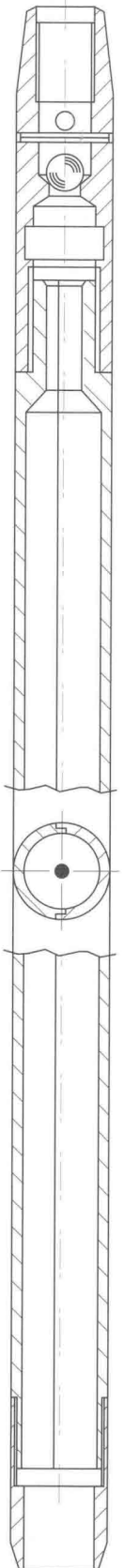


Heavy Duty Split Tube "Lynac" Samplers

U.S. Patent No. 2795395

This widely used sampler is a heavy duty version of the standard split tube sampler. The Acker Drill Company developed and patented this split tube sampler which is better adapted to severe service under hard driving than the standard type...Coarse threads in the sampler head speeds assembly and disassembly...As with all other Acker tube style samplers, the shoe is Heat Treated to stand exceptional abuse. The standard length of the samples is 18" with 24" an option. Ball check feature prevents washing out sample on withdrawal from the hole. The

shoe is recessed to accommodate a trap valve and spring or basket retainer...A liner is optional to accommodate successive sampling. Note the step in tube design—prevents bowing when driven—and the heavy duty threads in head section. This sampler is recommended for Standard Penetration Tests as well as other tests with heavier hammers. For additional service capability, Acker makes available "Heat Treated" split sections for the 2" O.D. Size "Lynac."



Heavy Duty Acker Lynac Split Tube Sampler With Heat Treated Shoes

| Size | Shoe I.D. | Conn. | Sample Length | | Part No. | Weight | |
|---|---------------------|-------|---------------|-------|----------|--------|------|
| | | | Inches | mm | | Lbs. | Kg |
| 2" O.D. x 1-1/2" I.D. (50.8 x 38.1 mm) | 1-3/8" (34.9 mm) | AW | 18 | 457.2 | 22124-3 | 12.5 | 5.6 |
| | | | 24 | 609.0 | 22124-4 | 13.5 | 6.1 |
| 2-1/2" O.D. x 2" I.D. (63.5 x 50.8 mm) | 1-7/8" (47.6 mm) | AW | 18 | 457.2 | 22044-3 | 20.5 | 9.2 |
| | | | 24 | 609.0 | 22044-4 | 23.0 | 10.4 |
| 3" O.D. x 2-1/2" I.D. (76.2 x 63.5 mm) | 2-3/8" (60.3 mm) | NW | 18 | 457.2 | 22045-7 | 26.0 | 11.7 |
| | | | 24 | 609.0 | 22045-8 | 30.5 | 13.8 |
| 3-1/2" O.D. x 3" I.D. (88.9 x 76.2 mm) | 2-7/8" (73.0 mm) | NW | 18 | 457.2 | 22046-7 | 38.5 | 17.4 |
| | | | 24 | 609.0 | 22046-8 | 43.0 | 19.4 |
| 4-1/2" O.D. x 4" I.D. (113.7 x 101 mm) | 3-7/8" (98.4 mm) | NW | 18 | 457.2 | 22047-7 | 54.0 | 24.5 |
| | | | 24 | 609.0 | 22047-8 | 60.0 | 27.1 |
| 2" O.D. x 1-1/2" I.D. (50.8 x 38.1 mm) | 1-3/8" (34.9 mm) | AWJ | 18 | 457.2 | 22043-31 | 12.5 | 5.6 |
| | | | 24 | 609.0 | 22043-32 | 13.5 | 6.1 |

Lynac Split Tube Sampler...For Severe Service

With Heat-Treated Split Sections and Shoe Assembly

| Size | Shoe I.D. | Conn. | Sample Length | | Part No. | Weight | |
|---|---------------------|-------|---------------|-------|----------|--------|-----|
| | | | Inches | mm | | Lbs. | kg |
| 2" O.D. x 1-1/2" I.D. (50.8 x 38.1 mm) | 1-3/8" (34.9 mm) | AW | 18 | 457.2 | 22124-3 | 12.5 | 5.6 |
| | | | 24 | 609.0 | 22124-4 | 13.5 | 6.1 |

Options & Spare Parts — Lynac Split Tube Sampler

| Diameter/Size: | 2" O.D. | | 2-1/2" O.D. | | 3" O.D. | | 3-1/2" O.D. | | 4-1/2" O.D. | |
|---------------------------|------------|----------|-------------|----------|------------|----------|-------------|----------|-------------|----------|
| Name of Part | Part No. | Wt. Lbs. | Part No. | Wt. Lbs. | Part No. | Wt. Lbs. | Part No. | Wt. Lbs. | Part No. | Wt. Lbs. |
| Head Assembly "W" | 22005-4 | 4.0 | 22005-14 | 6.0 | 22005-19 | 11.0 | 22005-24 | 16.0 | 22005-29 | 24.0 |
| Head Assembly "AWJ" | 22005-36 | 4.0 | NA | — | NA | — | NA | — | NA | — |
| Tube - 18" | 22016-50 | 10.0 | 22016-17 | 12.0 | 22016-19 | 15.0 | 22016-27 | 20.0 | 22016-29 | 26.0 |
| Tube - 24" | 22016-52 | 11.0 | 22016-18 | 15.0 | 22016-20 | 19.0 | 22016-28 | 24.0 | 22016-30 | 30.0 |
| Open Shoe - Blunt | 120062-4 | 1.0 | 120062-2 | 1.0 | 120062-7 | 2.0 | 120062-1 | 2.0 | 120062-8 | 2.0 |
| Open Shoe - ASTM | 120062-5 | 1.0 | NA | — | NA | — | NA | — | NA | — |
| H.T. Tube 18" | 22016-51 | 10.0 | NA | — | NA | — | NA | — | NA | — |
| H.T. Tube 24" | 22016-53 | 11.0 | NA | — | NA | — | NA | — | NA | — |
| Spacer | 150035-272 | † | 150035-273 | † | 150035-274 | † | 150035-275 | † | 150035-276 | † |
| Brass Liner - 18" | 120060-7 | 2.0 | 120060-2 | 2.0 | 120060-10 | 2.0 | NA | — | NA | — |
| Brass Liner - 24" | 120060-16 | 2.0 | 120060-18 | 2.0 | 120060-19 | 2.0 | NA | — | NA | — |
| Teflon Liner - 18" | 120966-1 | * | NA | — | NA | — | NA | — | NA | — |
| Teflon Liner - 24" | 120966-2 | * | NA | — | NA | — | NA | — | NA | — |
| Clear Plastic Liner - 18" | 120878-1 | * | 120878-7 | * | 120878-9 | * | 120878-10 | * | NA | — |
| Clear Plastic Liner - 24" | 120878-2 | * | 120878-8 | * | 120878-3 | * | 120878-11 | * | NA | — |
| Plastic Cap | 90367-35 | * | 90367-43 | * | 90367-49 | * | 90367-55 | * | NA | — |

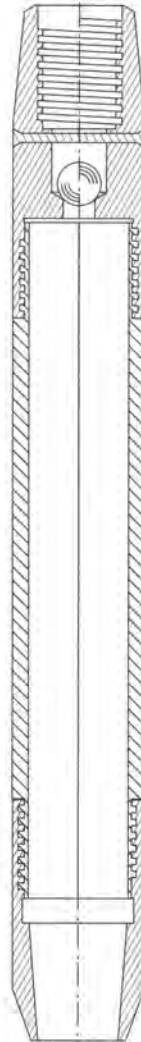
* Less than one pound or 45 kilograms. † Limited sizes.
NA = Not Available.

Soil Sampling

Standard Split Tube Samplers

For Standard Penetration Test*

This split tube sampler is designed for taking soil samples at the bottom of the cleaned bore hole by the drive weight method. The split section is held together with a ball check head and a hardened steel drive shoe. The ball check feature in the head prevents samples from being washed out of sampler upon withdrawal from the hole. The sampler is designed to accommodate a brass, plastic or paper tube liner for collecting and carrying samples to the field office. Two sample lengths are available. Note steps in tube design...Acker's Heat Treated Drive Shoe is recessed to accommodate various accessories.



All assemblies are designed to accommodate liners which facilitate transportation of samples to laboratory without disturbing soil samples.

*Stainless Steel sampler assemblies and tubes Now Available to meet your environmental sampling requirements.

| Standard Split Tube Sampler With Heat-Treated Shoes | | | | | | | |
|--|---------------------|-------|---------------|-------|----------|--------|------|
| Size | Shoe I.D. In./mm | Conn. | Sample Length | | Part No. | Weight | |
| | | | Inches | mm | | Lbs. | kg |
| 2" O.D. x 1-1/2" I.D. (50.8 x 38.1 mm) | 1-3/8" (34.9 mm) | AW | 18 | 457.2 | 22017-2 | 10.5 | 4.8 |
| | | | 24 | 609.0 | 22017-9 | 12.5 | 5.6 |
| 2-1/2" O.D. x 2" I.D. (63.5 x 50.8 mm) | 1-7/8" (47.6 mm) | AW | 18 | 457.2 | 22018-2 | 15.0 | 6.7 |
| | | | 24 | 609.0 | 22018-4 | 17.5 | 7.9 |
| 3" O.D. x 2-1/2" I.D. (76.2 x 63.5 mm) | 2-3/8" (60.3 mm) | NW | 18 | 457.2 | 22019-3 | 19.5 | 8.8 |
| | | | 24 | 609.0 | 22019-4 | 23.0 | 10.4 |
| 3-1/2" O.D. x 3" I.D. (88.9 x 76.2 mm) | 2-7/8" (73.0 mm) | NW | 18 | 457.2 | 22022-2 | 22.0 | 9.9 |
| | | | 24 | 609.0 | 22022-6 | 25.0 | 11.3 |
| 4-1/2" O.D. x 4" I.D. (113.7 x 101 mm) | 3-7/8" (98.4 mm) | NW | 18 | 457.2 | 22020-3 | 33.5 | 15.1 |
| | | | 24 | 609.0 | 22020-4 | 41.5 | 18.7 |

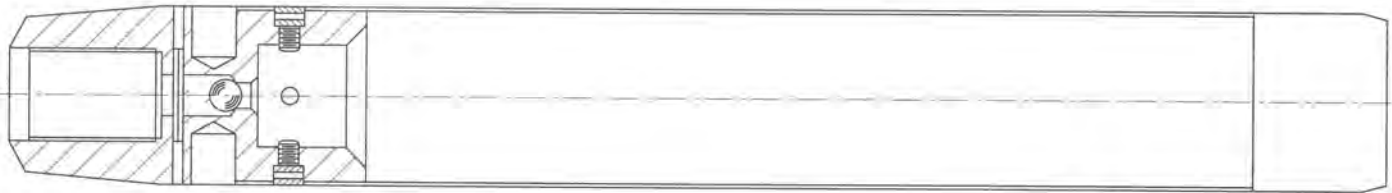
| Stainless Steel Split Tube Sampler | | | | | | | |
|---|---------------------|-------|---------------|-------|----------|--------|-----|
| Size | Shoe I.D. In./mm | Conn. | Sample Length | | Part No. | Weight | |
| | | | Inches | mm | | Lbs. | kg |
| 2" O.D. x 1-1/2" I.D. (50.8 x 38.1 mm) | 1-3/8" (34.9 mm) | AW | 24 | 609.0 | 22017-19 | 10.2 | 4.6 |
| 3" O.D. x 2-1/2" I.D. (76.2 x 63.5 mm) | 2-3/8" (60.3 mm) | AW | 24 | 609.0 | 22019-13 | 18.9 | 8.6 |

| Stainless Steel Sampler — Options and Spare Parts | | |
|---|-----------|-----------|
| Description | 2" O.D. | 3" O.D. |
| Head Assembly | 22036-58 | 22036-57 |
| Tube - 24" | 22016-57 | 22016-58 |
| Open Shoe | 120062-28 | 120062-29 |
| Basket Retainer | 320928 | 320929 |
| Special Coupling | 120161-9 | 120161-11 |

| Options & Spare Parts — Standard Split Tube Sampler | | | | | | | | | | |
|---|-------------|----------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|
| Diameter/Size: | 2" O.D. | | 2-1/2" O.D. | | 3" O.D. | | 3-1/2" O.D. | | 4-1/2" O.D. | |
| | AW Part No. | Wt. Lbs. | AW Part No. | Wt. Lbs. | NW Part No. | Wt. Lbs. | NW Part No. | Wt. Lbs. | NW Part No. | Wt. Lbs. |
| Head Assembly "W" | 22036-7 | 3.0 | 22036-4 | 6.0 | 22036-10 | 8.0 | 22036-2 | 9.0 | 22036-12 | 11.0 |
| Tube — 18" | 22016-6 | 10.0 | 22016-2 | 12.0 | 22016-8 | 11.0 | 22016-1 | 14.0 | 22016-10 | 15.0 |
| Tube — 24" | 22016-7 | 11.0 | 22016-12 | 15.0 | 22016-9 | 12.0 | 22016-24 | 15.0 | 22016-11 | 16.0 |
| Open Shoe — Blunt 1/16" | 120062-4 | 1.0 | 120062-2 | 1.0 | 120062-7 | 2.0 | 120062-1 | 2.0 | 120062-8 | 3.0 |
| Open Shoe — ASTM 1/16" | 120062-5 | 1.0 | — | — | — | — | — | — | — | — |
| Spacer | 150035-272 | † | 150035-273 | † | 150035-274 | † | 150035-275 | † | 1500276 | † |
| Brass Liner — 18" | 120060-7 | 2.0 | 120060-2 | 2.0 | 120060-10 | 3.0 | NA | - | NA | - |
| Brass Liner — 24" | 120060-16 | 2.0 | 120060-18 | 2.5 | 120060-19 | 3.0 | NA | - | NA | - |
| Teflon Liner — 18" | 120966-1 | * | NA | - | NA | - | NA | - | NA | - |
| Teflon Liner — 24" | 120966-2 | * | NA | - | NA | - | NA | - | NA | - |
| Clear Plastic Liner — 18" | 120878-1 | * | 120878-7 | * | 120878-9 | * | 120878-10 | * | NA | - |
| Clear Plastic Liner — 24" | 120878-2 | * | 120878-8 | * | 120878-3 | * | 120878-11 | * | NA | - |
| Plastic Cap | 90367-35 | * | 90367-43 | * | 90367-49 | * | 90367-55 | * | NA | * |
| Special Coupling | 120161-1 | 1.0 | 120161-2 | 1.0 | 120161-3 | 1.0 | 120161-4 | 1.0 | 120161-5 | 1.0 |

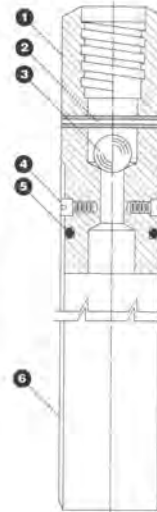
* Less than one pound or .45 kilogram. † Limited Sizes. NA = Not Available.

Soil Sampling



Thin Wall Tube Samplers

This sampler is designed to take undisturbed samples in cohesive type soils and clays...The thin steel tube containing the sample may be removed from the sampler head and used as a container to transport sample to laboratory thus avoiding any damage to sample or costly delays in operation. In practice several replacement tubes are carried by crew to minimize disturbance, preserve moisture and cut down on delays in sampling procedure. The thin wall tube is made available in either steel, galvanized or brass and in varying lengths. This sampler is also commonly called a "Shelby" or "Chicago" thin wall sampler. The procedure for taking samples is outlined under ASTM Standard Procedures, whereby the sampler is pressed into the undisturbed clay or silts by hydraulic force.



Stainless Steel tubes Now Available to meet your environmental sampling requirements.

Thin Wall Tube Sampler See Options Below for Galvanized Tubes

| Size | Length of Steel Tube* | | Rod Conn. | Part No. | Weight | |
|---|-----------------------|------|-----------|----------|--------|------|
| | Inches | mm | | | Lbs. | kg |
| 2" O.D. x 1-7/8" I.D. (50.8 x 47.7 mm) | 30 | 762 | AW | 22007-8 | 7.0 | 3.1 |
| | 36 | 914 | AW | 22007-10 | 8.0 | 3.6 |
| | 54 | 1371 | AW | 22007-12 | 10.0 | 4.5 |
| 2-1/2" O.D. x 2-3/8" I.D. (63.5 x 60.3 mm) | 30 | 762 | AW | 22027-8 | 11.0 | 4.9 |
| | 36 | 914 | AW | 22027-10 | 12.0 | 5.4 |
| | 54 | 1371 | AW | 22027-12 | 14.0 | 6.3 |
| 3" O.D. x 2-7/8" I.D. (76.2 x 72.0 mm) | 30 | 762 | NW | 22012-8 | 16.0 | 7.2 |
| | 36 | 914 | NW | 22012-10 | 16.5 | 7.4 |
| | 54 | 1371 | NW | 22012-12 | 19.0 | 8.6 |
| 3-1/2" O.D. x 3-3/8" I.D. (88.9 x 84.6 mm) | 30 | 762 | NW | 22058-8 | 20.0 | 9.0 |
| | 36 | 914 | NW | 22058-10 | 21.0 | 9.5 |
| | 54 | 1371 | NW | 22058-12 | 23.0 | 10.4 |
| 4-1/2" O.D. x 4-3/8" I.D. (113.7 x 110.5 mm) | 30 | 762 | NW | 22032-8 | 24.0 | 10.8 |
| | 36 | 914 | NW | 22032-10 | 27.0 | 12.2 |
| | 54 | 1371 | NW | 22032-12 | 31.0 | 14.0 |
| 5" O.D. x 4-7/8" I.D. (127.0 x 105.9 mm) | 30 | 762 | NW | 22035-8 | 36.5 | 16.5 |
| | 36 | 914 | NW | 22035-10 | 39.0 | 17.6 |
| | 54 | 1371 | NW | 22035-12 | 43.0 | 19.4 |

* Sample length is 2-1/2" (63.5 mm) shorter than tube length.

Optional and Spare Parts — Thin Wall Sampler

| Item No. | Diameter and Head Thread Conn. Name of Part | 2" O.D. | | 2-1/2" O.D. | | 3" O.D. | | 3-1/2" O.D. | | 4-1/2" O.D. | | 5" O.D. | |
|----------|--|-------------|-------------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|
| | | AW Part No. | Wt. Lbs. (kg) | AW Part No. | Wt. Lbs. (kg) | NW Part No. | Wt. Lbs. (kg) | NW Part No. | Wt. Lbs. (kg) | NW Part No. | Wt. Lbs. (kg) | NW Part No. | Wt. Lbs. (kg) |
| | | 1. | Head Assembly "W" | 22033-3 | 4.0 (1.8) | 22033-7 | 7.0 (3.1) | 22033-5 | 11.0 (4.9) | 22033-23 | 13.0 (5.8) | 22033-11 | 17.0 (7.7) |
| 2. | Ball | 90213-18 | * | 90213-18 | * | 90213-18 | * | 90213-18 | * | 90213-18 | * | 90213-18 | * |
| 3. | Rollpin | 90107-251 | * | 90107-251 | * | 90107-251 | * | 90107-251 | * | 90107-251 | * | 90107-251 | * |
| 4. | Cap Screw (4 Req'd) | 120660 | * | 120652 | * | 120652 | * | 120652 | * | 120652 | * | 120652 | * |
| 5. | Galvanized Tube — 30" | 120021-19 | 3.1 (1.4) | — | — | 120037-19 | 5.0 (2.3) | NA | — | NA | — | NA | — |
| 5. | Galvanized Tube — 36" | 120021-20 | 3.8 (1.7) | — | — | 120037-21 | 6.0 (2.7) | NA | — | NA | — | NA | — |
| 5. | Galvanized Tube — 54" | 120021-21 | 5.6 (2.5) | — | — | — | — | NA | — | NA | — | NA | — |
| 5. | Steel Tube — 30" | 120021-4 | 3.1 (1.4) | 120086-4 | 4.0 (1.8) | 120037-4 | 4.8 (2.2) | 120093-11 | 5.5 (2.5) | 120095-4 | 7.3 (3.3) | 120109-4 | 16.5 (7.5) |
| 5. | Steel Tube — 36" | 120021-5 | 3.8 (1.7) | 120086-5 | 4.8 (2.2) | 120037-5 | 5.7 (2.6) | 120093-12 | 6.6 (3.0) | 120095-5 | 8.7 (3.9) | 120109-5 | 19.8 (9.0) |
| 5. | Steel Tube — 54" | 120021-6 | 5.6 (2.5) | 120086-6 | 7.2 (3.3) | 120037-6 | 8.6 (3.9) | 120093-13 | 9.9 (4.5) | 120095-6 | 13.1 (5.9) | 120109-6 | 29.6 (12.1) |
| 5. | Brass Tube — 30" | 120022-4 | 4.0 (1.8) | 120085-4 | 4.0 (1.8) | 120038-4 | 6.0 (2.7) | 120092-10 | 7.0 (3.2) | 120094-4 | 7.0 (3.2) | NA | — |

Note: Sample length is 2-1/2" shorter than tube length. * Less than one pound or .45 kilogram.



Acker Denison Core Barrel

Special Undisturbed Soil Sampling Core Barrel U.S. Patent No. 2,403,002

The Acker Denison Soil Sampling Barrel is designed for taking undisturbed samples of cohesive soils, rate earths, kaolin and similar soft and easily eroded materials.

The soil core is retained by wall friction or by a basket type retainer. Three lengths of sawtooth borium faced cutter shoes are provided with each barrel to facilitate sampling in soft, medium or hard materials.

When extremely hard and compacted formations are encountered, the Denison Core Barrel can be fitted with a bit assembly consisting of an inner tube extension and special split ring core lifter. A diamond or carbide insert type bit is recommended depending on the hardness encountered.

The Acker Denison core Barrel is manufactured in five standard sizes: 2-15/16" O.D., 3-1/2" O.D., 4-1/2" O.D., 5-1/2" O.D., and 7-3/4" O.D. Each size recovers a relatively large sample in the inner non-rotating tube of the barrel. This inner tube is lined with thin plastic liners so that the sample can be recovered, capped and preserved in the same manner as when using thin wall tube samplers or stationary piston samplers. Standard length barrels recover either two or five foot samples. The shorter barrels are recommended for sampling softer materials. The Denison Core Barrel can be operated by any standard drill rig capable of using N rods or larger. The sampler is designed for use with either clear water, drilling mud or air.

Acker Denison Undisturbed Soil Sampling Core Barrel

(U.S. Patent No. 2,403,002)

| Sampler O.D. | 2-15/16" (74.6 mm) | | 3-1/2" (88.9 mm) | | 4" (101.6 mm) | | 5-1/2" (139.7 mm) | | 7-3/4" (196.9 mm) | | | | | | |
|--|--------------------|--------|------------------|----------|--------------------|------|--------------------|--------|--------------------|----------|--------|-------|---------|-------|-------|
| Hole Diameter (Nominal) | 3-1/16" (77.8 mm) | | 3-5/8" (92.0 mm) | | 4-1/8" (104.8 mm) | | 5-5/8" (142.9 mm) | | 7-7/8" (200.0 mm) | | | | | | |
| Core Diameter (Nominal) | 1-7/8" (47.6 mm) | | 2-3/8" (59.9 mm) | | 2-13/16" (71.4 mm) | | 4-3/32" (104.0 mm) | | 6-5/16" (160.3 mm) | | | | | | |
| Rod Connection (Box) | NW | | NW | | 2-7/8" API Reg. | | 2-7/8" API Reg. | | 3-1/2" API Reg. | | | | | | |
| Part Description | Part No. | Weight | | Part No. | Weight | | Part No. | Weight | | Part No. | Weight | | | | |
| | | Lbs. | kg | | Lbs. | kg | | Lbs. | kg | | Lbs. | kg | | | |
| Complete Assembly 2 ft. Core Cap. (.61 m) | 22143-2 | 63.0 | 28.6 | 22098-1 | 65.0 | 29.4 | 22099-1 | 75.0 | 33.9 | 22050-1 | 200.0 | 90.6 | 22100-1 | 320.0 | 145.0 |
| Complete Assembly 5 ft. Core Cap. (1.5 m) | 22143-1 | 95.0 | 43.1 | 22098-2 | 100.0 | 45.3 | 22099-2 | 140.0 | 63.4 | 22050-2 | 250.0 | 113.2 | 22100-2 | 355.0 | 160.8 |

Parts for Denison Core Barrel — 2 Ft. Core Assembly

| Sampler O.D.: | | | 2-15/16" (74.6 mm) | 3-1/2" (88.9 mm) | 4" (101.6 mm) | 5-1/2" (139.7 mm) | 7-3/4" (196.9 mm) |
|---------------|--------------------------|----------|-----------------------|---------------------|------------------|----------------------|--------------------------|
| Item No. | Parts List Description | No. Req. | Part No. | Part No. | Part No. | Part No. | Part No. |
| — | Complete Head Assembly | 1 | 22144-1 | 22104-1 | 22101-1 | 22051-1 | 22105-1 |
| 1 | Outer Head | 1 | 320814 | 320485 | 320469 | 320198 | 320503 |
| 2 | Outer Tube | 1 | 120824 | 120475 | 120463 | 120178 | 120493 |
| 3 | Bearing Cap | 1 | 120816 | 120488 | 120472 | 120169 | 120506 |
| 4 | Shaft | 1 | 120487 | 120487 | 120471 | 120173 | 120505 |
| 5 | Inner Head | 1 | 120810 | 120486 | 120470 | 120174 | 120504 |
| 6 | Key | 1 | 90109-61 | 90109-61 | 90109-61 | 90109-123 | 90109-123 |
| 7 | Inner Tube | 1 | 120825 | 120477 | 120465 | 120180 | 120495 |
| — | Check Valve Assembly | 1 | 22052-5 | 22052-1 | 22052-2 | 22052-3 | 22052-4 |
| 8 | Check Valve Closure | 1 | 120483 | 120483 | 120172 | 120172 | 120501 |
| 9 | Check Valve | 1 | 120481 | 120481 | 120167 | 120167 | 120499 |
| 10 | Check Valve Washer | 1 | 120482 | 120482 | 120170 | 120170 | 120500 |
| 11 | Check valve Base | 1 | 120808 | 120480 | 120467 | 120166 | 120498 |
| 12 | Check Valve Spacer | 1 | 120809 | 120484 | 120468 | 120171 | 120502 |
| 13 | Liner (Plastic) | 1 | 120878-8 | 120878-3 | 120104-56 | 120104-59 | — |
| 14 | Shoe, Inner Barrel | 1 | 120508-10 | 120508-1 | 120508-2 | 120508-3 | 120508-4 |
| 15 | Basket Retainer | 1 | 320509-5 | 320509-1 | 320509-2 | 320509-3 | 320509-4 |
| 16A | Sawtooth Bit 1/2" Lead | 1 | 320817-1 | 320479-1 | 320168-1 | 320197-1 | 320497-1 |
| 16B | Sawtooth Bit 1-1/2" Lead | 1 | 320817-2 | 320479-2 | 320168-2 | 320197-2 | 320497-2 |
| 16C | Sawtooth Bit 3" Lead | 1 | 320817-3 | 320479-3 | 320168-3 | 320197-3 | 320497-3 |
| 17 | O-Ring | 1 | 90108-145 | 90108-234 | 90108-237 | 90108-248 | 90108-262 |
| 18 | Oil Seal | 2 | 90363-37 | 90363-37 | 90366-73 | 90366-121 | 90366-186 |
| 19 | Bearing | 4 | 90207-205 | 90207-205 | 90207-206 | 90207-209 | 90207-213 |
| 20 | Locknut | 2 | 90400-05 | 90400-05 | 90400-06 | 90400-09 | 90400-13 |
| 21 | Lockwasher | 1 | 90399-05 | 90399-05 | 90399-06 | 90399-09 | 90399-13 |
| 22 | Oil Seal | 1 | 90363-57 | 90363-57 | 90363-81 | 90366-161 | 90366-225 |
| 23 | Lockwasher | 6 | — | 90343-4 | 90343-4 | 90343-5 | 90343-6 |
| 24 | Cap Screw | 6 | — | 90214-169 | 90214-197 | 90214-198 | 90214-199 |
| 25 | Shaft Nut | 1 | 90284-9 | 90284-9 | 90284-16 | 90294-14 | Nut (2-Req.) 90400-10 |
| 26 | Cotter Pin | 1 | 90456-38 | 90456-38 | 90456-41 | 90456-41 | Washer 90399-10 |
| 27 | Roll Pin | 1 | 90107-211 | 90107-211 | 90107-315 | 90107-315 | 90107-368 |
| 28 | Grease Fitting | 1 | 90359-26 | 90359-26 | 90359-1 | 90359-1 | 90359-1 |
| 29 | Pipe Plug | 1 | — | — | 90831-1 | 90831-1 | 90831-1 |

