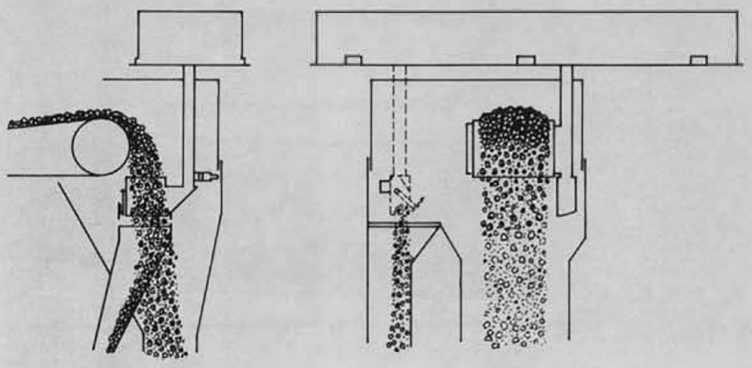
Operation:	Timed or continuous sequence.
Cutter Type:	"A", "B" or "C", direct or carriage mounted
Cutter Weight:	Up to 600 pounds.
Cutter Stroke:	18" to 72" standard, to 108" on special order basis
Drive Speeds:	6, 12, 18 or 24 in/sec, (light and medium weight cutters)
Drive Size:	1/2, 3/4 and 1 HP motors.

