ROLL FEEDS

COE PRESS EQUIPMENT CORPORATION

SERVO MASTER SERIES 4

SERVOMASTER SERIES 4

Coe Press Equipment combines intelligent design, high quality components, rugged construction, and precision assembly to produce a full range of dependable and versatile servo roll feeds. The ServoMaster Series 4 servo roll feeds provide the speed, precision, and power to meet the demands of the medium and heavy gauge material stamping applications. With 4.0" diameter feed rolls, this series of roll feeds is capable of processing material from .010" to .310" in thickness, depending on the material width and speed requirements. Starting with the SM-4 12, through the SM-4 54, material widths from 1" to 54" can be processed. Production rates above 250 cycles per minute are obtainable depending on the material thickness, width, and the allowed window for the feed to cycle. The ServoMaster Series of servo roll feeds is backed by our comprehensive “3-2-1” Warranty. Three year limited coverage on all major components manufactured by Coe Press Equipment; two year limited coverage on all mechanical components originally installed by Coe Press Equipment; and one year full coverage on the system complete.

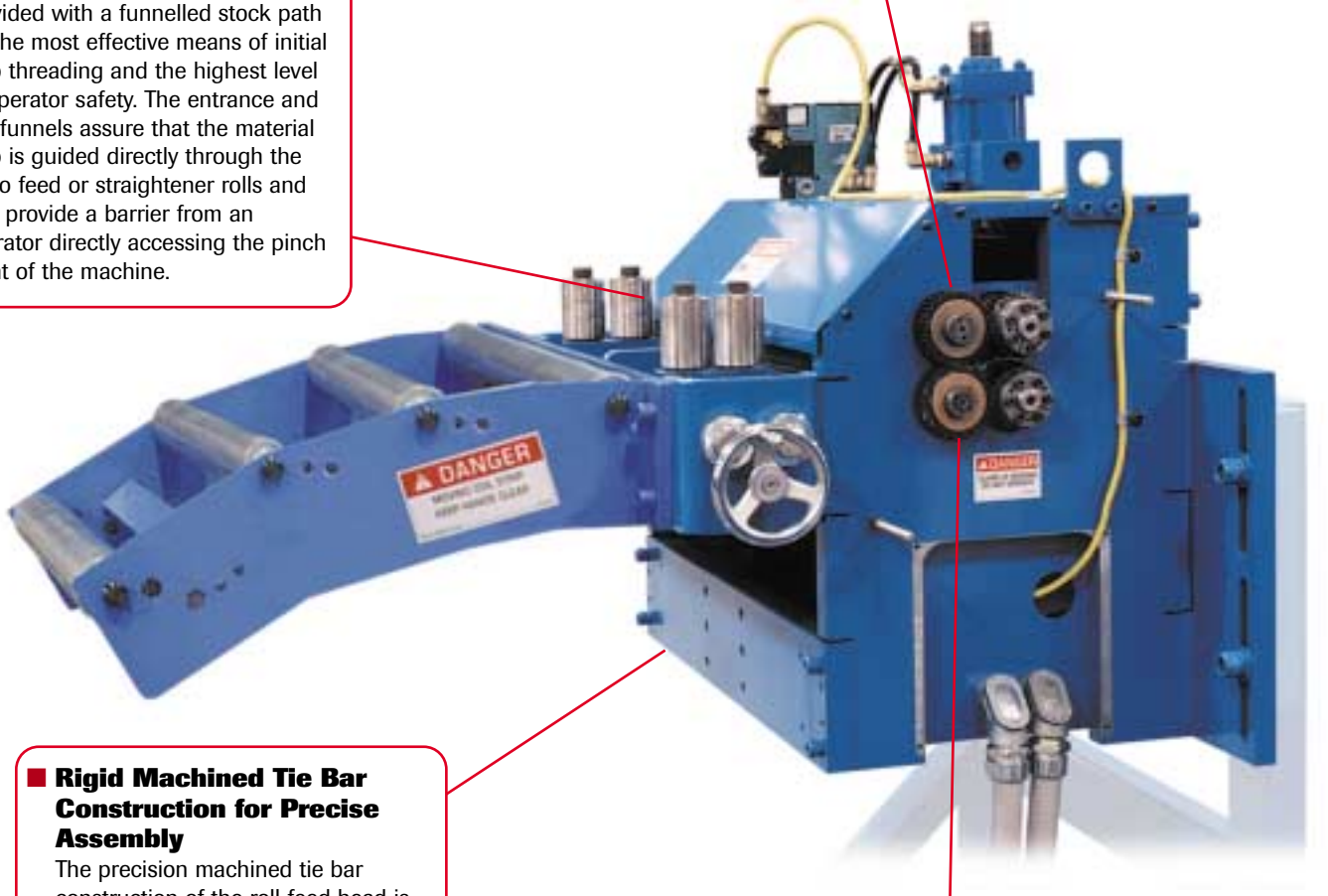
Roll Feed Standard Equipment

■ True Pivoting Upper Feed Roll to Assure Full Gear Mesh

The precision upper feed roll yoke assembly provides a true pivoting motion of the upper feed roll. The pivoting motion assures full gear mesh of the cluster gears at all material thicknesses. This keeps the upper roll in a perfect parallel condition with the lower roll, providing reliable and accurate feed lengths.

■ Funnelled Stock Path for Material Threading and Operator Safety

All Coe Press Equipment servo roll feeds and power straighteners are provided with a funnelled stock path for the most effective means of initial strip threading and the highest level of operator safety. The entrance and exit funnels assure that the material strip is guided directly through the servo feed or straightener rolls and also provide a barrier from an operator directly accessing the pinch point of the machine.



■ Rigid Machined Tie Bar Construction for Precise Assembly

The precision machined tie bar construction of the roll feed head is designed for simple and precise assembly and to assure perfect parallelism of the machined side plates. The upper feed roll is mounted on a precision yoke assembly and is rotated on a pivot shaft along the radius of the pitch diameter of the cluster gears. Upper and lower feed roll parallelism is guaranteed, resulting in an even distribution of roll pressure on the material. Balanced roll pressure is assured when running off-center applications.

■ Precision Cluster Gear Driven Upper Feed Roll

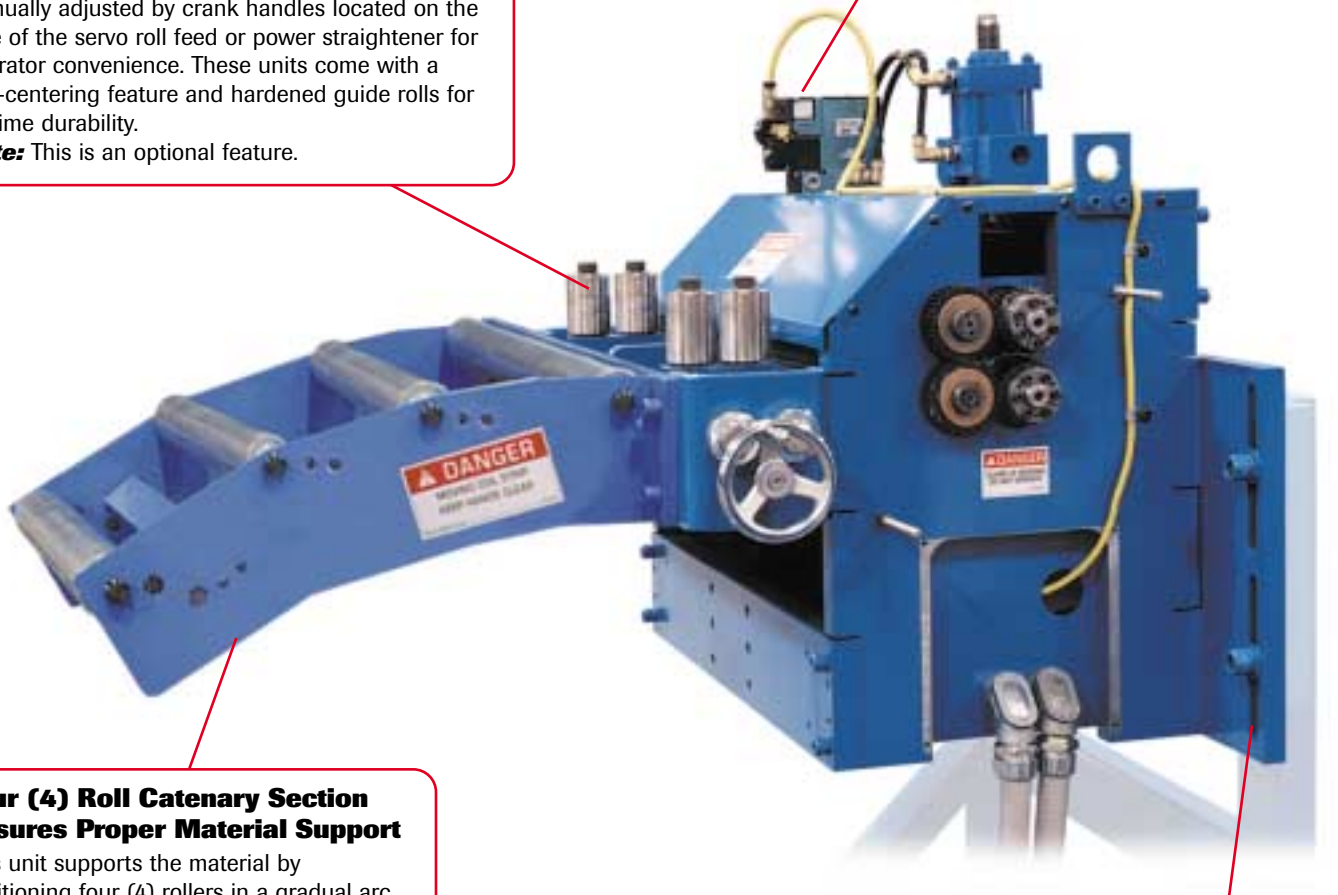
The transfer of motion from the bottom feed roll to the upper feed roll is accomplished through a close tolerance and low backlash cluster gear arrangement. This means of power transmission provides the highest efficiency of torque transfer. The torque loads of constant acceleration and deceleration through the life of the machine will not affect the mating shaft and gear fits and the corresponding feeding accuracy. All gears and feed rolls are hardened for long life and low maintenance requirements.

