

**Z TYPE HYDRAULIC JARS**

**Overview**

The Logan Z Type Hydraulic Jar is used for light drilling, fishing, coring, reaming, testing, side tracking, and washover operations. This straight-pull jar combines the principles of mechanics and hydraulics in a simple to assemble, easy to operate design. The jar has a closed hydraulic system that contains the hydraulic fluid within the jar and well fluids cannot enter the tool. The internal working parts are constantly lubricated by the hydraulic fluid within the tool resulting in long wear life of the parts.

**Construction**

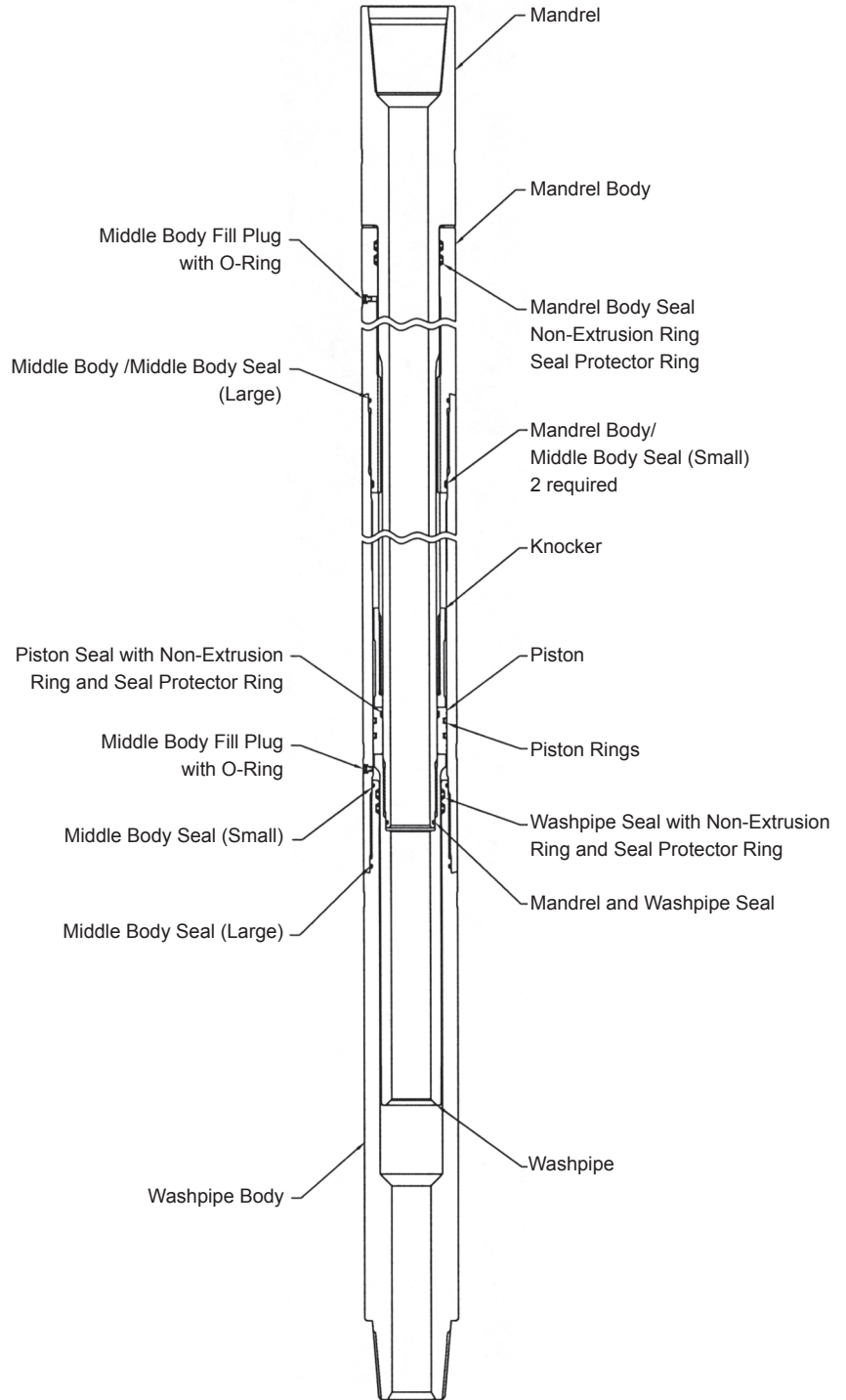
The Logan Z Type Hydraulic Jar consists of a mandrel/piston assembly that slides within a cylinder assembly. The mandrel/piston assembly is composed of a mandrel, piston assembly (a piston, two piston rings, an O-ring seal, a non-extrusion ring, and a seal protector ring), washpipe, knocker, and seal ring assemblies. The cylinder assembly consists of a mandrel body, middle body, washpipe body, fill plugs, and seal assemblies.

**Operation**

The Logan Z Type Hydraulic Jar is easy to use. Only straight pull is required to operate the jar. Each blow can be positively controlled by the operator from a very light blow to forceful impact. Successive blows can be struck as often as the operator can raise and slack off the running string. Full circulation through the tool can be maintained for effective flushing. Full torque may be used in either direction and at all times during operation.

