

Completion Systems

PACKER SYSTEMS



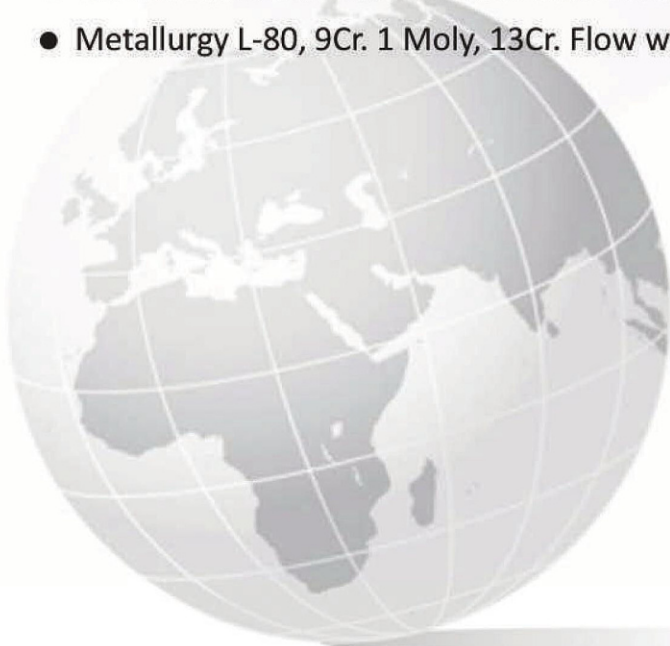
MagnusSet – IX Mechanical Set Testing Packer

MagnusSet - IX Mechanical Set Production Packer is a retrievable, double-grip compression - or tension - set production packer that can be left in tension, compression, or in a natural position, and will hold pressure from above or below.

A large internal bypass reduces the swabbing effect during run-in and retrieval, and closes when the packer is set. When the packer is released, the bypass opens first, allowing the pressure to equalize before the upper slips are released.

FEATURES:

- Sets securely in any hardness casing, including P-110.
- Pressure Rating up to 10,000 Psi.
- Temperature rating up to 350 Degree F.
- ¼ Turn Set & ¼ Turn (to right) Release type packer.
- Emergency Shear Release feature, shear rating 50,000 Lbs.
- Can be left in tension, compression, or neutral position
- Metallurgy L-80, 9Cr. 1 Moly, 13Cr. Flow wet parts



MagnusSet – IX Mechanical Set Testing Packer

Casing & Packer Dimension Table

Casing O.D.	Casing Weight	Minimum Casing I.D.	Maximum Packer O.D.	Packer I.D.	Connection
4-1/2"	9.5-13.5	3.920"	3.750"	1.938"	2-3/8" EU
	13.5-15.1	3.826"	3.653"	1.938"	2-3/8" EU
	15.1-16.6	3.754"	3.594"	1.500"	1.900" EU
	18.8	3.644"	3.438"	1.500"	1.900" EU
5.00"	11.5 - 15.0	4.408"	4.125"	1.938"	2-3/8" EU
	15.0 - 18.0	4.276"	4.063"	1.938"	2-3/8" EU
	18.0 - 20.8	4.156"	4.000"	1.938"	2-3/8" EU
	21.4	4.125"	4.938"	1.938"	2-3/8" EU
5-1/2"	13.0 - 14.0	5.012"	4.813"	2.375"	2-7/8" EU
	14.0 - 20.0	4.778"	4.625"	2.000"	2-3/8" EU
	14.0 - 20.0	4.778"	4.625"	2.375"	2-7/8" EU
	20.0 - 23.0	4.670"	4.500"	2.000"	2-3/8" EU
	20.0 - 23.0	4.670"	4.500"	2.375"	2-7/8" EU
	23.0 - 26.0	4.548"	4.375"	1.938"	2-3/8" EU
	23.0 - 26.0	4.548"	4.406"	2.375"	2-7/8" EU
5-3/4"	15.0 - 16.1	5.201"	5.000"	2.000"	2-3/8" EU
	15.0 - 16.1	5.201"	5.000"	2.375"	2-7/8" EU
	17.6 - 19.4	5.083"	4.875"	2.000"	2-3/8" EU
	17.6 - 19.4	5.083"	4.875"	2.375"	2-7/8" EU
	21.5 - 24.0	4.909"	4.719"	2.000"	2-3/8" EU
	21.5 - 24.0	4.909"	4.719"	2.375"	2-7/8" EU
6-5/8"	17.0 - 24.0	5.921"	5.750"	2.500"	2-7/8" EU
	20.0 - 24.0	5.921"	5.750"	3.000"	3-1/2" EU
	24.0 - 32.0	5.675"	5.500"	2.500"	2-7/8" EU
	24.0 - 32.0	4.675"	5.500"	3.000"	3-1/2" EU
	32.0 - 34.5	4.575"	5.313"	2.500"	2-7/8" EU

Note*: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



MagnusSet – IX Mechanical Set Testing Packer

Casing & Packer Dimension Table

Casing O.D.	Casing Weight	Minimum Casing I.D.	Maximum Packer O.D.	Packer I.D.	Connection
7.00"	17.0 – 20.0	6.456"	6.250"	2.500"	2-7/8" EU
	17.0 – 20.0	6.456"	6.250"	3.000"	3-1/2" EU
	17.0 – 26.0	6.276"	6.000"	2.500"	2-7/8" EU
	17.0 – 26.0	6.276"	6.000"	3.000"	3-1/2" EU
	26.0 – 32.0	6.094"	5.875"	2.500"	2-7/8" EU
	26.0 – 32.0	6.094"	5.875"	3.000"	3-1/2" EU
	29.0 – 35.0 35.0	6.004" 6.004"	5.813" 5.813"	2.500" 3.000"	2-7/8" EU 3-1/2" EU
7-5/8"	24.0 - 29.7	6.875"	6.672"	1.938"	2-7/8" EU
	24.0 - 29.7	6.875"	6.672"	1.938"	3-1/2" EU
	33.7 - 39.0	6.625"	6.438"	1.938"	2-7/8" EU
	33.7 - 39.0	6.625"	6.438"	1.938"	3-1/2" EU
8-5/8"	20.0 – 24.0	8.097"	7.750"	2.500"	2-7/8" EU
	20.0 – 28.0	8.017"	7.750"	4.000"	4-1/2" EU
	24.0 – 40.0	7.725"	7.500"	2.500"	2-7/8" EU
	24.0 - 40.0	7.725"	7.500"	3.000"	3-1/2" EU
	32.0 – 40.0	7.725"	7.500"	4.000"	4-1/2" EU
	44.0 – 49.0	7.511"	7.313"	2.500"	2-7/8" EU
9-5/8"	32.3 – 43.5	8.755"	8.500"	2.500"	2-7/8" EU
	32.3 – 43.5	8.755"	8.500"	3.000"	3-1/2" EU
	32.3 – 43.5	8.755"	8.500"	4.000"	4-1/2" EU
	43.5 – 53.5	8.535"	8.250"	2.500"	2-7/8" EU
	43.5 – 53.5	8.535"	8.250"	3.000"	3-1/2" EU
	43.5 – 53.5	8.535"	8.250"	4.000"	4-1/2" EU
10-3/4"	32.75 - 51.0	9.850"	9.688"	4.000"	4-1/2" EU
	51.0 – 65.7	9.560"	9.375"	4.000"	4-1/2" EU
11-3/4"	42.0 – 65.0	10.682"	10.500"	4.000"	4-1/2" EU
	66.7 – 80.5	10.406"	10.250"	4.000"	4-1/2" EU
13-3/8"	54.5 – 77.0	12.275"	12.000"	4.000"	4-1/2" EU

Note*: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



Magnus Set - IXS Injection Packer

The Magnus Set - IXS Injection Packer is a versatile, general purpose, large bore, double-grip, retrievable packer. A mechanical locking system allows the packer to hold pressure from above and below. After setting, the 'IXS' can be left with tubing in tension, compression or neutral.

Designed primarily for injection wells, but may also be used for production, zone isolation or remedial operations.

Magnus Set - IXS can be set shallow with tension or deeper with compression and once set can remain in neutral, it is ideal for completions where periodic casing integrity tests are required.

FEATURES:

- Can be set with tension for use in shallow or deep wells.
- No tension or compression required to hold the tool in place once set.
- Temperature rating up to 350 Degree F.
- 1/4 turn right-hand to set, 1/4 turn right-hand release.
- Emergency straight pull shear release, shear rating 30,000 Lbs.
- Metallurgy L-80 4140-4145



**Magnus Set - IXS
Injection Packer**

Casing & Packer Dimension Table

CASING				PACKER		
O.D. (IN)	WEIGHT (LB/FT)	MIN. I.D. (IN.)	MAX. I.D. (IN.)	MAX. O.D. (IN.)	MIN. I.D. (IN.)	THREAD CONNECTION BOX UP / PIN DOWN
4-1/2	9.5 - 13.5	3.920	4.090	3.750	1.922	2-3/8" EU 8 RD
5-1/2	20.0 - 23.0	4.670	4.778	4.500	1.970	2-3/8" EU 8 RD
	14.0 - 17.0	4.892	5.012	4.625	1.970	2-3/8" EU 8 RD
	20.0 - 23.0	4.670	4.778	4.500	2.359	2-7/8" EU 8 RD
	14.0 - 17.0	4.892	5.012	4.625	2.359	2-7/8" EU 8 RD
6-5/8	24.0 - 32.0	5.675	5.921	5.515	2.484	2-7/8" EU 8 RD
	17.0 - 24.0	5.921	6.135	5.750	2.484	2-7/8" EU 8 RD
7	17.0 - 26.0	6.276	6.538	6.015	2.484	2-7/8" EU 8 RD
	17.0 - 26.0	6.276	6.538	6.015	2.984	3-1/2" EU 8 RD
9-5/8	32.0 - 43.5	8.755	9.001	8.500	3.000	3-1/2" EU 8 RD
	43.5 - 53.5	8.535	8.755	8.250	3.000	3-1/2" EU 8 RD



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

Magnus Set A2LS Compression Set Packer

Magnus Set – A2LS packer is a compression-set, retrievable packer that enables tubing to be landed in a tension, compression, or neutral condition.

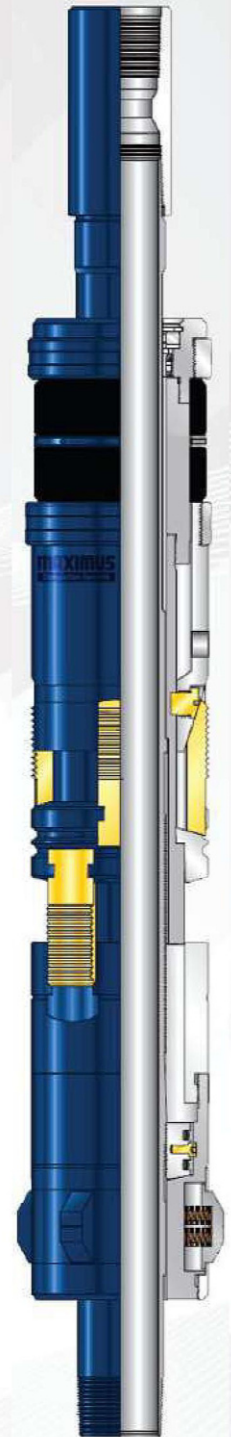
Right rotation sets and releases the packer, providing simple, reliable operation. The internal bypass equalizes the pressure before the slips are unset for safety and reliability.

FEATURES:

- Internal by-pass
- Opposed dovetail slips for positive set
- Holds pressure from above or below
- Can leave tubing in a tension, compression, or neutral
- Right-hand rotation sets and releases the packer
- Temperature rating up to 350 Degree F.
- Optional packing element systems
- Parts interchangeable with other manufacturers

Releasing Procedure

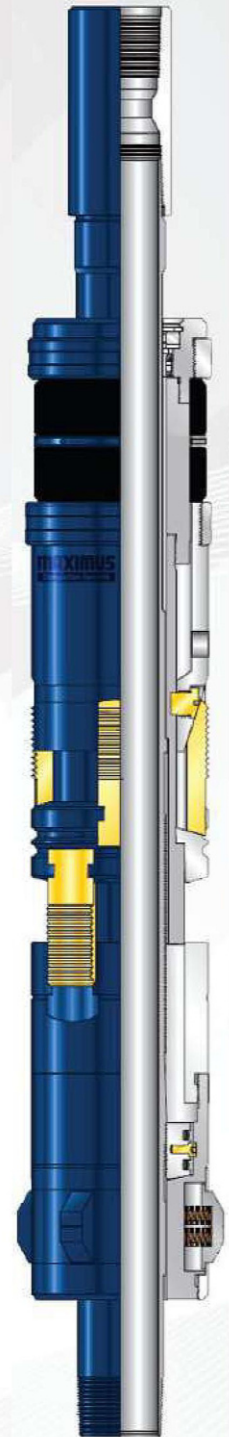
Apply an up strain of approximately 3,000 to 6,000 lb. and rotate the tubing (four to eight turns at the tool) to the right until the tool moves up the hole. When releasing the packer with pressure in favor of the tubing, rotate tubing to the right slowly enough to equalize before the lower slips disengage. Continue to rotate to the right several turns while moving up the hole to be certain the slips are fully retracted



**Magnus Set A2LS
Compression Set Packer**

Casing & Packer Dimension Table

CASING				PACKER	
O.D. (IN.)	WEIGHT (LB/FT)	MIN. I.D. (IN)	MAX. I.D. (IN)	MAX. O.D. (IN)	STANDARD THREAD CONNECTION
4-1/2	11.6 - 13.5	3.920	4.000	3.771	2-3/8" EU 8 RD
	9.5 - 10.5	4.052	4.090	3.771	2-3/8" EU 8 RD
5	15.0 - 18.0	4.250	4.408	4.125	2-3/8" EU 8 RD
	11.5 - 15.0	4.408	4.560	4.250	2-3/8" EU 8 RD
5-1/2	26.0	4.408	4.560	4.250	2-3/8" EU 8 RD
	20.0 - 23.0	4.625	4.777	4.500	2-3/8" EU 8 RD
	15.5 - 20.0	4.778	4.892	4.641	2-3/8" EU 8 RD
	13.0 - 15.5	4.950	5.044	4.781	2-3/8" EU 8 RD
6.0	26.0	5.132		4.781	2-3/8" EU 8 RD
	20.0 - 23.0	5.240	5.352	5.062	2-3/8" EU 8 RD
	15.0 - 18.0	5.424	5.524	5.156	2-3/8" EU 8 RD
6-5/8	34.0	5.575		5.406	2-3/8" EU 8 RD
	24.0 - 32.0	5.675	5.921	5.500	2-3/8" EU 8 RD
	24.0	5.830	5.937	5.656	2-7/8" EU 8 RD
	17.0 - 20.0	6.049	6.135	5.812	2-3/8" EU 8 RD
	17.0 - 20.0	6.049	6.135	5.812	2-7/8" EU 8 RD

