



Safety Joints

OVERVIEW

Logan Safety Joints — Drill Pipe, Tubing, Washover, and Type J — allow quick release from drilling, fishing, testing washover or tubing strings should they become stuck. The simple design of these Safety Joints has no release ring, which allows for quick disengagement of the tool. They leave a minimum of pipe in the hole thus reducing the problems of fishing or sidetracking.

The Logan Type J Safety Joint provides a release option from tools such as taper taps or die collars that are normally non-releasable. It also provides a way to connect or disconnect fishing string and stuck fish.

Logan Safety Joints are available in a full range of types, sizes, and lengths.

USES

Logan Safety Joints are used in a drilling, fishing, tubing, washover, or testing string whenever a releasing safety connection is needed.

CONSTRUCTION

Logan Drill Pipe, Tubing, and Washover Safety Joints are a simple, two-piece, four-seal design that permits easy disassembly for cleaning and lubrication.

These Safety Joints consist of an upper pin section, a lower box section and four seals. The upper pin section has a box connection up for connecting to the tool joint and a male coarse thread down for connection to the box section.

The pin section is grooved at the top and bottom to accommodate the O-ring type seals above and below the threads to seal the Safety Joint from both internal and external fluid pressures. Both seals are rated for high pressure operation and are capable of withstanding

up to 1,000 psi in continuous service. The seals are rated for all normal pump pressures in continuous service. The 6SHFLD10,000 psi working pressure Course Thread Safety Joints are available upon request.

The box section has a female coarse thread matching the male thread of the pin section and has a tool joint pin connection down for connecting to the pipe.

The coarse thread design of the pin and box sections allows speed and ease of engagement. When the Safety Joint is made up tightly, the joining coarse threads grip each other securely, pulling the surfaces into complete contact and transform the Safety Joint into a rigid unit. Once in the string the Safety Joint is resistant to vibration, heavy loads and left- or right-hand torque. The coarse thread design will not permit the safety joint to loosen or wedge during operation. The Safety Joint's design allows the transmission of torque in the left- or right-hand direction.

The Safety Joint will disengage with simple left-hand rotation between 20% – 40% of the tool's right-hand make-up torque.

Drill Pipe Safety Joints

The Logan Drill Pipe Safety Joint is made up of a box section and a pin section. The outer and inner diameters of the Logan Drill Pipe Safety Joint match the standard outer and inner diameters of the corresponding drill pipe tool joint connection.

Each Drill Pipe Safety Joint is designed to withstand internal and external pressures through the use of O-ring seals above and below the threads.

Logan Drill Pipe Safety Joints come in a variety of popular sizes for drill pipe strings.

Tubing Safety Joints

The Logan Tubing Safety Joint is made up of a box section and a pin section. The outside diameter of Logan Tubing Safety Joints are the same as the tubing coupling O.D. and an inside diameter that matches the I.D. of the tubing connection. O-ring seals positioned above and below the threads allow the Tubing Safety Joint to withstand internal and external pressures.

Logan Tubing Safety Joints come in a variety of popular sizes for tubing strings.

Washover Safety Joints

The Logan Washover Safety Joint is made up of a drill pipe box section and a washover string pin section. This allows the Safety Joint to be run between the washover pipe and the drill string. The outside diameter of the Washover Safety Joint matches the O.D. of the washover pipe.

O-ring seals positioned above and below the threads allow the Washover Safety Joint to withstand internal and external pressures.

Logan Washover Safety Joints come in a variety of popular sizes for drill pipe strings.

Type J Safety Joints

This simple two-piece construction made of heat-treated alloy steel allows easy make-up and release. Special shear screws securely fasten the tool to prevent accidental unlatching before the fish is engaged.

OPERATION

Examine the pin section to ensure that the top and bottom seals are properly installed in the grooves and are in good condition. Thoroughly lubricate the threads in the pin and the box sections. Make up the pin and box sections by hand.

