

ZH-R Rotary Actuators

Series ZH-R Semi-Rotary Actuators

Design

Zeus Hydratech semi rotary actuators are designed for long life, suitable for heavy duty applications and available in a wide range of torque outputs. The range comprises both single and double rack versions, the racks being hydraulic driven against a pinion to provide a rotary output.

Performance

Zeus Hydratech actuators are designed for maximum mechanical efficiency; the quoted torque figures are 100% and take into account losses within the actuator. The actuators will provide a constant torque output regardless of angular position, torque can be adjusted by regulating the hydraulic system pressure and speed of operation can be controlled by regulating the system flow rate.

Positioning

Zeus Hydratech actuators are available with standard rotations of 90°, 180°, 270° and 360°, standard variable end stops allow fine setting of each end of rotation position. Standard position controls will allow a total of 20° angular adjustment i.e. 10° per end. Mid rotation point is at 12 o'clock and is indicated by the position of the key way or identified by an arrow on non-keyed shafts.

Cushioning

Cushioning is used to decelerate rotation at the end of stroke and is effective over the last 10 to 15 degrees of rotation, use of end stops will reduce the available cushioning length proportionally.

Output shafts

Output shafts can be single or double sided, and can be supplied as plain keyed or splined; all models can be supplied with keyed hollow shafts. For heavy duty applications, actuators can be supplied with a double shaft key.

Materials

Zeus Hydratech actuators are manufactured in alloy steel for industrial applications, marinated and stainless steel versions are available for the offshore, food and subsea industries.

Seals

Actuators are fitted with nitrile seals as standard for use with mineral oil up to 80°C. Alternative seals can be supplied for higher temperatures, or to suit other types of hydraulic fluid.

Ordering Code

Port positions

As standard, port positions are shown as on the data sheet, if required they can be positioned at 90° or 180° to standard.

Double rack versions

All Zeus Hydratech actuators are available in a double rack configuration to provide twice the torque output shown for single rack models. This configuration ensures that the pinion bearings are balanced by the racks during operation.

Valve actuators

These variants can be supplied as spring returned or spring centred with visual or electrical valve position indicators and manual overrides.

Paint finishes

Actuators are supplied finished in enamel paint, they can be supplied in primer only or to marine specification as required.

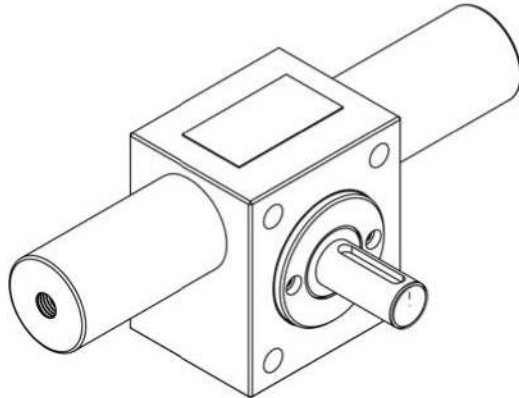
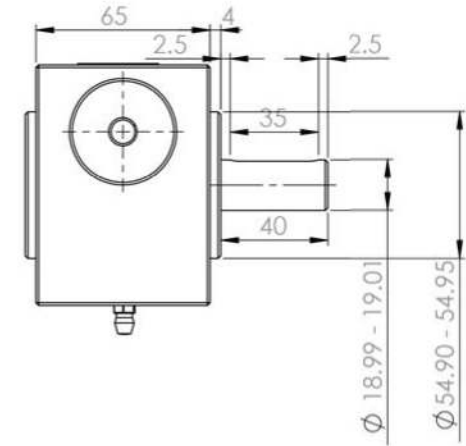
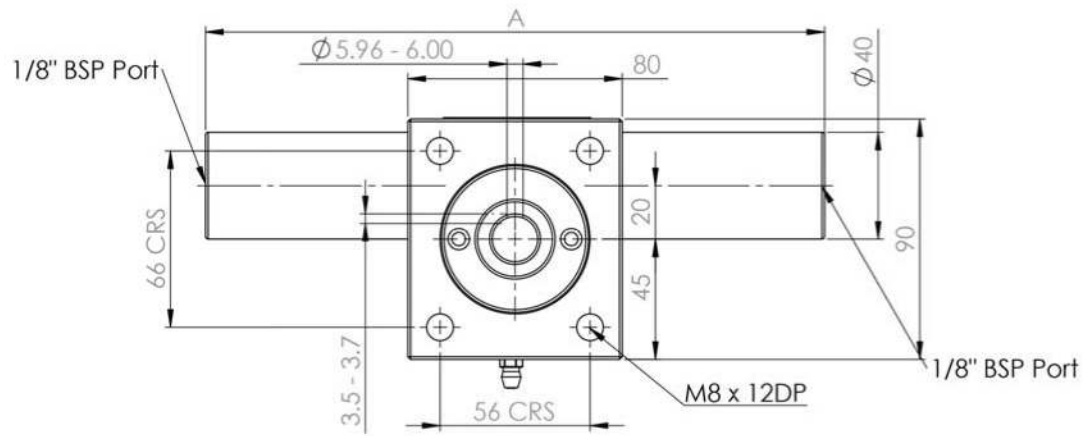
Positional control

Positional control can be supplied by end of stroke limit switches, proximity switches or rotary potentiometer for full range resolution.

Special units

All actuators can be modified for special requirements, units are available to directly interchange with existing equipment and custom designed models can be supplied if required.

Example:	ZH-R	-	90	-	S	-	2	-	20
Series ZH-R									
Total Rotation Required									
Single Rack									
Double Rack									
<u>Shaft Type</u>									
Hollow Keyed Shaft									
Single End Keyed Shaft									
Double End Keyed Shaft									
Single End Splined Shaft									
Double End Splined Shaft									
Special Shaft									
<u>Options</u>									
Cushioning									
Marinised Finish									
Stainless Steel									
Viton Seals									
Positional Control									

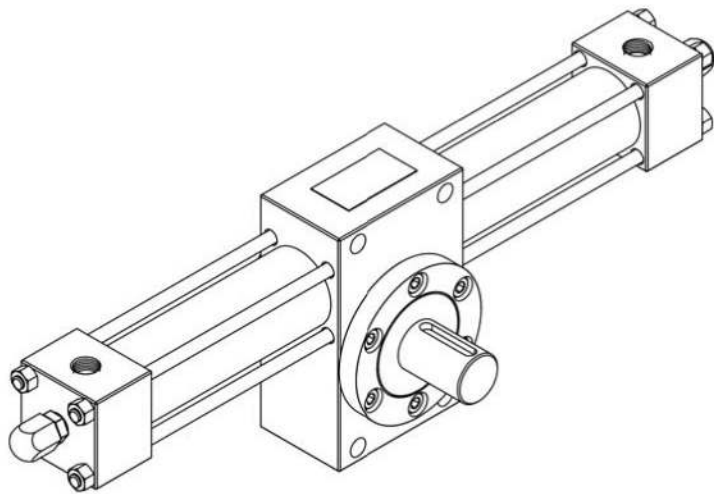
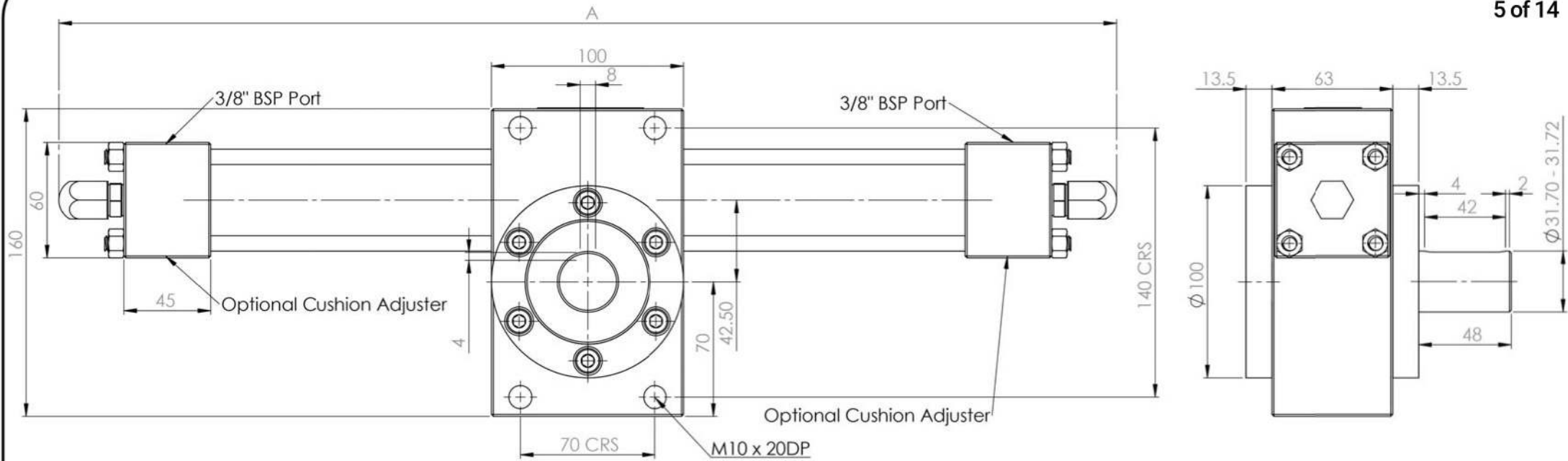


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	11	166	70 140 210	38 75 113
180 °	22	188		
270 °	33	210		
360 °	44	232		

ZH-R25S SEMI-ROTARY ACTUATOR



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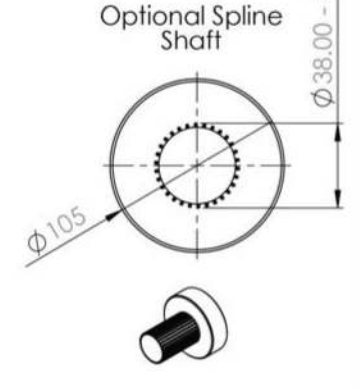
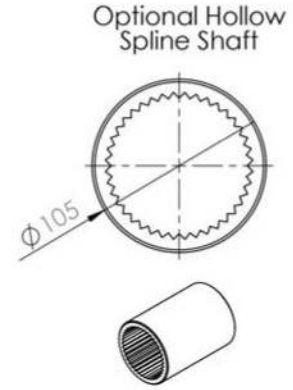
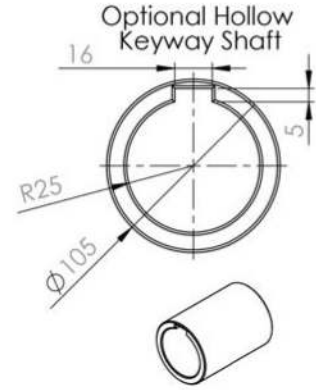
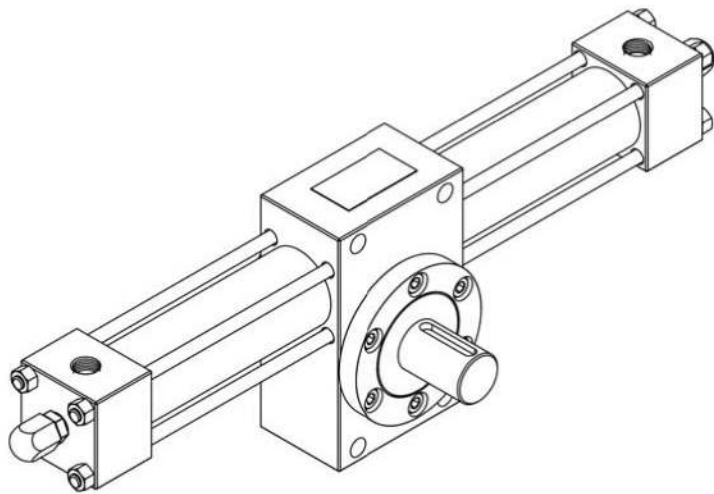
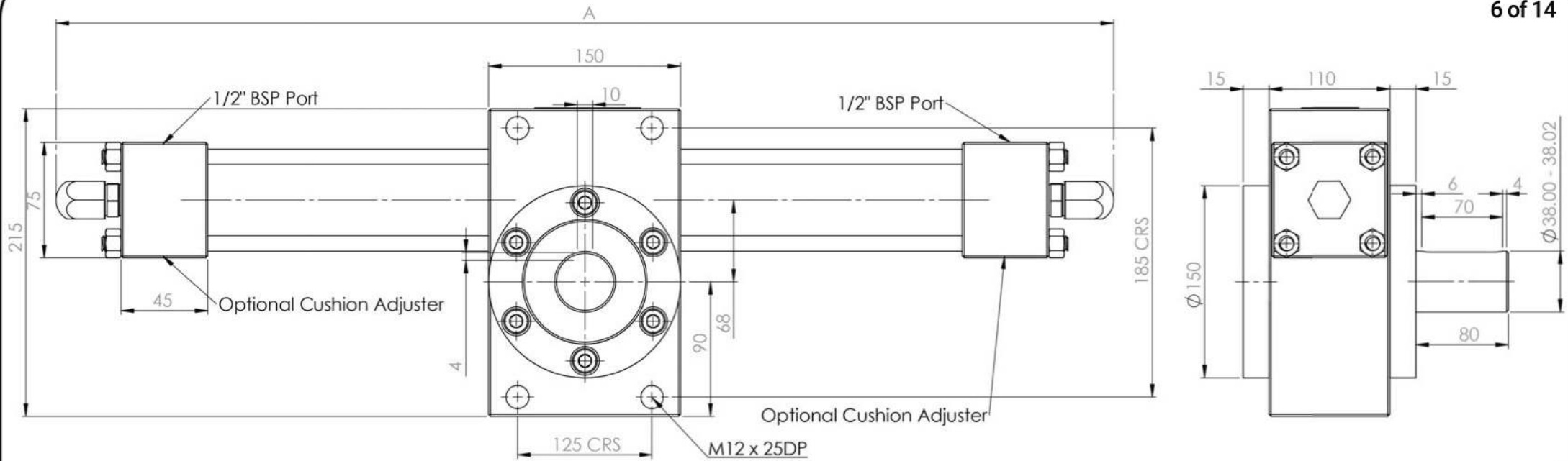


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	75	432	70	277
180 °	150	558		
270 °	225	681	140	554
360 °	300	800	210 (MAX)	831

ZH-R40S SEMI-ROTARY ACTUATOR



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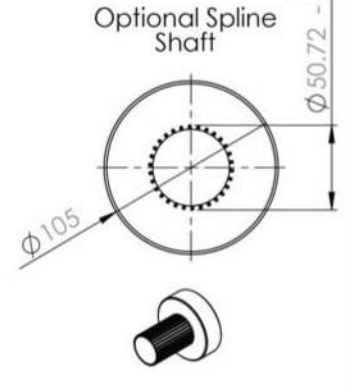
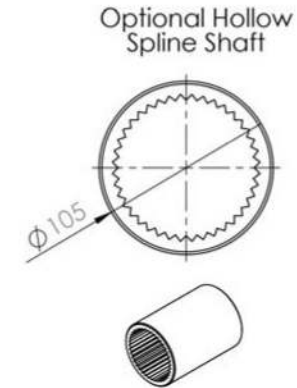
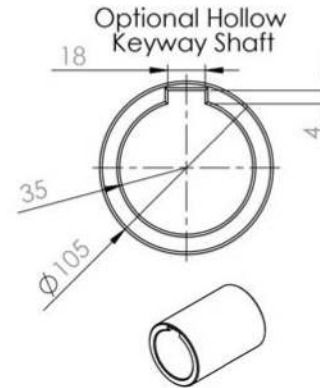
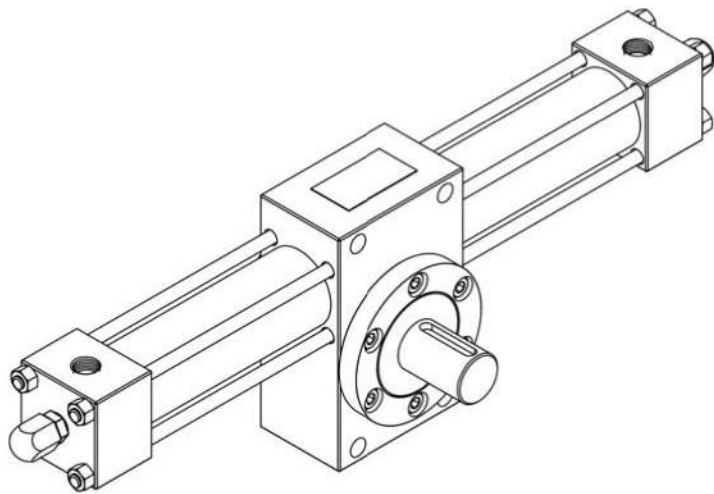
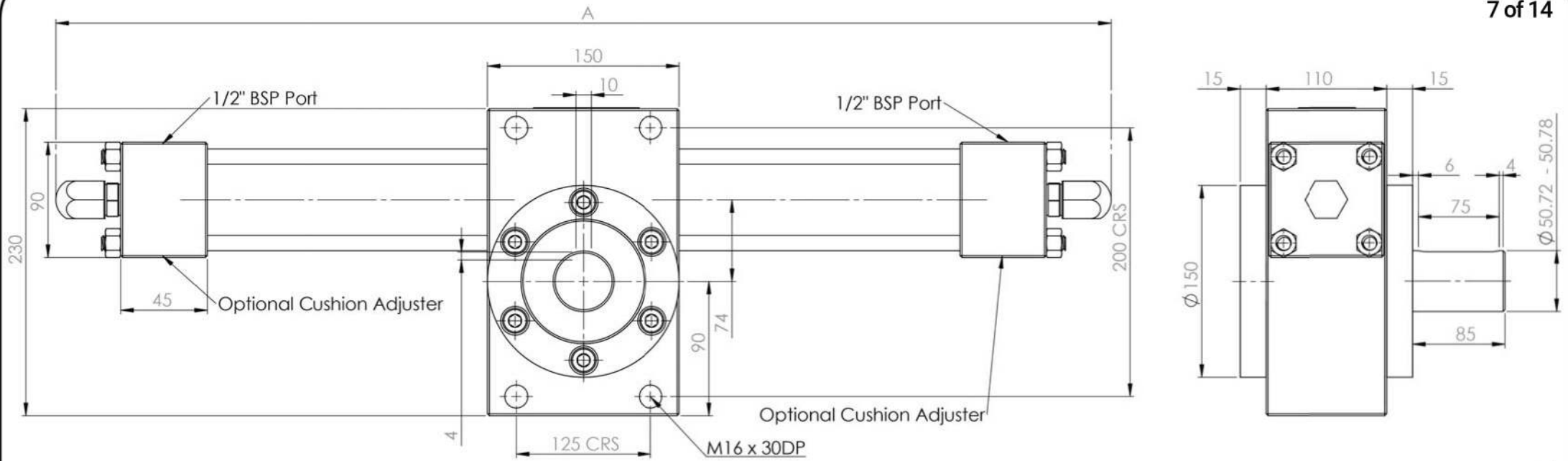


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	172	568	70	641
180 °	345	744		
270 °	517	920	140	1282
360 °	690	1096	210 (MAX)	1923

ZH-R50S SEMI-ROTARY ACTUATOR



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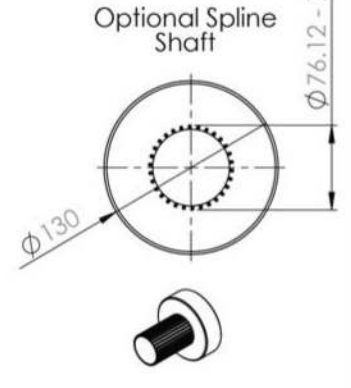
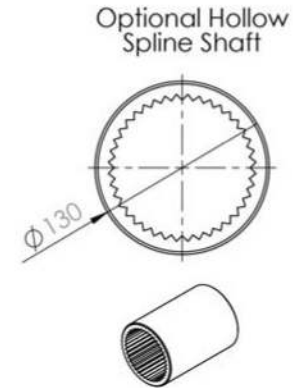
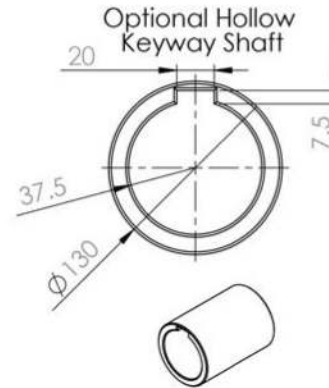
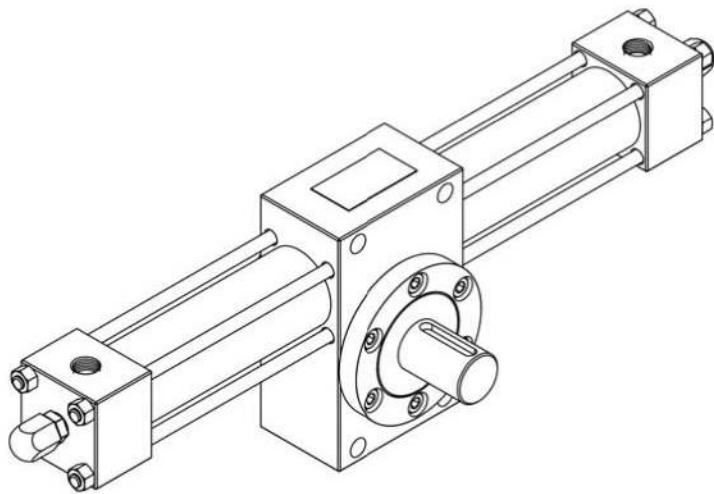
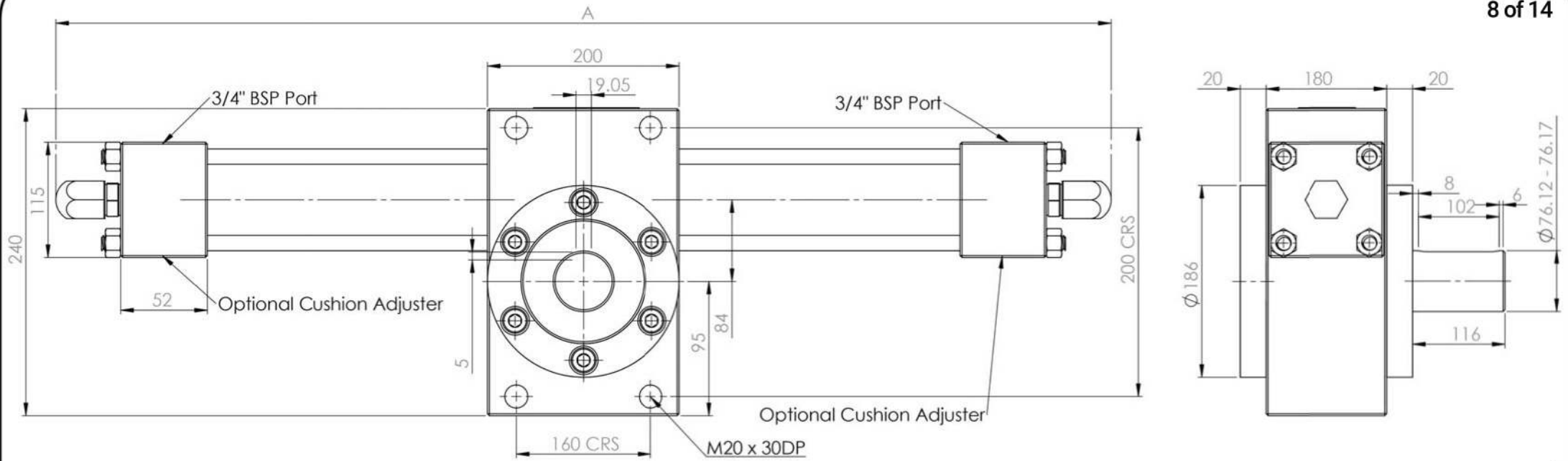