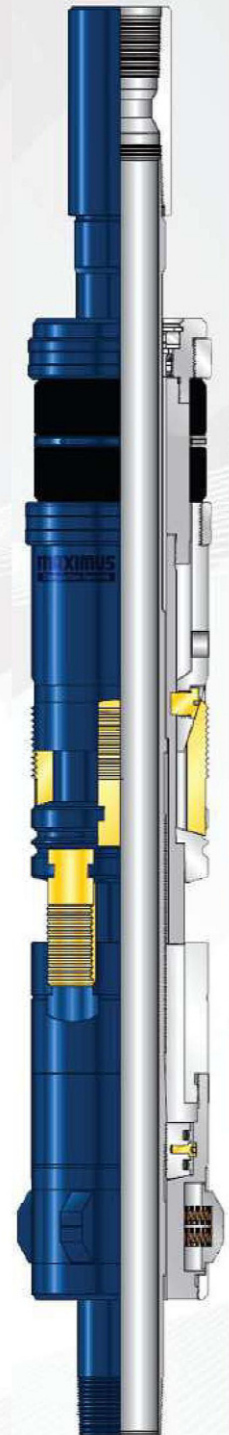


*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

**Magnus Set A2LS
Compression Set Packer**

Casing & Packer Dimension Table

CASING				PACKER	
O.D. (IN.)	WEIGHT (LB/FT)	MIN. I.D. (IN)	MAX. I.D. (IN)	MAX. O.D. (IN)	STANDARD THREAD CONNECTION
7	38.0	5.830	5.937	5.656	2-7/8" EU 8 RD
	38.0	5.830	5.937	5.656	3-1/2" EU 8 RD
	32.0 - 35.0	6.004	6.094	5.812	2-7/8" EU 8 RD
	26.0 - 29.0	6.184	6.276	5.968	2-7/8" EU 8 RD
	26.0 - 29.0	6.184	6.276	5.968	3-1/2" EU 8 RD
	23.0 - 26.0	6.276	6.366	6.078	2-7/8" EU 8 RD
	23.0 - 26.0	6.276	6.366	6.078	3-1/2" EU 8 RD
	17.0 - 20.0	6.456	6.538	6.281	2-7/8" EU 8 RD
	17.0 - 20.0	6.456	6.538	6.281	3-1/2" EU 8 RD
7-5/8	33.7 - 39.0	6.625	6.765	6.453	2-7/8" EU 8 RD
	24.0 - 29.7	6.875	7.025	6.672	2-7/8" EU 8 RD
	20.0 - 24.0	7.025	7.125	6.812	2-7/8" EU 8 RD
8-5/8	44.0 - 49.0	7.511	7.625	7.312	3-1/2" EU 8 RD
	32.0 - 40.0	7.725	7.921	7.531	3-1/2" EU 8 RD
	20.0 - 28.0	8.017	8.191	7.781	3-1/2" EU 8 RD
9-5/8	47.0 - 53.5	8.535	8.681	8.218	3-1/2" EU 8 RD
	40.0 - 47.0	8.681	8.835	8.437	3-1/2" EU 8 RD
	29.3 - 36.0	8.921	9.063	8.593	3-1/2" EU 8 RD
10-3/4	43.5 - 53.5	9.760	9.950	9.688	4-1/2" EU 8 RD



Note: All Premium & Drill Pipe connections are available on request.

Magnus Snap Set- I Compression Set Production Packer

The Magnus Snap Set- I is a compression set production packer that is run above another retrievable packer or permanent seal bore packer to isolate a zone between the tools for treating, injecting, producing or to isolate casing holes or perforations. Simple design and straight pick up release makes the Magnus Snap Set- I an ideal cost-effective packer for isolating zones in low pressure applications.

FEATURES:

- Simple design
- Collet style snap latch eliminating need to rotate to set
- Internal bypass
- Keyed for rotation if required to set packer below

APPLICATIONS:

- Treating and injecting multiple zones
- Isolating casing holes and perforations
- Where tubing rotation is prohibited
- Low pressure wells



Magnus Snap Set- I Compression Set Production Packer

Casing & Packer Dimension Table

Casing		Recommended Casing Range		Max. O.D. Of Packer (in.)	Min. I.D. Of Packer (in.)	Thread Connection	
Size (in.)	Weight (lbs./ft.)	Min. (in.)	Max. (in.)			Box Up	Pin Down
2.875	6.4 - 6.5	2.275	2.469	2.250	0.750	1.050" EU 10 RD BOX 1.250" EU 10 RD PIN	
3.000	7.7 - 10.2	2.992	3.068	2.781	0.750		
4.000	9.5 - 11.0	3.476	3.548	3.25	1.625	2-3/8" EU 8 RD	
4.500	15.1 - 16.6	3.754	3.826	3.594	1.625	2-3/8" EU 8 RD	
	9.5 - 13.5	3.920	4.090	3.750	2.000	2-3/8" EU 8 RD	
5.000	11.5 - 15.0	4.408	4.560	4.125	2.000	2-3/8" EU 8 RD	
5.500	14.0 - 17.0	4.892	5.012	4.625	2.000	2-3/8" EU 8 RD	
	20.0 - 23.0	4.67	4.778	4.500	2.000	2-3/8" EU 8 RD	
6.000	15.0 - 20.0	5.352	5.524	5.625	2.000	2-3/8" EU 8 RD	
6.625	24.0 - 28.0	5.791	5.921	5.500	2.500	2-7/8" EU 8 RD	
7.000	26.0 - 32.0	6.094	6.276	5.812	2.500	2-7/8" EU 8 RD	
	17.0 - 23.0	6.366	6.538	6.200	2.500	2-7/8" EU 8 RD	
7.625	26.4 - 33.7	6.765	6.969	6.453	2.500	2-7/8" EU 8 RD	
8.625	24.0 - 40.0	7.725	8.097	7.500	3.000	3-1/2" EU 8 RD	
9.625	32.3 - 40.0	8.835	9.001	8.500	3.000	3-1/2" EU 8 RD	
	43.5 - 53.5	8.535	8.755	8.250	3.000	3-1/2" EU 8 RD	
10.750	32.7 - 55.5	9.760	10.192	9.500	4.000	4-1/2" EU 8 RD	
11.750	42.0 - 60.0	10.772	11.084	10.500	4.000	4-1/2" EU 8 RD	
13.375	48.0 - 77.0	12.275	12.715	12.000	4.000	4-1/2" EU 8 RD	



Magnus Snap Set - II Injection Packer

Magnus Snap Set-II Packer is a compression set tool requiring only straight set down weight (slack) to pack-off. It is run above in tandem with other packers such as the Magnus Set-III or Magnus Set-IXS.

Magnus Snap Set-II Packer is ideal to selectively treat, produce or inject in multiple zone completions. It is also used to isolate casing hole perforation.

Magnus Snap set II Packer features a large by-pass area to prevent swabbing when running and retrieving.

Once the tool is set pressure from above or below acts down on the valve maintaining the seal and preventing upward movement of the tubing. Releasing the valve allows debris to be washed from the upper slips.

The packer is also equipped with an internal latch to prevent per-setting when running. Upon releasing, the latch re-engages to allow movement down hole.

FEATURES:

- Large internal by-pass
- Set down to pack off, pick up to release
- Differential pressure holds valve closed
- Temperature rating up to 350 Degree F.
- Three (3) element packing system
- Keyed for rotation through packer
- Running-In bypass feature



Magnus Snap Set - II Injection Packer

Casing & Packer Dimension Table

CASING		CASING I.D. RANGE (IN.)		MAX O.D. (IN.)	MIN I.D. (IN.)	THREAD CONNECTION BOX UP PIN DOWN
SIZE (IN.)	WEIGHT (LBS./FT.)	MIN. (IN.)	MAX (IN.)			
4.5	9.5 - 13.5	3.920	4.090	3.766	1.922	2-3/8" EU 8 RD
5	18 - 20.8	4.156	4.276	4.016	1.922	2-3/8" EU 8 RD
5.50	13.0 - 20.0	4.778	5.044	4.641	1.984	2-3/8" EU 8 RD
				4.641	2.359	2-7/8" EU 8 RD
	20.0 - 23.0	4.670	4.778	4.516	1.984	2-3/8" EU 8 RD
				4.531	2.359	2-7/8" EU 8 RD
7	26.0 - 32.0	6.094	6.276	5.890	2.484	2-7/8" EU 8 RD
	17.0 - 26.0	6.276	6.538	6.000	2.484	2-7/8" EU 8 RD
	26.0 - 32.0	6.094	6.276	5.890	2.907	3-1/2" EU 8 RD
	17.0 - 26.0	6.276	6.538	6.000	2.907	3-1/2" EU 8 RD
9.625	40.0 - 47.0	8.835	8.681	8.375	2.907	3-1/2" EU 8 RD
	47.0 - 58.0	8.835	8.681	8.125	2.907	3-1/2" EU 8 RD



Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

Magnus 32-A Tension Set Packer

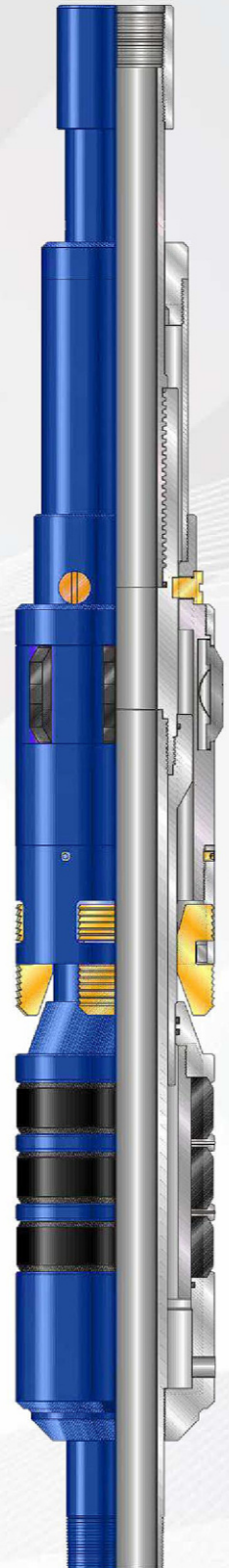
The Magnus 32-A Tension Set Packer is a tension set service tool, which holds differential pressure from above and below. It is designed to run set, reset and retrieve easily under adverse conditions. The Magnus 32-A tension set packer is a rugged design and easy to use service packer for shallow applications. The Magnus 32-A also incorporates built-in safety features that allow retrieving of the tool in the event debris prevents normal retrieving operations.