Position the Safety Joint at the desired point in the string:

- (a) In drilling string, position the Safety Joint far enough above the drill collars to avoid compression loading and to avoid sticky or heaving formations.
- (b) In fishing string, position the Safety Joint immediately above the fishing tool and below any accessory tool such as a jar or bumper sub.
- (c) In tubing strings, position the Safety Joint immediately above the tubing catcher or production packer.
- (d) In washover strings, position the Safety Joint between the drill pipe and the washover string.
- (e) In drill stem testing strings, the Safety Joint is usually located above the packer and test tool but below any accessory tool such as a jar or bumper sub.

Screw the tool joint pin of the Safety Joint into the joint box of the pipe. Make it up like an ordinary tool joint. With one tong on the box section and another tong on the pin section, make up the Safety Joint to the same degree of tightness as the other tool joints in the string. Screw the pin end of the next stand of pipe into the box of the Safety Joint. Make it up like an ordinary tool joint connection. Run the pipe into the well.

To Release a Drill Pipe, Tubing, or Washover Safety Joint in the Hole

1. Rotate the string to the left at 40% of the tool's right-hand make-up torque to break the connection. Rotate one (1) turn in straight or shallow holes and two (2) or three (3) turns in deep or crooked holes.

2. Pick up on the drill string until 500 to 1,000 lbs. remains on the Safety Joint. If too much weight is left sitting on the Safety Joint, the shoulder of the box section could be damaged when the tool disengages.
3. Rotate the string to the left until 40% of the tool's right-hand make-up torque is applied.
4. Pick up on the string slowly while rotating to the left to unscrew the Safety Joint. The coarse threads will lift the pipe approximately 1/2" to 1-1/2" (depending on the size of the Safety Joint) for each revolution of the string.
5. Care should be taken to keep a little weight on the Safety Joint as the tool is unscrewed as recommended in step 2 above. The operator will see a weight decrease as the Safety Joint separates.

To Re-engage a Drill Pipe, Tubing, or Washover Safety Joint in the Hole

Lower the string into the hole until the pin section contacts the box section.

Apply approximately 1,000 lbs. of weight and rotate the string slowly to the right. An increase in torque will indicate that the Safety Joint has reengaged.

To Release a Type J Safety Joint

Once the fish is engaged, a tension load is applied to the string to shear the shear screws. After the screws have been sheared and the tension released, slight left-hand torque is applied to the string while it is elevated. The lugs will shift into the release slots and the two halves of the safety joint will separate.

To Re-engage a Type J Safety Joint

Slowly rotate the string to the right. Lower the string until the lugs on the top half engage the J-slots in the lower half. Stop rotation. Maintain right-hand torque on the lowered string until the joint is fully engaged. The joint will remain engaged until it is released. The lugs on the top half of the Logan Type J Safety Joint are secured when they engage with the J-slots on the bottom half.

MAINTENANCE

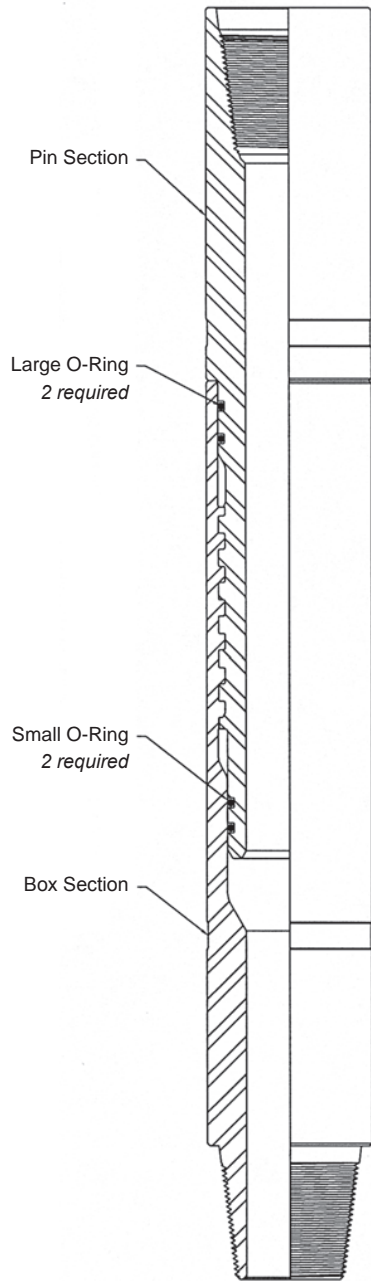
To prolong the life of the tool and guard against misruns, the Logan Safety Joint should be disassembled after use, thoroughly cleaned, lubricated, and serviced before storing.

