ESC
ENGINEERED SEALS & COMPONENTS, LLC.

ECT
CAPPED T-SEALS

KEY FEATURES OF ECT CAPPED T-SEALS:

- Back-ups for Positive Actuation
- Contamination Resistant
- Excellent Extrusion Resistance
- Low Friction
- Drift Resistant
- Long Wear - Long Life
- Positive Sealing to 5000 PSI
- Easy Orientation of Components

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ESC's Capped T-Seal is a double-acting, high-pressure, high-performance piston seal accommodating larger extrusion gaps when used with ESC close tolerance wear-rings.

The **Capped T-Seal** assembly consists of a filled PTFE cap and an elastomeric energizer. The two components are protected from extrusion and foreign material by two plastic anti-extrusion rings. While grit may become trapped between seal and dynamic surface in conventional systems, the Capped T-Seal's anti-extrusion rings serve as bore wipers, pre-cleaning the seal path and significantly reducing contamination caused wear or scoring.

Each of the elements of **ESC's Capped T-Seal** is designed to perform a specific task. The T-shaped elastomeric energizer must transform axial pressure to radial loading and is compounded for low compression set and high modulus. The low friction sealing element (cap) is designed for sealability and optimal wear resistance, resulting in long operational life. Finally the anti-extrusion rings have been designed based on the use of wear-resistant Acetal or Nylon material to provide stability and superior extrusion protection.

This seal offers a high degree of sealability in both high and low pressure environments. The seal is designed to handle temperature extremes, a wide variety of fluid media and larger than normal clearances--yet it requires a short axial length gland, and assembles and installs easily in the shop or in the field. The **Capped T-Seal** is especially suited for long stroke applications due to its low sliding friction and unique geometry which prevents rolling or spiraling.

Unlike conventional cap-type seals, **ESC's Capped T-Seal** virtually eliminates piston drift. Piston drift is caused by low pressure leakage past the cap. Because conventional caps are not adequately energized at low pressures, leakage can occur, ultimately resulting in piston drift. ESC's cap is loaded both in the static mode through high energizer squeeze, and in the dynamic mode through the proportional axial-to-radial conversion of system pressure levels. Thus, a fully positive seal is maintained throughout the pressure range. The substantial, uniform cap permits a high degree of evenly distributed radial load, virtually eliminating the possibility of excessive wear and premature failure found in conventional cap type seals.

Wider clearances can be used when designing with the **Capped T-Seal**. This allows for the use of wear rings which eliminate the possibility of piston and bore damage due to metal-to-metal contact.

When designing with the **Capped T-Seal**, refer to drawing and gland dimensions listed in Table 2.

Vented Back-up rings available upon request.

TABLE 1

MATERIALS INFORMATION:

CAP RINGS:

CAP NUMBER	COMPOUND	TEMP. RANG	TYPICAL SERVICE
155	PTFE 15% glass/5% moly	-100° to +450°F	General purpose hydraulic, hydrocarbon & water.
232	PTFE 25% carbon/graphite	-100° to +450°F	High pressure hydraulic, hydrocarbon & water. Low friction.
405	PTFE 40% bronze/5% moly	-100° to +450°F	High speed with improved sealability.
555	PTFE 55% bronze/5% moly	-100° to +450°F	High speed, pressure & abrasion resistance.

ENERGIZER:

NUMBER	COMPOUND	TEMP. RANGE	TYPICAL SERVICE
70B	70 duro NBR	-35° to +265°F	General purpose hydraulic & hydrocarbon service.
80L	80 duro NBR Low Temp.	-40° to +240°F	Low temperature hydraulic fluid service.
75V	Fluoroelastomer	-20° to +400°F	High temp.,harsh media applications, hydrocarbon & diester.

BACK-UP RINGS:

NUMBER	COMPOUND	TEMP. RANGE	TYPICAL SERVICE
95	Acetal	-40° to +225°F	General purpose hydraulic, hydrocarbon service.
94	Glass Filled Nylon	-40° to +300°F	General purpose hydraulic service.

Temperature ranges shown are limited by the functional range of the ECT assembly. Materials shown may have different operating ranges when used in other seal designs. The information contained herein is based on laboratory tests believed to be reliable. It is offered for comparison and guidance to persons who will conduct their own test in order to determine suitability for any purpose.

NOTE: ESC is has been a leader in designing seals for most hydraulic applications. Our engineering department should be contacted for design criteria if your application exceeds the limits of the above materials

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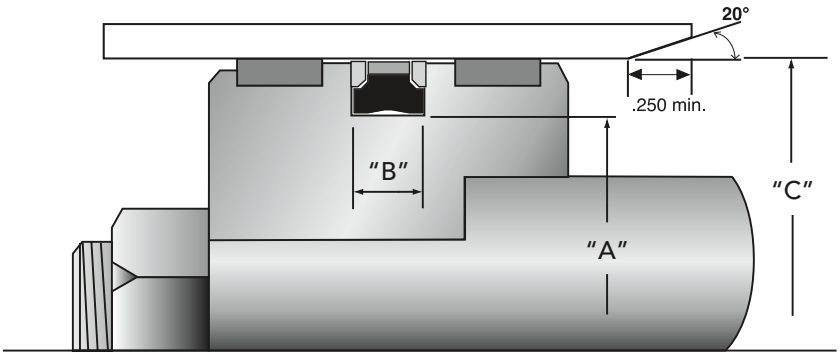
ECT 4250 - 80L - 155 - 95

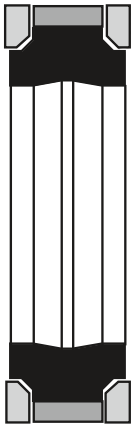
- 4250: Dash No. (See Table 2)
- 80L: Energizer Compound (See Table 1)
- 155: Cap Compound (See Table 1)
- 95: Back-up Compound (See Table 1)

TABLE 2

ESC Dash Number	NOM SEAL C/S	BORE Diameter (øA)	BORE Tolerance	GLAND Diameter (øF)	GLAND Tolerance	GLAND LENGTH (G) +.010 -.000	CLEARANCE (D) Without wear Ring max.	CLEARANCE (D) With wear Ring min./max
-1000		1.000		.627				
-1062		1.063		.690				
-1125		1.125		.752				
-1187		1.187		.815				
-1250		1.250		.877				
-1312		1.313		.940				
-1375		1.375		1.002		.424		
-1437		1.437		1.065				
-1500		1.500		1.127			.006	
-1562		1.562		1.150				.024/.030
-1625	3/16"	1.625		1.252				
-1687		1.687		1.315				
-1750		1.750		1.377				
-1875		1.875		1.502				
-2000		2.000		1.627				
-2125		2.125		1.752				
-2250		2.250		1.877				
-2375		2.375		2.002	+.000 -.002			
-2500		2.500	+.002 -.000	2.127				
-2625		2.625		2.252				
-2750		2.750		2.377				
-2875		2.875		2.502				
-3000		3.000		2.522				
-3125		3.125		2.647				
-3250		3.250		2.772			.007	
-3375		3.375		2.897				
-3500		3.500		3.022				
-3625		3.625		3.147				
-3750	1/4"	3.750		3.272				.024/.038
-3875		3.875		3.397				
-4000		4.000		3.522				
-4125		4.125		3.647		.579		
-4250		4.250		3.772				
-4375		4.375		3.897				
-4500		4.500		4.022				
-4635		4.625		4.147				
-4750		4.750		4.272			.008	
-4875		4.875		4.397				

ESC Dash Number	NOM SEAL C/S	BORE Diameter (øA)	BORE Tolerance	GLAND Diameter (øF)	GLAND Tolerance	GLAND LENGTH (G) +.010 -.000	CLEARANCE (D) Without wear Ring max.	CLEARANCE (D) With wear Ring min./max
-5000		5.000		4.274				
-5125		5.125		4.399				
-5250		5.250		4.524				
-5375		5.375		4.649				
-5500		5.500		4.774				
-5625		5.625		4.899		.750		
-5750		5.750		5.024				
-5875		5.875		5.149				
-6000		6.000		5.274	+.000 -.003		.009	
-6125		6.125		5.399				
-6250		6.250	+.003 -.000	5.524				
-6325		6.325		5.649				
-6500		6.500		5.774				
-6750		6.750		6.024				
-7000		7.000		6.274				
-7250		7.250		6.524				
-7500		7.500		6.774				.024/.045
-7750	3/8"	7.750		7.024				
-8000		8.000		7.274				
-8250		8.250		7.524				
-8500		8.500		7.774				
-8750		8.750		8.024				
-9000		9.000		8.274				
-9500		9.500		8.775				
-10000		10.000		9.275				
-10500		10.500		9.775				
-11000		11.000		10.275				
-11500		11.500		10.775			.010	
-12000		12.000		11.275	+.000 -.004			
-12500		12.500	+.004 -.000	11.775				
-13000		13.000		12.275				
-13500		13.500		12.775				
-14000		14.000		13.275				
-14500		14.500		13.775				
-15000		15.000		14.275				
-15500		15.500		14.775				
-16000		16.000		15.275				





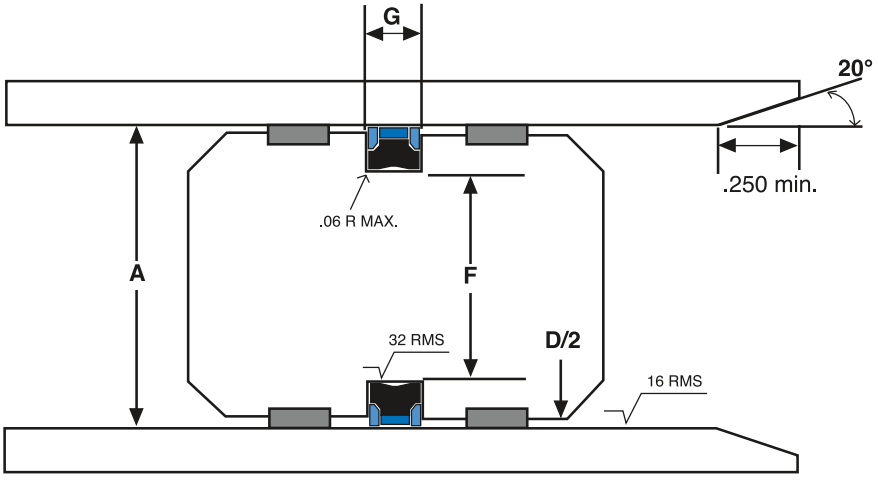
ECT CAPPED T-SEALS

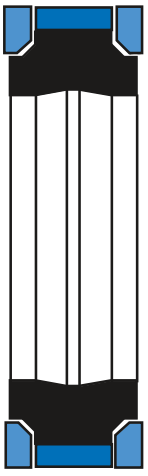
ECT 024 - 80L - 150 - 98

024	80L	150	98
Dash No. (See Table 3)	Energizer Compound (See Table 1)	Cap Compound (See Table 1)	Back-up Compound (See Table 1)

TABLE 3

ESC Dash Number	NOM SEAL C/S	BORE Diameter (øA)	BORE Tolerance	GLAND Diameter (øF)	GLAND Tolerance	GLAND LENGTH (G) +.010 -.000	CLEARANCE (D) Without wear Ring max.	CLEARANCE (D) With wear Ring min./max
-016	9/64	1.000	+.002 -.000	.722		.295	.015	.020/.030
-020	1/4	1.250		.752		.295		
-024	1/4	1.500		1.004		.295		
-026	1/4	1.625		1.129		.295		
-028	1/4	1.750		1.254		.295		
-030	1/4	1.875		1.377		.295		
-032	9/32	2.000		1.442		.295		
-036	9/32	2.250		1.692	+.000 -.004	.295		
-040	9/32	2.500		1.942		.295		
-044	9/32	2.750		2.192		.295		
-048	9/32	3.000		2.442		.420		.020/.038
-052	9/32	3.250		2.692		.420		
-056	9/32	3.500		2.942		.420		
-060	9/32	3.750		3.192		.420		
-064	9/32	4.000	+.003 -.000	3.442		.420		
-068	9/32	4.250		3.692		.420		
-072	9/32	4.500		3.942		.420		
-076	9/32	4.750		4.192		.420		
-080	9/32	5.000		4.442		.420		





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NOTES

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