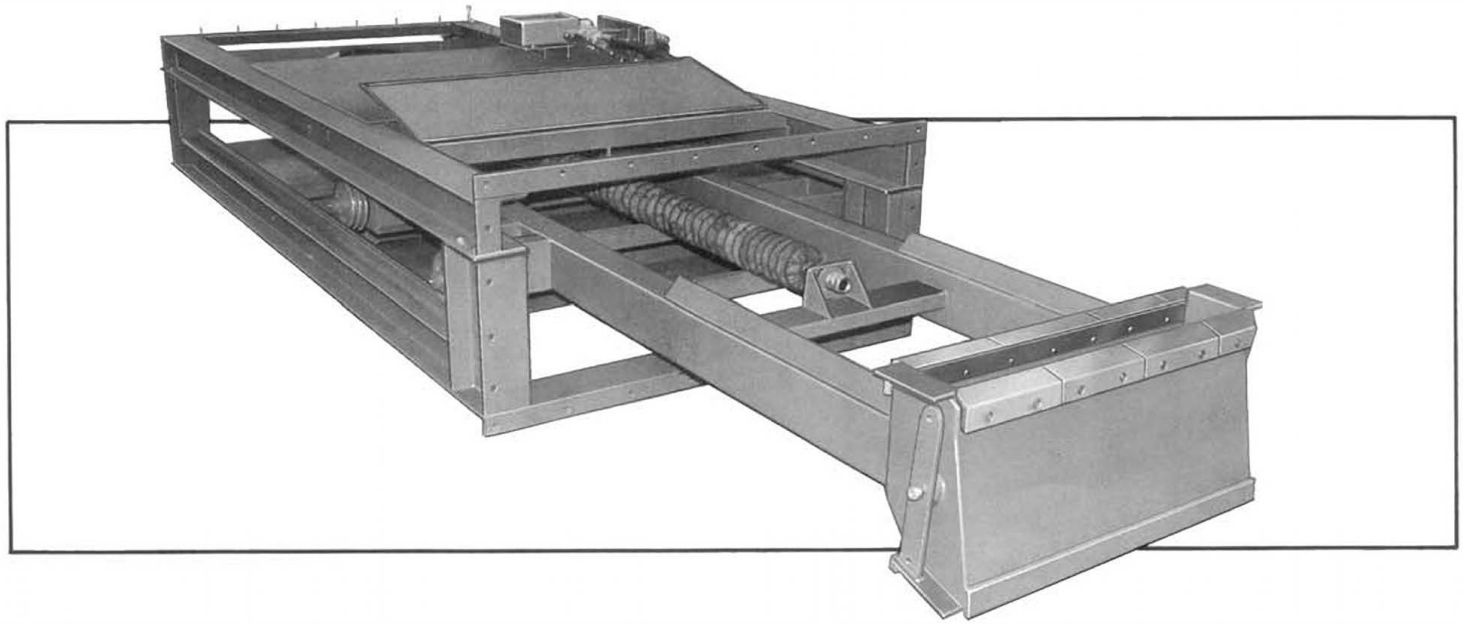
BOTTOM DUMP SAMPLERS

BOTTOM DUMP SAMPLE CUTTERS

Bottom dump sample cutters are used in situations where the headroom or discharge area is limited. The cutter is designed to hold the sample without overflowing until it reaches the discharge point. The cutter size depends on the volume of material taken with each pass through the stream. The bottom dump cutter can be carriage mounted, direct suspended or cantilevered.

100 SERIES WITH OVERHEAD DRIVE

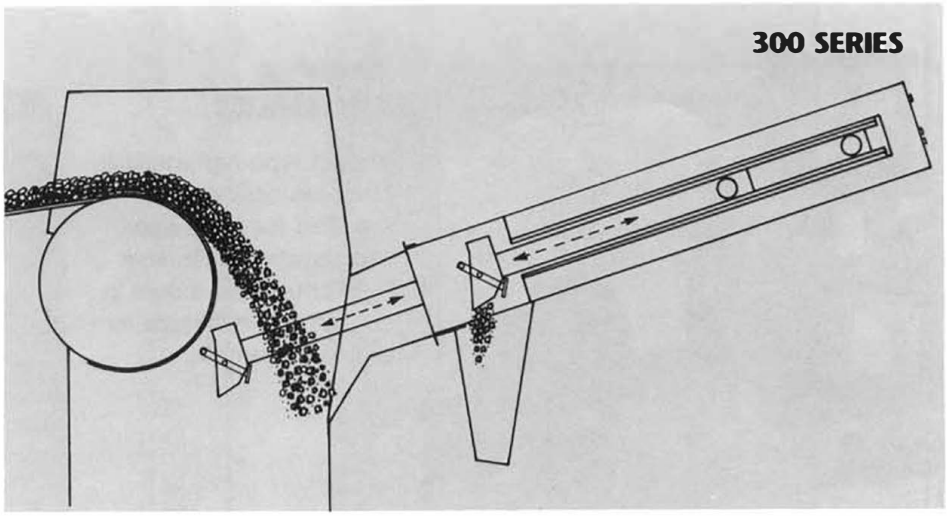




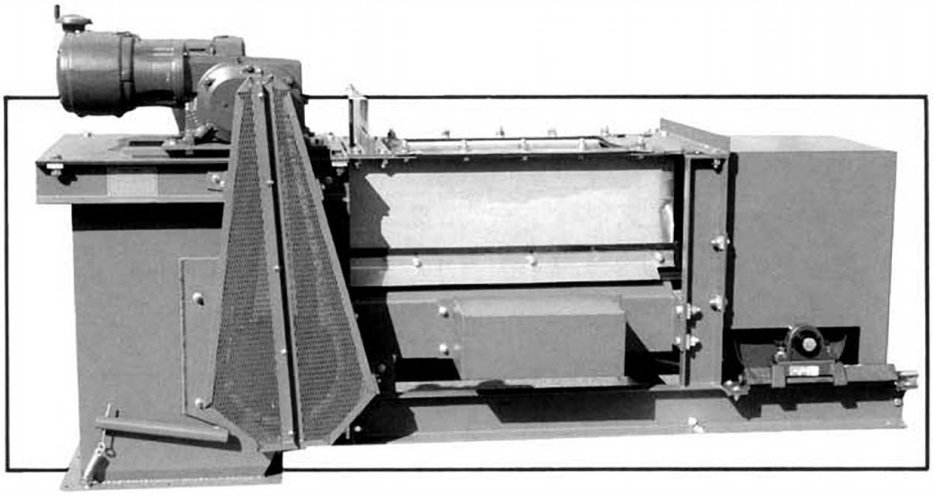
The SRO Technology Ramsey 300 Series Bottom Dump Sampling Machines consist of a steel fabricated track assembly with dust covers within, which is located a wheel-mounted bottom dump sample cutter. The sample cutter is fabricated of stain-less steel and has cast 440 cutter lips.

Mounted to the track assembly is the motor and drive which drives the cutter up and downwards by me ns of parallel #80 roller chains. The sample cutter is designed to dump at the terminus of each stroke by means of a tripper cam. As part of the track assembly, there are two limit switches that control the terminus of travel.

300 SERIES



ACCESSORIES

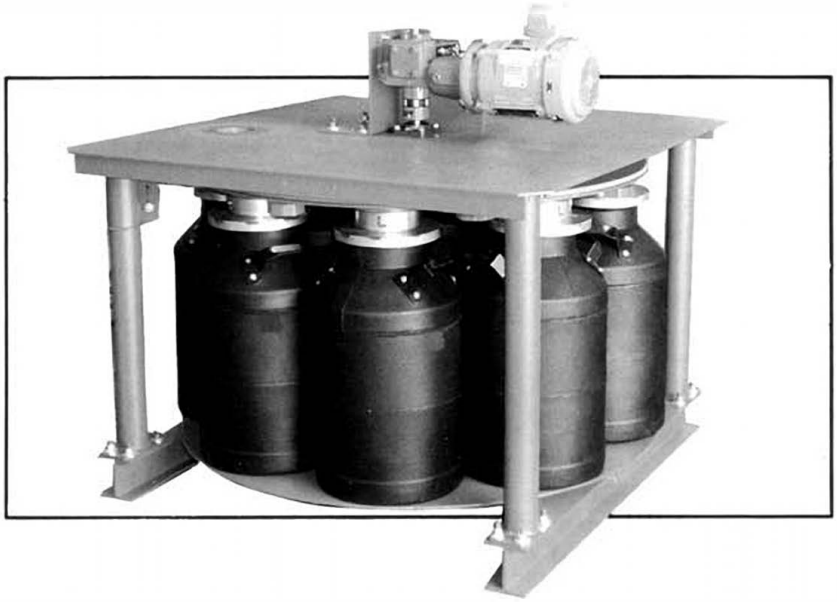


BELT FEEDERS

Belt feeders are available in belt widths of 8, 12, 18, and 24 inches. They accurately meter the products to the next sampling machine or crusher.

These feeders feature:

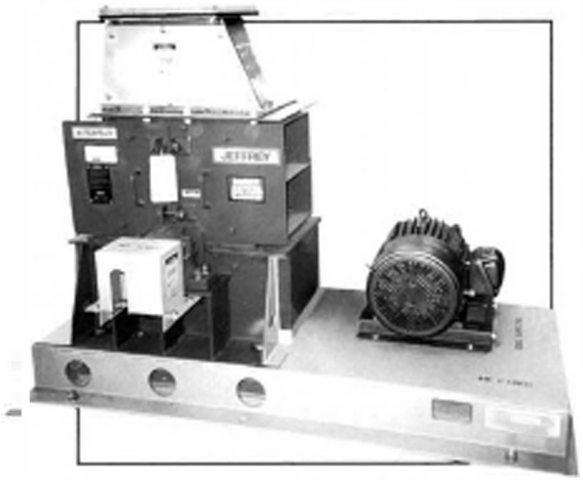
1. Flanged belt - no dribble or sample loss.
2. Rubber lagged head pulley - no belt slip.
3. Variable speed drive - adaptable to tonnage changes.
4. Burden depth adjusting rate.
5. Dust tight - no loss of dust or fines.
6. Rubber skirting - contains sample at predetermined burden depth.
7. Inspection doors.
8. Belt under-speed interlock.
9. Belt wiper.