Whenever the Safety Joint is used in continuous operation, such as in a drilling string, it is recommended that it be disassembled at least once a week.

1. Dismantle the Safety Joint. The pin and box sections may be unscrewed by hand if they are not tightly engaged. If the two sections are tightly engaged, place a tong wrench on each section and unscrew the pin section from the box section.

NOTE: Protect the tool joint pin connection before dismantling.

2. Thoroughly clean each section.
3. Replace the large seals (top) and the small seals (bottom).
4. Thoroughly lubricate the threads of the pin and box sections. Make up the pin and box sections by hand.
5. Reassemble the Safety Joint.
6. Paint or lubricate all exterior surfaces to prevent rust or corrosion.



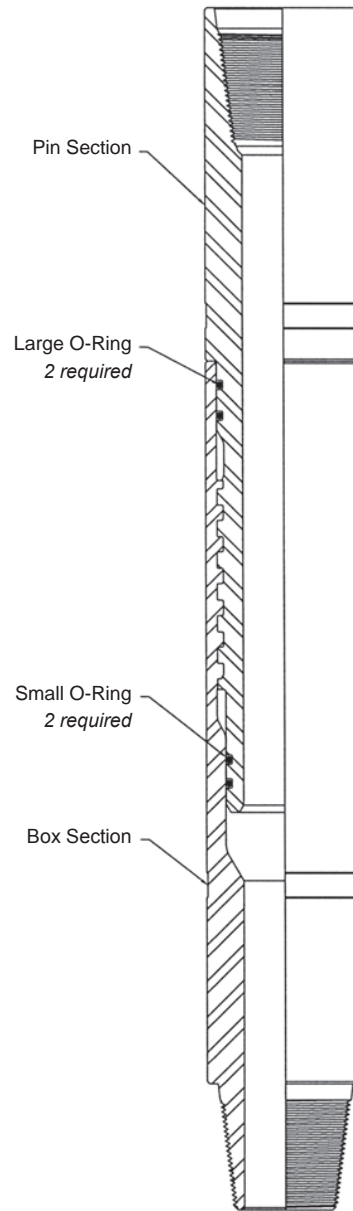
Pin Section

Large O-Ring
2 required

Small O-Ring
2 required

Box Section

Logan Drill Pipe Safety Joint



Pin Section

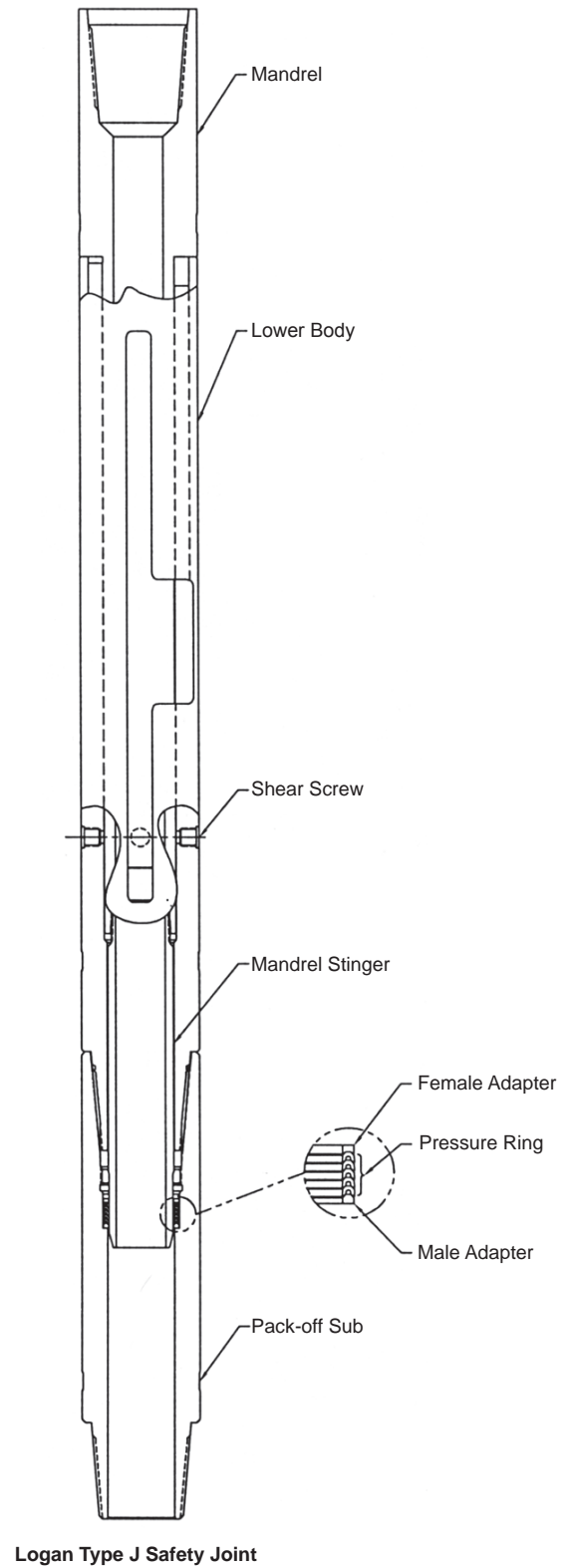
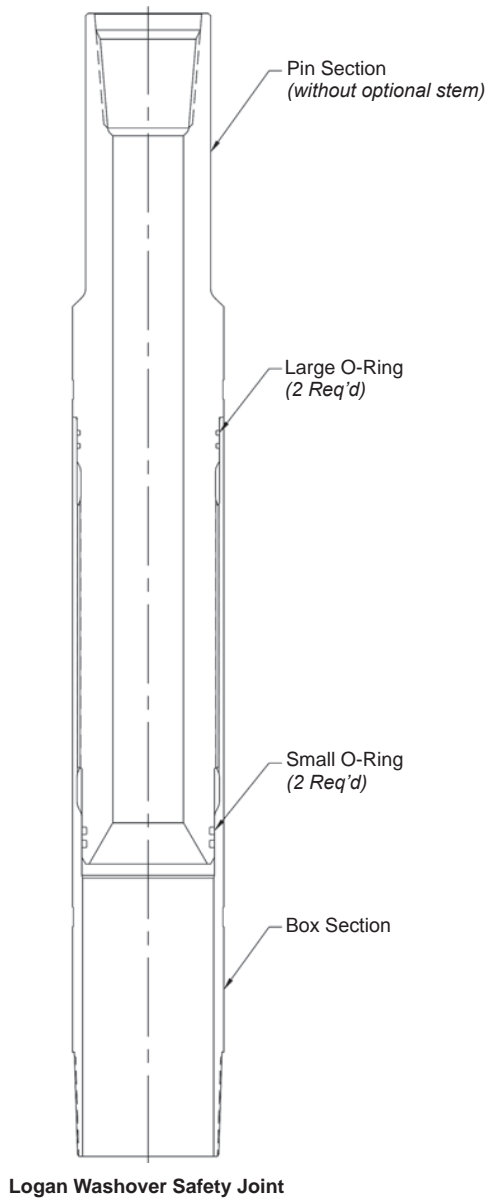
Large O-Ring
2 required

Small O-Ring
2 required

Box Section

Logan Tubing Safety Joint

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



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DRILL PIPE SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|------------------------|----------------------------|------------------------|----------------|----------------|----------------|----------------|
| CONNECTION SIZE | | 2-3/8 | 2-3/8 | 2-7/8 | 2-7/8 | 2-7/8 | 3-1/2 | 3-1/2 |
| CONNECTION TYPES | | API Reg ACME Reg | API IF API FH HYD IF | API Reg ACME Reg | HYD IF | Int Flush | API Reg | HYD IF |
| TOOL O.D. | | 3-1/8 | 3-3/8 | 3-3/4 | 3-7/8 | 4-1/8 | 4-1/4 | 4-1/2 |
| BORE | | 1 | 1-3/4 | 1-1/4 | 2-1/8 | 2-1/8 | 1-1/2 | 2-9/16 |
| COMPLETE ASSEMBLY | Logan Part No. | 601-313 | 601-338 | 601-375 | 601-388 | 601-413 | 601-425 | 601-450 |
| PIN SECTION | Logan Part No. | Y1000 | Y1001 | Y1002 | Y1003 | Y1004 | Y1005 | Y1006 |
| BOX SECTION | Logan Part No. | Y2000 | Y2001 | Y2002 | Y2003 | Y2004 | Y2005 | Y2006 |
| O-RING – SMALL | Logan Part No. | 568-325 | 568-226 | 568-227 | ... | 568-333 | 568-333 | ... |
| | No. Req'd | 2 | 2 | 2 | ... | 2 | 2 | ... |
| O-RING – LARGE | Logan Part No. | 568-329 | 568-332 | 568-333 | ... | 568-337 | 568-337 | ... |
| | No. Req'd | 2 | 2 | 2 | ... | 2 | 2 | ... |

DRILL PIPE SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| CONNECTION SIZE | | 3-1/2 | 3-1/2 | 3-1/2 | 4 | 4 | 4-1/2 | 4-1/2 |
| CONNECTION TYPES | | API FH | API Reg | API IF | API FH | Int Flush | API Reg | API FH |
| TOOL O.D. | | 4-5/8 | 4-3/4 | 4-3/4 | 5-1/4 | 5-3/4 | 5-1/2 | 5-3/4 |
| BORE | | 2-7/16 | 1-1/2 | 2-11/16 | 2-13/16 | 3-1/4 | 2-1/4 | 3 |
| COMPLETE ASSEMBLY | Logan Part No. | 601-463 | 601-475 | 601-476 | 601-525 | 601-575 | 601-550 | 601-575 |
| PIN SECTION | Logan Part No. | Y1007 | Y1008 | Y1009 | Y1010 | Y1011 | Y1012 | Y1013 |
| BOX SECTION | Logan Part No. | Y2007 | Y2008 | Y2009 | Y2010 | Y2011 | Y2012 | Y2013 |
| O-RING – SMALL | Logan Part No. | 568-337 | ... | 568-337 | ... | ... | ... | 568-344 |
| | No. Req'd | 2 | ... | 2 | ... | ... | ... | 2 |
| O-RING – LARGE | Logan Part No. | 568-341 | ... | 568-341 | ... | ... | ... | 568-349 |
| | No. Req'd | 2 | ... | 2 | ... | ... | ... | 2 |

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

Special Notes:

(1) Left-hand connections available upon request.

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) O.D., if other than standard.

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OIL TOOLS

DRILL PIPE SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|----------------|---------------------|----------------|----------------|----------------|----------------|----------------|
| CONNECTION SIZE | | 4-1/2 | 4-1/2 | 5-1/2 | 5-1/2 | 5-1/2 | 6-5/8 | 6-5/8 |
| CONNECTION TYPES | | X-HOLE | API IF HYD IF | API Reg | API Reg | API Reg | API Reg | API Reg |
| TOOL O.D. | | 6 | 6-1/8 | 6-3/4 | 7 | 7-3/8 | 7-3/4 | 8 |
| BORE | | 3-1/4 | 3-3/4 | 2-3/4 | 4 | 4-13/16 | 3-1/2 | 5 |
| COMPLETE ASSEMBLY | Logan Part No. | 601-600 | 601-613 | 601-675 | 601-700 | 601-738 | 601-775 | 601-800 |
| PIN SECTION | Logan Part No. | Y1014 | Y1015 | Y1016 | Y1017 | Y1018 | Y1019 | Y1020 |
| BOX SECTION | Logan Part No. | Y2014 | Y2015 | Y2016 | Y2017 | Y2018 | Y2019 | Y2020 |
| O-RING – SMALL | Logan Part No. | ... | 568-347 | ... | ... | ... | 568-355 | 568-435 |
| | No. Req'd | ... | 2 | ... | ... | ... | 2 | 2 |
| O-RING – LARGE | Logan Part No. | ... | 568-429 | ... | ... | ... | 568-359 | 568-438 |
| | No. Req'd | ... | 2 | ... | ... | ... | 2 | 2 |