Note: Machine is shown without standard guarding and covers to illustrate machine features and benefits.

Roll Feed Standard Equipment

Air Pressure Regulator for Exact Feed Roll Pressure
This feature assures that proper air pressure is applied to the upper feed roll to accommodate various material thickness, widths, and material surface sensitivity.

Hand Crank Entrance Edge Guides
Accurate material alignment to the press tooling is provided. Guides are normally located at the entrance side of the servo roll feed or power straightener. These vertical material guides are manually adjusted by crank handles located on the side of the servo roll feed or power straightener for operator convenience. These units come with a self-centering feature and hardened guide rolls for lifetime durability.
Note: This is an optional feature.

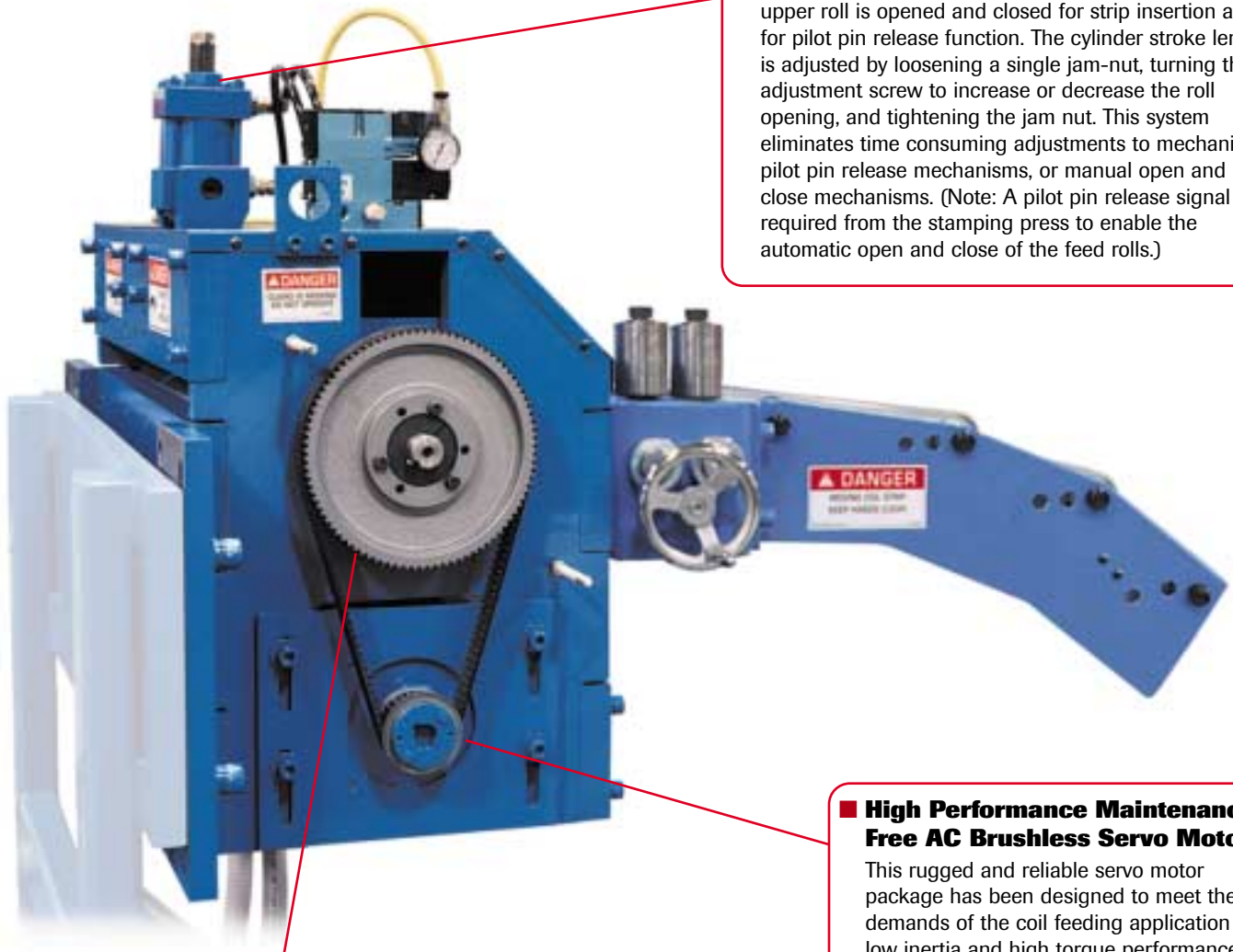


Four (4) Roll Catenary Section Assures Proper Material Support
This unit supports the material by positioning four (4) rollers in a gradual arc to and from the slack loop area. The catenary support section prevents coil set from being re-induced to the material by assuring correct support as the stock is moved to and from the slack loop area. These rollers are 2.5" diameter with lubricated and sealed bearings.

Slotted Press Mount Plate for Precise Alignment and Height Adjustment
A stationary adapter plate mounted to the feed is designed to be bolted to the side of the press or bolster. This plate is blanchard ground, for precise squareness to the press and tooling, and has two (2) machined parallel slots that provide +/- 3" of vertical adjustment from the nominal passline.

Note: Machine is shown without standard guarding and covers to illustrate machine features and benefits.

Roll Feed Standard Equipment



Air Operated High Speed Pilot Pin Release Mechanism

Through the use of a center mounted air cylinder, the upper roll is opened and closed for strip insertion and for pilot pin release function. The cylinder stroke length is adjusted by loosening a single jam-nut, turning the adjustment screw to increase or decrease the roll opening, and tightening the jam nut. This system eliminates time consuming adjustments to mechanical pilot pin release mechanisms, or manual open and close mechanisms. (Note: A pilot pin release signal is required from the stamping press to enable the automatic open and close of the feed rolls.)

High Performance Maintenance Free AC Brushless Servo Motor

This rugged and reliable servo motor package has been designed to meet the demands of the coil feeding application with low inertia and high torque performance capabilities. Closed loop positioning of the feed rolls is achieved by a motor-mounted, incremental encoder that provides position feedback.

Low Inertia Drive System Provides Accuracy and Efficiency

Light weight and rugged sheaves are used as the primary means of power transmission from the AC servo motor to the lower feed roll. A non-stretch Kevlar timing belt is used to couple the upper and lower sheaves. This low inertia type drive system provides the highest efficiency of power transmission and accuracy vs. conventional gear driven systems. The synchronous Kevlar timing belt provides the precision and accuracy required for driving the lower roll and does not require any maintenance or lubrication.

Note: Machine is shown without standard guarding and covers to illustrate machine features and benefits.

Roll Feed Standard Equipment

Ergonomic Desk-Type Slant Top Enclosure

All Coe Press Equipment servo roll feeds are provided, as standard, with a free standing sloped front control enclosure which houses all necessary servo controls and operating functions. A 10' long pre-wired cable set contained in flexible conduit is provided between the control enclosure and servo roll feed. The customer only needs to supply incoming power and compressed air. All other utility requirements are pre-wired and pre-piped.

Emergency Stop Push Button

All Coe Press Equipment roll feed enclosures are provided with an emergency stop push button. This will stop and disable power to the servo roll feed under any mode of operation.

Remote Jog Pendant

All servo roll feeds are provided with a remote jog pendant that allows the operator to index the coil strip into the press die space and maintain visual contact with the coil strip and tooling. This is a benefit during initial threading of the coil strip and for troubleshooting during the production run. Both jog forward and jog reverse push buttons are provided as standard.

Single Cycle Push Button for Set-up at Jog Speed

This allows the operator to initiate a single cycle progression of the material through the roll feed at jog speed. Die and tooling conditions such as progression length, guide clearance, and pilot pin position can be verified prior to initiating the continuous speed of the roll feed and press.

Sealed Precision Roller Bearings

The upper and lower feed roll journals are mounted in precision roller bearings that are mounted in the side plates and pivoting yokes. These bearings are pre-lubricated and sealed. No lubrication is required for long term precision and accuracy.

Upper and Lower Feed Rolls with #3 Matte Chrome Finish

This hard chrome and shot blasted finish is used for general purpose feeding of most materials. Cold rolled steel, and many non-ferrous materials can be effectively processed with this roll finish.

ServoMaster Controller

This servo feed controller has a user-friendly keypad and a 4 line x 20 character alpha numeric display screen. Job set-up and troubleshooting are made easy by the simple format and diagnostic information.

Standard features include the following:

- Serial Communications Capability to Presses
- Ergonomic Desk-Type Slant Top Enclosure
- User Friendly Operator Interface and Keypad
- Four Line 80 Character Alpha-Numeric Display
- Keypad Input of All Servo Feed Parameters
- Batch Counter to 999,999 Cycles with Output
- Remote Jog with Hand Held Pendant for Threading
- “Feed Advisor” Feature to Calculate Job Set-ups
- “On the Fly” Feed Length Micro Adjustment
- Continuous Jog or Jog to Position for Threading
- English or Spanish Language Capacity
- Password Protected Job Edit and Selection
- Password Protected System Parameters
- Error History Log of Last 20 Events
- 100 Job Memory Storage Capacity
- Inch or Metric Programming
- Tight Loop Detection Input
- Feed Complete Signal Output
- Batch Complete Output
- Auxiliary Signal Output

■ Serial Communications Capability to Press or Host Devices

As standard, the ServoMaster Controller is provided with serial communications capability to the press or host device. This feature provides for single-point entry of press and roll feed parameters.

■ Manually Adjusted 2.25" Diameter Slide and Clamp Vertical Edge Guides

Manually adjusted 2.25" diameter hardened vertical edge guide rolls allow accurate material alignment to the press and tooling. Quick release handles are provided for quick set-up and simple adjustment.

■ 460 Volt AC Three Phase Supply Voltage

Supply voltage for this machine is 460 volt AC three phase service as standard. Optional transformers are available for alternative voltages.

Roll Feed Optional Equipment

■ Heavy Duty Cabinet Base With +/- 4" of Height Adjustment

The free standing cabinet base fully supports the roll feed while allowing the operator to easily adjust for material width and passline height. Changing the passline is a one man job without the use of auxiliary support equipment such as a fork truck or crane. An adjustment range of +/- 4" from the nominal passline height is provided on the standard cabinet base. Two (2) precision screw jacks and two (2) guide bar assemblies provide the cabinet base with an accurate and rugged method of height adjustment. A unique guiding mechanism of anti-friction plates and springs eliminates the need to loosen and re-tighten any fasteners to make passline height changes.

■ Adjustable Height Mounting Bracket With +/- 3" of Height Adjustment

This bracket is combined with the standard Slotted Press Mount Plate to provide a fast and repeatable method of passline adjustment. The two (2) precision ground plates maintain roll feed squareness to the press and tooling at various passline height settings. The height adjustment is accomplished by simply turning the handle of the jack mechanism built into the base of the base of the bracket. A unique guiding mechanism of anti-friction plates and springs eliminates the need to loosen and re-tighten any fasteners to make passline height changes. An adjustment range of +/-3" from the nominal passline is provided.

■ Standard Duty Cabinet Base With +/- 4" of Height Adjustment

The free standing cabinet base fully supports the roll feed while allowing the operator to easily adjust for material width and passline height. Passline is adjusted by a single-point handcrank mechanism. Four (4) heavy duty lift jacks are provided to support the base. The cabinet is provided with two (2) slotted press mount plates for attaching the cabinet base to the press.

■ Hand Crank Entrance Edge Guides

Accurate material alignment to the press tooling is provided. Guides are normally located at the entrance side of the servo roll feed or power straightener. These vertical material guides are manually adjusted by crank handles located on the side of the servo roll feed or power straightener for operator convenience. These units come with a self-centering feature and hardened guide rolls for lifetime durability.

■ Self Centering & Independent Edge Guides

Accurate material alignment to the press tooling is provided. Guides are normally located at the entrance side of the servo roll feed or power straightener. These vertical material guides are manually adjusted by crank handles located on the side of the servo roll feed or power straightener for operator convenience. The edge guides are offset adjusted by pushing a detented button for running “off-center” applications. The dual guide rolls are hardened for optimum wear and durability.

■ Overhead Cable Set

The cable set between the control console and servo roll feed is provided in an overhead conduit run. This will provide the operator with no obstructions on the floor between the enclosure and feed. Rigid conduit pipe is mounted to both the roll foll feed cabinet and the electrical enclosure to an 8' elevation above the floor. Flexible conduit is used to provide a 6' span between the electrical enclosure and the roll feed.

■ Feed-Signal-Press/Press-Signal-Feed Electrics

This circuit allows the operator to use a selector switch to choose either the Feed-Signal-Press mode or the Press-Signal-Feed mode of operation. If the press runs faster than the feed this option is required to run in automatic mode. It is the responsibility of the buyer to tie in the “FSP-PSF” circuit to their press. Each press control circuit may vary and presses with “redundant” controls may present added interfacing problems.

■ End of Stock Shut-off Electric Eye

This feature stops the feed and the press at the end of the coil strip. The feed drops from automatic mode and the press stops on top. This prevents potential short feeds and bad hits on the tooling.

■ 230 to 460 Volt Step-up Transformer

Required when plant incoming voltage is 230 volts AC.

Roll Feed Dimensions

Model	Width
SM-4 12	12.0"
SM-4 18	18.0"
SM-4 24	24.0"
SM-4 30	30.0"
SM-4 36	36.0"
SM-4 42	42.0"
SM-4 48	48.0"
SM-4 54	54.0"

Note: Support stand shown is for display purposes only.

Machine Specifications
ServoMaster Series 4

MODEL CPRF SM-4	12	18	24	30	36	42	48	54
Maximum Material Width	12.0"	18.0"	24.0"	30.0"	36.0"	42.0"	48.0"	54.0"
Thickness at Full Width	.250"	.210"	.187"	.156"	.125"	.090"	.060"	.040"
Thickness at Half Width	.310"	.250"	.210"	.187"	.156"	.125"	.090"	.060"
Maximum Velocity (FPM)	395	395	395	395	395	395	395	395
Maximum Acceleration (FPS^2)	90	80	70	60	60	60	50	50
Standard Drive Ratio	2.6:1	2.6:1	2.6:1	2.6:1	2.6:1	2.6:1	2.6:1	2.6:1
Motor Peak Torque (in-lbs)	1210	1210	1210	1210	1210	1210	1210	1210
Motor RMS Torque (in-lbs)	465	465	465	465	465	465	465	465

Performance Specifications
ServoMaster Series 4

MODEL CPRF SM-4	12	18	24	30	36	42	48	54
Max. Thickness @ Full Width	.250 x12.0"	.210" x18.0"	.187" x24.0"	.156" x30.0"	.125" x36.0"	.090" x42.0"	.060" x48.0"	.040" x54.0"
– With 180° Press Angle								
2" Progression	248	238	226	214	214	214	199	199
6" Progression	163	155	147	138	138	138	128	128
12" Progression	115	111	107	101	101	101	94	94
18" Progression	89	87	84	81	81	81	76	76
24" Progression	73	71	69	67	67	67	64	64
30" Progression	62	60	59	57	57	57	55	55
36" Progression	53	52	51	50	50	50	48	48
– With 240° Press Angle								
2" Progression	330	317	302	285	285	285	266	266
6" Progression	217	207	196	184	184	184	170	170
12" Progression	154	149	142	135	135	135	126	126
18" Progression	119	116	112	107	107	107	101	101
24" Progression	97	95	92	89	89	89	85	85
30" Progression	82	81	79	76	76	76	73	73
36" Progression	71	70	68	67	67	67	64	64

Note: The machine specifications and performance specifications listed above are subject to change. Please consult the Coe Press Equipment factory for confirmation of all specifications prior to placing a formal purchase order.