FEATURES:

- Bi-directional slips holds differential pressure from above and below
- Simple rig friendly 1/3 turn at the tool to set and release
- Full opening
- Internal safety joint above J-Pins
- Field proven design

APPLICATIONS:

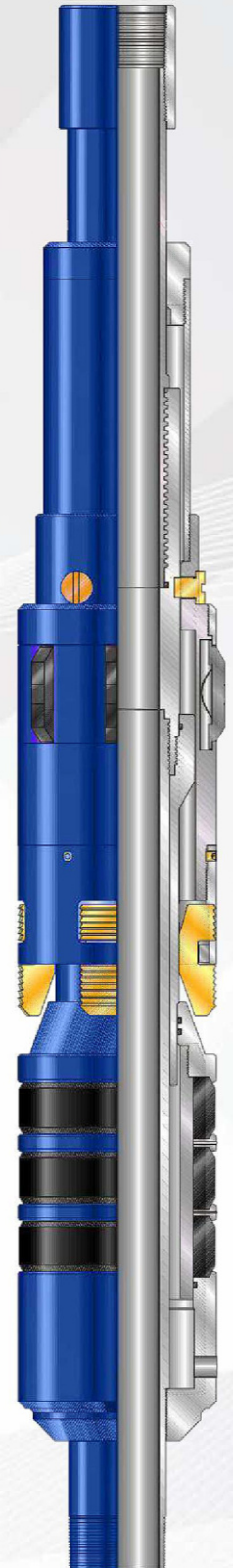
- Shallow testing and treating operations
- General purpose service work
- Squeeze cementing
- Cased-hole production testing



Magnus 32-A Tension Set Packer

Casing & Packer Dimension Table

Casing		Recommended Casing Range		Max. O.D. Of Packer (in.)	Min. I.D. Of Packer (in.)	Thread Connection	
Size (in.)	Weight (lbs./ft.)	Min. (in.)	Max. (in.)			Box Up	Pin Down
2.875	6.4 - 6.5	2.275	2.469	2.250	0.750	1.050" EU 10 RD BOX 1.250" EU 10 RD PIN	
3.000	7.7 - 10.2	2.992	3.068	2.781	0.750		
4.000	9.5 - 11.0	3.476	3.548	3.25	1.625	2-3/8" EU 8 RD	
4.500	15.1 - 16.6	3.754	3.826	3.594	1.625	2-3/8" EU 8 RD	
	9.5 - 13.5	3.920	4.090	3.750	2.000		
5.000	11.5 - 15.0	4.408	4.560	4.125	2.000	2-3/8" EU 8 RD	
5.500	14.0 - 17.0	4.892	5.012	4.625	2.000	2-3/8" EU 8 RD	
	20.0 - 23.0	4.67	4.778	4.500	2.000		
6.000	15.0 - 20.0	5.352	5.524	5.625	2.000	2-3/8" EU 8 RD	
6.625	24.0 - 28.0	5.791	5.921	5.500	2.500	2-7/8" EU 8 RD	
7.000	26.0 - 32.0	6.094	6.276	5.812	2.500	2-7/8" EU 8 RD	
	17.0 - 23.0	6.366	6.538	6.200	2.500		
7.625	26.4 - 33.7	6.765	6.969	6.453	2.500	2-7/8" EU 8 RD	
8.625	24.0 - 40.0	7.725	8.097	7.500	3.000	3-1/2" EU 8 RD	
9.625	32.3 - 40.0	8.835	9.001	8.500	3.000	3-1/2" EU 8 RD	
	43.5 - 53.5	8.535	8.755	8.250	3.000		
10.750	32.7 - 55.5	9.760	10.192	9.500	4.000	4-1/2" EU 8 RD	
11.750	42.0 - 60.0	10.772	11.084	10.500	4.000	4-1/2" EU 8 RD	
13.375	48.0 - 77.0	12.275	12.715	12.000	4.000	4-1/2" EU 8 RD	



Note: All Premium & Drill Pipe connections are available on request.

MagnusSet - II Single & Double Grip Packer

MagnusSet - II is a single & double grip packer with or without upper hold down for use where no differential pressure from below is present.

Features a large bypass area to prevent swabbing when running or retrieving.

MagnusSet - II is a 1/4 turn set and straight pickup release type packer which makes it ideal when picking up the tubing string after completion of treating, stimulation or injection operations.

MagnusSet - II is an ideal packer for isolating casing holes, perforations or injection purposes when used as the **lower packer** in conjunction with the Magnus SnapSet - II, as the upper packer.

FEATURES:

- Large internal bypass
- Optional setting bottoms
- 1/4 turn set/straight pick up release
- Additional J-slot arrangements available
- Three (3) element system



Single Grip

Double Grip

MagnusSet - II Single & Double Grip Packer

Casing & Packer Dimension Table

Casing		Casing ID Minimum (inches)	Packer O.D (inches)	Packer I.D (inches)	Connection Box x Pin
Size (inches)	Weight (PPF)				
4-1/2"	9.50-13.50	3.920"	3.750"	1.922"	2-3/8" EUE
5.00"	11.5 – 15.0	4.408"	4.250"	1.922"	2-3/8" EUE
	15.0 – 18.0	4.250"	4.125"		
5-1/2"	13.0 – 15.5	4.950"	4.750"	1.922"	2-3/8" EUE
	15.5 - 20.0	4.778"	4.625"	1.922"	2-3/8" EUE
	20.0 – 23.0	4.670"	4.500"	1.922"	2-3/8" EUE
	13.0 – 15.5	4.950"	4.750"	2.375"	2-7/8" EUE
	15.0 - 20.0	4.778"	4.625"	2.375"	2-7/8" EUE
	20.0 – 23.0	4.670"	4.500"	2.375"	2-7/8" EUE
5-3/4"	22.5	4.990"	4.781"	1.922"	2-3/8" EUE
	22.5	4.990"	4.781"	2.375"	2-7/8" EUE
6-5/8"	17.0 – 20.0	6.456"	5.813"	2.375"	2-7/8" EUE
	20.0 - 24.0	5.830"	5.656"	2.375"	2-7/8" EUE
	24.0 - 28.0	5.791"	5.500"	1.922"	2-3/8" EUE
	28.0 - 32.0	5.675"	5.500"	1.922"	2-3/8" EUE
7.00"	17.0 – 20.0	6.456"	6.281"	2.375"	2-7/8" EUE
	17.0 – 20.0	6.456"	6.281"		3-1/2" EUE
	20.0 - 26.0	6.276"	6.078"		2-7/8" EUE
	20.0 – 26.0	6.276"	6.078"		3-1/2" EUE
	26.0 – 29.0	6.184"	5.969"		2-7/8" EUE
	26.0 – 29.0	6.184"	5.969"		3-1/2" EUE
	32.0 – 35.0	6.004"	5.813"		2-7/8" EUE
	32.0 – 35.0	6.004"	5.813"		3-1/2" EUE
	38.0	5.920"	5.656"		2-7/8" EUE

Note*: Drill Pipe connections are also available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