DRILL PIPE SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|----------------|----------------|-----------------|--|--|--|--|
| CONNECTION SIZE | | 6-5/8 | 7-5/8 | 8-5/8 | | | | |
| CONNECTION TYPES | | API IF | API Reg | API Reg | | | | |
| TOOL O.D. | | 8-1/2 | 9 | 10 | | | | |
| BORE | | 5-29/32 | 4 | 4-3/4 | | | | |
| COMPLETE ASSEMBLY | Logan Part No. | 601-850 | 601-900 | 601-1000 | | | | |
| PIN SECTION | Logan Part No. | Y1021 | Y1022 | Y1023 | | | | |
| BOX SECTION | Logan Part No. | Y2021 | Y2022 | Y2023 | | | | |
| O-RING – SMALL | Logan Part No. | ... | 568-361 | ... | | | | |
| | No. Req'd | ... | 2 | ... | | | | |
| O-RING – LARGE | Logan Part No. | ... | 568-363 | ... | | | | |
| | No. Req'd | ... | 2 | ... | | | | |

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TUBING SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| CONNECTION SIZE | | 3/4 | 1 | 1 | 1-1/2 | 2 | 2-1/2 | 2-7/8 |
| CONNECTION TYPE | | EUE HARDY GRIFFIN | DSS | EUE | CS | EUE | EUE C-100 | HYDRIL |
| TOOL O.D. | | 1.660 | 1.590 | 1-29/32 | 2-1/8 | 3-1/16 | 3-21/32 | 3-1/2 |
| BORE | | .812 | .812 | 1 | 1-1/2 | 2 | 2-7/16 | 2-3/8 |
| COMPLETE ASSEMBLY | Logan Part No. | 602-166 | 602-159 | 602-191 | 602-213 | 602-306 | 602-366 | 602-350 |
| PIN SECTION | Logan Part No. | Y3000 | Y3001 | Y3002 | Y3003 | Y3004 | Y3005 | Y3006 |
| BOX SECTION | Logan Part No. | Y4000 | Y4001 | Y4002 | Y4003 | Y4004 | Y4005 | Y4006 |
| O-RING – SMALL | Logan Part No. | ... | ... | 568-025 | 568-131 | 568-138 | 568-228 | ... |
| | No. Req'd | ... | ... | 2 | 2 | 2 | 2 | ... |
| O-RING – LARGE | Logan Part No. | ... | ... | 568-128 | 568-225 | 568-332 | 568-336 | ... |
| | No. Req'd | ... | ... | 2 | 2 | 2 | 2 | ... |

TUBING SAFETY JOINTS

| | | | | | | | | |
|--------------------------|-----------------------|----------------|----------------|--|--|--|--|--|
| CONNECTION SIZE | | 3 | 3 | | | | | |
| CONNECTION TYPE | | EUE | EUE | | | | | |
| TOOL O.D. | | 4-1/2 | 5 | | | | | |
| BORE | | 3 | 3 | | | | | |
| COMPLETE ASSEMBLY | Logan Part No. | 602-450 | 602-500 | | | | | |
| PIN SECTION | Logan Part No. | Y3007 | Y3008 | | | | | |
| BOX SECTION | Logan Part No. | Y4007 | Y4008 | | | | | |
| O-RING - SMALL | Logan Part No. | 568-152 | ... | | | | | |
| | No. Req'd | 2 | ... | | | | | |
| O-RING - LARGE | Logan Part No. | 568-241 | ... | | | | | |
| | No. Req'd | 2 | ... | | | | | |

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Special Notes:

(1) *Left-hand connections available upon request.*

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) O.D., if other than standard.



WASHOVER SAFETY JOINTS

| | | | | | | | | |
|---------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| CONNECTION SIZE | | 4 | 4-1/2 | 5 | 5-1/2 | 5-3/4 | 7 | 7-3/8 |
| CONNECTION TYPE | | FJ | FJ | FJ | FJ | FJ | HYDRIL FJ | FJ |
| TOOL O.D. | | 4 | 4-1/2 | 5-3/8 | 5-5/8 | 5-3/4 | 7-5/16 | 7-3/8 |
| BORE | | 1-1/4 | 1-1/4 | 2-1/8 | 2-9/16 | 2-7/16 | 3-3/4 | 3 |
| COMPLETE ASSEMBLY | Logan Part No. | 603-400 | 603-450 | 603-538 | 603-563 | 603-575 | 603-731 | 603-738 |
| PIN SECTION WITHOUT STEM | Logan Part No. | Y5000-B | Y5001-B | Y5002-B | Y5003-B | Y5004-B | Y5005-B | Y5006-B |
| BOX SECTION | Logan Part No. | Y6000 | Y6001 | Y6002 | Y6003 | Y6004 | Y6005 | Y6006 |
| O-RING – SMALL | Logan Part No. | ... | ... | ... | 568-244 | 568-251 | ... | 568-261 |
| | No. Req'd | ... | ... | ... | 2 | 2 | ... | 2 |
| O-RING – LARGE | Logan Part No. | ... | ... | ... | 568-248 | 568-350 | ... | 568-261 |
| | No. Req'd | ... | ... | ... | 2 | 2 | ... | 2 |

OPTIONAL

| | | | | | | | | |
|------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| PIN SECTION WITH STEM | Logan Part No. | Y5000-A | Y5001-A | Y5002-A | Y5003-A | Y5004-A | Y5005-A | Y5006-A |
|------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|

WASHOVER SAFETY JOINTS

| | | | | | | | | |
|---------------------------------|-----------------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|--|
| CONNECTION SIZE | | 7-5/8 | 8-1/8 | 9 | 9-5/8 | 10-3/4 | 11-3/4 | |
| CONNECTION TYPE | | FJ | FJ | FJ | FJ | FJ | FJ | |
| TOOL O.D. | | 8 | 8-5/32 | 9-3/8 | 10-1/8 | 11-1/16 | 11-3/4 | |
| BORE | | 3-3/4 | 3-5/32 | 4 | | 4 | | |
| COMPLETE ASSEMBLY | Logan Part No. | 603-800 | 603-816 | 603-938 | 603-1013 | 603-1106 | 603-1175 | |
| PIN SECTION WITHOUT STEM | Logan Part No. | Y5007-B | Y5008-B | Y5009-B | Y5010-B | Y5011-B | Y5012-B | |
| BOX SECTION | Logan Part No. | Y6007 | Y6008 | Y6009 | Y6010 | Y6011 | Y6012 | |
| O-RING – SMALL | Logan Part No. | 568-262 | 568-263 | ... | ... | ... | ... | |
| | No. Req'd | 2 | 2 | ... | ... | ... | ... | |
| O-RING – LARGE | Logan Part No. | 568-363 | 568-364 | ... | ... | ... | ... | |
| | No. Req'd | 2 | 2 | ... | ... | ... | ... | |

OPTIONAL

| | | | | | | | | |
|------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|--|
| PIN SECTION WITH STEM | Logan Part No. | Y5007-A | Y5008-A | Y5009-A | Y5010-A | Y5011-A | Y5012-A | |
|------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|--|

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Special Notes:

- (1) Left-hand connections available upon request

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) If ordering Pin Section With Stem, specify stem length
- (5) O.D., if other than standard.

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OIL TOOLS

TYPE J SAFETY JOINTS

| STANDARD TOOL O.D. | | 4-1/8 | 4-3/4 | 6-1/4 | 7-3/4 | | |
|--------------------|----------------|------------|------------|------------|------------|--|--|
| COMPLETE ASSEMBLY | Logan Part No. | 610-413 | 610-475 | 610-625 | 610-775 | | |
| MANDREL | Logan Part No. | Y7000 | Y7001 | Y7002 | Y7003 | | |
| MANDREL STINGER | Logan Part No. | Y8000 | Y8001 | Y8002 | Y8003 | | |
| LOWER BODY | Logan Part No. | Y9000 | Y9001 | Y9002 | Y9003 | | |
| PACK-OFF SUB | Logan Part No. | Y10000 | Y10001 | Y10002 | Y10003 | | |
| GLAND NUT | Logan Part No. | Y11000 | Y11001 | Y11002 | Y11002 | | |
| FEMALE ADAPTER | Logan Part No. | SC3131-480 | SC2652-480 | SC3123-480 | SC3433-480 | | |
| MALE ADAPTER | Logan Part No. | SC3132-280 | SC2652-280 | SC3123-280 | SC3433-280 | | |
| CHEVRON PACKING | Logan Part No. | SC3132-160 | SC2652-160 | SC3123-160 | SC3433-160 | | |
| SHEAR SCREW | Logan Part No. | Y12000 | Y12000 | Y12000 | Y12000 | | |
| | No. Req'd. | 2 | 2 | 4 | 4 | | |
| GLAND WRENCH | Logan Part No. | Y13000 | Y13001 | Y13002 | Y13002 | | |

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CORPORATE HEADQUARTERS

▲ **Logan International, Inc.**
7850 North Sam Houston Parkway West
Suite 100
Houston, Texas 77064
832.386.2500 | Fax 281.227.1766

635 8th Avenue Southwest
Suite 850
Calgary, Canada T2P 3M3
403.930.6810 | Fax 403.930.6811

U.S. SALES OFFICES

▲ **California**
3155 Pegasus Drive
Bakersfield, CA 93308-6800
661.387.1449 | Fax 661.387.1624

▲ **Louisiana**
103 Bluffwood Drive
Broussard, LA 70518-3310
337.839.2331 | Fax 337.839.2334

118 Common Court
Houma, LA 70360-7982
985.868.7333 | Fax 985.868.7007

▲ **North Dakota**
4925 Highway 85 South
Williston, ND 58801
701.572.0565 | Fax 701.572.0644

▲ **Oklahoma**
424 South Eagle Lane
Oklahoma City, OK 73128-4225
405.782.0625 | Fax 405.782.0760

▲ **Pennsylvania**
244 Grey Fox Drive, Suite 1
Montoursville, PA 17754-9572
570.546.1066 | Fax 570.546.0388

▲ **Texas**
1519 South Flournoy
Alice TX, 78332
361.396.0139 | Fax 361.396.0112

11610 Cutten Road
Houston, TX 77066-3008
832.602.2134 | Fax 832.286.4117

11006 Lucerne Street
Houston, Texas 77016-1920
281.219.6613 | Fax 281.219.6638

1305 Energy Drive
Kilgore, TX 75662-5539
903.984.6700 | Fax 903.984.6755

601 McDonald
Odessa, TX 79761-6106
432.580.7414 | Fax 432.580.7656

▲ **Utah**
1369 South 1100 East
Vernal, UT 84078-8600
435.781.2856 | Fax 435.781.2858

INTERNATIONAL STOCKING DISTRIBUTORS

▲ **Canada**
Logan Oil Tools
9755 45th Avenue NW
Edmonton, Alberta T6E 5V8
780.433.9957 | Fax 780.468.1979

▲ **Colombia**
Logan Oil Tools Sucursal Colombia
Calle 113 No. 7-21
Edificio Teleport Business Park
Torre A, Oficina 915
Bogota, Colombia
(57.1).629.1995 | Fax (57.1).612.8357

▲ **Singapore**
Logan Oil Tools Pte Ltd
54 Loyang Way
Singapore 508747
65.65428422 | Fax 65.65420477

▲ **United Arab Emirates**
Logan Oil Tools
Jebel Ali Free Zone (South)
P.O. Box 23724
Dubai, UAE
971.4.813.8000 | Fax 971.4.813.8001

▲ **Woodhouse International**
P.O. Box 23724
Dubai, UAE
971.4.347.2300 | Fax 971.4.347.4642

▲ **United Kingdom**
Logan Oil Tools, U.K. Ltd.
Unit C1 Kintore Business Park
Kintore, Inverurie
Aberdeenshire AB51 0YQ
Scotland
+44.1467.631190