**When ordering, please specify:**

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



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<b>TOOL JOINT CONNECTION</b>	7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
<b>OUTSIDE DIAMETER (INCHES)</b>	1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
<b>INSIDE DIAMETER (INCHES)</b>	1/4	5/16	3/8	1	1-1/2	1	1-1/4
<b>TYPE JAR</b>	Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b> 605-000 Bowen No. 70822	<b>605-001</b> 74723	<b>605-002</b> 54020	<b>605-003</b> 68010	<b>605-004</b> 55670	<b>605-005</b> 52504	<b>605-006</b> 52506
<b>TOP SUB</b>	<b>Logan Part No.</b> AG3000 Bowen No. 70823	<b>AG3001</b> 21156	...	<b>AG3003</b> 68015	<b>AG3004</b> 55889	...	...
<b>MANDREL</b>	<b>Logan Part No.</b> AG4000 Bowen No. 70825	<b>AG4001</b> 21155	<b>AG4002</b> 18780	<b>AG4003</b> 68014	<b>AG4004</b> 55888	<b>AG4005</b> 38056	<b>AG4006</b> 38041
<b>PISTON ASSEMBLY</b> <i>(Ring Type Standard)</i>	<b>Logan Part No.</b> 26000-018 Bowen No. 70853	<b>26000-019</b> 74725	<b>26000-020</b> 59585	<b>26000-021</b> 68019	<b>26000-022</b> 56368	<b>26000-023</b> 61282	<b>26000-024</b> 68128
<b>MANDREL BODY</b>	<b>Logan Part No.</b> AG5000 Bowen No. 70824	<b>AG5001</b> 21153	<b>AG5002</b> 56571	<b>AG5003</b> 68013	<b>AG5004</b> 55887	<b>AG5005</b> 52764	<b>AG5006</b> 52770
<b>MIDDLE BODY</b>	<b>Logan Part No.</b> AG6000 Bowen No. 70826	<b>AG6001</b> 74724	<b>AG6002</b> 18777	<b>AG6003</b> 68012	<b>AG6004</b> 55886	<b>AG6005</b> 42737	<b>AG6006</b> 38044
<b>WASHPIPE BODY</b>	<b>Logan Part No.</b> AG7000 Bowen No. 70829	<b>AG7001</b> 21151	<b>AG7002</b> 18776	<b>AG7003</b> 68011	<b>AG7004</b> 55885	<b>AG7005</b> 38064	<b>AG7006</b> 38045
<b>KNOCKER</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>AG8002</b> 18781	...	...	<b>AG8005</b> 38060	<b>AG8006</b> 38049
<b>WASHPIPE</b>	<b>Logan Part No.</b> AG9000 Bowen No. 70828	<b>AG9001</b> 21154	<b>AG9002</b> 18779	<b>AG9003</b> 68016	<b>AG9004</b> 55890	<b>AG9005</b> 42738	<b>AG9006</b> 38046
<b>MANDREL BODY</b>	<b>Logan Part No.</b> AG10000 Bowen No. 617	<b>AG10000</b> 617	<b>AG10002</b> 329	<b>AG10000</b> 617	<b>AG10000</b> 617	<b>AG10002</b> 329	<b>AG10002</b> 329
<b>FILL PLUG</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>AG10000</b> 617	<b>AG10004</b> 10641	<b>AG10004</b> 10641	<b>AG10000</b> 617	<b>AG10000</b> 617
<b>MIDDLE BODY</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>AG10000</b> 617	<b>AG10004</b> 10641	<b>AG10004</b> 10641	<b>AG10000</b> 617	<b>AG10000</b> 617
<b>FILL PLUG</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>AG10000</b> 617	<b>AG10004</b> 10641	<b>AG10004</b> 10641	<b>AG10000</b> 617	<b>AG10000</b> 617
<b>PACKING SET</b>	<b>Logan Part No.</b> 26000-036 Bowen No. 70961	<b>26000-037</b> 74802	<b>26000-038</b> 18793	<b>26000-039</b> 68017	<b>26000-040</b> 55924	<b>26000-041</b> 44622	<b>26000-042</b> 38048
<b>JAR LUBE</b>	<b>Logan Part No.</b> 49842-A Bowen No. 49842-A 1 Gallon	<b>49842-B</b> 49842-B 5 Gallons	<b>49842-D</b> 49842-D 55 Gallons				

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### 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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

### Recommended Spares:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

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<b>TOOL JOINT CONNECTION</b>		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
<b>OUTSIDE DIAMETER (INCHES)</b>		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
<b>INSIDE DIAMETER (INCHES)</b>		1/4	5/16	3/8	1	1-1/2	1	1-1/4
<b>TYPE JAR</b>		Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-000</b>	<b>605-001</b>	<b>605-002</b>	<b>605-003</b>	<b>605-004</b>	<b>605-005</b>	<b>605-006</b>
	<b>Bowen No.</b>	70822	74723	54020	68010	55670	52504	52506
<b>MANDREL NON-EXTRUSION RING</b>	<b>Logan Part No.</b>	<b>L365-16</b>	<b>L365-17</b>	<b>L365-24</b>	<b>L365-30.5</b>	<b>L364-32.5</b>	<b>L365-32</b>	<b>L365-35</b>
	<b>Bowen No.</b>	365-16	365-17	365-24	365-30.5	364-32.5	365-32	365-35
	<b>No. Req'd</b>	8	4	4	8	8	8	8
<b>MANDREL SEAL PROTECTOR RING</b>	<b>Logan Part No.</b>	<b>L375-16</b>	<b>L375-17</b>	<b>L375-24</b>	<b>L375-30.5</b>	<b>L375-32.5</b>	<b>L375-32</b>	<b>L375-35</b>
	<b>Bowen No.</b>	375-16	375-17	375-24	375-30.5	375-32.5	375-32	375-35
	<b>No. Req'd</b>	8	4	4	8	8	8	8
<b>MANDREL BODY NON-EXTRUSION RING</b>	<b>Logan Part No.</b>	...	...	<b>L56542</b>	...	...	...	...
	<b>Bowen No.</b>	...	...	56542	...	...	...	...
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	<b>AG11000</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	71254	...	...	...	...	...	...
<b>MANDREL BODY SEAL PROTECTOR RING</b>	<b>Logan Part No.</b>	...	...	<b>L227-27.25</b>	...	...	...	...
	<b>Bowen No.</b>	...	...	227-27.25	...	...	...	...

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**Recommended Spares:**

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- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
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<b>OUTSIDE DIAMETER (INCHES)</b>	1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
<b>INSIDE DIAMETER (INCHES)</b>	1/4	5/16	3/8	1	1-1/2	1	1-1/4
<b>TYPE JAR</b>	Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b> 605-000 Bowen No. 70822	<b>605-001</b> 74723	<b>605-002</b> 54020	<b>605-003</b> 68010	<b>605-004</b> 55670	<b>605-005</b> 52504	<b>605-006</b> 52506
<b>RING TYPE</b>	<b>Logan Part No.</b> 26000-018	<b>26000-019</b>	<b>26000-020</b>	<b>26000-021</b>	<b>26000-022</b>	<b>26000-023</b>	<b>26000-024</b>
<b>PISTON ASSEMBLY</b>	Bowen No. 70853	74725	59585	68019	56368	61282	68128
<i>Consists of:</i>							
<b>PISTON</b>	<b>Logan Part No.</b> AG15000 Bowen No. 70827	...	<b>AG15002</b> 59586	...	...	<b>AG15005</b> 61283	<b>AG15006</b> 68127
<b>WAVE SPRING</b>	<b>Logan Part No.</b> L66164 Bowen No. 66164 No. Req'd 2	...	...	...	...	...	...
<b>PISTON RING</b>	<b>Logan Part No.</b> ... Bowen No. ... No. Req'd ...	...	<b>L18783</b> 18783 4	...	...	<b>L61284</b> 61284 4	<b>L61287</b> 61287 2
<b>SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>568-214</b> 568214	...	...	<b>568-223</b> 568223	<b>568-226</b> 568226
<b>NON-EXTRUSION RING</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>L365-19</b> 365-19	<b>L370-1.5</b> 370-1.5	<b>L370-3.5</b> 370-3.5	<b>L370-1</b> 370-1	<b>L370-4</b> 370-4
<b>SEAL PROTECTOR RING</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	<b>L375-19</b> 375-19	<b>L376-1.5</b> 376-1.5	<b>L376-3.5</b> 376-3.5	<b>L376-1</b> 376-1	<b>L376-4</b> 376-4
<b>CONE TYPE PISTON ASSEMBLY</b>	<b>Logan Part No.</b> ... Bowen No. ...	<b>26000-019</b> 74725	...	...	...	...	...
<i>Consists of:</i>							
<b>CONE</b>	<b>Logan Part No.</b> ... Bowen No. ...	<b>AG14001</b> 74726	...	<b>AG14003</b> 68020	<b>AG14004</b> 55891	...	...
<b>BY-PASS BODY</b>	<b>Logan Part No.</b> ... Bowen No. ...	<b>AG13001</b> 74727	...	...	...	...	...
<b>SEAL BODY</b>	<b>Logan Part No.</b> ... Bowen No. ...	<b>AG12001</b> 74728	...	<b>AG12003</b> 68021	<b>AG12004</b> 55892	...	...
<b>SEAL BODY SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	<b>568-020</b> 568020	...	<b>568-224</b> 568224	<b>568-226</b> 568226	...	...

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<b>INSIDE DIAMETER (INCHES)</b>	1/4	5/16	3/8	1	1-1/2	1	1-1/4
<b>TYPE JAR</b>	Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b> 605-000	<b>605-001</b>	<b>605-002</b>	<b>605-003</b>	<b>605-004</b>	<b>605-005</b>	<b>605-006</b>
	<b>Bowen No.</b> 70822	74723	54020	68010	55670	52504	52506

## OPTIONAL

<b>MANDREL BODY</b>	<b>Logan Part No.</b> AG1000-16	AG1000-17	AG1000-24	AG1000-29.5	AG1000-32.5	AG1000-32	AG1000-35
<b>SETTING TOOL</b>	<b>Bowen No.</b> 22709-16	22709-17	22709-24	22709-29.5	22709-32.5	22709-32	22709-3
<b>PISTON SETTING TOOL</b>	<b>Logan Part No.</b> ...	...	AG1000-19	AG1000-30.5	AG1000-31	AG1000-29	AG1000-32
	<b>Bowen No.</b> ...	...	22709-19	22709-30.5	22709-31	22709-29	22709-32
<b>SERVICE KIT</b>	<b>Logan Part No.</b> 26000-054	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
	<b>Bowen No.</b> 21279	55403	55403	55403	55403	55403	55403
<b>HI-TEMPERATURE</b>	<b>Logan Part No.</b> ...	26000-73	26000-074	...	26000-076	26000-077	26000-078
<b>PACKING SET</b>	<b>Bowen No.</b> ...	149945	149884	...	148247	73659	80004
<b>PACKING SET</b>	<b>Logan Part No.</b> 26000-036	26000-037	26000-038	26000-039	26000-040	26000-041	26000-042
<i>Consists of:</i>	<b>Bowen No.</b> 70961	74802	18793	68017	55924	44622	38048
<b>MANDREL/ WASHPIPE SEAL</b>	<b>Logan Part No.</b> 568-211	568-212	568-219	568-328	568-330	568-329	568-332
	<b>Bowen No.</b> 568211	568212	568219	568328	568330	568329	568332
	<b>No. Req'd</b> 4	4	4	4	4	4	4
<b>LARGE MIDDLE</b>	<b>Logan Part No.</b> 568-216	568-019	568-224	568-036	568-038	568-231	...
<b>BODY SEAL</b>	<b>Bowen No.</b> 568216	568019	568224	568036	568038	568231	568235
	<b>No. Req'd</b> 2	2	2	2	2	2	2
<b>SMALL MIDDLE</b>	<b>Logan Part No.</b> 568-214	568-027	568-228	568-035	568-036	568-228	568-233
<b>BODY SEAL</b>	<b>Bowen No.</b> 568214	568027	568228	568035	568036	568228	568233
	<b>No. Req'd</b> 3	3	3	3	3	3	3
<b>WASHPIPE SEAL</b>	<b>Logan Part No.</b> ...	568-115	568-210	568-224	568-226	568-220	568-222
	<b>Bowen No.</b> ...	568115	568210	568224	568226	568220	568222

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<b>TYPE JAR</b>		Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-000</b>	<b>605-001</b>	<b>605-002</b>	<b>605-003</b>	<b>605-004</b>	<b>605-005</b>	<b>605-006</b>
	<b>Bowen No.</b>	70822	74723	54020	68010	55670	52504	52506
<b>MANDREL BODY</b>	<b>Logan Part No.</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>	<b>568-006</b>
<b>FILL PLUG SEAL</b>	<b>Bowen No.</b>	568005	568005	568006	568005	568006	568006	568006
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	...	...	<b>568-005</b>	...	...	<b>568-005</b>	<b>568-005</b>
<b>FILL PLUG SEAL</b>	<b>Bowen No.</b>	...	...	568005	...	...	568005	568005
<b>PISTON SEAL</b>	<b>Logan Part No.</b>	...	...	<b>568-214</b>	...	...	<b>568-223</b>	<b>568-226</b>
	<b>Bowen No.</b>	...	...	568214	...	...	568223	568226
<b>MIDDLE BODY / MANDREL BODY SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>WASHPIPE / MIDDLE BODY SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>BACK-UP RINGS</b>	<b>Logan Part No.</b>	<b>8-024</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	8-024	...	...	...	...	...	...
<b>MANDREL SEAL</b>	<b>Logan Part No.</b>	<b>568-015</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	568015	...	...	...	...	...	...
<b>MANDREL BODY SEAL</b>	<b>Logan Part No.</b>	<b>568-024</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	568024	...	...	...	...	...	...

<b>JAR LUBE</b>	<b>Logan Part No.</b>	<b>49842-A</b>	<b>49842-B</b>	<b>49842-D</b>				
	<b>Bowen No.</b>	49842-A	49842-B	49842-D				
		1 Gallon	5 Gallons	55 Gallons				

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- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

<b>TOOL JOINT CONNECTION</b>		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
<b>OUTSIDE DIAMETER (INCHES)</b>		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
<b>INSIDE DIAMETER (INCHES)</b>		1/4	5/16	3/8	1	1-1/2	1	1-1/4
<b>TYPE JAR</b>		Sub	Special	Integral Mandrel	Sub	Sub	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-000</b>	<b>605-001</b>	<b>605-002</b>	<b>605-003</b>	<b>605-004</b>	<b>605-005</b>	<b>605-006</b>
	<b>Bowen No.</b>	70822	74723	54020	68010	55670	52504	52506
<b>MANDREL BODY</b>	<b>Logan Part No.</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>	<b>568-006</b>
<b>FILL PLUG SEAL</b>	<b>Bowen No.</b>	568005	568005	568006	568005	568006	568006	568006
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	...	...	<b>568-005</b>	...	...	<b>568-005</b>	<b>568-005</b>
<b>FILL PLUG SEAL</b>	<b>Bowen No.</b>	...	...	568005	...	...	568005	568005
<b>PISTON SEAL</b>	<b>Logan Part No.</b>	...	...	<b>568-214</b>	...	...	<b>568-223</b>	<b>568-226</b>
	<b>Bowen No.</b>	...	...	568214	...	...	568223	568226
<b>MIDDLE BODY / MANDREL BODY SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>WASHPIPE / MIDDLE BODY SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>BACK-UP RINGS</b>	<b>Logan Part No.</b>	<b>8-024</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	8-024	...	...	...	...	...	...
<b>MANDREL SEAL</b>	<b>Logan Part No.</b>	<b>568-015</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	568015	...	...	...	...	...	...
<b>MANDREL BODY SEAL</b>	<b>Logan Part No.</b>	<b>568-024</b>	...	...	...	...	...	...
	<b>Bowen No.</b>	568024	...	...	...	...	...	...
<b>JAR LUBE</b>	<b>Logan Part No.</b>	<b>49842-A</b>	<b>49842-B</b>	<b>49842-D</b>				
	<b>Bowen No.</b>	49842-A	49842-B	49842-D				
		1 Gallon	5 Gallons	55 Gallons				

*Logan Oil Tools reserves the right to change or discontinue designs without notice.*

**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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

TOOL JOINT CONNECTION	2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API IF	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)	3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)	1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No. 605-007</b>	<b>605-008</b>	<b>605-009</b>	<b>605-010</b>	<b>605-011</b>	<b>605-012</b>	<b>605-018</b>
	Bowen No. 52528	52497	52502	52653	52530	52500	...
<b>TOP SUB</b>	<b>Logan Part No. AG3007</b>	<b>AG3008</b>	...	...	...	...	...
	Bowen No. 37412	20156	...	...	...	...	...
<b>MANDREL</b>	<b>Logan Part No. AG4007</b>	<b>AG4008</b>	<b>AG4009</b>	<b>AG4010</b>	<b>AG4011</b>	<b>AG4012</b>	<b>AG40125</b>
	Bowen No. 37411	20155	44484	35850	25965	38115	38115
<b>PISTON ASSEMBLY</b> <i>(Ring Type Standard)</i>	<b>Logan Part No. 26000-025</b>	<b>26000-026</b>	<b>26000-027</b>	<b>26000-028</b>	<b>26000-029</b>	<b>26000-030</b>	<b>26000-030</b>
	Bowen No. 61288	61285	68420	68421	55285	55193	55193
<b>MANDREL BODY</b>	<b>Logan Part No. AG5007</b>	<b>AG5008</b>	<b>AG5009</b>	<b>AG5010</b>	<b>AG5011</b>	<b>AG5012</b>	<b>AG5012</b>
	Bowen No. 52771	52772	52780	52815	52749	52833	52833
<b>MIDDLE BODY</b>	<b>Logan Part No. AG6007</b>	<b>AG6007</b>	<b>AG6009</b>	<b>AG6010</b>	<b>AG6011</b>	<b>AG6012</b>	<b>AG6012</b>
	Bowen No. 20152	20152	41840	35853	25962	38112	38112
<b>WASHPIPE BODY</b>	<b>Logan Part No. AG7007</b>	<b>AG7008</b>	<b>AG7009</b>	<b>AG7010</b>	<b>AG7011</b>	<b>AG7012</b>	<b>AG70125</b>
	Bowen No. 37407	20151	44487	35854	25961	38111	38111
<b>KNOCKER</b>	<b>Logan Part No. ...</b>	...	<b>AG8009</b>	<b>AG8010</b>	<b>AG8011</b>	<b>AG8012</b>	<b>AG8012</b>
	Bowen No. ...	...	44490	35857	25966	38116	38116
<b>WASHPIPE</b>	<b>Logan Part No. AG9007</b>	<b>AG9008</b>	<b>AG9009</b>	<b>AG9010</b>	<b>AG9011</b>	<b>AG9012</b>	<b>AG90125</b>
	Bowen No. 37410	20154	44488	35855	25964	38114	38114
<b>MANDREL BODY</b>	<b>Logan Part No. AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>
<b>FILL PLUG</b>	Bowen No. 329	329	329	329	329	329	329
<b>MIDDLE BODY</b>	<b>Logan Part No. AG10000</b>	<b>AG10000</b>	<b>AG10000</b>	<b>AG10000</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>
<b>FILL PLUG</b>	Bowen No. 617	617	617	617	329	329	329
<b>PACKING SET</b>	<b>Logan Part No. 26000-043</b>	<b>26000-044</b>	<b>26000-045</b>	<b>26000-046</b>	<b>26000-047</b>	<b>26000-048</b>	<b>26000-048</b>
	Bowen No. 37415	20163	44491	35858	25892	38120	38120

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**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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool



## Z TYPE HYDRAULIC JARS

<b>TOOL JOINT CONNECTION</b>		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API IF	3-1/2 API IF
<b>OUTSIDE DIAMETER (INCHES)</b>		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
<b>INSIDE DIAMETER (INCHES)</b>		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
<b>TYPE JAR</b>		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-007</b>	<b>605-008</b>	<b>605-009</b>	<b>605-010</b>	<b>605-011</b>	<b>605-012</b>	<b>605-018</b>
	Bowen No.	52528	52497	52502	52653	52530	52500	...
<b>MANDREL NON-EXTRUSION RING</b>	<b>Logan Part No.</b>	<b>L365-36</b>	<b>L365-36</b>	<b>L365-40</b>	<b>L365-42</b>	<b>L365-40</b>	<b>L365-41</b>	<b>L365-41</b>
	Bowen No.	365-36	365-36	365-40	365-42	365-40	365-41	365-41
	No. Req'd	8	8	8	8	8	8	8
<b>MANDREL SEAL PROTECTOR RING</b>	<b>Logan Part No.</b>	<b>L375-36</b>	<b>L375-36</b>	<b>L375-40</b>	<b>L375-42</b>	<b>L375-40</b>	<b>L375-41</b>	<b>L375-41</b>
	Bowen No.	375-36	375-36	375-40	375-42	375-40	375-41	375-41
	No. Req'd	8	8	8	8	8	8	8
<b>MANDREL BODY NON-EXTRUSION RING</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>MANDREL BODY INSERT</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>MANDREL BODY SEAL PROTECTOR RING</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
<b>RING TYPE PISTON ASSEMBLY</b>	<b>Logan Part No.</b>	<b>26000-025</b>	<b>26000-026</b>	<b>26000-027</b>	<b>26000-028</b>	<b>26000-029</b>	<b>26000-030</b>	<b>26000-030</b>
	Bowen No.	61288	61285	68420	68421	55285	55193	55193
	<i>Consists of:</i>							
<b>PISTON</b>	<b>Logan Part No.</b>	<b>AG15007</b>	<b>AG15008</b>	<b>AG15009</b>	<b>AG15010</b>	<b>AG15011</b>	<b>AG15012</b>	<b>AG15012</b>
	Bowen No.	61289	61286	68413	68415	55286	55194	55194
<b>WAVE SPRING</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
<b>PISTON RING</b>	<b>Logan Part No.</b>	<b>L61287</b>	<b>L61287</b>	<b>L68414</b>	<b>L68416</b>	<b>L25968</b>	<b>L25293</b>	<b>L25293</b>
	Bowen No.	61287	61287	68414	68416	25968	25293	25293
	No. Req'd	4	4	3	3	2	2	2
<b>SEAL</b>	<b>Logan Part No.</b>	<b>568-228</b>	<b>568-229</b>	<b>568-231</b>	<b>568-233</b>	<b>568-231</b>	<b>568-232</b>	<b>568-232</b>
	Bowen No.	568228	568229	568231	568233	568231	568232	568232
<b>NON-EXTRUSION RING</b>	<b>Logan Part No.</b>	<b>L370-6</b>	<b>L52495</b>	<b>L370-9</b>	<b>L370-11</b>	<b>L370-8.5</b>	<b>L370-10</b>	<b>L370-10</b>
	Bowen No.	370-6	52495	370-9	370-11	370-8.5	370-10	370-10
<b>SEAL PROTECTOR RING</b>	<b>Logan Part No.</b>	<b>L376-6</b>	<b>L52496</b>	<b>L376-9</b>	<b>L376-11</b>	<b>L376-8.5</b>	<b>L376-10</b>	<b>L376-10</b>
	Bowen No.	376-6	52496	376-9	376-11	376-8.5	376-10	376-10

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**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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

TOOL JOINT CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API IF	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-007</b>	<b>605-008</b>	<b>605-009</b>	<b>605-010</b>	<b>605-011</b>	<b>605-012</b>	<b>605-018</b>
	Bowen No.	52528	52497	52502	52653	52530	52500	...
<b>CONE TYPE</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<b>PISTON ASSEMBLY</b>	Bowen No.	...	...	...	...	...	...	...
<i>Consists of:</i>		...	...	...	...	...	...	...
<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>SEAL BODY SEAL</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...

## OPTIONAL

<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AG1000-36</b>	<b>AG1000-36</b>	<b>AG1000-40</b>	<b>AG1000-42</b>	<b>AG1000-40</b>	<b>AG1000-41</b>	<b>AG1000-41</b>
<b>SETTING TOOL</b>	Bowen No.	22709-36	22709-36	22709-40	22709-42	22709-40	22709-41	22709-41
<b>PISTON SETTING TOOL</b>	<b>Logan Part No.</b>	<b>AG1000-34</b>	<b>AG2000</b>	<b>AG1000-37</b>	<b>AG1000-39</b>	<b>AG1000-36.5</b>	<b>AG1000-38</b>	<b>AG1000-38</b>
	Bowen No.	22709-34	54922	22709-37	22709-39	22709-36.5	22709-38	22709-38
<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>HI-TEMPERATURE</b>	<b>Logan Part No.</b>	...	...	<b>26000-081</b>	...	<b>26000-083</b>	<b>26000-084</b>	<b>26000-084</b>
<b>PACKING SET</b>	Bowen No.	...	...	78330	...	80115	80005	80005

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### 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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

### Recommended Spares:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

TOOL JOINT CONNECTION	2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API IF	3-1/2 API IF
<b>OUTSIDE DIAMETER (INCHES)</b>	3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
<b>INSIDE DIAMETER (INCHES)</b>	1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
<b>TYPE JAR</b>	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b> 605-007 Bowen No. 52528	<b>605-008</b> 52497	<b>605-009</b> 52502	<b>605-010</b> 52653	<b>605-011</b> 52530	<b>605-012</b> 52500	<b>605-018</b> ...
<b>PACKING SET</b>	<b>Logan Part No.</b> 26000-043 Bowen No. 37415	<b>26000-044</b> 20163	<b>26000-045</b> 44491	<b>26000-046</b> 35858	<b>26000-047</b> 25892	<b>26000-048</b> 38120	<b>26000-048</b> 38120
<i>Consists of:</i>							
<b>MANDREL / WASHPIPE SEAL</b>	<b>Logan Part No.</b> 568-333 Bowen No. 568333 No. Req'd 4	<b>568-333</b> 568333 4	<b>568-337</b> 568337 4	<b>568-339</b> 568339 4	<b>568-337</b> 568337 4	<b>568-338</b> 568338 4	<b>568-338</b> 568338 4
<b>LARGE MIDDLE BODY SEAL</b>	<b>Logan Part No.</b> 568-235 Bowen No. 568235 No. Req'd 2	<b>568-235</b> 568235 2	<b>568-239</b> 568239 2	<b>568-241</b> 568241 2	<b>568-241</b> 568241 2	<b>568-241</b> 568241 2	<b>568-241</b> 568241 2
<b>SMALL MIDDLE BODY SEAL</b>	<b>Logan Part No.</b> 568-233 Bowen No. 568233 No. Req'd 3	<b>568-233</b> 568233 3	<b>568-237</b> 568237 3	<b>568-239</b> 568239 3	<b>568-239</b> 568239 3	<b>568-239</b> 568239 3	<b>568-239</b> 568239 3
<b>WASHPIPE SEAL</b>	<b>Logan Part No.</b> 568-224 Bowen No. 568224	<b>568-227</b> 568227	<b>568-227</b> 568227	<b>568-233</b> 568233	<b>568-228</b> 568228	<b>568-228</b> 568228	<b>568-228</b> 568228
<b>MANDREL BODY FILL PLUG SEAL</b>	<b>Logan Part No.</b> 568-006 Bowen No. 568006	<b>568-006</b> 568006	<b>568-006</b> 568006	<b>568-006</b> 568006	<b>568-006</b> 568006	<b>568-006</b> 568006	<b>568-006</b> 568006
<b>MIDDLE BODY FILL PLUG SEAL</b>	<b>Logan Part No.</b> 568-005 Bowen No. 568005	<b>568-005</b> 568005	<b>568-005</b> 568005	<b>568-005</b> 568005	<b>568-006</b> 568006	<b>568-006</b> 568006	<b>568-006</b> 568006
<b>PISTON SEAL</b>	<b>Logan Part No.</b> 568-228 Bowen No. 568228	<b>568-229</b> 568229	<b>568-231</b> 568231	<b>568-233</b> 568233	<b>568-231</b> 568231	<b>568-232</b> 568232	<b>568-232</b> 568232
<b>MIDDLE BODY / MANDREL BODY SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	...	...	...	...	...
<b>WASHPIPE / MIDDLE BODY SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	...	...	...	...	...
<b>BACK-UP RINGS</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	...	...	...	...	...
<b>MANDREL SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	...	...	...	...	...
<b>MANDREL BODY SEAL</b>	<b>Logan Part No.</b> ... Bowen No. ...	...	...	...	...	...	...

JAR LUBE	Logan Part No.	49842-A	49842-B	49842-D			
	Bowen No.	49842-A	49842-B	49842-D			
		1 Gallon	5 Gallons	55 Gallons			

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**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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

<b>TOOL JOINT CONNECTION</b>		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg	
<b>OUTSIDE DIAMETER (INCHES)</b>		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9	
<b>INSIDE DIAMETER (INCHES)</b>		2	2-1/4	2-3/8	3-1/16	3-3/4	
<b>TYPE JAR</b>		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-013</b>	<b>605-014</b>	<b>605-015</b>	<b>605-016</b>	<b>605-017</b>	
	<b>Bowen No.</b>	52498	52544	52680	52711	68346	
<b>TOP SUB</b>	<b>Logan Part No.</b>	...	...	...	...	...	
	<b>Bowen No.</b>	...	...	...	...	...	
<b>MANDREL</b>	<b>Logan Part No.</b>	<b>AG4013</b>	<b>AG4014</b>	<b>AG4015</b>	<b>AG4016</b>	<b>AG4017</b>	
	<b>Bowen No.</b>	14715	12375	11131	15156	66352	
<b>PISTON ASSEMBLY</b> <i>(Ring Type Standard)</i>	<b>Logan Part No.</b>	<b>26000-031</b>	<b>26000-032</b>	<b>26000-033</b>	<b>26000-034</b>	<b>26000-035</b>	
	<b>Bowen No.</b>	55246	55212	55335	68924	66355	
<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AG5013</b>	<b>AG5014</b>	<b>AG5015</b>	<b>AG5016</b>	<b>AG5017</b>	
	<b>Bowen No.</b>	52834	52835	52836	53088	66354	
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	<b>AG6013</b>	<b>AG6014</b>	<b>AG6015</b>	<b>AG6016</b>	<b>AG6017</b>	
	<b>Bowen No.</b>	14712	12372	11133	15158	66347	
<b>WASHPIPE BODY</b>	<b>Logan Part No.</b>	<b>AG7013</b>	<b>AG7014</b>	<b>AG7015</b>	<b>AG7016</b>	<b>AG7017</b>	
	<b>Bowen No.</b>	14711	12371	701	15164	66350	
<b>KNOCKER</b>	<b>Logan Part No.</b>	<b>AG8013</b>	<b>AG8014</b>	<b>AG8015</b>	<b>AG8016</b>	<b>AG8017</b>	
	<b>Bowen No.</b>	14717	12377	11134	15159	66348	
<b>WASHPIPE</b>	<b>Logan Part No.</b>	<b>AG9013</b>	<b>AG9014</b>	<b>AG9015</b>	<b>AG9016</b>	<b>AG9017</b>	
	<b>Bowen No.</b>	14714	12374	704	15163	66349	
<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AG10003</b>	<b>AG10003</b>	<b>AG10003</b>	<b>AG10003</b>	<b>AG10003</b>	
<b>FILL PLUG</b>	<b>Bowen No.</b>	508	508	508	508	508	
<b>MIDDLE BODY</b>	<b>Logan Part No.</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	<b>AG10002</b>	
<b>FILL PLUG</b>	<b>Bowen No.</b>	329	329	329	329	329	
<b>PACKING SET</b>	<b>Logan Part No.</b>	<b>26000-049</b>	<b>26000-050</b>	<b>26000-051</b>	<b>26000-052</b>	<b>26000-053</b>	
	<b>Bowen No.</b>	14720	12383	9738	20980	66359	
<b>MANDREL</b>	<b>Logan Part No.</b>	<b>L453</b>	<b>L365-48</b>	<b>L365-50.75</b>	<b>L365-59</b>	<b>L365-65</b>	
<b>NON-EXTRUSION RING</b>	<b>Bowen No.</b>	453	365-48	708	365-59	365-65	
	<b>No. Req'd</b>	8	8	8	8	8	
<b>MANDREL SEAL</b>	<b>Logan Part No.</b>	<b>L449</b>	<b>L375-48</b>	<b>L375-50.75</b>	<b>L375-59</b>	<b>L375-65</b>	
<b>PROTECTOR RING</b>	<b>Bowen No.</b>	449	375-48	709	375-59	375-65	
	<b>No. Req'd</b>	8	8	8	8	8	
<b>MANDREL BODY</b>	<b>Logan Part No.</b>	...	...	...	...	...	
<b>NON-EXTRUSION RING</b>	<b>Bowen No.</b>	...	...	...	...	...	

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**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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

TOOL JOINT CONNECTION	4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg
<b>OUTSIDE DIAMETER (INCHES)</b>	6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9
<b>INSIDE DIAMETER (INCHES)</b>	2	2-1/4	2-3/8	3-1/16	3-3/4
<b>TYPE JAR</b>	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No. 605-013</b> Bowen No. 52498	<b>605-014</b> 52544	<b>605-015</b> 52680	<b>605-016</b> 52711	<b>605-017</b> 68346
<b>MANDREL BODY INSERT</b>	<b>Logan Part No. ...</b> Bowen No. ...	...	...	...	...
<b>MANDREL BODY SEAL PROTECTOR RING</b>	<b>Logan Part No. ...</b> Bowen No. ...	...	...	...	...
<b>RING TYPE PISTON ASSEMBLY</b>	<b>Logan Part No. 26000-031</b> Bowen No. 55246	<b>26000-032</b> 55212	<b>26000-033</b> 55335	<b>26000-034</b> 68924	<b>26000-035</b> 66355
<i>Consists of:</i>					
<b>PISTON</b>	<b>Logan Part No. AG15013</b> Bowen No. 55247	<b>AG15014</b> 55213	<b>AG15015</b> 55339	<b>AG15016</b> 68925	<b>AG15017</b> 66357
<b>WAVE SPRING</b>	<b>Logan Part No. ...</b> No. Req'd ...	...	...	...	...
<b>PISTON RING</b>	<b>Logan Part No. L1999</b> Bowen No. 1999 No. Req'd 1	<b>L12379</b> 12379 2	<b>L719</b> 719 2	<b>L15162</b> 15162 4	<b>L66356</b> 66356 5
<b>SEAL</b>	<b>Logan Part No. 568-236</b> Bowen No. 568236	<b>568-237</b> 568237	<b>568-239</b> 568239	<b>568-426</b> 568426	<b>568-430</b> 568430
<b>NON-EXTRUSION RING</b>	<b>Logan Part No. L370-13.75</b> Bowen No. 370-13.75	<b>L370-15</b> 370-15	<b>L370-17</b> 370-17	<b>L365-53</b> 365-53	<b>L365-57</b> 365-57
<b>SEAL PROTECTOR RING</b>	<b>Logan Part No. L376-13.75</b> Bowen No. 376-13.75	<b>L376-15</b> 376-15	<b>L376-17</b> 376-17	<b>L375-53</b> 375-53	<b>L375-57</b> 375-57
<b>CONE TYPE PISTON ASSEMBLY</b>	<b>Logan Part No. ...</b> Bowen No. ...	...	...	...	...
<i>Consists of:</i>					
<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>SEAL BODY SEAL</b>	<b>Logan Part No. ...</b> Bowen No. ...	...	...	...	...

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*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
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

**Recommended Spares:**

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

# LOGAN GENERAL CATALOG

## OIL TOOLS

### Z TYPE HYDRAULIC JARS

<b>TOOL JOINT CONNECTION</b>		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg	
<b>OUTSIDE DIAMETER (INCHES)</b>		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9	
<b>INSIDE DIAMETER (INCHES)</b>		2	2-1/4	2-3/8	3-1/16	3-3/4	
<b>TYPE JAR</b>		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>605-013</b>	<b>605-014</b>	<b>605-015</b>	<b>605-016</b>	<b>605-017</b>	
	Bowen No.	52498	52544	52680	52711	68346	

### OPTIONAL

<b>MANDREL BODY</b>	<b>Logan Part No.</b>	<b>AG1001</b>	<b>AG1000-48</b>	<b>AG1000-51</b>	<b>AG1000-59</b>	<b>AG1000-65</b>	
<b>SETTING TOOL</b>	Bowen No.	448	22709-48	22709-51	22709-59	22709-65	
<b>PISTON SETTING TOOL</b>	<b>Logan Part No.</b>	<b>AG1000-41.75</b>	<b>AG2001</b>	<b>AG1000-45</b>	<b>AG1000-53</b>	<b>AG1000-57</b>	
	Bowen No.	22709-41.75	54309	22709-45	22709-53	22709-57	
<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>	
	Bowen No.	55403	55403	55403	55403	55403	
<b>HI-TEMPERATURE PACKING SET</b>	<b>Logan Part No.</b>	<b>26000-085</b>	<b>26000-086</b>	<b>26000-087</b>	<b>26000-088</b>	...	
	Bowen No.	148246	79015 & 147932	9738/006	20980/006 & 007	...	
<b>PACKING SET</b>	<b>Logan Part No.</b>	<b>26000-049</b>	<b>26000-050</b>	<b>26000-051</b>	<b>26000-052</b>	<b>26000-053</b>	
<i>Consists of:</i>	Bowen No.	14720	12383	9738	20980	66359	
<b>MANDREL / WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-344</b>	<b>568-345</b>	<b>568-348</b>	<b>568-432</b>	<b>568-438</b>	
	Bowen No.	568344	568345	568348	568432	568438	
	No. Req'd	4	4	4	4	4	
<b>LARGE MIDDLE BODY SEAL</b>	<b>Logan Part No.</b>	<b>568-248</b>	<b>568-252</b>	<b>568-256</b>	<b>568-261</b>	<b>568-265</b>	
	Bowen No.	568248	568252	568256	568261	568265	
	No. Req'd	2	2	2	2	2	
<b>SMALL MIDDLE BODY SEAL</b>	<b>Logan Part No.</b>	<b>568-246</b>	<b>568-250</b>	<b>568-254</b>	<b>568-259</b>	...	
	Bowen No.	568246	568250	568254	568259	...	
	No. Req'd	3	3	3	3	3	
<b>WASHPIPE SEAL</b>	<b>Logan Part No.</b>	<b>568-234</b>	<b>568-235</b>	<b>568-235</b>	<b>568-242</b>	<b>568-246</b>	
	Bowen No.	568234	568235	568235	568242	568246	
<b>MANDREL BODY FILL PLUG SEAL</b>	<b>Logan Part No.</b>	<b>568-011</b>	<b>568-011</b>	<b>568-011</b>	<b>568-011</b>	<b>568-011</b>	
	Bowen No.	568011	568011	568011	568011	568011	
<b>MIDDLE BODY 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>568-011</b>	
	Bowen No.	568006	568006	568006	568006	568011	
<b>PISTON SEAL</b>	<b>Logan Part No.</b>	<b>568-236</b>	<b>568-237</b>	<b>568-239</b>	<b>568-426</b>	<b>568-430</b>	
	Bowen No.	568236	568237	568239	568426	568430	

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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:

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- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

#### Recommended Spares:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings
- (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

## Z TYPE HYDRAULIC JARS

TOOL JOINT CONNECTION	4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg		
OUTSIDE DIAMETER (INCHES)	6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9		
INSIDE DIAMETER (INCHES)	2	2-1/4	2-3/8	3-1/16	3-3/4		
TYPE JAR	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel		
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No. 605-013</b>	<b>605-014</b>	<b>605-015</b>	<b>605-016</b>	<b>605-017</b>		
	Bowen No. 52498	52544	52680	52711	68346		
<b>MIDDLE BODY / MANDRELBODY SEAL</b>	<b>Logan Part No. ...</b>	...	...	...	<b>568-441</b>		
	Bowen No. ...	...	...	...	568441		
<b>WASHPIPE / MIDDLE BODY SEAL</b>	<b>Logan Part No. ...</b>	...	...	...	<b>568-263</b>		
	Bowen No. ...	...	...	...	568263		
<b>BACK-UP RINGS</b>	<b>Logan Part No. ...</b>	...	...	...	...		
	Bowen No. ...	...	...	...	...		
<b>MANDREL SEAL</b>	<b>Logan Part No. ...</b>	...	...	...	...		
	Bowen No. ...	...	...	...	...		
<b>MANDREL BODY SEAL</b>	<b>Logan Part No. ...</b>	...	...	...	...		
	Bowen No. ...	...	...	...	...		

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- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool