

# Z Type Energizers

## Z TYPE ENERGIZERS

### Overview

The Z Type Energizer is run in conjunction with a Z Type Fishing Jar of the same size. Its function is to supply intensified impact during the jarring operation. Each size of Z Type Energizer is designed to match a corresponding size of Logan Z Type Fishing Jar. The Z Type Energizer is essentially a fluid spring, which stores energy when a strain is pulled on the fishing string. When the strain is removed by the free stroke of the fishing jar, the stored energy is released, accelerating the collars upward until a blow of high impact is struck. The tool absorbs much of the jarring shock from the rebounding string to protect tools and string from damage.

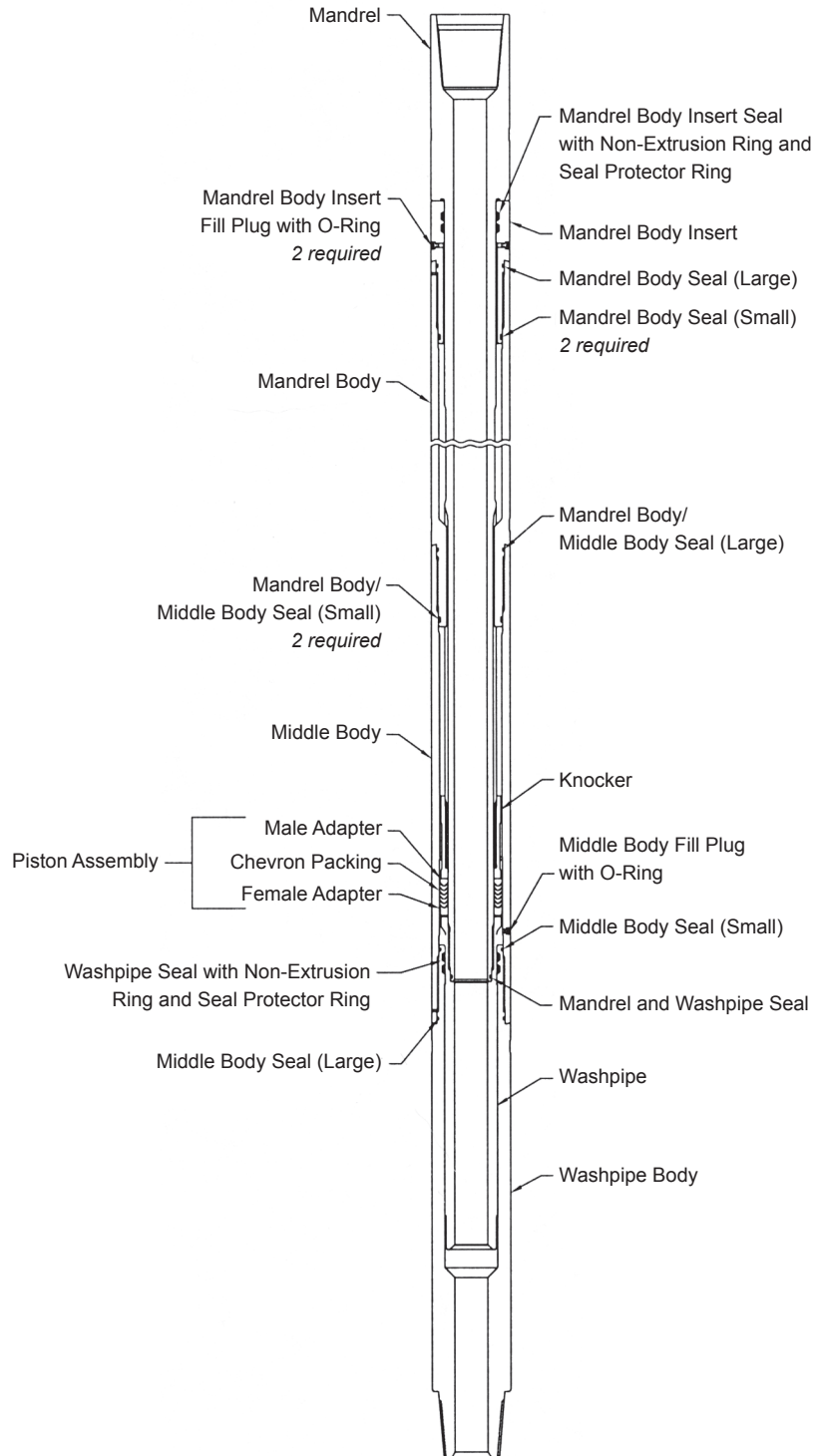
### Operation

Operation of the Z Type Energizer is simple to use and requires only a straight pull at a speed determined by the job. It is completely safe to assemble since no high pressure pre-loading is required.

The Z Type Energizer can transmit full torque in either direction at all times while maintaining full circulation throughout the tool.

### When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard









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<b>TOOL JOINT CONNECTION</b>	Per Order	1-13/16 WFJ	1-1/4 API Reg	2-3/8 PH6 5.9# HYD	2-3/8 API Reg	2-3/8 API IF	2-3/8 EUE	
<b>OUTSIDE DIAMETER (INCHES)</b>	1-5/8	1-13/16	2-1/4	2-29/32	3-1/8	3-3/4	3-3/4	
<b>INSIDE DIAMETER (INCHES)</b>	1/4	5/16	3/8	1	1	1-1/2	1-7/8	
<b>JARS USED WITH</b>	70822	74723	54020	68010	52504	52528	52497	
<b>TOTAL STROKE TO SOLID (INCHES)</b>	6	6	6	12-3/4	8-3/4	7-7/8	7-5/8	
<b>COMPLETE ASSEMBLY</b> <input type="checkbox"/>	<b>606-000</b>	<b>606-001</b>	<b>606-002</b>	<b>606-003</b>	<b>606-004</b>	<b>606-005</b>	<b>606-006</b>	
Bowen No.	70957	64460	50640	68262	55867	55747	50660	
<b>O-RING PACKING SET</b> <input type="checkbox"/>	<b>27000-034</b>	<b>27000-035</b>	<b>27000-036</b>	<b>27000-037</b>	<b>27000-038</b>	<b>27000-039</b>	<b>27000-040</b>	
<i>Consists of:</i>	Bowen No.	70961	50638	50835	68272	55873	55816	55497
<b>WASHPIPE SEAL</b> <input type="checkbox"/>	<b>568-211</b>	<b>568-115</b>	<b>568-210</b>	<b>568-224</b>	<b>568-220</b>	<b>568-224</b>	<b>568-227</b>	
Bowen No.	568211	568115	568210	568224	568220	568224	568227	
<b>MANDREL &amp; WASHPIPE SEAL</b>	Bowen No.	<b>568-015</b>	<b>568-212</b>	<b>568-219</b>	<b>568-328</b>	<b>568-329</b>	<b>568-333</b>	<b>568-333</b>
No. Req'd	1	2	4	5	4	4	3	
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – LARGE</b>	Bowen No.	<b>568-016</b>	<b>568-219</b>	<b>568-224</b>	<b>568-036</b>	<b>568-231</b>	<b>568-235</b>	<b>568-235</b>
No. Req'd	3	3	3	4	3	3	3	
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – SMALL</b>	Bowen No.	<b>568-214</b>	<b>568-027</b>	<b>568-222</b>	<b>568-035</b>	<b>568-228</b>	<b>568-233</b>	<b>568-233</b>
No. Req'd	3	3	3	8	5	5	5	
<b>MANDREL BODY INSERT FILL PLUG SEAL</b>	Bowen No.	<b>568-001</b>	...	<b>568-006</b>	<b>568-005</b>	<b>568-006</b>	<b>568-006</b>	<b>568-006</b>
No. Req'd	2	...	2	2	2	2	2	
<b>MIDDLE BODY FILL PLUG SEAL</b>	Bowen No.	...	<b>568-005</b>	<b>568-005</b>	...	<b>568-005</b>	<b>568-005</b>	<b>568-005</b>
No. Req'd	...	568005	568005	...	568005	568005	568005	
<b>SERVICE KIT</b> <input type="checkbox"/>	<b>26000-054</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	
Bowen No.	21279	55403	55403	55403	55403	55403	55403	
<b>ENERGIZER FLUID</b> <input type="checkbox"/>	<b>50529-A</b>	<b>50529-B</b>	<b>50529-C</b>	<b>50529-D</b>	<b>50529-E</b>			
Bowen No.	50529-A	50529-B	50529-C	50529-D	50529			
	1 Gallon	2 Gallons	5 Gallons	30 Gallons	55 Gallons			

### Special Notes:

- (1) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (2) Service Kit does not include Seal Setting Tools, which must be ordered separately.

### When ordering, please specify:

- (1) Name and number of assembly or part
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- (3) Name and number of any desired spares
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<b>TOOL JOINT CONNECTION</b>		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
<b>OUTSIDE DIAMETER (INCHES)</b>		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
<b>INSIDE DIAMETER (INCHES)</b>		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
<b>JARS USED WITH</b>		52506	52502	52653	52530	52500	52498	52544
<b>TOTAL STROKE TO SOLID (INCHES)</b>		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-007</b>	<b>606-008</b>	<b>606-009</b>	<b>606-010</b>	<b>606-011</b>	<b>606-012</b>	<b>606-013</b>
	<b>Bowen No.</b>	55895	55664	50708	50700	55812	55860	55905
<b>TOP SUB</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>MANDREL</b>	<b>Logan Part No.</b>	<b>AH3007</b>	<b>AH3008</b>	<b>AH3009</b>	<b>AH3010</b>	<b>AH3011</b>	<b>AH3012</b>	<b>AH3013</b>
	<b>Bowen No.</b>	55897	55769	50709	50701	55817	55862	55908
<b>PISTON ASSEMBLY</b>	<b>Logan Part No.</b>	<b>27000-024</b>	<b>27000-025</b>	<b>27000-026</b>	<b>27000-027</b>	<b>27000-028</b>	<b>27000-029</b>	<b>27000-030</b>
	<b>Bowen No.</b>	64248	64206	64340	64995	64264	64268	64272
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	<b>AH4008</b>	<b>AH4009</b>	<b>AH4010</b>	<b>AH4011</b>	<b>AH4012</b>	<b>AH4013</b>	<b>AH4014</b>
	<b>Bowen No.</b>	50591	49412	50710	50702	49394	49635	50598
<b>MANDREL BODY EXTENSION</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AH6007</b>	<b>AH6008</b>	<b>AH6009</b>	<b>AH6010</b>	<b>AH6011</b>	<b>AH6012</b>	<b>AH6013</b>
	<b>Bowen No.</b>	50589	50371	50711	50703	50374	49634	50597
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	<b>AH7007</b>	<b>AH7008</b>	<b>AH7009</b>	<b>AH7010</b>	<b>AH7011</b>	<b>AH7012</b>	<b>AH7013</b>
	<b>Bowen No.</b>	55898	55660	50712	50704	55814	55863	55920
<b>WASHPIPE BODY</b>	<b>Logan Part No.</b>	<b>AG7006</b>	<b>AG7009</b>	<b>AG7010</b>	<b>AG7011</b>	<b>AG7012</b>	<b>AG7013</b>	<b>AG7014</b>
	<b>Bowen No.</b>	38045	44487	35854	25961	38111	14711	12371
<b>KNOCKER</b>	<b>Logan Part No.</b>	<b>AG8006</b>	<b>AH9008</b>	<b>AG8010</b>	<b>AG8011</b>	<b>AG8012</b>	<b>AG8013</b>	<b>AG8014</b>
	<b>Bowen No.</b>	38049	51185	35857	25966	38116	14717	12377
<b>WASHPIPE</b>	<b>Logan Part No.</b>	<b>AG9006</b>	<b>AG9009</b>	<b>AH10009</b>	<b>AG9011</b>	<b>AG9012</b>	<b>AG9013</b>	<b>AH10013</b>
	<b>Bowen No.</b>	38046	44488	64344	25964	38114	14714	55907
<b>MANDREL BODY INSERT FILL PLUG</b>	<b>Logan Part No.</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10003</b>	<b>AG10003</b>
	<b>Bowen No.</b>	329	329	329	329	329	508	508
	<b>No. Req'd</b>	2	2	2	2	2	2	2
<b>MIDDLE BODY FILL PLUG</b>	<b>Logan Part No.</b>	<b>AG10000</b>	<b>AG10000</b>	<b>AG10000</b>	<b>AG10002</b>	<b>AG10000</b>	<b>AG10002</b>	<b>AG10002</b>
	<b>Bowen No.</b>	617	617	617	329	617	329	329

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<b>TOOL JOINT CONNECTION</b>		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
<b>OUTSIDE DIAMETER (INCHES)</b>		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
<b>INSIDE DIAMETER (INCHES)</b>		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
<b>JARS USED WITH</b>		52506	52502	52653	52530	52500	52498	52544
<b>TOTAL STROKE TO SOLID (INCHES)</b>		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-007</b>	<b>606-008</b>	<b>606-009</b>	<b>606-010</b>	<b>606-011</b>	<b>606-012</b>	<b>606-013</b>
	Bowen No.	55895	55664	50708	50700	55812	55860	55905
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<b>NON-EXTRUSION RING</b>	Bowen No.	...	...	...	...	...	...	...
<b>MIDDLE BODY INSERT</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<b>SEAL RING</b>	Bowen No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
<b>MANDREL &amp; WASHPIPE</b>	<b>Logan Part No.</b>	<b>L365-35</b>	<b>L365-40</b>	<b>L365-42</b>	<b>L365-40</b>	<b>L365-41</b>	<b>L453</b>	<b>L365-48</b>
<b>NON-EXTRUSION RING</b>	Bowen No.	365-35	365-40	365-42	365-40	365-41	453	365-48
	No. Req'd	8	8	8	8	8	8	8
<b>MANDREL &amp; WASHPIPE</b>	<b>Logan Part No.</b>	<b>L375-35</b>	<b>L375-40</b>	<b>L375-42</b>	<b>L375-40</b>	<b>L375-41</b>	<b>L449</b>	<b>L375-48</b>
<b>SEAL PROTECTOR RING</b>	Bowen No.	375-35	375-40	375-42	375-40	375-41	449	375-48
	No. Req'd	8	8	8	8	8	8	8

## OPTIONAL

<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AG1000-35</b>	<b>AG1000-40</b>	<b>AG1000-42</b>	<b>AG1000-40</b>	<b>AG1000-41</b>	<b>AG1001</b>	<b>AG1000-48</b>
<b>SETTING TOOL</b>	Bowen No.	22709-35	22709-40	22709-42	22709-40	22709-41	448	22709-48
<b>PISTON ASSEMBLY</b>	<b>Logan Part No.</b>	<b>27000-024</b>	<b>27000-025</b>	<b>27000-026</b>	<b>27000-027</b>	<b>27000-028</b>	<b>27000-029</b>	<b>27000-030</b>
<i>Consists of:</i>	Bowen No.	64248	64206	64340	64995	64264	64268	64272
<b>UPPER ADAPTER</b>	<b>Logan Part No.</b>	<b>AH12007</b>	<b>AH12008</b>	<b>AH12009</b>	<b>AH12010</b>	<b>AH12011</b>	<b>AH12012</b>	<b>AH12013</b>
	Bowen No.	64250	64208	64341	64997	64266	64269	64273
<b>PACKING</b>	<b>Logan Part No.</b>	<b>AH13007</b>	<b>AH13008</b>	<b>AH13009</b>	<b>AH13010</b>	<b>AH13011</b>	<b>AH13012</b>	<b>AH13013</b>
	Bowen No.	64251	64209	64343	64998	64267	64271	64275
<b>LOWER ADAPTER</b>	<b>Logan Part No.</b>	<b>AH14007</b>	<b>AH14008</b>	<b>AH14009</b>	<b>AH14010</b>	<b>AH14011</b>	<b>AH14012</b>	<b>AH14013</b>
	Bowen No.	64249	64207	64342	64996	64265	64270	64274
<b>CONE</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>BY-PASS BODY</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>SEAL BODY</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>O-RING SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...

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<b>OUTSIDE DIAMETER (INCHES)</b>		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
<b>INSIDE DIAMETER (INCHES)</b>		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
<b>JARS USED WITH</b>		52506	52502	52653	52530	52500	52498	52544
<b>TOTAL STROKE TO SOLID (INCHES)</b>		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-007</b>	<b>606-008</b>	<b>606-009</b>	<b>606-010</b>	<b>606-011</b>	<b>606-012</b>	<b>606-013</b>
	Bowen No.	55895	55664	50708	50700	55812	55860	55905
<b>O-RING PACKING SET</b>	<b>Logan Part No.</b>	<b>27000-041</b>	<b>27000-042</b>	<b>27000-043</b>	<b>27000-044</b>	<b>27000-045</b>	<b>27000-046</b>	<b>27000-047</b>
<i>Consists of:</i>	Bowen No.	55902	55666	50840	50841	55815	55866	55919
<b>WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-222</b>	<b>568-227</b>	<b>568-233</b>	<b>568-228</b>	<b>568-228</b>	<b>568-234</b>	<b>568-232</b>
	Bowen No.	568222	568227	568233	568228	568228	568234	568232
<b>MANDREL &amp; WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-332</b>	<b>568-327</b>	<b>568-339</b>	<b>568-337</b>	<b>568-338</b>	<b>568-344</b>	<b>568-345</b>
	Bowen No.	568332	568327	568339	568337	568338	568344	568345
	No. Req'd	4	4	4	4	4	4	4
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – LARGE</b>	<b>Logan Part No.</b>	<b>568-235</b>	<b>568-239</b>	<b>568-241</b>	<b>568-241</b>	<b>568-241</b>	<b>568-248</b>	<b>568-252</b>
	Bowen No.	568235	568239	568241	568241	568241	568248	568252
	No. Req'd	3	3	3	3	3	3	3
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – SMALL</b>	<b>Logan Part No.</b>	<b>568-233</b>	<b>568-237</b>	<b>568-239</b>	<b>568-239</b>	<b>568-239</b>	<b>568-246</b>	<b>568-250</b>
	Bowen No.	568233	568237	568239	568239	568239	568246	568250
	No. Req'd	5	5	5	5	5	3	5
<b>MANDREL BODY INSERT FILL PLUG SEAL</b>	<b>Logan Part No.</b>	<b>568-006</b>	<b>568-006</b>	<b>568-006</b>	<b>568-006</b>	<b>568-006</b>	<b>568-011</b>	<b>568-011</b>
	Bowen No.	568006	568006	568006	568006	568006	568011	568011
	No. Req'd	2	2	2	2	2	2	2
<b>MIDDLE BODY FILL PLUG SEAL</b>	<b>Logan Part No.</b>	<b>568-005</b>	<b>568-005</b>	<b>568-005</b>	<b>568-006</b>	<b>568-005</b>	<b>568-006</b>	<b>568-006</b>
	Bowen No.	568005	568005	568005	568006	568005	568006	568006
<b>SERVICE KIT</b>	<b>Logan Part No.</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>
	Bowen No.	55403	55403	55403	55403	55403	55403	55403

<b>ENERGIZER FLUID</b>	<b>Logan Part No.</b>	<b>50529-A</b>	<b>50529-B</b>	<b>50529-C</b>	<b>50529-D</b>	<b>50529-E</b>		
	Bowen No.	50529-A	50529-B	50529-C	50529-D	50529		
		1 Gallon	2 Gallons	5 Gallons	30 Gallons	55 Gallons		

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<b>TOOL JOINT CONNECTION</b>		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
<b>OUTSIDE DIAMETER (INCHES)</b>		6-3/4	7-3/4 & 8	9				
<b>INSIDE DIAMETER (INCHES)</b>		2-3/8	3-1/16	3-3/4				
<b>JARS USED WITH</b>		52680	52711	66346				
<b>TOTAL STROKE TO SOLID (INCHES)</b>		13	13	13				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-014</b>	<b>606-015</b>	<b>606-016</b>				
	<b>Bowen No.</b>	50720	55910	66372				
<b>TOP SUB</b>	<b>Logan Part No.</b>	...	...	...				
	<b>Bowen No.</b>	...	...	...				
<b>MANDREL</b>	<b>Logan Part No.</b>	<b>AH3014</b>	<b>AH3015</b>	<b>AH3016</b>				
	<b>Bowen No.</b>	50721	50146	66376				
<b>PISTON ASSEMBLY</b>	<b>Logan Part No.</b>	<b>27000-031</b>	<b>27000-032</b>	<b>27000-033</b>				
	<b>Bowen No.</b>	64240	64276	66382				
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	<b>AH4015</b>	<b>AH4016</b>	<b>AH4017</b>				
	<b>Bowen No.</b>	50722	50149	66380				
<b>MANDREL BODY EXTENSION</b>	<b>Logan Part No.</b>	...	...	...				
	<b>Bowen No.</b>	...	...	...				
<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AH6014</b>	<b>AH6015</b>	<b>AH6016</b>				
	<b>Bowen No.</b>	50723	50147	66377				
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	<b>AH7014</b>	<b>AH7015</b>	<b>AH7016</b>				
	<b>Bowen No.</b>	50724	55911	66373				
<b>WASHPIPE BODY</b>	<b>Logan Part No.</b>	<b>AG7015</b>	<b>AG7016</b>	<b>AG7017</b>				
	<b>Bowen No.</b>	701	15164	66350				
<b>KNOCKER</b>	<b>Logan Part No.</b>	<b>AG8015</b>	<b>AH9015</b>	<b>AG8017</b>				
	<b>Bowen No.</b>	11134	50150	66348				
<b>WASHPIPE</b>	<b>Logan Part No.</b>	<b>AG9015</b>	<b>AH10015</b>	<b>AG9017</b>				
	<b>Bowen No.</b>	704	55912	66349				
<b>MANDREL BODY INSERT FILL PLUG</b>	<b>Logan Part No.</b>	<b>AG10003</b>	<b>AG10003</b>	<b>AG10003</b>				
	<b>Bowen No.</b>	508	508	508				
	<b>No. Req'd</b>	2	2	2				
<b>MIDDLE BODY FILL PLUG</b>	<b>Logan Part No.</b>	<b>AG10002</b>	<b>AG10002</b>	...				
	<b>Bowen No.</b>	329	329	...				

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### Special Notes:

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- (2) Service Kit does not include Seal Setting Tools, which must be ordered separately.

### When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

## Z TYPE ENERGIZERS

<b>TOOL JOINT CONNECTION</b>		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
<b>OUTSIDE DIAMETER (INCHES)</b>		6-3/4	7-3/4 & 8	9				
<b>INSIDE DIAMETER (INCHES)</b>		2-3/8	3-1/16	3-3/4				
<b>JARS USED WITH</b>		52680	52711	66346				
<b>TOTAL STROKE TO SOLID (INCHES)</b>		13	13	13				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-014</b>	<b>606-015</b>	<b>606-016</b>				
	Bowen No.	50720	55910	66372				
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	...	...	...				
<b>NON-EXTRUSION RING</b>	Bowen No.	...	...	...				
<b>MIDDLE BODY INSERT</b>	<b>Logan Part No.</b>	...	...	...				
<b>SEAL RING</b>	Bowen No.	...	...	...				
	No. Req'd	...	...	...				
<b>MANDREL &amp; WASHPIPE</b>	<b>Logan Part No.</b>	<b>L365-50.75</b>	<b>L365-59</b>	<b>L365-65</b>				
<b>NON-EXTRUSION RING</b>	Bowen No.	708	365-59	365-65				
	No. Req'd	8	8	8				
<b>MANDREL &amp; WASHPIPE</b>	<b>Logan Part No.</b>	<b>L375-50.75</b>	<b>L375-59</b>	<b>L375-65</b>				
<b>SEAL PROTECTOR RING</b>	Bowen No.	709	375-59	375-65				
	No. Req'd	8	8	8				

## OPTIONAL

<b>MANDREL BODY SETTING TOOL</b>	<b>Logan Part No.</b>	<b>AG1000-51</b>	<b>AG1000-59</b>	<b>AG1017</b>				
	Bowen No.	22709-51	22709-59	22709-65				
<b>PISTON ASSEMBLY</b>	<b>Logan Part No.</b>	<b>27000-031</b>	<b>27000-032</b>	<b>27000-033</b>				
<i>Consists of:</i>	Bowen No.	64240	64276	66382				
<b>UPPER ADAPTER</b>	<b>Logan Part No.</b>	<b>AH12014</b>	<b>AH12015</b>	<b>AH12016</b>				
	Bowen No.	64242	64277	66378				
<b>PACKING</b>	<b>Logan Part No.</b>	<b>AH13014</b>	<b>AH13015</b>	<b>AH13016</b>				
	Bowen No.	64243	64279	66384				
<b>LOWER ADAPTER</b>	<b>Logan Part No.</b>	<b>AH14014</b>	<b>AH14015</b>	<b>AH14016</b>				
	Bowen No.	64241	64278	66379				
<b>CONE</b>	<b>Logan Part No.</b>	...	...	...				
	Bowen No.	...	...	...				
<b>BY-PASS BODY</b>	<b>Logan Part No.</b>	...	...	...				
	Bowen No.	...	...	...				
<b>SEAL BODY</b>	<b>Logan Part No.</b>	...	...	...				
	Bowen No.	...	...	...				
<b>O-RING SEAL</b>	<b>Logan Part No.</b>	...	...	...				
	Bowen No.	...	...	...				

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- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

# Z Type Energizers

## Z TYPE ENERGIZERS

<b>TOOL JOINT CONNECTION</b>		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
<b>OUTSIDE DIAMETER (INCHES)</b>		6-3/4	7-3/4 & 8	9				
<b>INSIDE DIAMETER (INCHES)</b>		2-3/8	3-1/16	3-3/4				
<b>JARS USED WITH</b>		52680	52711	66346				
<b>TOTAL STROKE TO SOLID (INCHES)</b>		13	13	13				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>606-014</b>	<b>606-015</b>	<b>606-016</b>				
	Bowen No.	50720	55910	66372				
<b>O-RING PACKING SET</b>	<b>Logan Part No.</b>	<b>27000-048</b>	<b>27000-049</b>	<b>27000-050</b>				
<i>Consists of:</i>	Bowen No.	50842	55921	66383				
<b>WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-235</b>	<b>568-242</b>	<b>568-246</b>				
	Bowen No.	568235	568242	568246				
<b>MANDREL &amp; WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-348</b>	<b>568-432</b>	<b>568-438</b>				
	Bowen No.	568348	568432	568438				
	No. Req'd	4	4	4				
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – LARGE</b>	<b>Logan Part No.</b>	<b>568-256</b>	<b>568-261</b>	<b>568-265</b>				
	Bowen No.	568256	568261	568265				
	No. Req'd	3	3	3				
	Price	\$6.90	\$7.00	\$8.25				
<b>MANDREL BODY &amp; MIDDLE BODY SEAL – SMALL</b>	<b>Logan Part No.</b>	<b>568-254</b>	<b>568-259</b>	<b>568-263</b>				
	Bowen No.	568254	568259	568263				
	No. Req'd	5	3	1				
<b>MANDREL BODY INSERT FILL PLUG SEAL</b>	<b>Logan Part No.</b>	<b>568-011</b>	<b>568-011</b>	<b>568-441</b>				
	Bowen No.	568011	568011	568441				
	No. Req'd	2	2	2				
<b>MIDDLE BODY FILL PLUG SEAL</b>	<b>Logan Part No.</b>	<b>568-006</b>	<b>568-006</b>	<b>568-011</b>				
	Bowen No.	568006	568006	568011				
<b>SERVICE KIT</b>	<b>Logan Part No.</b>	<b>26000-055</b>	<b>26000-055</b>	<b>26000-055</b>				
	Bowen No.	55403	55403	55403				

<b>ENERGIZER FLUID</b>	<b>Logan Part No.</b>	<b>50529-A</b>	<b>50529-B</b>	<b>50529-C</b>	<b>50529-D</b>	<b>50529-E</b>		
	Bowen No.	50529-A	50529-B	50529-C	50529-D	50529		
		1 Gallon	2 Gallons	5 Gallons	30 Gallons	55 Gallons		

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- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard