

# Steering Control Units—Series 5

## Product Description

The new Series 5 steering control units (SCU) are exciting new products designed for low flow, low pressure applications. The Series 5 units are available in two compact designs:

### Option 1:

Square Housing (Mount) Unit with Side Ports

### Option 2:

Round Housing (Mount) Unit with End Ports

In addition to the installation flexibility provided by the two options above, this new family of products has best in-class steering feel and provides crisp centering. These units also have better efficiency (lower pressure drop) than competitive units.

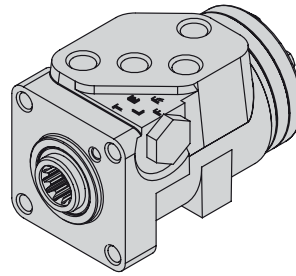
Power Beyond Models—Optional power beyond steering control units supply steering and flow to auxiliary valve functions. The power beyond unit is used in open center (fixed displacement pump) systems in the medium pressure range. When not steering, the power beyond unit directs all inlet flow to the excess flow port (power beyond) for use in the auxiliary circuit. Once steering is initiated, and since steering has priority, inlet flow will be diverted to the steering circuit as required. Flow out the excess flow port (power beyond) and tank port will vary or stop depending upon the steering requirement. The tank port of the steering unit has flow only when steering is operating.

### Features

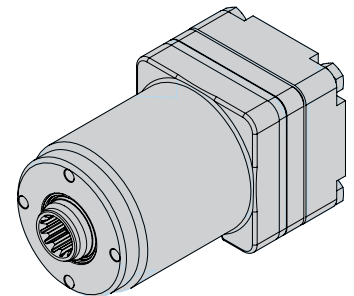
- Open Center
- Load Sensing
- Open Center
- Power Beyond Integral Column
- Manual Steering Check Valve
- Inlet Relief Valve
- Load Sense Relief Valve
- Cylinder Relief Valve
- Anti-Cavitation Valve

### Applications

- Lawn and Garden Equipment
- Turf Equipment
- Golf Course Maintenance Equipment
- Lift Trucks
- Compact Utility Tractors



**Option 1: Square Housing with Side Ports**  
refer to Model Code, page 26



**Option 2: Round Housing with End Ports**  
refer to Model Code, page 27

### SPECIFICATIONS

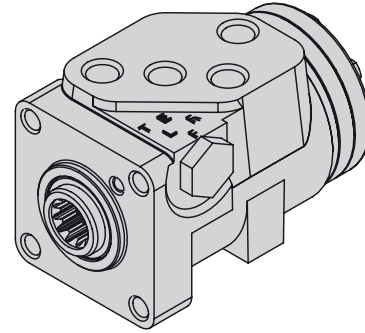
Max. System Pressure	140 bar [2030 PSI]
Max. Back Pressure	21 bar [ 300 PSI]
Max. Flow	19 l/min [5 GPM]
Max. Differential Between Steering Unit and System Temperature	28° C 50° F
Max. System Operating Temperature	93°C [200° F]
Input Torque Powered -Standard	1,7 - 2,8 Nm @ 6,9 bar tank pressure [15 - 25 lb-in @ 100 PSI tank pressure]
Low	1,1 - 2,0 Nm @ 6,9 bar tank pressure [10 - 17.5 lb-in @ 100 PSI tank pressure]
Max. Non Powered	81,4 Nm [60 lb-ft]
Fluid	Petroleum Based Fluids
Recommended Filtration	ISO 18/13 cleanliness level
Port Options	9/16-18 SAE O-ring – 06 STC 3/8 BSP Straight thread ports
Check Valve for Manual Steering	Yes
Optional Relief Valve Settings bar[PSI]	40 [ 580] 50 [ 725] 63 [ 914] 70 [1015] 80 [1160] 90 [1305] 100 [1450] 125 [1812]

# Steering Control Units—Series 5

## Model Code – Ordering Information

### Square Housing with Side Ports - Option 1

The following 30-digit coding system has been developed to identify all of the configuration options for the Series 5 steering control units. Use this model code to specify a unit with the desired features. All 30-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	B	R		C	A			O	A													A	O			1	O		B

Nos	Feature	Code	Description
1,2,3	Product Series	ABR	Series 5 Steering Control Unit
4	Nominal Flow Rating	1 B	11 l/min [3 GPM] 19 l/min [5 GPM]
5	Inlet Pressure Rating	C	140 bar [2030 PSI]
6	Tank Pressure Rating	A B	10 bar [150 PSI] 21 bar [300 PSI]
7-8	Displacement	35 37 39 41 43 46 48	31.5 cm <sup>3</sup> /r [1.92 in <sup>3</sup> /r] 39.5 cm <sup>3</sup> /r [2.41 in <sup>3</sup> /r] 50.8 cm <sup>3</sup> /r [3.10 in <sup>3</sup> /r] 63.1 cm <sup>3</sup> /r [3.85 in <sup>3</sup> /r] 73.8 cm <sup>3</sup> /r [4.50 in <sup>3</sup> /r] 100 cm <sup>3</sup> /r [6.10 in <sup>3</sup> /r] 120 cm <sup>3</sup> /r [7.33 in <sup>3</sup> /r]
9	Flow Amplification	0	None
10	Neutral Circuit	A B F	Open Center Open Center, Power Beyond Load Sensing, Dynamic signal
11	Load Circuit	A	Non-Load Reaction
12,13	Valve Options	01 04 05 12 13	Manual Steering Check Valve Inlet Check Valve, Manual Steering Check Valve Inlet Relief Valve, Manual Steering Check Valve Cylinder Relief Valve, Anti-Cavitation Valve, Inlet Relief Valve, Inlet Check Valve, Manual Steering Check Valve. Cylinder Relief Valve, Anti-cavitation Valve, Inlet Check Valve, Load Sensing Relief Valve, Manual Steering Check Valve
14,15	Integral Inlet Relief Valve Setting	00 18 1J 1Z 26 2G 2T 34 3V	None 40 bar [580 PSI] 50 bar [725 PSI] 63 bar [914 PSI] 70 bar [1015 PSI] 80 bar [1160 PSI] 90 bar [1305 PSI] 100 bar [1450 PSI] 125 bar [1812 PSI]
16,17	Cylinder Relief Setting	00 37 42 55 68	None 103 bar [1490 PSI] 130 bar [1890 PSI] 185 bar [2680 PSI] 200 bar [2900 PSI]

Nos	Feature	Code	Description
18,19,20,	Ports and Mounting Threads	4AAN 4AKN 4AEN UAAN UBNN UBPN YAAN YBRN	Square 4 x 9/16 SAE Ports, M10 x 1,5 Column Mounting Threads (Use with Open Center) Square 5 x 9/16 SAE Ports, M10 x 1,5 Column Mounting Threads (Use with Excess Flow) Square 5 x 9/16 SAE Ports, M10 x 1,5 Column Mounting Threads (Use with Load Sense) Square 4 x -06 STC Direct Ports, M10 x 1,5 Column Mounting Threads (Use with Open Center) Square 5 x -06 STC Direct Ports, M10 x 1,5 Column Mounting Threads (Use with Excess Flow) Square 5 x -06 STC Direct Ports, M10 x 1,5 Column Mounting Threads (Use with Load Sense) Square 4 x G .375 BSP Straight Thd. Ports, M10 x 1,5 Column Mounting Threads (Use with Open Center) Square 5 x G .375 BSP Striaight Thd. Ports, M10 x 1,5 Column Mounting Threads (Use with Load Sense)
22	Input Torque	1 3	Low* Standard
23	Fluid Type	A	See Eaton Technical Bulletin 3-401
24	Special Application	0	None
25,26	Special Feature	AA	None
27	Paint	1	Black Primer
28	Identification	0	Eaton Product Number on Nameplate
29	Mechanical Interface	A D	Tapered 17.919mm (.7055in) diameter, .083:1 and serrated 17.5 (.688) diameter, 40 tooth, M16x1.5-6g, Extension length 65.02 (2.56) Internal involute spline 12 tooth, 16/32 DP, 30 degree PA
30	Eaton Assigned Design Code	B	Assigned Design Code

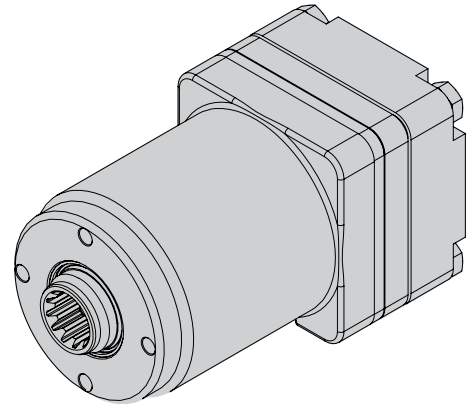
\* All low torque units need approval from an Eaton Steering Engineer.

# Steering Control Units—Series 5

## Model Code – Ordering Information

### Round Housing with End Ports - Option 2

The following 30-digit coding system has been developed to identify all of the configuration options for the Series 5 steering control units. Use this model code to specify a unit with the desired features. All 30-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
A	B	R			A			O		A					O	O							A	O			1	O		B

Nos	Feature	Code	Description
1,2,3	Product Series	ABR	Series 5 Steering Control Unit
4	Nominal Flow Rating	1 B	11 l/min [3 GPM] 19 l/min [5 GPM]
5	Inlet Pressure Rating	C	140 bar [2030 PSI]
6	Tank Pressure Rating	A	10 bar [150 PSI]
7-8	Displacement	35 37 39 41 43 46 48	31.5 cm <sup>3</sup> /r [1.92 in <sup>3</sup> /r] 39.5 cm <sup>3</sup> /r [2.41 in <sup>3</sup> /r] 50.8 cm <sup>3</sup> /r [3.10 in <sup>3</sup> /r] 63.1 cm <sup>3</sup> /r [3.85 in <sup>3</sup> /r] 73.8 cm <sup>3</sup> /r [4.50 in <sup>3</sup> /r] 100 cm <sup>3</sup> /r [6.10 in <sup>3</sup> /r] 120 cm <sup>3</sup> /r [7.33 in <sup>3</sup> /r]
9	Flow Amplification	0	None
10	Neutral Circuit	A B C F	Open Center Open Center, Power Beyond Closed Center Load Sensing, Dynamic signal
11	Load Circuit	A	Non-Load Reaction
12,13	Valve Options	01 04 05 12	Manual Steering Check Valve Inlet Check Valve, Manual Steering Check Valve Inlet Relief Valve, Manual Steering Check Valve Cylinder Relief Valve, Anti-cavitation Valve, Inlet Relief Valve, Inlet Check Valve, Manual Steering Check Valve.
14,15	Integral Inlet Relief Valve Setting	00 18 1J 1Z 26 2G 2T 34 3W 4C	None 40 bar [580 PSI] 50 bar [725 PSI] 63 bar [914 PSI] 70 bar [1020 PSI] 80 bar [1160 PSI] 90 bar [1310 PSI] 100 bar [1450 PSI] 125 bar [1812 PSI] 140 Bar [2030 PSI]
16,17	Cylinder Relief Setting	00	None

Nos	Feature	Code	Description
18,19, 20, 21	Ports and Mounting Threads	VAAH VAKH VAEH WAAH WBNH WBPH	Round 4 x 9/16 SAE Ports, M6 x 1,0 Column Mounting Threads (Use with Open Center) Round 5 x 9/16 SAE Ports, M6 x 1,0 Column Mounting Threads (Use with Excess Flow) Round 5 x 9/16 SAE Ports, M6 x 1,0 Column Mounting Round 4 x -06 STC Direct Ports, M6 x 1,0 Column Mounting Threads (Use with Open Center) Round 5 x -06 STC Direct Ports, M6 x 1,0 Column Mounting Threads (Use with Excess Flow) Round 5 x -06 STC Direct Ports, M6 x 1,0 Column Mounting Threads (Use with Load Sense)
22	Input Torque	1 3	Low* Standard
23	Fluid Type	A	See Eaton Technical Bulletin 3-401
24	Special Application	0	None
25,26	Special Feature	AA	None
27	Paint	1	Black Primer
28	Identification	0	Eaton Product Number on Nameplate
29	Mechanical Interface	A D	Tapered 17.919mm (.7055in) diameter, .083:1 and serrated 17.5 (.688) diameter, 40 tooth, M16x1.5-6g, Extension length 65.02 (2.56) Internal involute spline 12 tooth, 16/32 DP, 30 degree PA
30	Eaton Assigned Design Code	B	Assigned Design Code

\* All low torque units need approval from an Eaton Steering Engineer.

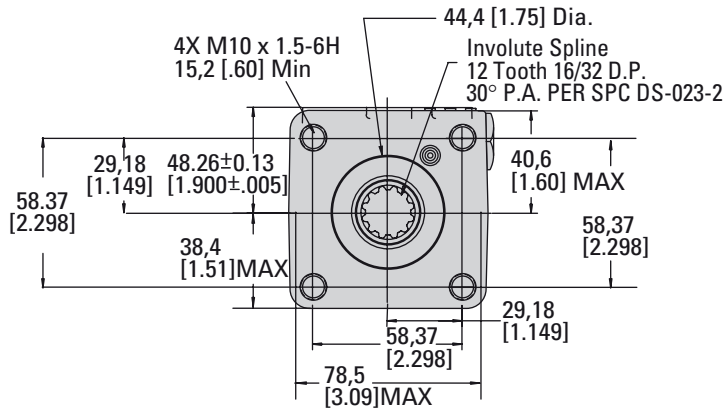
\*\* Plug-O ports rated to 103 bar [1500PSI]

# Steering Control Units—Series 5

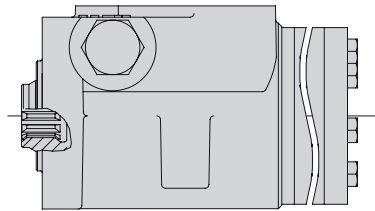
## Installation Drawing

### Option 1: Square Housing with Side Ports

refer to Model Code, page 26

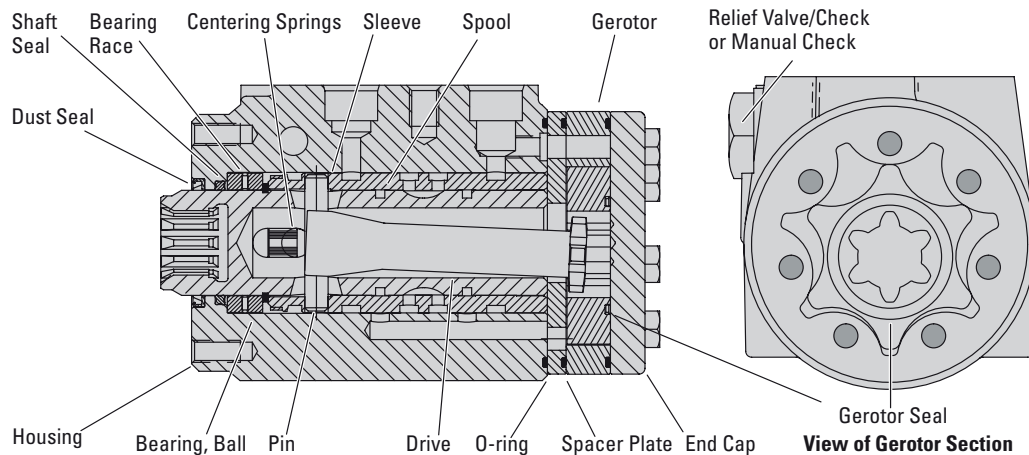
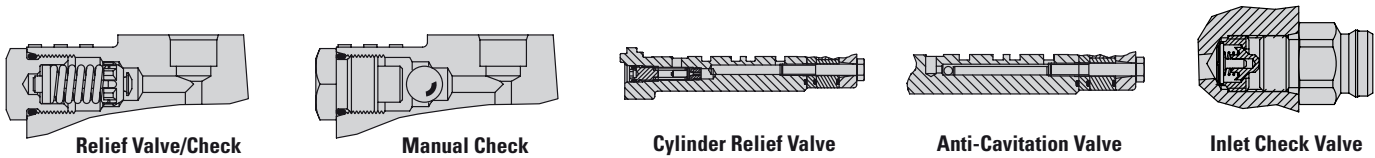


Side View



Code	Displacement cm <sup>3</sup> /r [in <sup>3</sup> /r]	Dim. A Max. mm [inch]
35	31.5 [1.92]	123.4 [4.86]
37	39.5 [2.41]	125.2 [4.93]
39	50.8 [3.10]	124.2 [4.89]
41	63.1 [3.85]	126.2 [4.97]
43	73.8 [4.50]	128.0 [5.04]
46	100.0 [6.10]	132.3 [5.21]
48	120.0 [7.33]	135.4 [5.33]

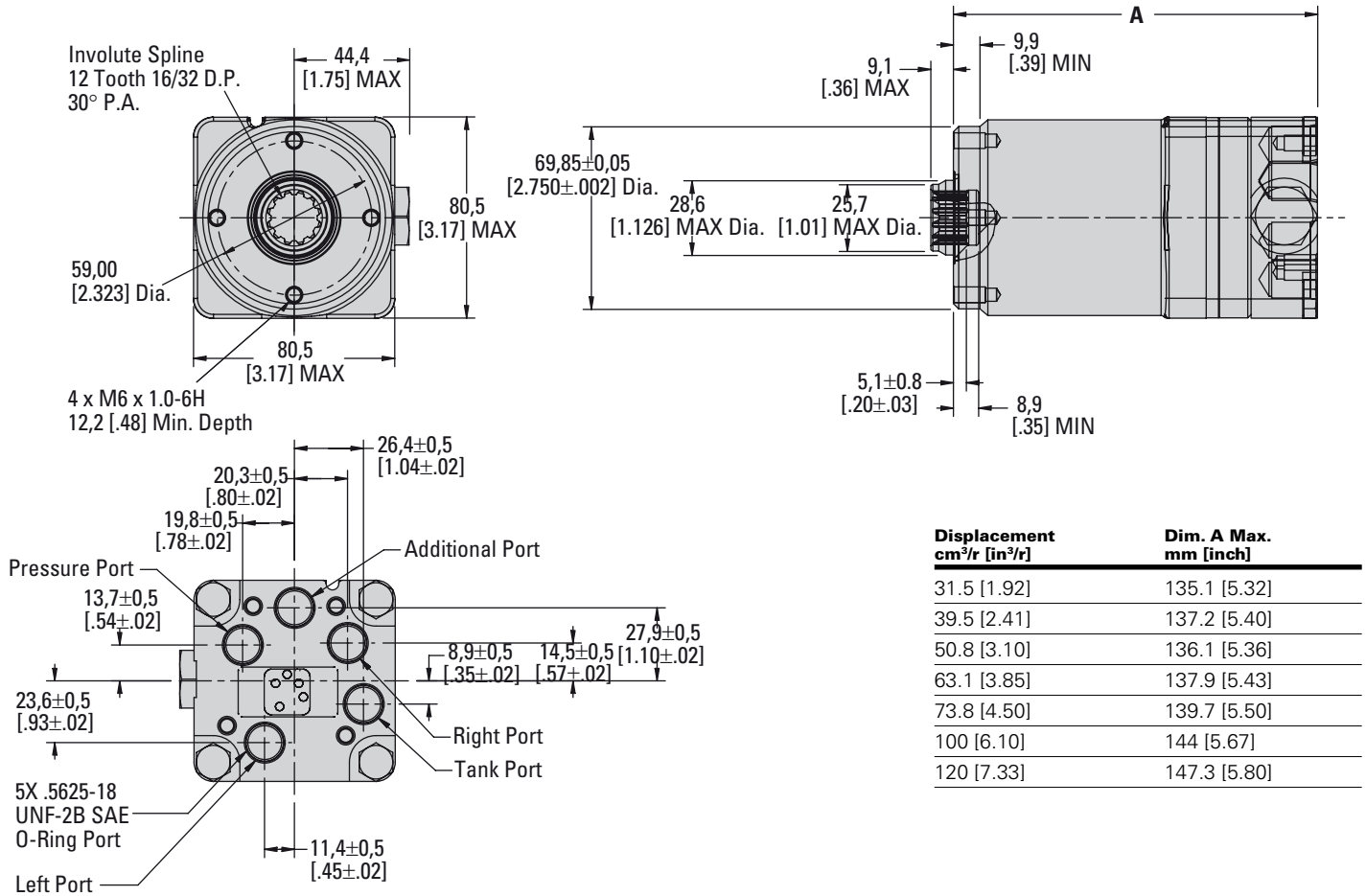
### Sectional Drawing



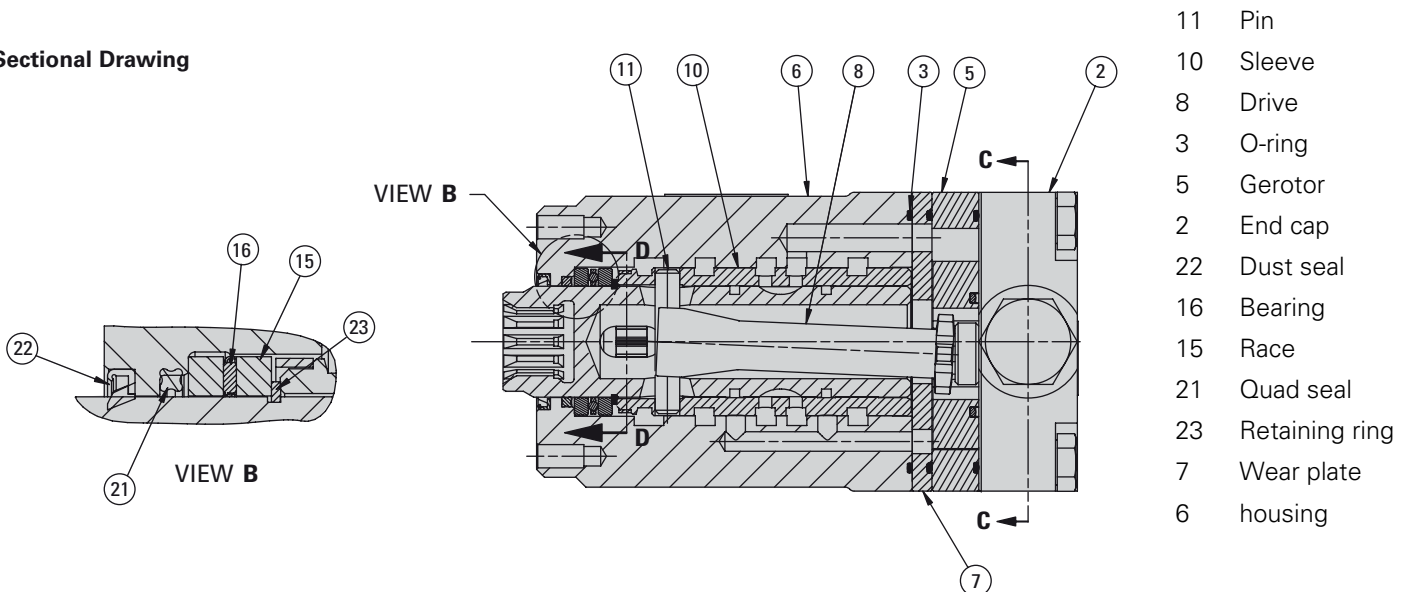
# Steering Control Units—Series 5

## Installation Drawing

### Option 2: Round Housing with End Ports



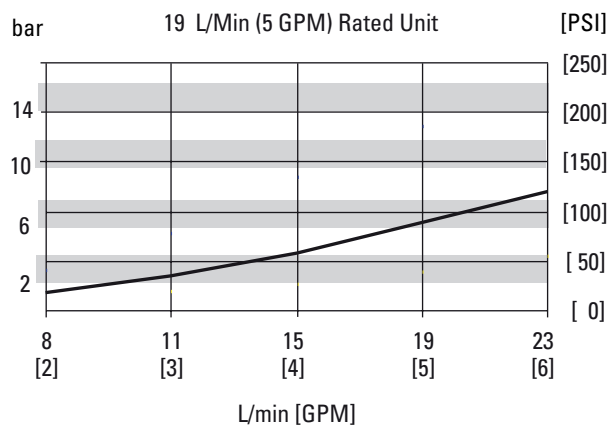
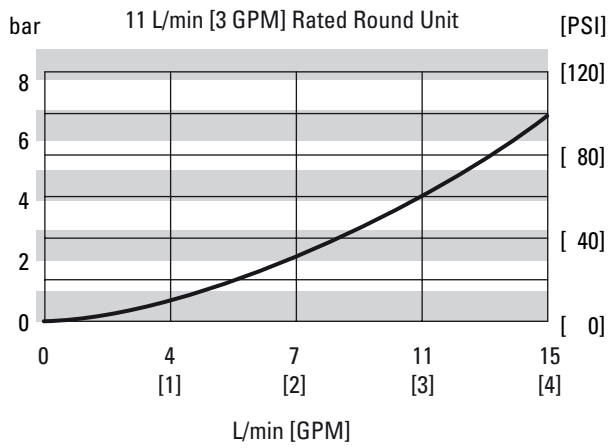
### Sectional Drawing