Denison Conversion Parts — For 5 Ft. Core Length

| | | | | | | | |
|---|---------------|---|-----------|----------|--------|----------|-----------|
| — | Outer Tube | 1 | 120823 | 120476 | 120464 | 120179 | 120494 |
| — | Inner Tube | 1 | 120813 | 120478 | 120466 | 120181 | 120496 |
| — | Liner (Brass) | 1 | 120060-61 | 120182-9 | NA | 120182-3 | 120182-12 |

Optional Bottom Assembly for Coring Soft Rock — With Optional Bits**

| | | | | | | | |
|----|-------------------------------|---|--------|--------|--------|--------|--------|
| 30 | Inner Tube Extension | 1 | 120821 | 120489 | 120473 | 120176 | 120507 |
| 31 | Core Lifter—Special | 1 | 120822 | 120490 | 120474 | 120175 | 120571 |
| — | Carbide Insert, Btm. Dis. Bit | 1 | 320842 | 320492 | 320120 | 320195 | 320572 |
| 32 | Sawtooth Btm. Dischg. Bit** | 1 | 320840 | 320081 | 320123 | 320162 | 320573 |
| — | Conv. Dischg. Diamond Bit** | 1 | — | 20088 | 20089 | 20090 | 20091 |

** Not illustrated.

Denison — Optional Parts and Accessories

| | | | | | | | |
|---|--|---|-----------|------------|------------|------------|------------|
| — | Spacer (In Lieu of Basket Retainer) | 1 | 120811 | 150035-145 | 150035-143 | 150035-142 | 150035-146 |
| — | Clear Plastic Liner-2 Ft. | 1 | 120878-8 | 120878-3 | 120104-56 | 120104-59 | — |
| — | Clear Plastic Liner-5 Ft. | 1 | 120104-55 | 120878-19 | 120104-57 | 120104-58 | — |
| — | Plastic Cap for Liner | 2 | 90367-43 | 90367-49 | 90367-55 | — | — |
| — | Blank Bit (Coring) | 1 | 320820 | 320491 | 120118 | 320192 | 320574 |
| — | Strap Wrenches | 2 | 90809-3 | 90809-3 | 90809-4 | 90809-4 | 90809-5 |

*Less than one pound or .45 kg. **Not illustrated.

Soil Sampling



Stationary Piston Sampler

This sampler features a stationary piston, that is, the piston remains stationary as the outer tube of the sampler is pushed ahead into fine silts or clays. The piston creates suction on the sample assisting it into the sample tube. In operation, the piston closes the entrance of the tube eliminating any change of contamination in the tube prior to pressing. The sampler features a vacuum release and a cone clamp assembly that prevents the piston from pushing out the sample upon recovery. The outer tube, containing the sample, is generally used to carry the sample to the laboratory. Several replacement tubes and caps are desirable to take continuous samples without delay. The actuating rods are in convenient lengths for transportation and are necessary to hold piston during the pressing of the sample. For operation in brackish water, brass or stainless steel tubes are commonly used.

Stainless Steel Tubes now available.

Stationary Piston Sampler — With Steel Tube

*Meets ASTM-AASHTO-DCDMA-Standards on Tubes

| Size | Sample Tube Length | Rod Conn. | Part No. | Weight | |
|---|--------------------|-----------|----------|--------|------|
| | | | | Lbs. | kg |
| 2" O.D. x 1-7/8" I.D.* (50.8 x 47.6 mm) | 30" 762.0 mm | AW | 22056-16 | 25.0 | 11.3 |
| 2-1/2" O.D. x 2-3/8" I.D. (63.5 x 60.3 mm) | 30" 762.0 mm | AW | 22053-16 | 28.0 | 12.6 |
| 3" O.D. x 2-7/8" I.D.* (76.2 x 73.0 mm) | 30" 762.0 mm | NW | 22041-43 | 30.0 | 13.6 |
| 3-1/2" O.D. x 3-3/8" I.D. (88.9 x 85.7 mm) | 30" 762.0 mm | NW | 22057-34 | 32.0 | 14.5 |
| 4-1/2" O.D. x 4-3/8" I.D. (113.7 x 110.5 mm) | 30" 762.0 mm | NW | 22065-34 | 36.0 | 16.3 |

Options & Spare Parts — Stationary Piston Sampler

(Optional Tubes See Item No. 11)

| Item No. | Diameter and Head Thread Connection Part Description | 2" O.D. | | 2-1/2" O.D. | | 3" O.D. | | 3-1/2" O.D. | | 4-1/2" O.D. | |
|----------|---|-----------|---------|-------------|---------|-----------|---------|-------------|----------|-------------|----------|
| | | AW | Weight | AW | Weight | NW | Weight | NW | Weight | NW | Weight |
| | | Part No. | Lbs. kg | Part No. | Lbs. kg | Part No. | Lbs. kg | Part No. | Lbs. kg | Part No. | Lbs. kg |
| 1 | Head | 120140-9 | 2.0 .90 | 120140-7 | 6.0 2.7 | 120140-10 | 6.0 2.7 | 120140-12 | 8.0 3.6 | 120140-16 | 11.0 4.9 |
| 2 | Clamp Spring | 120136 | * * | 120136 | * * | 120136 | * * | 120136 | * * | 120136 | * * |
| 3 | Cone Clamp Assembly | 22042-1 | * * | 22042-1 | * * | 22042-1 | * * | 22042-1 | * * | 22042-1 | * * |
| 4 | Plug | 120221 | 3.0 1.3 | 120189 | 5.0 2.2 | 120142 | 7.0 3.1 | 120226 | 10.0 4.5 | 120243 | 12.0 5.4 |
| 5 | Socket Head Cap Screw (4 Req'd) | 120660 | * * | 120652 | * * | 120652 | * * | 120652 | * * | 120652 | * * |
| 6 | Packing Cup (2 Req'd) | 150045-15 | * * | 50045-14 | * * | 50045-11 | * * | 50045-12 | * * | 50045-18 | * * |
| 7 | Piston Spacer (2 Req'd) | 120222 | * * | 120190 | * * | 120138 | 1.0 .45 | 120145 | 1.0 .45 | 120297 | 1.0 .45 |
| 8 | Piston | 120223 | * * | 120295 | 1.0 .45 | 120143 | 1.0 .45 | 120225 | 1.0 .45 | 120242 | 2.0 .90 |
| 9 | Lockwasher | 90399-04 | * * | 90399-065 | * * | 90399-08 | * * | 90399-10 | * * | 90399-15 | * * |
| 10 | Locknut | 90400-04 | * * | 90400-065 | * * | 90400-08 | * * | 90400-10 | * * | 90400-15 | * * |
| 11 | Steel Tube — 30" | 12021-4 | 3.0 1.3 | 120086-4 | 4.0 1.8 | 120037-4 | 5.0 2.2 | 120093-11 | 7.0 3.1 | 120095-4 | 7.0 3.1 |
| 11 | Brass Tube — 30" | 120022-4 | 4.0 1.8 | 120085-4 | 4.0 1.8 | 120038-4 | 6.0 2.7 | 120092-10 | 6.0 2.7 | — | 7.0 3.1 |
| 11 | Stainless Steel Tube — 30" | 120045-4 | 3.5 1.5 | 1200246-4 | 4.0 1.8 | 120030-1 | 5.0 2.2 | 120027-7 | 6.5 2.9 | 120244-4 | 7.0 3.1 |
| 12 | Piston Rod — Master | 120139-1 | 1.5 .67 | 120139-1 | 1.5 .67 | 120139-1 | 1.5 .67 | 120139-1 | 1.5 .67 | 120139-1 | 1.5 .67 |
| † | Actuating Rod — 2 Ft. | 120219-2 | 1.5 .67 | 120219-2 | 1.5 .67 | 120219-2 | 1.5 .67 | 120219-2 | 1.5 .67 | 120219-2 | 1.5 .67 |
| † | Actuating Rod — 5 Ft. | 120219-4 | 5.0 2.2 | 120219-4 | 5.0 2.2 | 120219-4 | 5.0 2.2 | 120219-4 | 5.0 2.2 | 120219-4 | 5.0 2.2 |
| † | Actuating Rod — 10 Ft. | 120219-5 | 7.0 3.1 | 120219-5 | 7.0 3.1 | 120219-5 | 7.0 3.1 | 120219-5 | 7.0 3.1 | 120219-5 | 7.0 3.1 |

* Less than one pound or .45 kg. † Not shown.

GUS Undisturbed Sampler

This unique, air or hydraulic piston sampler was designed and test proven in the drilling field for many years. The design allows the sampler to be classed as a truly undisturbed piston sampler producing high production sampling.

How it Works:

The GUS Sampler is assembled on a drill rod and lowered to the bottom of a cleaned bore hole. The drill rod may be chucked by means of a chucking rod. A water swivel is attached with a hose line coupled to the swivel and the pressure pump. As the water or air pressure is applied to

the drill rods at approximately 100 to 600 PSI, the piston in the head of the assembly forces the thin wall sample tube into the soft underlying soil or clay materials to take the sample.

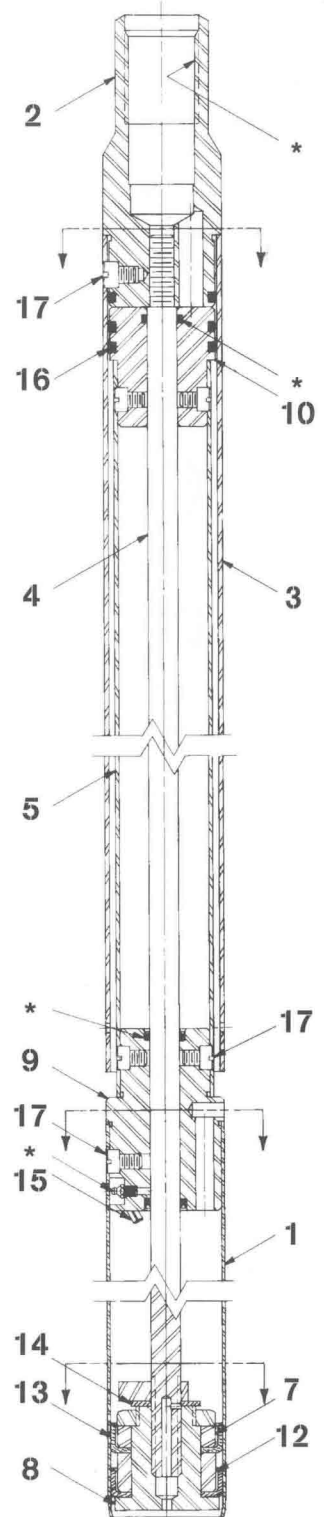
In Operation:

- 1) The hole is drilled by rotary means and prepared by using either casing or drilling mud to support the overburden.
- 2) The drill rods extending the sampler to the bottom of the hole may be clamped to the casing to prevent upward movement from down thrust of fluid or air pressure used...or rods may be connected to the chucking rod in rotary drill head.

3) A water swivel or adaptor is used to direct fluid or air into the drill string to operate the sampler.

4) A positive displacement pump or compressed air is used to exert pressure on the stationary piston of the sampler. Pressure range normally required is 100 to 600 PSI for a least one minute.

Stainless Steel tubes Now Available to meet your environmental sampling requirements.



Gus Undisturbed Sampler — Parts

| Item No. | Part Description | No. Req'd. | 2-1/2 Inch Part No. | 3 Inch Part No. | 3-1/2 Inch Part No. |
|----------|-------------------------------------|------------|---------------------|-----------------|---------------------|
| — | Rod Connection in Head | — | AW | NW | NW |
| 1 | Tube, Sampler (Steel) | 1 | 120086-4 | 120037-4 | 120093-11 |
| 3 | Adapter | 1 | 120798-1 | 120798-5 | 120798-3 |
| 4 | Rod, Piston | 1 | 120800-1 | 120800-6 | 120800-2 |
| 5 | Tube, Inner | 1 | 120801-1 | 120801-2 | 120801-3 |
| 6 | Latch, Release | 1 | 120802-1 | 120802-2 | 120802-3 |
| 7 | Retainer | 1 | 120803-1 | 120803-2 | 120803-3 |
| 8 | Piston | 1 | 120804-1 | 120804-2 | 120804-3 |
| 9 | Adapter (Inner Tube to Sample Tube) | 1 | 120805-1 | 120805-2 | 120805-3 |
| 10 | Carrier, Tube | 1 | 120806-1 | 120806-2 | 120806-3 |
| 11 | Nut | 1 | 120807-1 | 120807-2 | 120807-2 |
| 12 | Spacer | 1 | 150035-336 | 150035-312 | 150035-377 |
| 13 | Cup, Packing | 2 | 150045-14 | 150045-11 | 150045-12 |
| 14 | Washer, Leather | 1 | 150045-87 | 150045-71 | 150045-71 |
| 15 | Rollpin (1/4 Dia. x 1-1/2 Long) | 1 | 90107-186 | 90107-214 | 90107-214 |
| 16 | "O" Ring (2) Piston (1) Adapter | 3 | 90108-328 | 90108-332 | 90108-336 |
| 17 | Capscrews | 11 | 120652-0 | 120652-0 | 120652-0 |
| — | O-Ring | 1 | 90108-113 | 90108-210 | 90108-210 |
| — | Oil Seal | 2 | 90363-22 | 90363-37 | 90363-37 |
| — | Grease Fitting | 1 | 90359-16 | 90359-16 | 90359-16 |
| — | Caution Tag | 1 | 150157-209 | 150157-209 | 150157-209 |
| — | Cylinder | 1 | 120799-1 | 120799-2 | 120799-3 |

Gus Assembly — Sample Tubes and Caps

| Size | Assembly* Part No. | Head Conn. | Extra Steel ASTM Tubes | Caps for Sample Tubes |
|--------|--------------------|------------|------------------------|-----------------------|
| 2-1/2" | 22142-1 | AW | 120086-4 | 90367-49 |
| 3" | 22142-2 | NW | 120037-4 | 90367-55 |
| 3-1/2" | 22142-3 | NW | 120093-11 | 90367-56 |

* Assembly includes one sample tube and cap screw wrench.

Specifications — GUS Undisturbed Piston Sampler

Air or Hydraulic (Water)

| Sampler Size | | Thread in Head Conn. | Sampler Stroke | | Sampler Tube Length | | Sampler Diameter Decimal | Operating Pressure Nominal** | | Weight of Assembly | |
|--------------|------|----------------------|----------------|-----|---------------------|-----|--------------------------|------------------------------|-------------------|--------------------|----|
| Inch | mm | | Inch | mm | Inch | mm | | PSI | kg/c ² | Lbs. | kg |
| 2-1/2 | 63.5 | AW ROD | 24 | 609 | 30 | 762 | 2.347 | 100 to 600 | 7.03 to 42.1 | 42 | 19 |
| 3 | 76.2 | NW ROD | 24 | 609 | 30 | 762 | 2.841 | | | 47 | 21 |
| 3-1/2 | 88.9 | NW ROD | 24 | 609 | 30 | 762 | 3.336 | | | 51 | 23 |

Operation

The thrust developed by the operation of the GUS Sampler may exceed weight of drill rig...Therefore, caution should be exercised when securing drill rods to casing, drilling equipment or actuating the Sampler above ground. Maximum operating pressure—600 PSI.

Soil Sampling

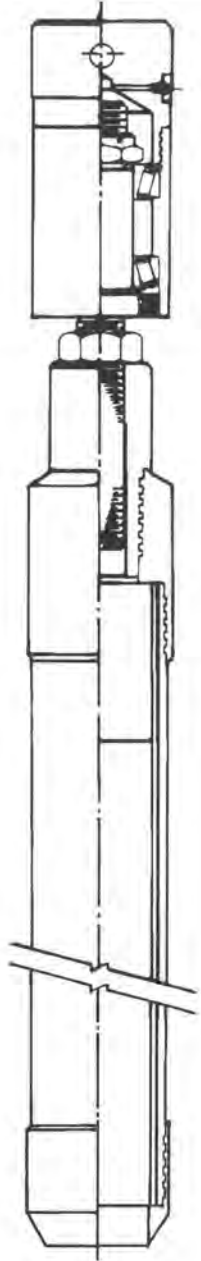
"New" The Laskey Continuous Soil Sampler

The Laskey Sampler was designed to recover continuous, relatively undisturbed soil samples when drilling with Hollow Stem augers and works similarly to the Acker Denison Soil Sampler.

The Laskey provides a continuous 5 ft. soil sample plus accommodates collection of 6 inches of overflow material. The non-rotating sample barrel is available in three sizes and uses liners or a patented resilient sleeve retainer to hold the sample and protect it during recovery operations.

Fast Simple Operation
Continuous 5 Ft. Sample Recovery

The Laskey Sampler is available in three sizes for use inside standard 3-1/4, 3-3/4 and 4-1/4 inch Hollow Stem Augers. The sampler requires minimal maintenance.



Laskey – Auger Drive Adapter

| Laskey Size | Auger Size | Hex Size | Part Number |
|-------------|-------------------------|----------|-------------|
| 3" | 3-1/4 H.S.A. | 1-5/8" | 320931-0 |
| | 3-1/4 H.S.A. (Diedrich) | 1-5/8" | 321049-0 |
| | 3-1/4 H.S.A. (CME) | 1-5/8" | 321052-0 |
| | 3-1/4 H.S.A. (Mobile) | 1-5/8" | 321052-1 |
| 3-1/2" | 3-3/4 H.S.A. | 1-5/8" | 320935-0 |
| 4" | 4-1/4 H.S.A. | 1-5/8" | 320957-0 |
| | 4-1/4 H.S.A. (CME) | 1-5/8" | 321011-0 |
| | 4-1/4 H.S.A. (Diedrich) | 1-5/8" | 321060-0 |
| | 6-1/4 H.S.A. | 2" | 320963-0 |
| | 4-1/4 H.S.A. | 2" | 321063-0 |
| | 4-1/4 H.S.A. (Mobile) | 2" | 321067-0 |

Laskey Continuous Soil Sampler

U.S Patent No. 4,156,469

| Laskey Size | Conn. | Assembly Part No. | Outer Tube Barrel Part No. | Head Assembly Part No. | Shoe Part No. | Holder Res. Slv. Part No. | Sampler Head Part No. | 6" Liner Part No. | 5' Liner Part No. |
|-----------------------|-------|-------------------|----------------------------|------------------------|---------------|---------------------------|-----------------------|-------------------|-------------------|
| 3" 3-1/4" H.S. | AW | 22152-1 | 120902 Solid | 22155-1 | 120903 | 120904 | 120905 | 120906-1 | 120906-2 |
| | | 22152-2 | 120902-1 Split | 22155-2 | | | 121008 | | |
| | AWJ | 22152-3 | 120902 Solid | 22155-2 | | | 120913 | | |
| | | 22152-4 | 120902-1 Split | | | | | | |
| 3-1/2" 3-3/4" H.S. | NW | 22153-1 | 120910 Solid | 22156-1 | 120911 | 120912 | 120913 | 120914 | 120914-2 |
| | | 22153-2 | 120910-1 Split | 22156-2 | | | | | |
| | NWJ | 22153-3 | 120910 Solid | | | | 22156-2 | | |
| | | 22153-4 | 120910-1 Split | | | | | | |
| 4" 4-1/4" H.S. | NW | 22154-1 | 120918 Solid | 22156-1 | 120919 | 120920 | 120921 | 120922-1 | 120922-2 |
| | | 22154-2 | 120918-1 Split | 22156-2 | | | | | |
| | NWJ | 22154-3 | 120918 Solid | | | | 22156-2 | | |
| | | 22154-4 | 120918-1 Split | | | | | | |

H.S. = Equivalent Hollow Stem Auger Size.

Laskey – Optional Accessories

| Laskey Size | Description | Part No. |
|-------------|-----------------|----------|
| 3" | Basket Retainer | 321007 |
| 3-1/2" | | — |
| 4" | | 320101-2 |

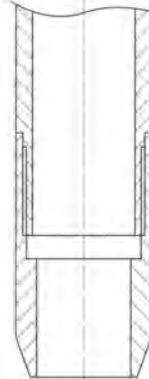
Soil Sampling

Heat-Treated Open Shoes

For Solid or Split Tube Samplers — 8 TPI

| Nose Radius 1/16" Blunt | | | D.C.D.M.A. — A.S.T.M. 1/16" Sharp | | | | |
|----------------------------|----------|--------|--------------------------------------|---------------------------|----------|--------|-----|
| Use W/ Sampler O.D. | Part No. | Weight | | Use W/ Sampler O.D. | Part No. | Weight | |
| | | Lbs. | kg | | | Lbs. | kg |
| 2" | 120062-4 | 1.0 | .45 | 2" | 120062-5 | 1.0 | .45 |
| 2-1/2" | 120062-2 | 1.0 | .45 | 2-1/2" | — | 1.0 | .45 |
| 3" | 120062-7 | 1.5 | .72 | 3" | — | 1.5 | .72 |
| 3-1/2" | 120062-1 | 1.5 | .72 | 3-1/2" | — | 1.5 | .72 |
| 4-1/2" | 120062-8 | 2.0 | .90 | 4-1/2" | — | 2.0 | .90 |

Note: Shoes with 4 TPI are available in most sizes.



Interchangeable Parts and Accessories

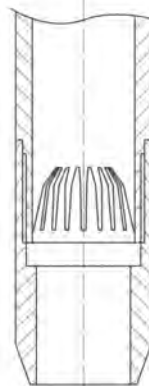
We have grouped together the various types of interchangeable parts and accessories for solid and split-tube type samplers. Since these samplers are repeatedly driven into the earth, it is necessary to periodically replace them. Spare parts should be considered when placing order for samplers.

Open Shoes— Heat Treated

This open shoe is made from heat treated case hardened steel for sampling coarse materials up to the diameter of the throat opening. The inside diameter of the shoe may be the same as, or slightly smaller, than the inside of the tube, thus making it possible to collect a good representative sample.

Stainless Steel

Now available in stainless steel. For solid or split tube samplers.



Stainless Steel – Open Shoes

For Solid or Split Tube Samplers – 8 TPI

| Nose Radius 1/16" Blunt | | | |
|-------------------------|-----------|--------|------|
| For Sampler O.D. | Part No. | Weight | |
| | | Lbs. | kg |
| 2" (50.8mm) | 120062-28 | 1.0 | 0.45 |
| 3" (76.2mm) | 120062-29 | 1.5 | 0.72 |

Spring Type Sample Retainers

For 2" O.D. Samplers

| Sampler O.D. | Assembly No. | Wt. | Extra Springs | Extra Adapter |
|--------------|--------------|-----|---------------|---------------|
| | | | Part No. | Part No. |
| 2" | 22037-2 | * | 120098 | 120058-14 |

**Less than one pound or .45 kilograms.*

Spring Type Sample Retainer

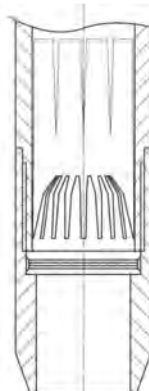
This inexpensive spring retainer is quite useful in collecting coarse sand and small gravel or unconsolidated type materials. The spring fingers gently press against the sample and hold it in until it is unloaded at the surface. The retainer fits in a slot already provided for it in the sampler show. Fingers are adjustable to improve sampling.

Basket Retainers

For Use in Split and Solid Tube Samplers

| Steel Spring Type | | | | Plastic Type** | |
|-------------------|----------|--------|-----|--------------------|--------------------|
| Sampler Size | Part No. | Weight | | Soft Fingers | Hard Fingers |
| | | Lbs. | kg | Part No. | Part No. |
| 2" | 320110 | * | * | 120110-1 | 120110-2 |
| 2-1/2" | 320100 | * | * | Color Coded Yellow | Color Coded Orange |
| 3" | 320057 | * | * | | |
| 3-1/2" | 320103 | * | * | | |
| 4-1/2" | 320101 | * | * | | |
| 5-1/2" | 320102 | 1.0 | .45 | | |

**Less than one pound or .45 kilograms. **2" Only.*



Basket Retainers— Steel & Plastic

All New—Plastic Retainer

Basket retainers have flexible fingers that open to admit loose dry sand, then close, forming a tight lock, that retains the sample when the tube is removed to the surface. A slot is provided in the sampler show to accommodate the basket ring. Steel basket retainers have heat treated fingers that can be adjusted to improve sampling.

Stainless Steel Retainers now available to meet your environmental sampling requirements.

L.A.D Steel Basket Retainer

With Polyethylene Sleeve

| Sampler O.D. | Assembly No. | Wt. | Spring Part No. | Top Adapter | Bottom Adapter | Sleeve Bag** | Wt. |
|--------------|--------------|-----|-----------------|-------------|----------------|--------------|-----|
| | | | | Part No. | Part No. | Part No. | |
| 2" | 22037-1 | * | 120098 | 120058-12 | 120058-13 | 41026-1 | * |
| 2-1/2" | 22037-3 | * | 120309 | 120058-20 | 120058-21 | 41027-1 | * |

** Less than one pound or .45 kilograms. **Set of 50.*

L.A.D. Basket Retainer and Polyethylene Sleeve

U.S. Pat. No. 3,008,529

The L.A.D. steel basket retainer mounts inside Acker sampler shoes for taking samples of free flowing sands, silts and other difficult materials. Upon withdrawal of sampler, the plastic sleeve collapses over the basket and seals the sample within the sample tube. Ideal for use in solid or split tube samplers and for collecting samples of sewage, harbor bottom type sediments and muds. Extra sleeves are inexpensive.

Soil Sampling

Trap Valves

Trap valves are inserted in open shoes where they hold thin mud and other watery substances.



| Trap Valves | | | |
|-------------------------|----------|--------|-----|
| Used w/ Sampler O.D. | Part No. | Weight | |
| | | Lbs. | kg. |
| 2" | 320273 | * | * |
| 2-1/2" | 320274 | * | * |
| 3" | 320275 | * | * |
| 3-1/2" | 320276 | * | * |
| 4-1/2" | 320277 | 1.0 | .45 |

** Less than one pound or .45 kilograms.*

Special Couplings— For Samplers

This special coupling is designed for connecting two, three or more standard samplers together. Ideal when long samples are desired of marine or other easily sampled materials for visual inspection. Split or solid type sampler may be tandem connected. The inside diameter of coupling permits use of sampler liners. Sampler shoe may be fitted with a "Trap" or "LAD" basket retainer. Coupling is capable of withstanding light duty driving of sampler.



| Special Sampler Couplings | | | |
|---------------------------|----------|--------|-----|
| Sampler O.D. | Part No. | Weight | |
| | | Lbs. | kg |
| 2" | 120161-1 | 1.0 | .45 |
| 2-1/2" | 120161-2 | 1.0 | .45 |
| 3" | 120161-3 | 1.0 | .45 |
| 3-1/2" | 120161-4 | 1.5 | .72 |
| 4-1/2" | 120161-5 | 1.5 | .72 |

Sampler Liners

These liners are used for quickly removing the sample from the sampler. Each end of the liner is covered with plastic caps to keep the sample intact.

| Liners for Split and Solid Tube Samplers | | | | | | | | | |
|--|-------|---------------|-------|---------------|-------|-----------|--------|-----|---------------|
| Sampler Size | | Sample Length | | Core Diameter | | Brass | | | Clear Plastic |
| Inches | mm | Inch | mm | Inches | mm | Part No. | Weight | | Part No. |
| | | | | | | | Lbs. | kg | |
| 2 | 50.8 | 18 | 457.2 | 1-3/8 | 34.9 | 120060-7 | 1.5 | .67 | 120878-1 |
| 2 | 50.8 | 24 | 609.6 | 1-3/8 | 34.9 | 120060.16 | 2.0 | .90 | 120878-2 |
| 2-1/2 | 63.5 | 18 | 457.2 | 2-1/8 | 53.9 | 120060-2 | 3.0 | 1.3 | 120878-7 |
| 2-1/2 | 63.5 | 24 | 609.6 | 2-1/8 | 53.9 | 120060-18 | 3.5 | 1.5 | 120878-8 |
| 3 | 76.2 | 18 | 457.2 | 2-3/8 | 60.3 | 120060-10 | 3.5 | 1.5 | 120878-9 |
| 3 | 76.2 | 24 | 609.6 | 2-3/8 | 60.3 | 120060-19 | 4.0 | 1.8 | 120878-3 |
| 3-1/2 | 88.9 | 18 | 457.2 | 3-1/8 | 79.3 | NA | — | — | 120878-10 |
| 3-1/2 | 88.9 | 24 | 609.6 | 3-1/8 | 79.3 | NA | — | — | 120878-11 |
| 4-1/2 | 114.3 | 18 | 457.2 | 4-1/8 | 104.1 | NA | — | — | — |
| 4-1/2 | 114.3 | 24 | 609.6 | 4-1/8 | 104.1 | NA | — | — | — |

** Less than one pound or .45 kilogram.*

Plastic Caps— For Sampler Tubes

These caps are for thin wall tubes, stationary piston sampler tubes and one inch retractable plus samplers. They are furnished in plastic, copper and aluminum.



| Plastic Caps — Soil Seals For Thin Wall Sample Tubes | | | | | |
|---|-------|--------------|-----|----------------------|-----|
| Size | | Plastic Caps | | Soilseals Assemblies | |
| Inches | mm | Part No. | Wt. | Part No. | Wt. |
| 1 | 25.4 | 90367-24 | * | — | — |
| 2 | 50.8 | 90367-43 | * | 120872-1 | * |
| 2-1/2 | 63.5 | 90367-49 | * | 120872-2 | * |
| 3 | 76.2 | 90367-55 | * | 120872-3 | * |
| 3-1/2 | 88.7 | 90367-56 | * | — | — |
| 4-1/2 | 113.7 | — | — | — | — |
| 5 | 127.0 | — | — | 120872-5 | — |

**Less than one pound or .45 kilogram.*

Soilseals

Soilseals are simple to seal, unseal and reseal, even in sample tube containing sublength samples.

Sealing Wax— For Sampler Tubes

This is a low shrinkage wax, selected to seal samples in tubes and jars before shipping the samples to the laboratory or inspection point. The wax is microcrystalline in quality.



| Sealing Wax For Sampler Tubes | | |
|----------------------------------|--------|------|
| Part No. | Weight | |
| | Lbs. | kg |
| 120284 | 10 | 4.53 |

Soil Sampling



Part No. 41007-1
Complete Soil Sampling Kit – Cart (Optional)



Part No. 41007-9
Complete Soil Sampling Kit – Wooden Box

Soil Sampling Kit

Depth Capacity — 25 Feet or 7.6 meters

| Description | No. Req. | Part No. | Weight | |
|--|----------|----------|--------|------|
| | | | Lbs. | kg |
| Soil Sample Kit — Complete for 25 Ft. Depths | 1 | 41007-1 | 390 | 86.2 |
| Kit consists of: | | | | |
| Chopping Bit, Straight Edge, 2-1/8" wide | 1 | 21083-1 | 6.0 | 2.7 |
| Drive Head Assembly with Wash Tee and Handle | 1 | 22070-1 | 8.0 | 3.6 |
| Glass Sample Jars with Caps | 12 | 22081-11 | * | * |
| Drill Rods, 1-5/16" O.D., 2 Ft. 6 In. Long | 10 | 21041-1 | 7.0 | 3.1 |
| 2" Thin Wall Sampler, 18" Long (12" Sample) | 1 | 22071-1 | 6.0 | 2.7 |
| Extra Heavy Assembly for Thin Wall Sampler | ** | 22033-31 | 3.0 | 1.4 |
| Extra Tubes (Steel) for Thin Wall Sampler | ** | 120021-9 | 1.0 | .45 |
| 2" Split Tube Sampler, 18" Long (12" Sample) | 1 | 22072-1 | 9.0 | 4.0 |
| Extra Head Assembly for Split Tube Sampler | ** | 22036-33 | 3.0 | 1.3 |
| Extra Split Tube Only 18" Long | 1 | 22016-31 | 5.0 | 2.2 |
| Paper Liner (For Split Tube Sampler) | 2 | 120268 | * | * |
| Closed Spiral Auger (1-7/8" O.D., 18" Long) | 1 | 320304 | 5.0 | 2.2 |
| Open Spiral Auger (2" O.D., 18" Long) | 1 | 320303 | 5.5 | 2.4 |
| Probe (to Fit Drill Rods, 1-5/16" O.D.) | 1 | 110060-9 | 1.5 | .68 |
| Handle for Drive Head (Extra) | ** | 110018 | 3.5 | 1.5 |
| Iwan Post Hole Auger (to Fit Drill Rods) | 1 | 32013-1 | * | * |
| Pipe Wrench (18") | 2 | 91100-5 | 4.5 | 2.0 |
| Special Coupling (for Coupling 2 Samplers Together) | 1 | 120161-1 | * | * |
| Basket Retainr (for use with Split Tube Sampler) | 1 | 320110 | 1.0 | .45 |
| Trap Valve (for use with Split Tube Sampler) | 1 | 320273 | * | * |
| Sawtooth Shoe (for use with Split Tube Sampler) | 1 | 320114-1 | * | * |
| Pocket Shoe (for use with Split Tube Sampler) | 1 | 120112-1 | 1.5 | .68 |
| L.A.D. Retainer 2" (for use with Split Tube Sampler) | 1 | 22037-1 | * | * |
| Spring Sample Retainer (for use with Split Tube Sampler) | 1 | 22037-2 | * | * |
| Compartmented Steel Carrying Case (Length-36"; Width-21"; Height- 8"; Export Cu. Ft.-3.5) | 1 | 151823-2 | 50.0 | 23.0 |

** Suggested spares not part of complete kit. * Less than one pound or .45 kilogram.

Soil Sampling Kit

All Hand Operation

This is one of the most popular and useful kits for preliminary investigations. The assembly consists of 15 different earth soil sampling tools in a handy steel case small enough to be carried in an auto. The set contains a variety of tubes, earth augers and samplers capable of recovering samples from most materials except rock. It is designed for hand operation.

Recommend 14.0 lb. (6.3 kg.) sledge hammer for driving split tube sampler or probe.

Soil Sampling

Vane Shear Test Kit with Adapters

For Operations in Three Sizes of Pipe or Casing

The Acker Vane Shear Test Kit has everything needed to obtain fast, accurate "in place" shear readings to depths of 100 feet. It's easy to use and provides accurate soils information at low cost! For ease in carrying, the entire set of tools is packaged in a handy kit. (Carrying case with handles.)

Two torque wrenches are included in the kit with a high and low range for shearing soft cohesive materials or heavier clays.



Vane Shear Test Kit with Calibrated Torque Head

For extreme accuracy and where extensive testing justifies additional equipment expense, the Acker calibrated torque head is recommended. The high ratio geared head permits even, angular rotation of the vane.

Readings are shown on a precision force gauge that features a maximum reading hand for precise accuracy without guess work! The torque arm has 3 positions for shearing soft, medium or stiff soils. The base is divided into 10 degree intervals for ease in recording data. Complete operating instruction are included. (Kit includes two plywood carrying cases with rope handles.)

| Acker Vane Shear Test Kit — With "Torque Wrenches" | | | | |
|---|----------|-----------|------|--------|
| Description | No. Req. | "AW" Rods | | Weight |
| | | Part No. | Lbs. | kg |
| Complete Kit Assembly in Case with Handles | 1 | 41003-16 | 95.0 | 43.0 |
| Parts List | | | | |
| 2" O.D. (50.8 mm) Vane (for use inside 2-1/2" Pipe — BX or BW Casing) | 1 | 320211-9 | 4.0 | 1.8 |
| 2-1/2" O.D. (63.5 mm) Vane (for use inside 3" Pipe — NX or NW Casing) | 1 | 320211-7 | 4.5 | 2.0 |
| 3-5/8" O.D. (92.0 mm) Vane (for use inside 4" Drive Pipe — HW Casing) | 1 | 320211-8 | 5.0 | 2.2 |
| Ball Bearing Guides (for 2-1/2" Pipe — BX or BW Casing) | 4 | 22003-5 | 14.0 | 6.3 |
| Collar Guides (for 3" Pipe — NX or NW Casing) | 4 | 120698 | 3.0 | 1.3 |
| Collar Guides (for 4" Drive Pipe or HW Casing) | 4 | 120699 | 8.0 | 3.6 |
| Thrust Bearing Guide (for Customer's Rods) | 1 | 120356-2 | 4.5 | 2.0 |
| Collar with Set Screws | 1 | 120619 | 5.0 | 2.2 |
| Adapter — Drill Rod to Torque Wrench | 1 | 320621 | 2.0 | .90 |
| Torque Wrench 0-200 Inch/Pounds Capacity (2.305 kg/meters) | 1 | 120359-1 | 0.5 | .20 |
| Torque Wrench 0-600 Inch/Pounds Capacity (6.615 kg/meters) | 1 | 120359-2 | 1.0 | .45 |
| Thrust Bearing | 1 | 90000-26 | 1.0 | .45 |
| Coupling for 2-1/2" Drive Pipe (2-1/2" x 3") | 1 | 90980-30 | 4.0 | 1.8 |
| Coupling for 3" Drive Pipe (3" x 3") | 1 | 90304-11 | 3.5 | 1.5 |
| Coupling for 4" Drive Pipe (4" x 4") | 1 | 90980-39 | 6.5 | 2.9 |
| Carrying Case and Instructions | 1 | 25111-4 | 23.0 | 10.4 |

| Acker Vane Shear Test Kit With "Calibrated Torque Head" | | | | |
|---|----------|-----------|-------|--------|
| Description | No. Req. | "AW" Rods | | Weight |
| | | Part No. | Lbs. | kg |
| Complete Kit Assembly in Case with Handles | 1 | 41003-3 | 161.0 | 72.9 |
| Parts List | | | | |
| 2" O.D. (50.8 mm) Vane (for use inside 2-1/2" Pipe — BX or BW Casing) | 1 | 320211-9 | 4.0 | 1.8 |
| 2-1/2" O.D. (63.5 mm) Vane (for use inside 3" Pipe — NX or NW Casing) | 1 | 320211-7 | 4.5 | 2.0 |
| 3-5/8" O.D. (92.0 mm) Vane (for use inside 4" Drive Pipe — HW Casing) | 1 | 320211-8 | 5.0 | 2.2 |
| Ball Bearing Guides (for 2-1/2" Pipe — BX or BW Casing) | 4 | 22003-5 | 14.0 | 6.3 |
| Collar Guides (for 3" Pipe — NX or NW Casing) | 4 | 120698 | 3.0 | 1.3 |
| Collar Guides (for 4" Drive Pipe or HW Casing) | 4 | 120699 | 8.0 | 3.6 |
| Calibrated Drive Unit Assembly (720:1 Ratio) | 1 | 22001-5 | 40.0 | 18.1 |
| Sub (2-1/2" Pipe box to Vane Shear Body) | 1 | 110944-1 | 5.0 | 2.2 |
| Sub (3" Pipe box to Vane Shear Body) | 1 | 110500-2 | 5.0 | 2.2 |
| Sub (4" Pipe Box to Vane Shear Body) | 1 | 110945-1 | 8.0 | 3.6 |
| Sub (NW Casing Pin to Vane Shear Body) | 1 | 111205-1 | 7.0 | 3.1 |
| Max. Reading Force Gauge (100 lbs. cap) (43.36 kg) | 1 | 22002-1 | 2.0 | .90 |
| Speed Crank (3/8" Drive) | 1 | 120326 | 2.5 | 1.1 |
| Upper Force Arm | 1 | 120373 | 7.0 | 3.1 |
| Lower Force Arm | 1 | 120325 | 6.0 | 2.7 |
| Thrust Bearing | 1 | 90072-110 | 1.5 | .67 |
| Vane Housing Body (Less Worm Gears) | 1 | 120207 | 12.0 | 5.4 |
| Gauge Block | 1 | 120323 | 1.0 | .45 |
| Carrying Case and Instructions | 1 | 120210 | 23.0 | 10.4 |

Soil Sampling



Other lightweight equipment for use with the Motorized Cathead and Aluminum Derrick.
(See Page 1-12 of Drill Rig Section for description of Pipe Mounted Diamond Core Drill.)



Acker Lightweight Motorized Hoist and Portable Aluminum Derrick

This lightweight, portable motorized cathead is 4-cycle gasoline motor driven. It includes a built-in centrifugal clutch that permits the cathead to stop when the engine is at idle. The cathead is driven by a sprocket and chain drive enclosed by safety guards. Engine RPM is 3,600. Cathead is 4-1/2" O.D. and turns at 175 to 225 RPM. Lifting capacity is rated at 500 lbs. It is ideal for use with a 140 lb. drive weight or soil sample kit. The aluminum derrick is designed to accommodate lifting tools in 10 ft. sections. The derrick legs are 16 ft. long consisting of two 8 ft. lengths to facilitate transportation into remote areas or marine type conditions.

Portable Motorized Cathead

Lightweight Motorized Hoist and Portable Aluminum Derrick

| Description | Part No. | Weight | | Cu. Ft. |
|-------------------|----------|--------|------|---------|
| | | Lbs. | kg | |
| Complete Assembly | 40032-1 | 345 | 90.6 | 17.0 |

Assembly Consists Of:

| Description | Part No. | Weight | | Cu. Ft. |
|---|-----------|--------|------|---------|
| | | Lbs. | kg | |
| Comb. Motor Cathead w/Clamp | 25060-3 | 155 | 45.3 | 3.0 |
| Aluminum Tripod Derrick, Tie Bolt and Bail (for 10 ft. pulls) | 25505-2 | 165 | 40.7 | 8.5 |
| Tripod Sheave for Manila Rope | 25031-7 | 10.0 | 4.5 | — |
| Manila Rope (75 feet) | 110450-75 | 14.0 | 6.3 | 1.0 |
| Safety Hook | 90351-1 | * | * | — |
| Extra Gasoline Engine* | 25007-93 | 35.0 | 15.8 | 2.0 |

* Not included with Assembly.

Specifications

| | |
|----------------------------|----------------------------|
| Engine Type | 4-Cycle Gasoline |
| Capacity Rated | 500 lbs. (226.5 kg) |
| Cathead (113.7 x 156.4 mm) | 4-1/2" x 6" Long |
| Derrick Work Length | 10 ft. long (3.048 Meters) |

* Less than one pound or .45 kilograms

Soil Sampling

Acker Soil Mechanic—Model "S"

Lightweight • Portable • Goes Any Place

Acker has designed the Soil Mechanic with many features and options to provide versatility for small diameter auger borings and soil sampling to shallow depths...The Model "S" (*Stand Mounting*) has a 7.0 HP highly efficient 4-cycle air cooled gasoline engine for drilling conveyor flight augers. Optional jib and cathead permit the driving of Standard (*ASTM*) Penetration Tests with the 140 lb. drive weight and 2" O.D. Sampler. The power head is attached to the swivel mounting post by a sliding fixture. The swivel post base allows the post to turn for lining up power drive to the optional cathead hoist assembly. This design feature allows the power head to be swiveled clear of the hole for soil sampling and driving operations. The assembly includes a centering guide, 4 anchor pins and two sets of noise suppressor ear muffs.

Tow Tongue (Optional)—Provides a simple method for taking the auger assembly into remote or rugged job sites. Not designed for towing in back of motor transport. The tongue and dolly wheel save the back breaking task of moving the equipment from hole to hole.



Standard Model "S" Soil Mechanic for auger drilling soils. Note: Hand feed wheel, auger power head and drill platform. Ideal for shallow investigations. Cathead Optional.

| Acker Soil Mechanic Model "S" — Complete Assembly | | | |
|--|--|--------|------|
| Part No. | Description | Weight | |
| | | Lbs. | kg |
| — | Complete Assembly 36.0 Cu. Ft. (1.0m ³) | 206 | 93.0 |

| Drill Kit "A" 3-1/2" (90mm) Holes to 24 ft. (7.3m) Depths | | | |
|--|---|--------|------|
| Part No. | Description | Weight | |
| | | Lbs. | kg |
| 41005-11 | Complete Kit 4.75 Cu. Ft. (0.13 m ³) | 140 | 64.0 |

| Contents: Drill Kit "A" | |
|-------------------------|---|
| Qty. | Description |
| 1 | Articulated Adapter (<i>Engine to Auger</i>) |
| 8 | Conveyor Flight Augers 3" O.D. x 36" Long (76.2 mm x 914 mm) |
| 8 | Drive Pin Connectors for Coupling Augers Together |
| 1 | 3-1/4" O.D. (82.5 mm) Cutter Head with 2 Carbide Insert Fingers and Pilot |
| 1 | Auger Holding Fork |
| 1 | Rigid Sub. 1-3/8" Hex. Box to 1-1/8" Hex. Box |

| Optional Accessories or Spare Parts | | | |
|--|-----------|--------|------|
| Description | Part No. | Weight | |
| | | Lbs. | kg |
| Auger — Power Head with Transmission (150 RPM) and 4 Handles | 25002-102 | 72.0 | 32.7 |
| 3" O.D. x 36" Long Conveyor Flight Auger with 1-1/8" Hex Connections (76.2 mm x 914 mm with 28.6 mm Hex Conn.) | 330098-9 | 15.0 | 6.8 |
| 3-1/4" O.D. Cutter Head (for above Auger Flight) (82.5 mm O.D.) | 23003-4 | 5.0 | 2.2 |
| Carbide Insert Finger for above Cutter Head (2 Req.) | 130319-1 | * | * |
| Pilot Bit (for use with Cutter Head) | 130320 | 4.0 | 1.8 |
| Drive Pin (for Connecting Augers) | 130064-3 | * | * |
| Universal Adapter Between Engine and Auger Flights (Model "S" Only) | 25130-61 | 4.0 | 1.8 |
| Sub-Adapter Between Engine and Auger Flights (Model "H")** | 130039-11 | 7.0 | 3.1 |
| Dolly Wheel with Tow Handle | 25066-5 | 23.0 | 10.4 |
| Cathead Hoist Drum with Right Angle Gear Box (4" O.D. x 4" Long) — (152.4 mm x 101.6 mm) | 50015-16 | 45.0 | 20.4 |
| Hoisting Jib and Mounting with Built-In Sheaves Two Piece 140 lb. (63.4 kg) Drive Weight with Pin | 50061-3 | 20.0 | 9.0 |
| Guide and Drive Head | 21138-1 | 145.0 | 65.6 |
| Length 3/4" Manila Rope x 25 Ft. Long (19 mm x 7.6 m) | 110450-25 | 7.0 | 3.1 |
| Noise Suppressor Head Set Ear Muffs | 157293-1 | 1.5 | 0.68 |
| Holding Fork | 330109 | 8.0 | 3.6 |
| Pull Plate with Chains | 311339 | 2.0 | 0.90 |
| Drive Head for AW Rods | 111336 | 3.0 | 1.36 |
| Pin Guide for AW Rods | 111332 | 1.0 | 0.45 |
| Eye bolt for Coupling Drive Weights | 353499-4 | 1.0 | 0.45 |
| Set Carrying Handles for two 70 lb. (31.7 kg) Drive Weights | 111337 | * | * |
| | 111338 | * | * |

* Less than one pound or 0.45 kg. ** Use with Model "H" Assembly Only.