SAMPLE COLLECTORS

Sample collectors are furnished as 4, 8 or 12 station rotary models, 2-can models or single can collectors. The normal sample collection weights for each station is 50 lbs. of -8 mesh material, 50 pcf, in a polyurethane moisture-tight can.

All collectors can be furnished with plastic bags in lieu of polyurethane cans.



SAMPLE CRUSHERS

Impact type hammermill crushers are recommended for most sampling systems. Crusher feed chute has a built in air baffle to minimize air drying of sample.

CONDENSED SPECIFICATIONS

Crusher Manufacturer & Model	Capacity (tph)	Feed Size (in)
Jeffrey Jr. "E"	2	3"
Jeffrey Mini-Mill	5	3"
30 AB	10	4"
34 AB	16	5"
30 FT	30	14"
34 FT	50	14"
Holmes 45, 10 x 15	1	6"

Roll and Jaw Crushers are available if required.

ELECTRICAL CONTROLS

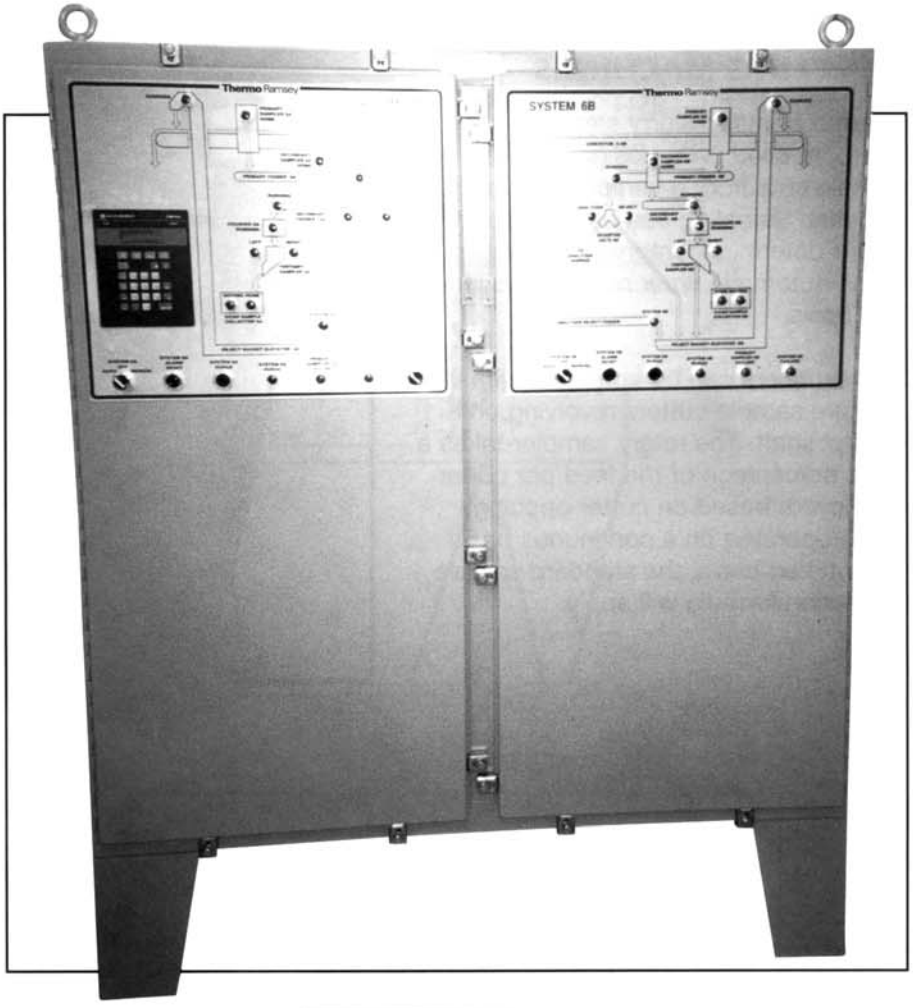
Each sampling machine and/or engineered sampling system requires some type of electrical controls. Actual electrical requirements will vary greatly with each project, plant or process. Electrical specifications should be discussed and resolved prior to order placement. Both PLC or relay/timer controls are available.