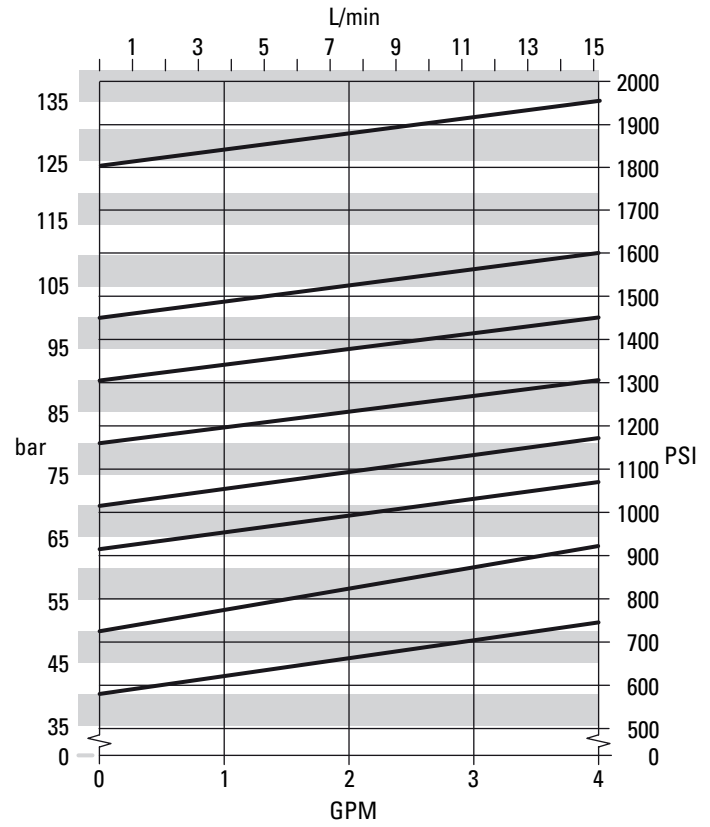
# Steering Control Units—Series 5

## Performance Data

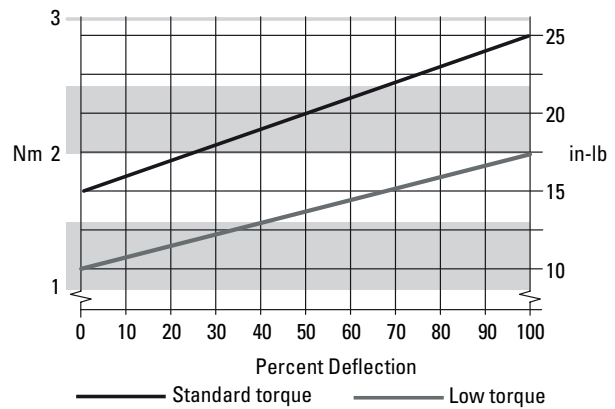
### Neutral Pressure Drop Inlet to Auxiliary



### Relief Valve Curve



### Input Torque Curve

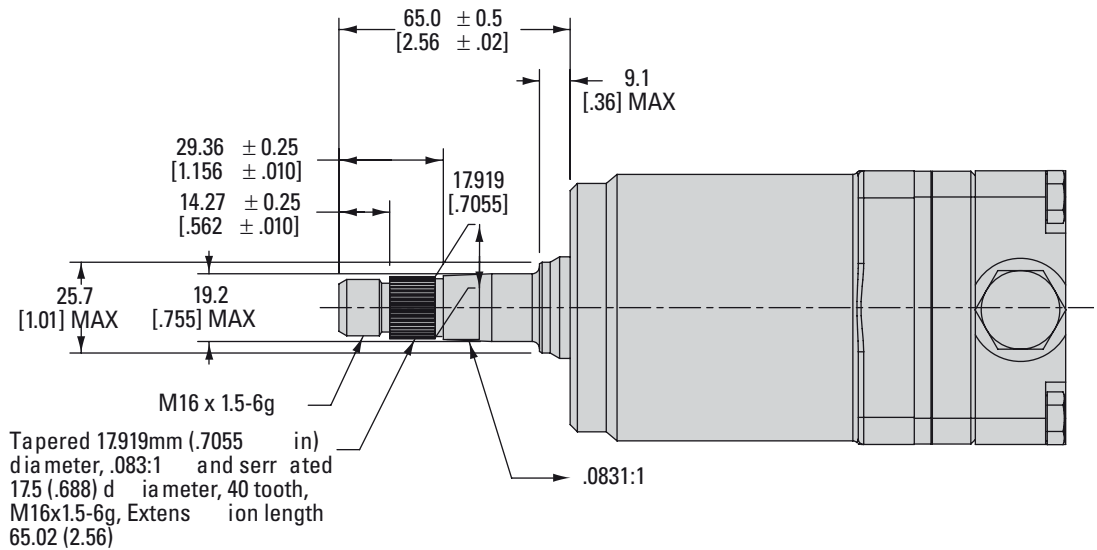


# Steering Control Units—Series 5

Integral Column Option

**Integral Column Option Available in Square Housing with Side Ports, and Round Housing with End Ports**

**40 Tooth Serrated Integral Column Option (Shown on Round Housing with End Ports)**



**12 Tooth Internal Spline Standard Mechanical Interface (Shown on Round Housing with End Ports)**