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	274	610	70	1020
180 °	548	786		
270 °	822	962	140	2040
360 °	1096	1138	210 (MAX)	3060

ZH-R63S SEMI-ROTARY ACTUATOR



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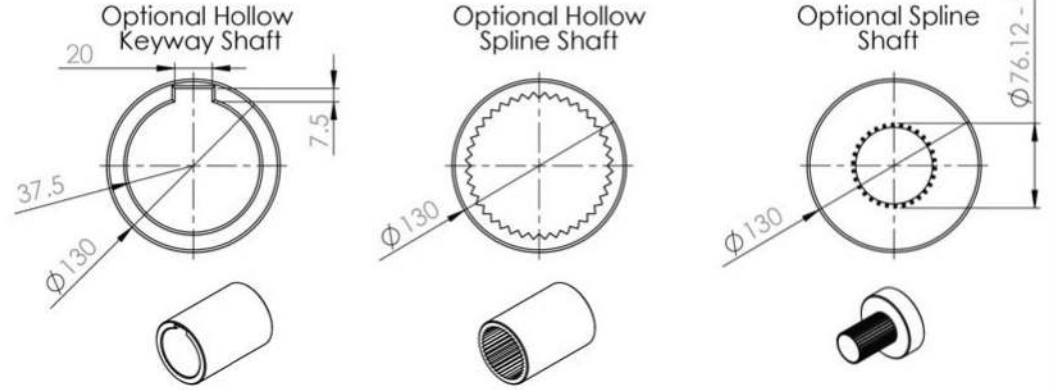
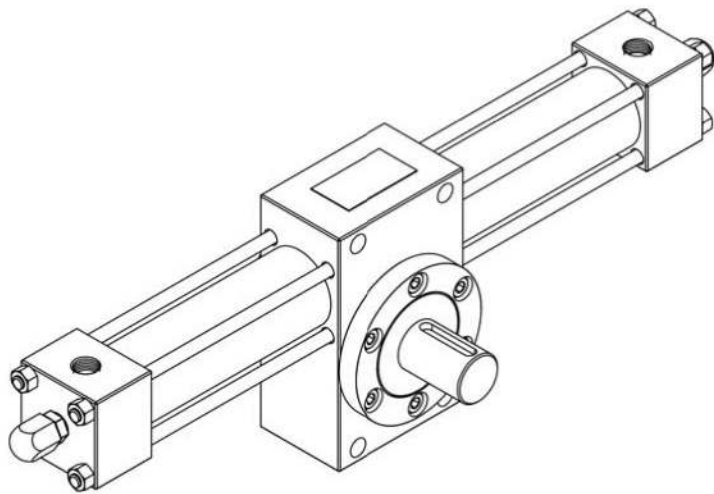
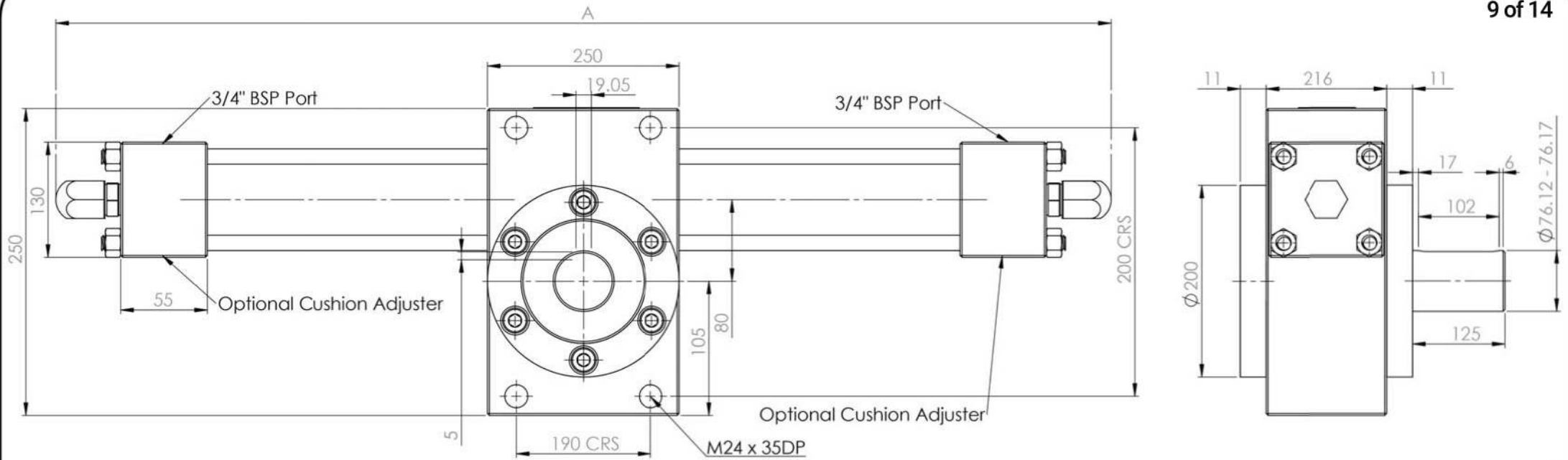


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90°	513	692	70 140 210 (MAX)	1905 3810 5715
180°	1026	890		
270°	1539	1086		
360°	2052	1282		

ZH-R80S SEMI-RORY ACTUATOR



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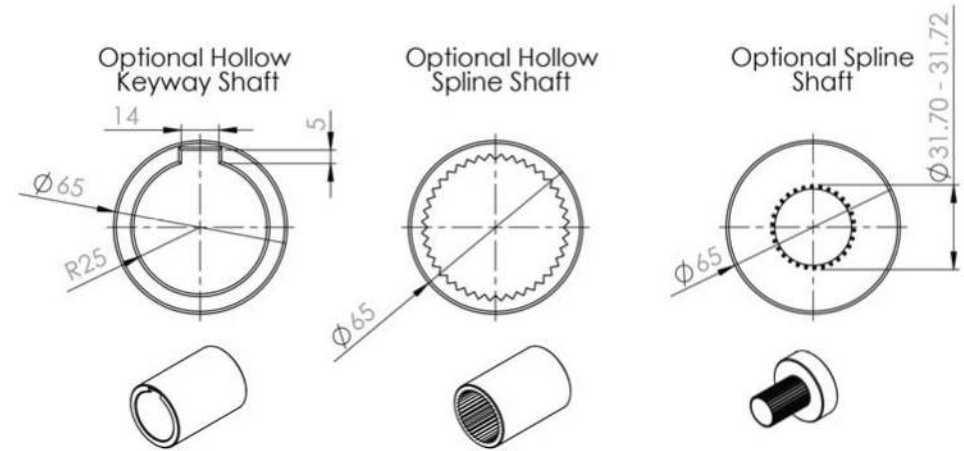
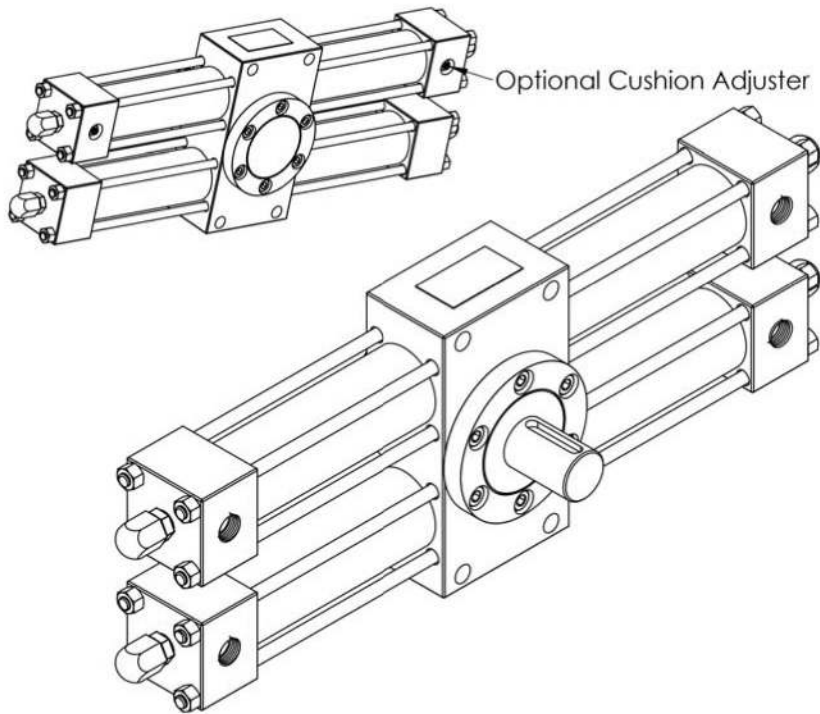
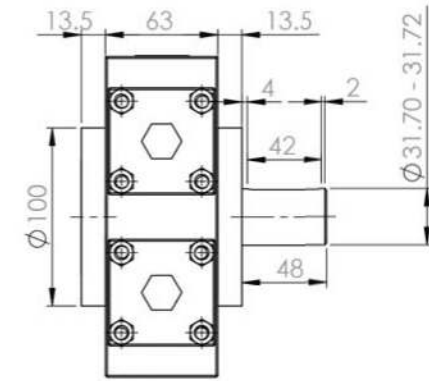
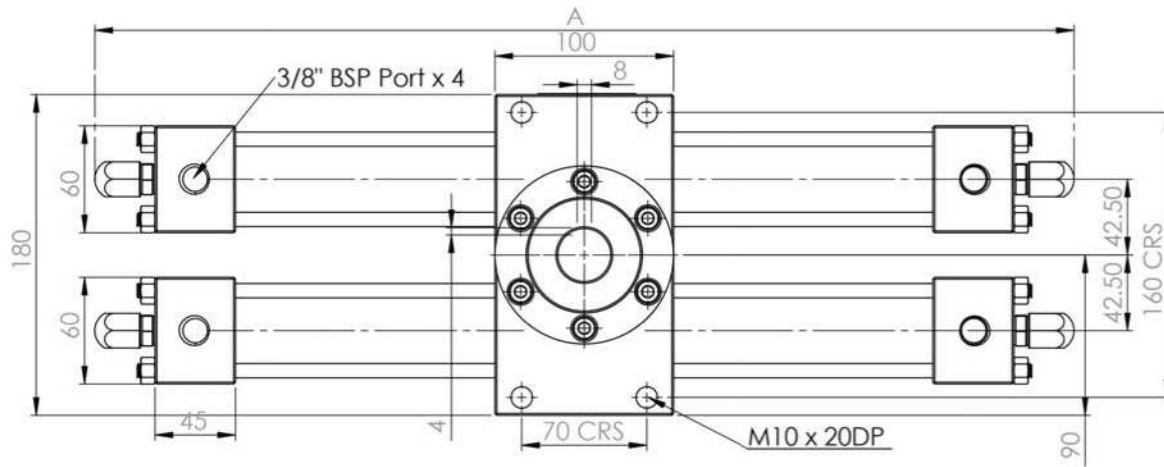


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	962	781	70 140 210 (MAX)	3572 7144 10716
180 °	1924	1002		
270 °	2886	1100		
360 °	3848	1430		

ZH-R100S SEMI-ROTARY ACTUATOR



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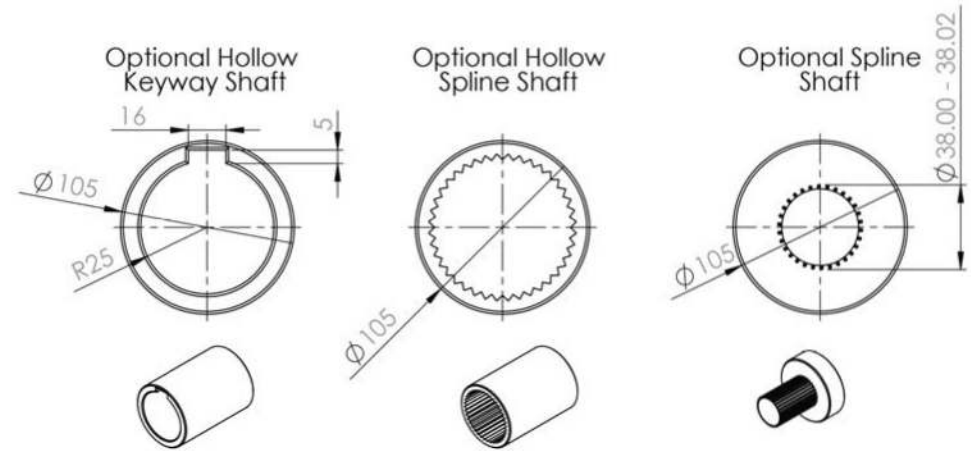
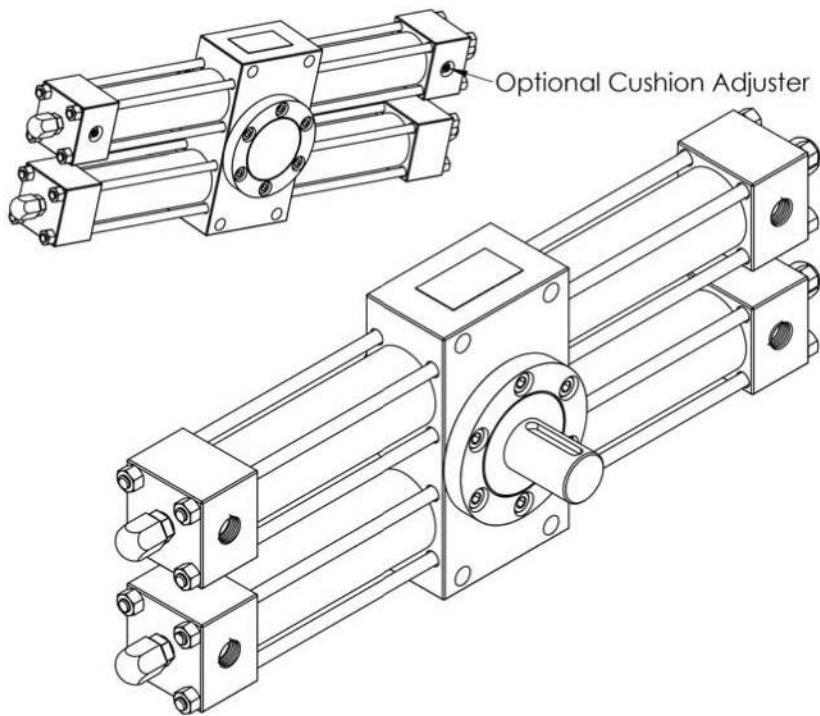
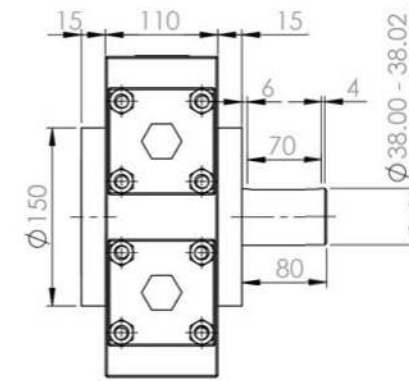
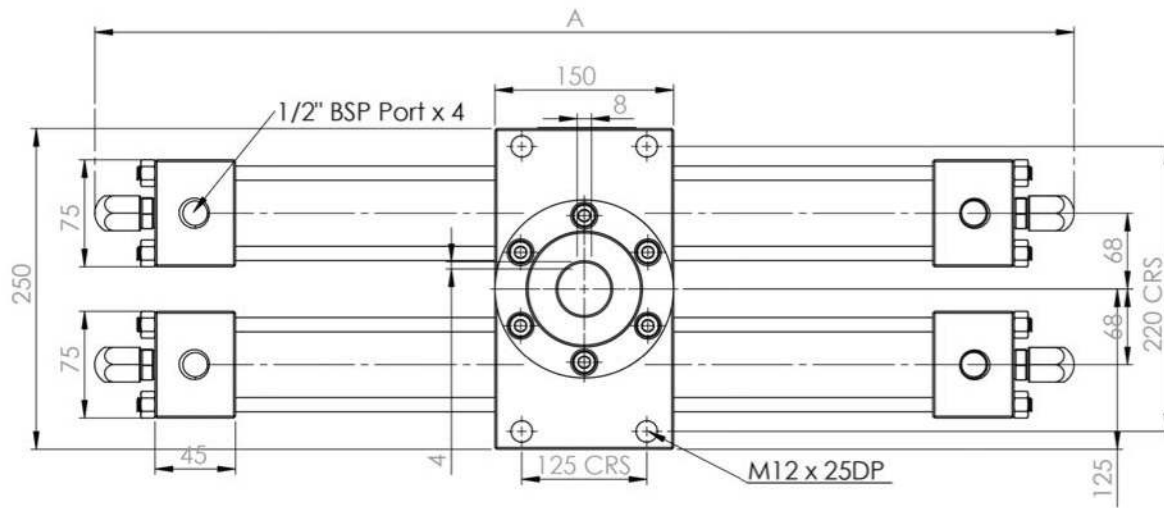


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90 °	150	432	70	554
180 °	300	558	140	1108
270 °	450	681	210	1662
360 °	600	800		

ZH-R40D SEMI-ROTARY ACTUATOR



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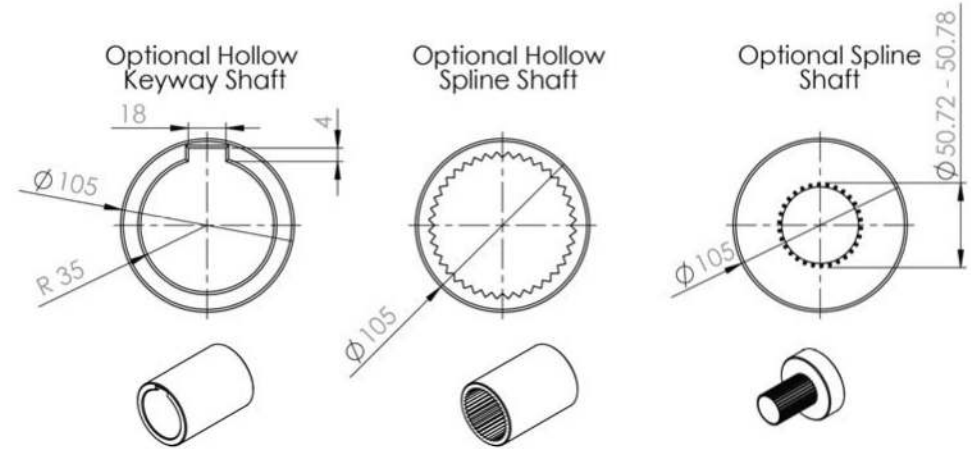
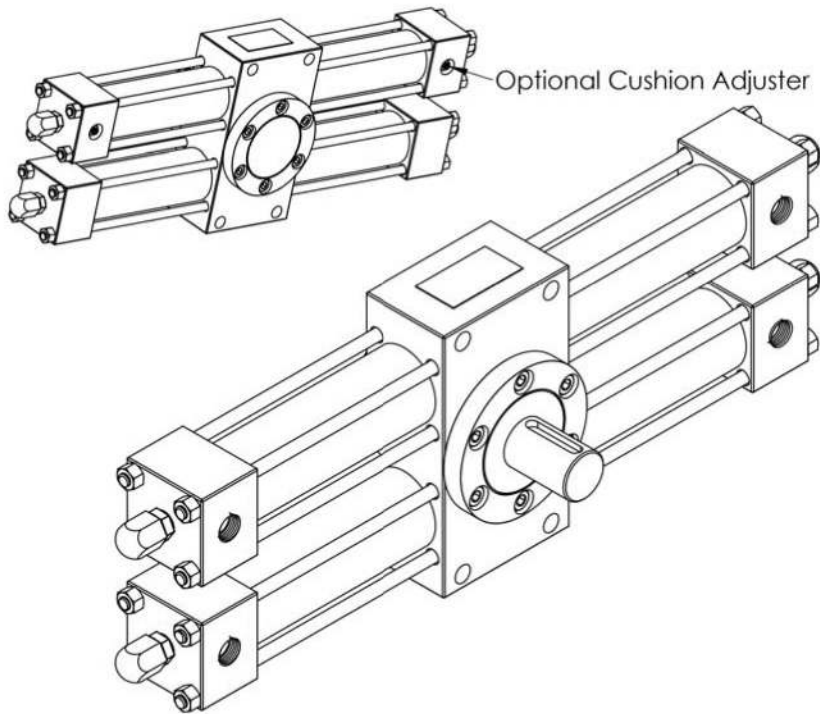
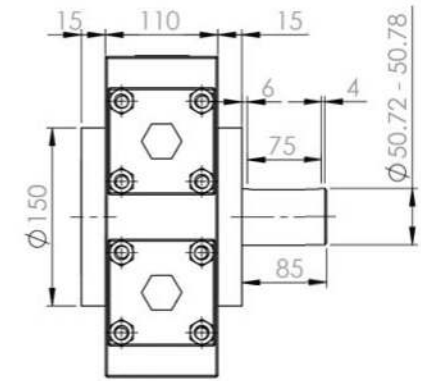
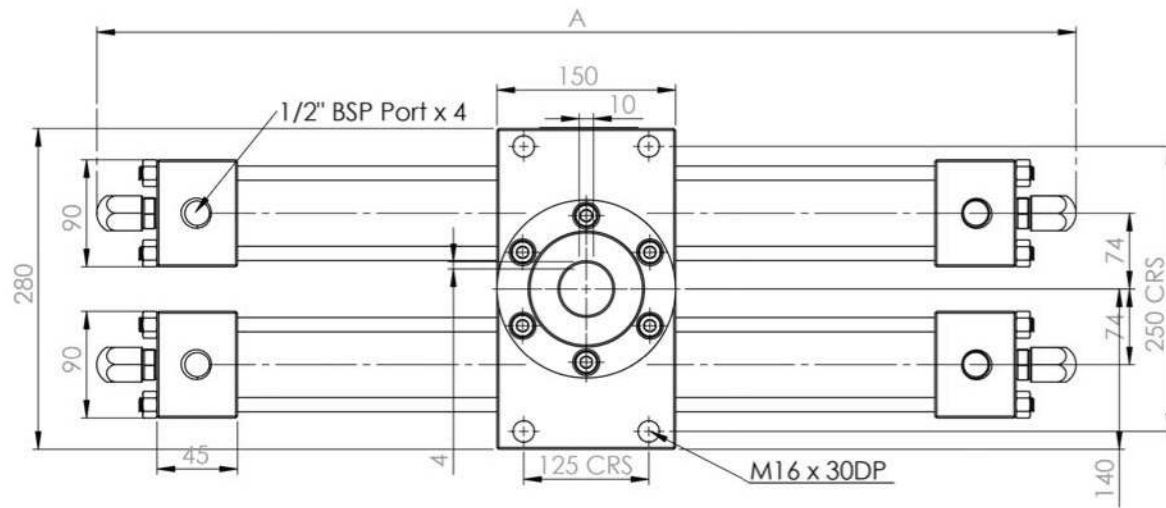


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90°	344	568	70 140 210	1282 2564 3846
180°	690	744		
270°	1034	920		
360°	1380	1096		

ZH-R50D SEMI-ROTARY ACTUATOR



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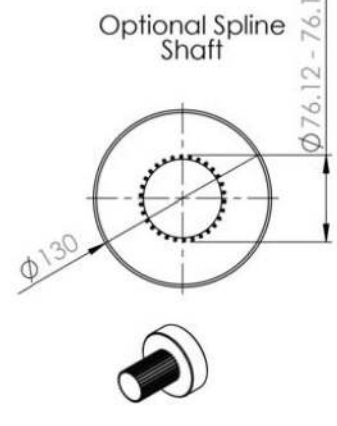
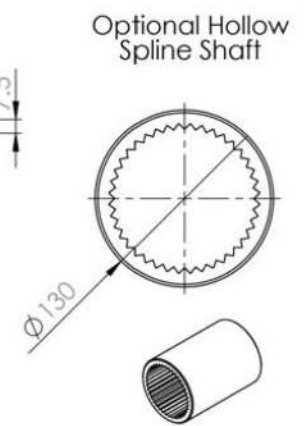
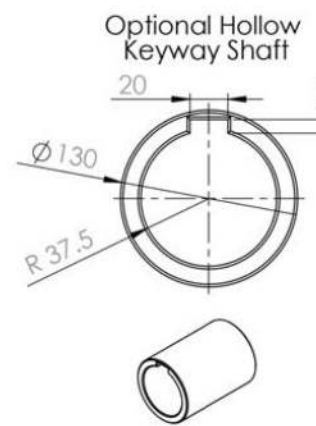
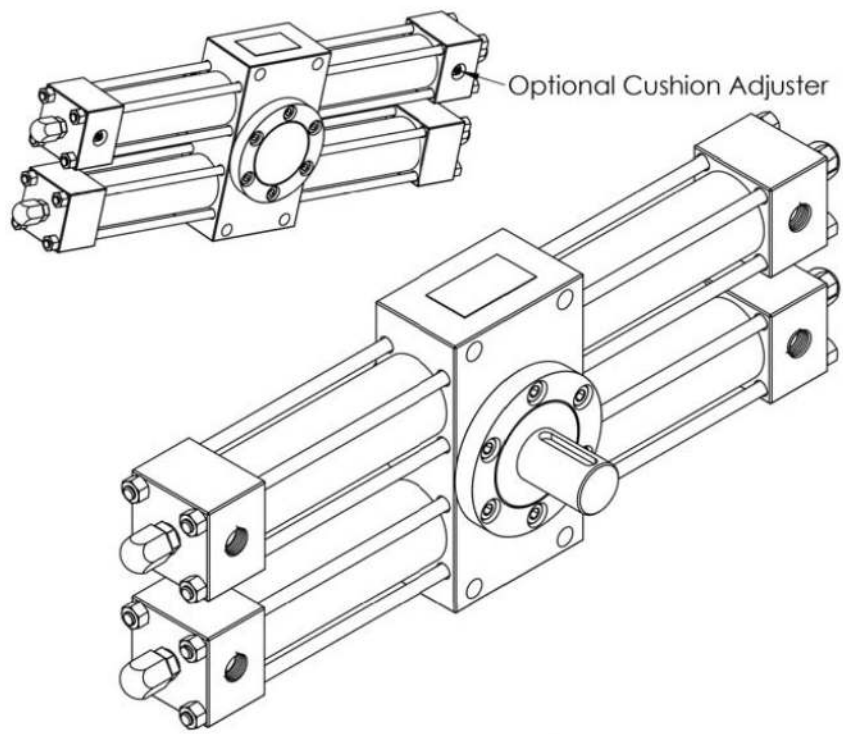
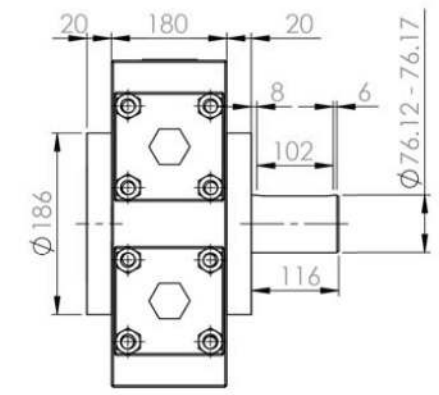
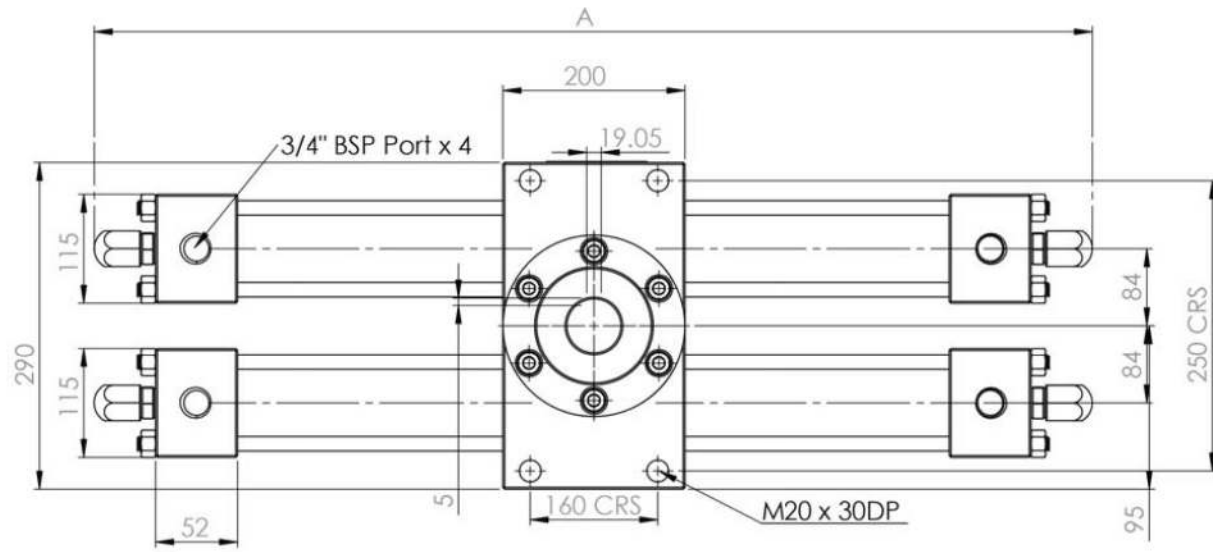


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90°	548	610	70 140 210	2040 4080 6120
180°	1096	786		
270°	1644	962		
360°	2192	1138		

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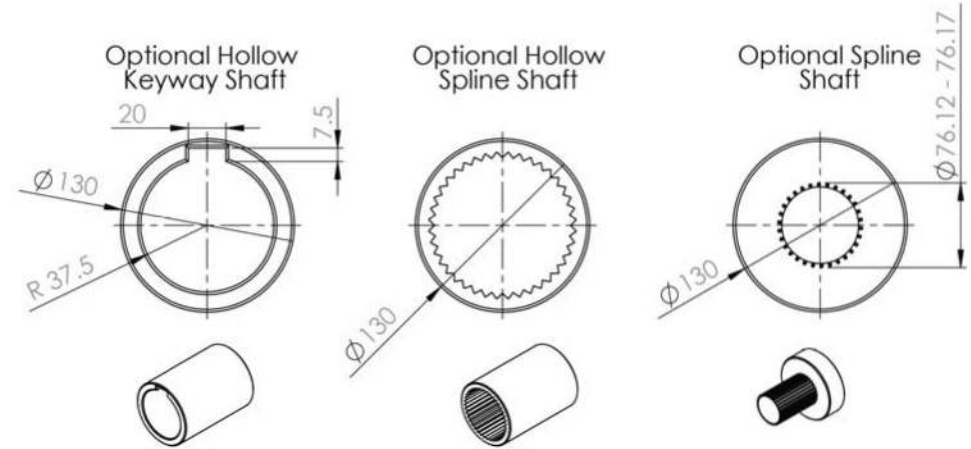
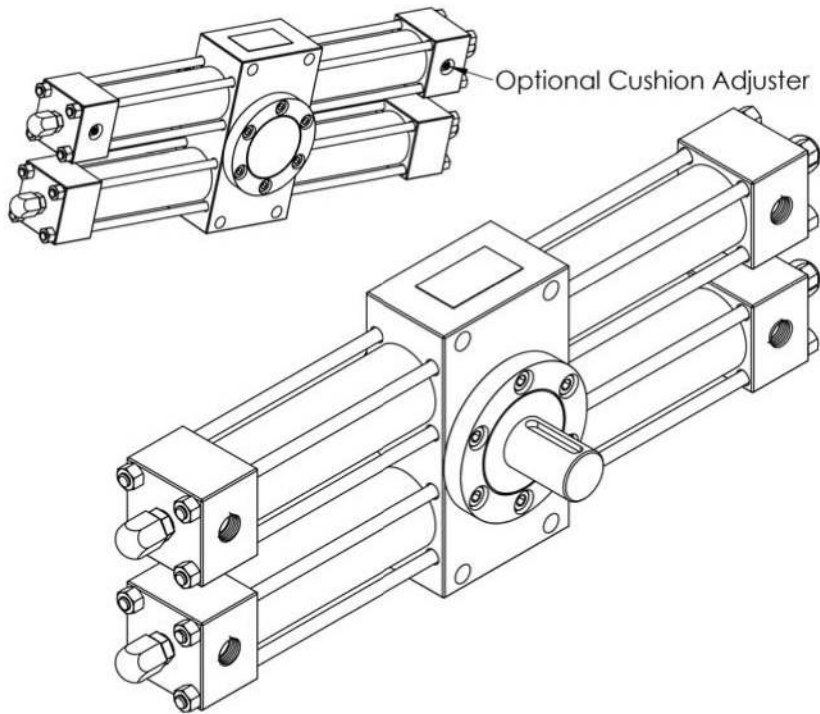
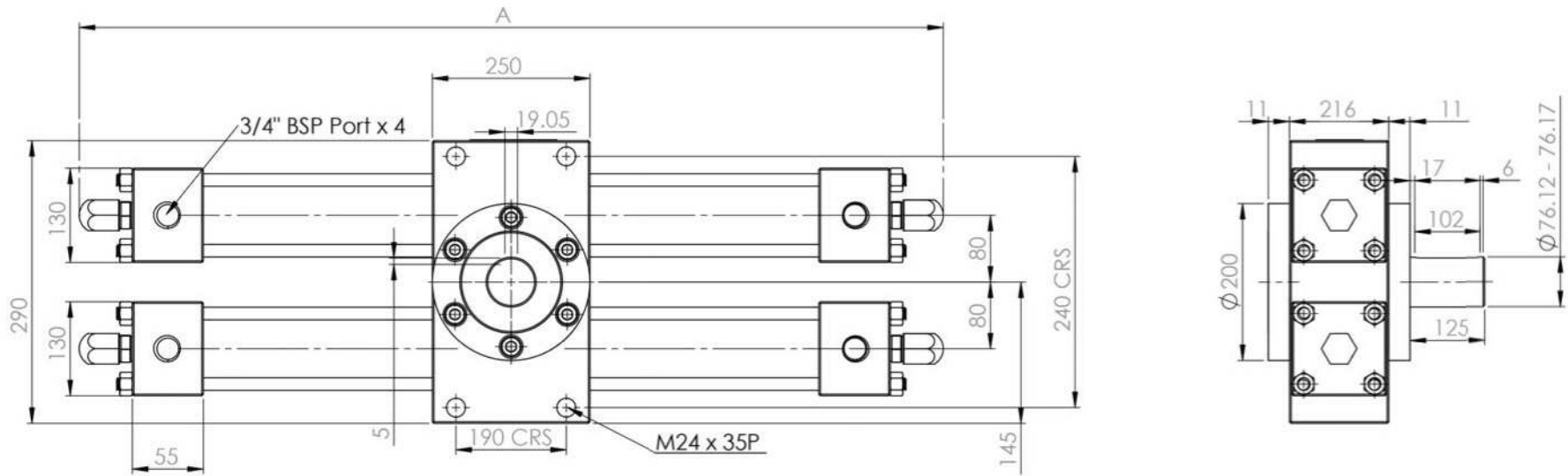


Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90°	1026	692	70	3810
180°	2052	890		
270°	3078	1086	140	7620
360°	4104	1282	210 (MAX)	11430

ZH-R80D SEMI-ROTARY ACTUATOR



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Angular Position	Displacement (cc)	A (mm)	Working Pressure (BAR)	Output Torque (N.M.)
90°	1924	781	70 140 210	7144 14288 21432
180°	3848	1002		
270°	5772	1100		
360°	7696	1430		

ZH-R100D SEMI-ROTARY ACTUATOR



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