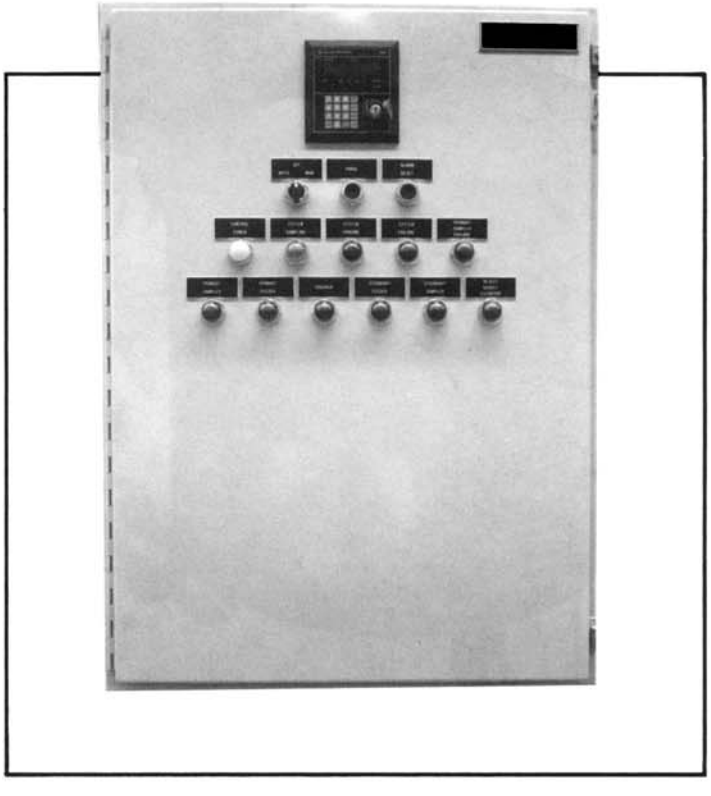
The general types of controls that are available include:

a. Individual control boxes for single machine application.
b. Wall mounted control panels.
c. Floor mounted control panels for systems.
d. Complete motor control centers with attached control section.
e. Optional graphic panel.

Available enclosures:

a. NEMA-1A (General purpose)
b. NEMA-4 (Water-tight)
c. NEMA-12 (Dust-tight)



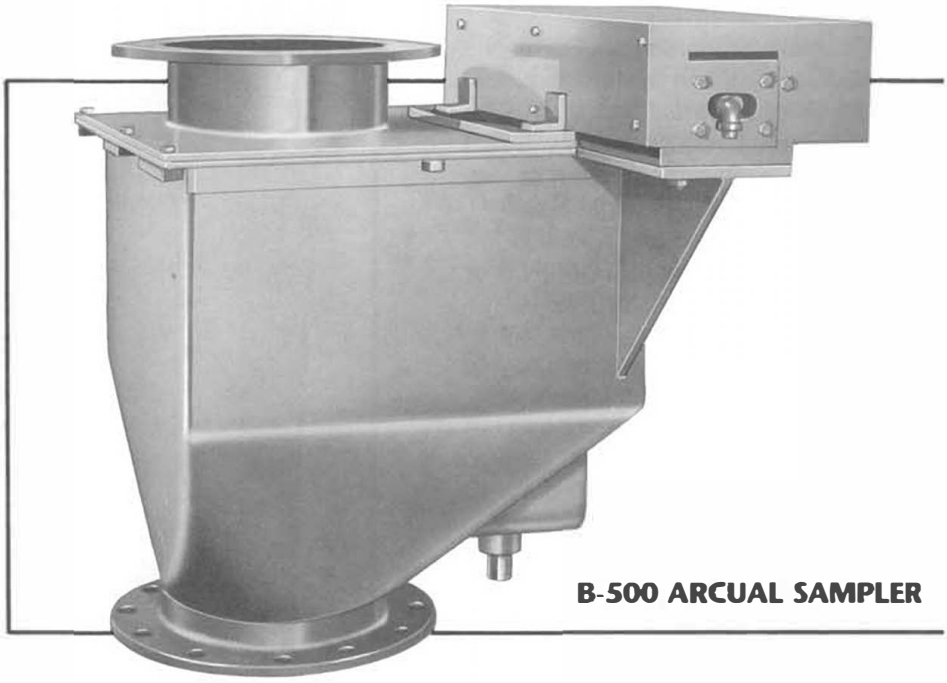


SLURRY SAMPLING MACHINES

MODEL 500 SLURRY SAMPLING MACHINES

SRO Technology Ramsey Slurry samplers are self-contained units designed to take sample cuts from a vertical stream of material. Sampling can be performed at pre-determined intervals controlled by an automatic timer or on a continu-ous basis.

The samplers can be equipped with one of more sample cutters revolving on a central shaft. The rotary sampler takes a fixed percentage of the feed per cutter employed, based on cutter opening when operated on a continuous basis. On a timed basis, the standard sample extraction formula will apply.



B-500 ARCUAL SAMPLER

GM-500 ROTARY SAMPLER

CONDENSED SPECIFICATIONS

B-500 Self-Contained Arcual Sampler

Drive:	Electric or pneumatic, 6-30 in./sec.
Stroke:	As required
Cutter:	Type B
Cutter Opening:	1/8"-1 "
Infeed:	Up to 8" flanged pipe
Capacity:	2000 GPM
Particle Size:	To -1/4"

CONDENSED SPECIFICATIONS

GM-500 Self-Contained Rotary Sampler

Drive:	Electric
Speed:	18 in./sec.
Cutter Opening:	0 - 1-1/4"
Infeed:	Up to 4" diameter pipe
Capacity:	500 GPM
Particle Size:	-4 mesh

***NOTE:** at center of cutter

WET SAMPLE CUTTERS

Wet sample cutters are available in three different types:

1. **Type "A"**, with a vertical cutter opening for taking a sample from the discharge of a horizontal stream.

2. **Type "B"**, with horizontal cutter opening for taking a sample from a free falling vertical stream.

3. **Type "D"**, with an inclined cutter opening for taking a sample from the discharge of an inclined stream.

These cutters can be direct suspended, carriage mounted or end driven by an electric chain drive.

Cutters can be furnished with either fixed cutter openings or adjustable - replaceable cutter lips, and all are standard with drip rings around the neck of the discharge pipe to prevent material from contaminating the sample.

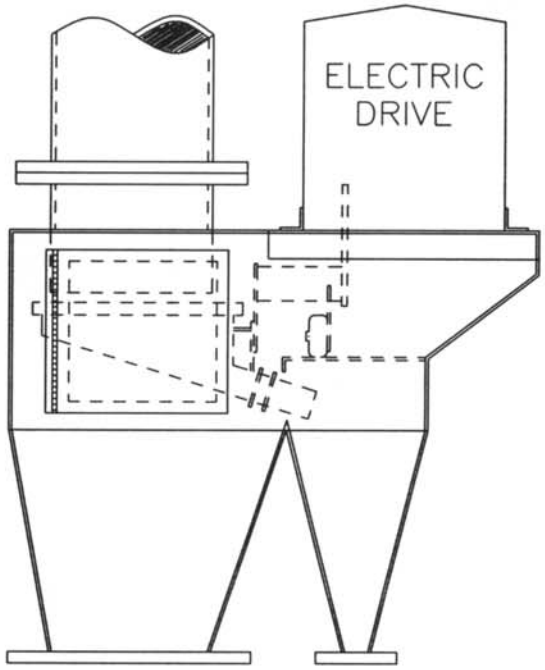
Standard materials of construction available:

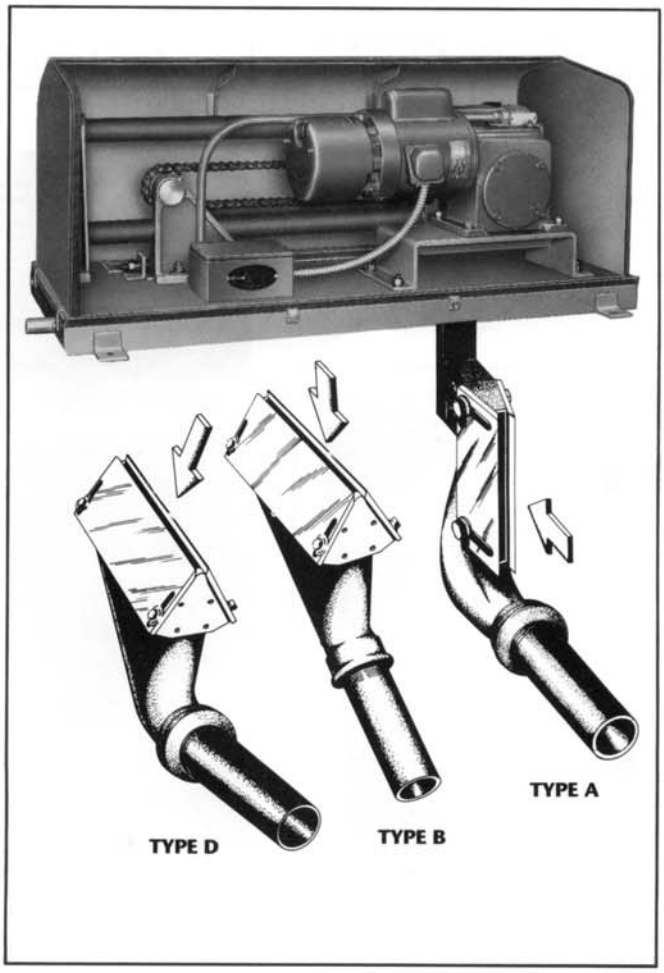
a. Cast iron
b. Cast stainless steel
c. Fabricated mild steel
d. Fabricated stainless steel
e. Fabricated PVC or other plastics
f. Rubber or neoprene covered

OR

Material of construction as required for service requirements (on special order basis).

CS-400 DRIVE WITH TYPE "B" CUTTER





SLURRY SAMPLING MACHINES

INJECTOR SAMPLER, MODEL PN-1600

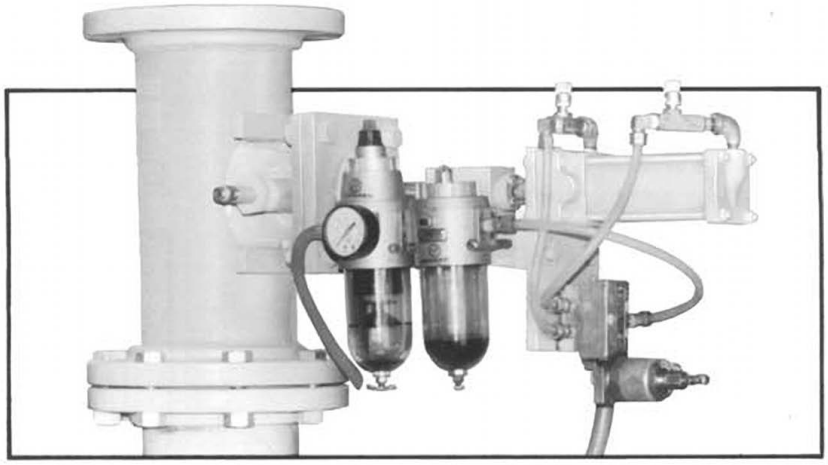
The SRO Technology Ramsey Injector Sampler, Model PN-1600 is expressly designed for inline, automatic sampling in pipelines transporting water/solids slurries.

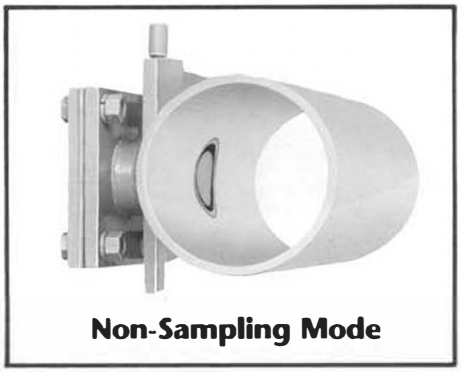
The cutter/air cylinder drive mounts directly to the pipeline with only minor modification to the pipe.

An associated control box is electrically interconnected with the solenoid controlled air cylinder and may be mounted locally or remotely. An adjustable timer is provided for adjustment of the interval between cutter operations.

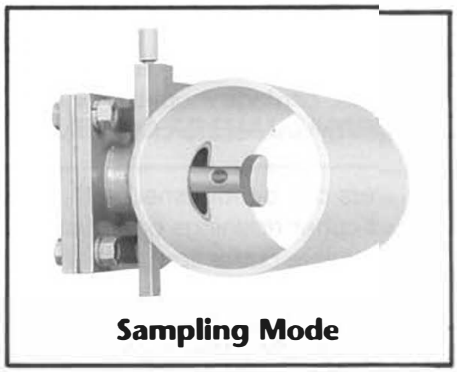
A hose fitting is provided to route the samples to a container or to a remote location for subsequent analysis.

A flush water connection is provided to clean cutter between cutter strokes.





Non-Sampling Mode



Sampling Mode

CONDENSED SPECIFICATIONS

Pipe Sizes:	All standard pipe sizes from 6"-24"
Maximum Line Operating Pressure:	125 psi
Maximum Particle Size in Slurry:	4 Mesh
Sample Size:	The amount of sample extracted is adjustable over a wide range and is determined by line pressure and velocity and cutter speed time.
Cutter Construction:	Hi-alloy, abrasion resistant steel.
Drive:	Pneumatic cylinder of requisite bore and stroke, solenoid controlled and furnished with flow set controls and filter/regulator/lubricator.
Air Requirements:	Plant air at 80 psi to 175 psi max, .05 cfm per cylinder stroke.
Power Requirements:	115 VAC, 50-60 Hz @ 40 VA
Sample Extraction:	$\left(\frac{\text{GPM}}{60}\right) \times \left(\frac{\text{Cutter Opening}}{\text{Inside Pipe Diameter}}\right)^2 \times \left(\frac{2 \times \text{Cutter Stroke}}{\text{Cutter Speed}}\right)$

Product Support

From design to shipment and beyond, SRO Technology Ramsey supports its products with a full range of activities. Our large, creative staff of electrical, mechanical and software engineers allows SRO Technology Ramsey to maintain its leadership with new developments in technology and machine design. Our extensive customer service organization is dedicated to providing users with technical support, field service and prompt parts delivery when needed. Of further assurance to our customers is our dedication to quality. SRO Technology Ramsey is proud to have been awarded formal certification to the quality standards of the International Standards Organization (ISO 9001).

RAMSEY by SRO TECHNOLOGY

srotechnology.com/ramsey-engineered-sampling-systems