MagnusSet - II Single & Double Grip Packer

Casing & Packer Dimension Table

Casing		Casing ID Minimum (inches)	Packer O.D (inches)	Packer I.D (inches)	Connection Box x Pin
Size (inches)	Weight (PPF)				
7-5/8"	20.0 – 24.0	7.025"	6.813"	2.375"	2-7/8" EUE
	20.0 – 24.0	7.025"	6.813"		3-1/2" EUE
	24.0 – 29.7	6.875"	6.672"		2-7/8" EUE
	24.0 – 29.7	6.875"	6.672"		3-1/2" EUE
	33.7 – 39.0	6.625"	6.438"		2-7/8" EUE
	33.7 – 39.0	6.625"	6.438"		3-1/2" EUE
9-5/8"	29.3 – 36.0	8.921"	9.063"	2.375"	2-7/8" EUE
	29.0 – 36.0	8.921"	9.063"	2.938"	3-1/2" EUE
	29.0 – 36.0	8.921"	9.063"	3.875"	4-1/2" EUE
	40.0 – 47.0	8.681"	8.831"	2.375"	2-7/8" EUE
	40.0 – 47.0	8.681"	8.831"	2.938"	3-1/2" EUE
	40.0 – 47.0	8.681"	8.831"	3.875"	4-1/2" EUE
	47.0 – 53.5	8.535"	8.681"	2.375"	2-7/8" EUE
	47.0 – 53.5	8.535"	8.681"	2.938"	3-1/2" EUE
	47.0 – 53.5	8.535"	8.681"	3.875"	4-1/2" EUE

Note*: Drill Pipe connections are also available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



MagnusSet – MRIII Compression Set Packer (Single & Double Grip)

MagnusSet-MRIII is a medium duty, compression set, retrievable packer that has proved reliable by its of world-wide use.

Available in Single & Double Grip versions.

MagnusSet-MRIII double-grip is used for production, stimulation and testing where pressure differential from below the tool is expected.

A large bore version is available for 5-1/2" Casing Size

FEATURES:

- Large built-in bypass speeds equalizing and resists swab-off.
- Automatically returns to run in position when moved up the hole
- 30" stroke makes spotting or circulating fluid easier without unseating the packer.
- Three element packing system is field proven to be dependable.
- Rocker-type slips are rugged and reliable.
- Hydraulic, button-type hold-down located below the bypass.
- Built-in differential lock actuated by pressure from below helps keep bypass closed.
- Parts interchangeable with other manufacturers.



Single Grip

Double Grip

MagnusSet – MRIII
Compression Set Packer (Single & Double Grip)

O.D. (in.)	Weight (lb. /ft.)	I.D. (in.)		Minimum I.D. (in.)	Gauge Ring O.D. (in.)	Connection
		Min.	Max.			
4-1/2	9.5 TO 13.5	3.92	4.09	1.92	3.77	2-3/8 EUE
5	11.5 TO 15	4.40	4.56	1.92	4.250	2-3/8 EUE
	15.0 TO 18.0	4.25	4.40		4.125	
5-1/2	20.0 TO 23.0	4.67	4.79	1.93	4.50	2-3/8 EUE
	15.5 TO 20.0	4.79	4.95		4.64	
	13.0 TO 15.5	4.95	4.89		4.78	
	20.0 TO 23.0	4.67	4.79	2.36	4.50	2-7/8 EUE
	15.0 TO 20.0	4.79	4.97		4.64	
	13.0 TO 15.5	4.95	5.04		4.78	
6-5/8	28.0 TO 32.0	5.67	5.79	1.93	5.49	2-3/8 EUE
	24.0 TO 28.0	5.79	5.92	2.37	5.81	2-7/8 EUE
	24.0	5.83	5.93		5.656	
	17.0 TO 20.0	6.45	6.538			
7	38.0	5.83	5.94	2.37	5.66	2-7/8 EUE
	32.0 TO 35.0	6.00	6.09		5.81	
	26.0 TO 29.0	6.18	6.28		5.97	3-1/2 EUE
	20.0 TO 26.0	6.28	6.46		6.08	2-7/8 EUE
	17.0 TO 20.0	6.46	6.54		6.27	
7-5/8	33.7 TO 39.0	6.62	6.76	2.37	6.45	2-7/8 EUE
	24.0 TO 29.7	6.87	7.02		6.67	
	20.0 TO 24.0	7.02	7.12		6.81	
9-5/8	47.0 TO 53.5	8.53	8.68	2.97	8.59	3-1/2 EUE
	40.0 TO 47.0	8.68	8.835		8.44	
	29.3 TO 36.0	8.92	9.06		8.21	

Note: All Premium & Drill Pipe connections are available on request.
 Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

Magnus PAK - I Premium Hydraulic Set Packer

The Magnus Pak-I Retrievable Production Packer combines hydraulic setting with a rugged three piece-element design, making it ideal for the most demanding multi-zone and deviated hole applications.

The Magnus Pak-I is readily customizable for maximum performance in wells where HS, CO, amines or other chemicals require modified metallurgical or demanding elastomeric properties.

Faster running speeds and reduced completion time are made possible with a compact, swab resistant element design. Adjustable setting pressures permit running multiple packers (tandem) and selective setting utilizing a single, temporary plug set below the bottom packer.

The Magnus Pak-I mandrel does not move during setting, ideal for situations where production tubing is spaced out and the well flanged up.

It's a straight pull release type packer.

FEATURES:

- Upper-slip releasing system
- Tension force to release packer easily adjusted before running
- All components locked to prevent pre-set
- Release shear pins not affected by differential pressures
- Tension force to release the packer is easily adjusted in the field

APPLICATIONS:

- Offshore oil and gas completions
- Highly deviated wells and doglegs
- Stacked packer completions
- Coiled tubing completions



**Magnus PAK - I
Premium Hydraulic Set Packer**

Casing & Packer Dimension Table

Casing				Packer		
OD (In)	Weight Lbs.	Min. I.D. (In)	Max ID (In)	Gage Ring OD (In)	ID (In)	Connection
4-1/2	9.5-13.5	3.920	4.090	3.766	1.938	2-3/8" EU 8 RD
5	15-18	4.276	4.408	4.125	1.938	2-3/8" EU 8 RD
	11.5-15	4.408	4.560	4.141	1.938	2-3/8" EU 8 RD
5-1/2	20-23	4.670	4.778	4.516	1.984	2-3/8" EU 8 RD
	13-20	4.778	5.044	4.641	1.984	2-3/8" EU 8 RD
	9-13	5.044	5.240	4.875	1.984	2-3/8" EU 8 RD
	20-23	4.670	4.778	4.500	2.375	2-7/8" EU 8 RD
	15.5-20	4.778	4.950	4.641	2.375	2-7/8" EU 8 RD
	13-15.5	4.892	5.044	4.781	2.375	2-7/8" EU 8 RD
5-3/4	18.6-25	4.882	5.118	4.625	2.000	2-7/8" EU 8 RD
6	23-26	5.132	5.240	4.875	1.984	2-3/8" EU 8 RD
6-5/8	24-32	5.675	5.921	5.500	2.439	2-7/8" EU 8 RD
	17-24	5.921	6.135	5.781	2.908	3-1/2" EU 8 RD
	20-24	5.921	6.049	5.750	2.439	2-7/8" EU 8 RD
7	26-35	6.004	6.276	5.891	2.439	2-7/8" EU 8 RD
	17-29	6.184	6.538	6.000	2.439	2-7/8" EU 8 RD
	26-35	6.004	6.276	5.891	2.908	3-1/2" EU 8 RD
	17-29	6.184	6.538	6.000	2.908	3-1/2" EU 8 RD



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

**Magnus PAK - I
Premium Hydraulic Set Packer**

Casing & Packer Dimension Table

Casing				Packer		
OD (In)	Weight Lbs.	Min. I.D. (In)	Max ID (In)	Gage Ring OD (In)	ID (In)	Connection
7-5/8	29.7-39	6.625	6.875	6.458	2.908	3-1/2" EU 8 RD
	20-33.7	6.765	7.125	6.625	2.908	3-1/2" EU 8 RD
8-5/8	28-40	7.725	8.017	7.536	2.984	3-1/2" EU 8 RD
9-5/8	40-53.5	8.535	8.835	8.266	2.984	3-1/2" EU 8 RD
	29.3-43.5	8.755	9.063	8.516	2.984	3-1/2" EU 8 RD
	40-53.5	8.535	8.835	8.266	3.937	4-1/2" EU 8 RD
10-3/4	60.7-71.1	9.450	9.660	9.200	2.984	4-1/2" EU 8 RD
	45.5 - 55.5	9.760	9.995	9.500	2.984	4-1/2" EU 8 RD
	60.7-71.1	9.450	9.660	9.200	4.875	4-1/2" EU 8 RD
13-3/8	48-68	12.415	12.715	12.200	4.930	4-1/2" EU 8 RD
	68-72	12.347	12.415	11.875	3.000	4-1/2" EU 8 RD



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

Magnus MLH Packer Hydraulic Set Packer

The Magnus MLH Packer is a hydraulic-set single-string retrievable packer and may be used in virtually any production application. Tubing pump pressure is used to set the packer and the setting force is locked into the packer by a body lock ring. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens during the releasing process to allow pressure equalization. Shear screws are used to control the packer release. The standard MLH Packers are designed for differential pressures up to 7,500 PSI

FEATURES:

- Adjustable setting initiation pressure.
- Adjustable shear release values
- The packer incorporates ONE PIECE mandrel
- The packer can be released by straight pull
- Ideal packer for high deviation wells
- Premium thread connections are available.
- All metallurgies i.e. AISI 4140 STEEL, L-80, 9Cr. 1 Mo., 13 Cr.



Magnus MLH Packer Hydraulic Set Packer

Casing & Packer Dimension Table

CASING				PACKER	
O.D. (IN.)	WEIGHT (LB/FT)	MIN. I.D. (IN)	MAX. I.D. (IN)	MAX. O.D. (IN)	STANDARD THREAD CONNECTION
4-1/2	9.5 - 13.5	3.920	4.090	3.750	2-3/8 EUE
	15.1	3.826		3.656	2-3/8 EUE
5	11.5 - 15.0	4.408	4.560	4.125	2-3/8 EUE
	18.0 - 21.0	4.154	4.276	4.000	2-3/8 EUE
5-1/2	13.0 - 15.5	4.950	5.044	4.813	2-7/8 EUE
	14.0 - 20.0	4.778	5.012	4.625	2-3/8 EUE
					2-7/8 EUE
	20.0 - 23.0	4.670	4.778	4.500	2-3/8 EUE
2-7/8 EUE					
6	12.0 - 20.0	5.352	5.620	5.188	2-7/8 EUE
	17.0 - 23.0	5.240	5.450	5.063	2-7/8 EUE
6-5/8	17.0 - 24.0	5.921	6.135	5.750	2-7/8 EUE
					3-1/2 EUE
	24.0 - 32.0	5.675	5.921	5.500	2-7/8 EUE
					3-1/2 EUE
7	17.0 - 26.0	6.276	6.538	6.000	2-7/8 EUE
					3-1/2 EUE
	26.0 - 32.0	6.094	6.276	5.875	2-7/8 EUE
					3-1/2 EUE
29.0 - 35.0	6.004	6.184	5.812	2-7/8 EUE	
				3-1/2 EUE	

*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*



Magnus MLH Packer Hydraulic Set Packer

Casing & Packer Dimension Table

CASING				PACKER	
O.D. (IN.)	WEIGHT (LB/FT)	MIN. I.D. (IN)	MAX. I.D. (IN)	MAX. O.D. (IN)	STANDARD THREAD CONNECTION
7-5/8	24.0 - 29.7	6.875	7.025	6.672	2-7/8 EUE
					3-1/2 EUE
	29.7 - 33.7	6.765	6.875	6.563	3-1/2 EUE
					3-1/2 EUE
33.7 - 39.0	6.625	6.765	6.453	2-7/8 EUE	
				3-1/2 EUE	
8-5/8	24.0 - 40.0	7.725	8.097	7.500	4-1/2 EUE
9-5/8	32.3 - 43.5	8.755	9.001	8.500	2-7/8 EUE
					3-1/2 EUE
					4-1/2 EUE
	43.5 - 53.5	8.535	8.755	8.250	2-7/8 EUE
					3-1/2 EUE
					4-1/2 EUE
10-3/4	51.0 - 65.7	9.560	9.850	8.250	4-1/2 EUE
13-3/8	54.5 - 77.0	12.275	12.615	12.000	4-1/2 EUE



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

Magnus PAK - VI Premium Hydraulic Set Packer

The Magnus Pak-VI Hydraulic-Set Retrievable Packer is a compact, economical, packer designed for low- to medium-pressure applications. The short body length makes it ideal for tight radius deviations and horizontal applications. The packer requires no downward mandrel movement for setting, allowing stacked applications. Straight pull releases the packer, and built-in bypass ports equalize pressure across the packer for ease in retrieval. The shear-release mechanism is isolated from the packer hydraulics to allow low release forces, even at full pressure differential.

FEATURES:

- No downward mandrel movement for setting
- Low setting pressure: 3,500 psi minimum
- Straight-pull release, adjustable up to 55,000 lb
- Shear screws isolated from hydraulic pressure
- Short overall length
- Pressure differential rating: 6,000 psi
- Material: L-80 or equivalent for H₂S service
- Temperature rating: 275°F (standard trim)

APPLICATIONS:

- Offshore oil and gas completions
- Highly deviated wells and doglegs
- Stacked packer completions
- Coiled tubing completions



**Magnus PAK - VI
Premium Hydraulic Set Packer**

Casing & Packer Dimension Table

CASING		SETTING PRESSURE	MAX. O.D. OF TOOL (IN.)	MIN. I.D. OF TOOL (IN.)	END CONNECTION
SIZE (IN)	WEIGHT (LB/FT.)	MINIMUM (PSI)			
5.500	14.0 - 17.0	3,500	4.625	1.940	2-3/8" EUE
	20.0 - 23.0	3,500	4.500	1.940	2-3/8" EUE
6.625	20.0 - 24.0	3,500	5.661	2.375	2-7/8" EUE
	24.0 - 28.0	3,500	5.625	2.375	2-7/8" EUE
	28.0 - 32.0	3,500	5.438	2.375	2-7/8" EUE
7.000	17.0 - 20.0	3,500	6.250	2.375	2-7/8" EUE
	17.0 - 20.0	3,500	6.250	2.900	3-1/2" EUE
	20.0 - 26.0	3,500	6.000	2.375	2-7/8" EUE
	20.0 - 26.0	3,500	6.000	2.900	3-1/2" EUE
	23.0 - 29.0	3,500	6.000	2.375	2-7/8" EUE
	23.0 - 29.0	3,500	6.000	2.900	3-1/2" EUE
	26.0 - 32.0	3,500	5.891	2.375	2-7/8" EUE
	26.0 - 32.0	3,500	5.891	2.900	3-1/2" EUE



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

Magnus MFH Hydrostatic/Hydraulic Packer

The Magnus MFH is a hydrostatic and/or hydraulic set packer that allows the tubing to be left in a compression or neutral condition. Used in multi-zone production where crooked or deviated holes are not suitable for mechanical packers. An installation where the wellhead is flanged up before the packer is set.

FEATURES:

- No tubing manipulation required Withstands high hydrostatic pressures Hydraulic set for low hydrostatic head wells Locked in pack-off force
- Hydraulic hold-down for differential pressure from below

BENEFITS:

- No mandrel movement during setting
- Straight pull or optional rotational release
- Parts interchangeable with other manufacturers

APPLICATIONS:

- Multi-zone production in crooked or deviated holes not suitable for mechanical packers and installations where the wellhead is flanged up before the packer is set



Magnus MFH Hydrostatic/Hydraulic Packer

Casing & Packer Dimension Table

Casing				Packer	
O.D.	WEIGHT	MIN. I.D.	MAX I.D.	MAX O.D.	Standard Thread Connections
(IN.)	(LBS./FT.)	(IN.)	(IN.)	(IN.)	
5-1/2	20.0 - 23.0	4.670	4.778	4.500	2-3/8 EU 8 RD
	15.5 - 20.0	4.778	4.950	4.641	2-3/8 EU 8 RD
	13.0 - 15.5	4.950	5.044	4.781	2-3/8 EU 8 RD
6	26.0	4.950	5.044	4.781	2-3/8 EU 8 RD
6-5/8	24.0	5.830	5.937	5.656	2-7/8 EU 8 RD
	17.0 - 20.0	6.049	6.135	5.812	2-7/8 EU 8 RD
7	38.0	5.830	5.920	5.656	2-7/8 EU 8 RD
	32.0 - 35.0	6.004	6.094	5.812	2-7/8 EU 8 RD
	26.0 - 29.0	6.184	6.276	5.968	2-7/8 EU 8 RD
	26.0 - 29.0	6.184	6.276	5.968	3-1/2 EU 8 RD
	20.0 - 26.0	6.276	6.366	6.078	2-7/8 EU 8 RD
	20.0 - 26.0	6.276	6.366	6.078	3-1/2 EU 8 RD
7-5/8	33.7 - 39.0	6.625	6.765	6.453	2-7/8 EU 8 RD
	24.0 - 29.7	6.875	7.025	6.672	2-7/8 EU 8 RD
	33.7 - 39.0	6.625	6.765	6.453	3-1/2" EU 8 RD



Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

Magnus MDT Service Packer

Magnus MDT Retrievable Packer consists is a compression set packer with hydraulic hold down that is designed to provide an extra measure of dependability for rugged service. The hydraulic actuated upper hold down provides more than the usual surface area to assure the packer will not move up the hole. It is ideally suited for high pressure, high temperature service work.

Some unique features of the Magnus MDT Retrievable Packer include positive rotational lock on all internal connections, which allow for extreme values of torque (left-and or right-hand) to be transmitted through the packer. Backup rings on all the o-rings provide for more reliable sealing at high temperature and pressure.

Magnus MDT Retrievable Packer also come with extra long top and bottom subs, which allow for hydraulic tong make-up and break out.

FEATURES:

- Hydraulic actuated upper hold down slips
- Positive rotational locks on all internal connections
- Back-up rings on all the O-rings provide for more reliable sealing at high temperature and high pressure
- Available with extra-long top and bottom subs allowing hydraulic tong make-up and break-out



**Magnus MDT
Service Packer**

Casing & Packer Dimension Table

Casing				Packer		
OD (in)	Weight (Lbs.)	Min. I.D. (in)	Max ID (in)	Max OD (in)	Min ID (in)	Standard Thread Connections
4-1/2	15.1-17.7	3.696	3.826	3.593	1.750	2-3/8" I.F.
	11.6-13.5	3.920	4.000	3.781	1.750	2-3/8" I.F.
5	15-18	4.276	4.408	4.125	1.750	2-3/8" I.F.
	11.5-15	4.408	4.560	4.250	1.750	2-3/8" I.F.
5-1/2	17-23	4.670	4.892	4.500	1.750	2-3/8" I.F.
	13-17	4.892	5.044	4.641	1.750	2-3/8" I.F.
7	38-46.4	5.626	5.920	5.525	2.688	3-1/2" I.F.
	32-38	5.920	6.094	5.781	2.688	3-1/2" I.F.
	26-32	6.094	6.276	5.954	2.688	3-1/2" I.F.
	17-23	6.366	6.538	6.188	2.688	3-1/2" I.F.
7-5/8	33.7-39	6.625	6.765	6.453	2.688	3-1/2" I.F.
	24-29.7	6.875	7.025	6.670	2.688	3-1/2" I.F.
9-5/8	58.4-59.4	8.407	8.435	8.250	3.750	4-1/2" I.F.
	43.5-53.5	8.535	8.755	8.365	3.750	4-1/2" I.F.
	32.3-43.5	8.755	9.001	8.584	3.750	4-1/2" I.F.
10-3/4	71.1-73.2	9.406	9.450	9.125	3.750	4-1/2" I.F.
	51-55.5	9.760	9.850	9.500	3.750	4-1/2" I.F.
11-3/4	60-71	10.586	10.772	10.406	3.750	4-1/2" I.F.
13-3/8	48-77	12.275	12.715	12.000	3.750	4-1/2" I.F.

Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



Magnus V-III Unloader Valve

The Magnus V-III Unloader Valve is a high-pressure accessory tool for a compression-set service packer. The V-III allows pressure to equalize above and below the packer before the packer is unset and permits fluid bypass during running in or out of the hole. It can be locked in the open or closed position by a quarter-turn of the pipe. The valve can be equipped with tool joint connections, making it compatible with the MDT packer.

FEATURES:

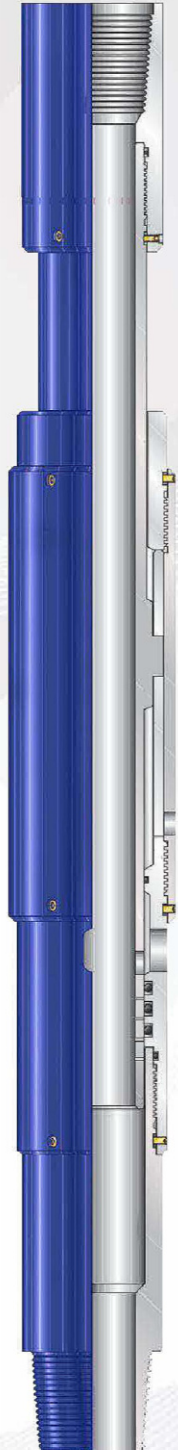
- Can be locked in open or closed position
- Large bypass area for fluid circulation
- Tool joint or tubing connections available
- Top connection keyed to prevent torque overload
- Unloader seals protected from fluid flow in open position
- High-strength alloy steel construction

BENEFITS:

- Torque rating compatible with MDT Packer
- High-pressure and high-temperature rating for severe service
- Allows high circulation rates
- High hanging weight capacity for long tailpipe below packer
- Simple, rig-friendly operation

APPLICATION:

- High-pressure and high-temperature testing and treating operations
- Drillstem and production testing



Magnus V-III Unloader Valve

Casing & Packer Dimension Table

Size (in)	Max OD (In)	Min ID (In)	Standard Thread Connections
2-3/8	3.750	1.750	2-3/8" EU 8 RD
			2-3/8" I.F.
2-7/8	4.118	2.125	2-7/8" EU 8 RD
3-1/2	5.500	2.688	3-1/2" I.F.
4-1/2	7.250	3.750	4-1/2" I.F.



Magnus MANC Storm Valve

The Magnus MANC Storm Valve, which is run above the MDT Compression- Set Packer, provides a means to isolate the tubing below the packer and disconnect the running string by 22 turns of left-hand rotation. The running string can be reconnected, and the valve opened to equalize pressure for packer retrieval. The Storm Valve features an expendable plug that provides through-bore access for circulation or wireline passage.

FEATURES:

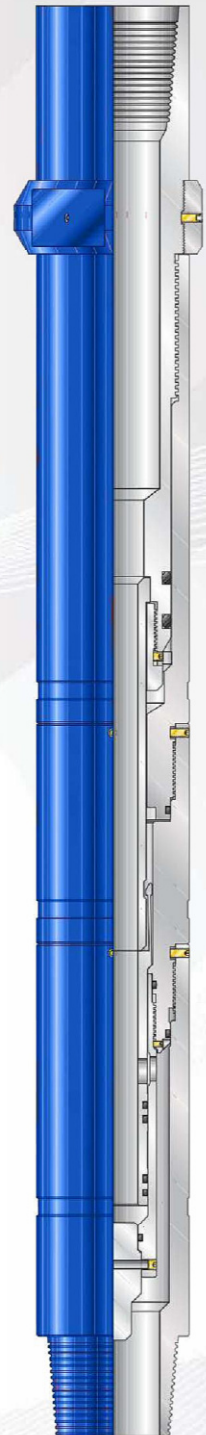
- Valve closes automatically when disconnecting the running string
- Valve equalizes automatically when reconnecting running string
- Expendable plug for through-bore access
- Rugged alloy-steel construction
- Tool-joint connections

BENEFITS:

- Simple to operate
- Compatible with compression packer operation
- Dependable design
- Easy to redress

APPLICATION:

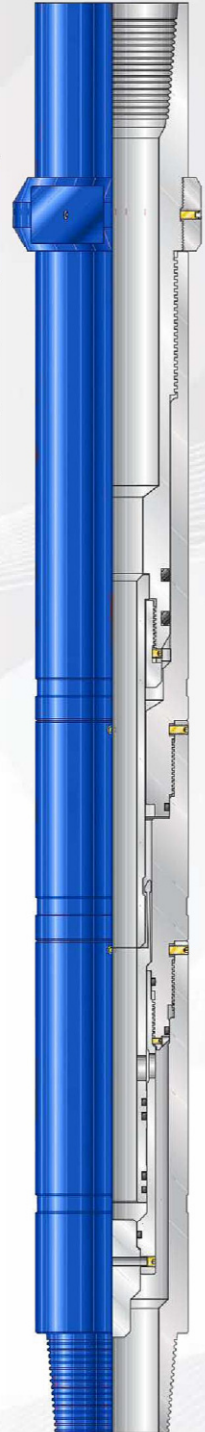
- Weather-related emergencies
- Wellhead repair



Magnus V-III Unloader Valve

Casing & Packer Dimension Table

Valve Size (In)	Max. O.D. (in.)	Min. I.D. (in.)	Standard Thread Connections
4-3/4	4.750	1.490	3-1/2" IF
6-1/8	6.125	2.000	4-1/2" IF
	7.160	2.000	5-1/2" HT55-375



Magnus HD Service Packer

The HD Retrievable Packer is a heavy duty service packer ideally suited for all types of squeeze cementing, formation fracturing, high pressure acidizing, etc. It is a large opening compression set packer with hydraulic button-type hold down. This packer withstands high pressure from above or below and uses a 3-element packing system, J-slot, and a drag block mechanism for easy setting. This packer has a built-in unloader which circulates across the hold down buttons to improve retrievability and run in performance.

FEATURES:

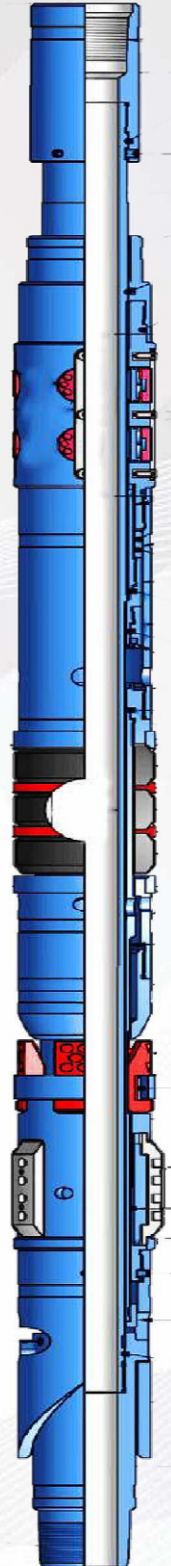
- Large internal by-pass
- Built in pressure-balanced unloader
- Left Hand Set /straight pick up release
- Equalizing ports directly above elements
- Additional J-slot arrangements available

BENEFITS:

- Large-diameter hold-down buttons reduce casing damage
- Large internal by-pass reduces swabbing when running and retrieving
- Wide range of sizes available
- Simple, rig-friendly operation

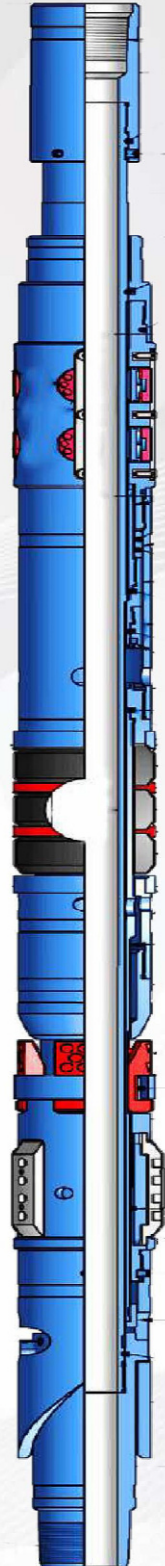
APPLICATION:

- Particularly useful for all types of squeeze cementing, formation fracturing and high pressure acidizing.
- This packer has a built in unloader which circulates across the hold down buttons to improve retrievability and run in performance.



Magnus HD Service Packer Casing & Packer Dimension Table

CASING				PACKER		
O.D. (IN.)	Weight (LB/FT.)	MIN. I.D. (IN.)	MAX. I.D. (IN.)	MAX. O.D. (IN.)	MIN. I.D. (IN.)	STANDARD THREAD CONNECTION S
4	9.5 - 11.0	3.476	3.548	3.286	1.500	1.900" EU 10 RD
4-1/2	9.5 - 13.5	3.920	4.090	3.750	1.875	2-3/8" EUE 8 RD
5	18.0 - 20.8	4.156	4.276	3.969	1.875	2-3/8" EUE 8 RD
	11.5 - 18.0	4.276	4.560	4.125	1.875	2-3/8" EUE 8 RD
5-1/2	20.0 - 23.0	4.670	4.778	4.500	2.000	2-3/8" EUE 8 RD
	14.0 - 17.0	4.892	5.012	4.625	2.000	2-3/8" EUE 8 RD
	14.0 - 17.0	4.892	5.012	4.625	2.375	2-7/8" EUE 8 RD
6-5/8	28.0 - 35.0	5.595	5.791	5.375	2.500	2-7/8" EUE 8 RD
	24.0 - 32.0	5.675	5.921	5.500	2.500	2-7/8" EUE 8 RD
7	29.0 - 35.0	6.004	6.184	5.828	2.500	2-7/8" EUE 8 RD
	26.0 - 32.0	6.094	6.276	5.890	2.500	2-7/8" EUE 8 RD
	17.0 - 26.0	6.276	6.538	6.000	2.500	2-7/8" EUE 8 RD
7-5/8	33.7 - 39.0	6.625	6.765	6.453	2.500	2-7/8" EUE 8 RD
	24.0 - 29.7	6.875	7.025	6.688	2.500	2-7/8" EUE 8 RD
9-5/8	43.5 - 53.5	8.535	8.755	8.281	3.984	4-1/2" EUE 8 RD
	43.5 - 53.5	8.535	8.755	8.281	3.984	4-1/2" EUE 8 RD



Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

Magnus MSU Retrievable Bridge Plug

The MSU Retrievable Bridge Plug is a high pressure plug for multiple zone and selective single zone operations such as acidizing, fracturing, cementing, and testing. It features a large internal by-pass to reduce swabbing when running and retrieving. The by-pass closes during the setting of the plug and opens prior to releasing the upper slips to equalize pressure when unsetting. The by-pass is located directly below the upper slips to help wash debris when the by-pass is open.

This tool can be set in tension and compression. It can be set shallow in unsupported casing to contain pressure while working on wellhead equipment. It can be set in tension making it ideal for setting shallow to test wellhead equipment and also deep, high pressure wells.

The Wireline MSU Retrievable Bridge Plug is a version of the MSU Retrievable Bridge Plug that allows the plug to be set on wireline or with a hydraulic setting tool, and retrieved with tubing. It cannot be reset in the wellbore once it is unset, but it can be pulled, re-dressed and run again. A Wireline Adapter Kit is required for this version.

FEATURES:

- Heavy-duty mandrel supports high hang-off weights
- Backup rings on O-rings seal for high pressure and temperature
- Tool joint connections are standard
- Rotationally locked end connections for torque transmission
- Quarter-turn set, pickup unset
- Standard automatic jay mechanism

APPLICATION:

- High-pressure and high-temperature testing and treating operations
- Storm packer applications
- Drillstem and production testing



Magnus MSU Retrievable Bridge Plug Casing & Packer Dimension Table

Casing				Bridge Plug
OD	Weight	Min. I.D.	Max ID	Tool OD
(In)	(Lbs./ft.)	(in)	(in)	(in)
4-1/2	9.5 - 13.5	3.920	4.090	3.750
5	11.5 - 15.0	4.408	4.560	4.280
	18.0 - 20.8	4.156	4.276	4.000
5-1/2	20.0 - 23.0	4.670	4.778	4.500
	14.0 - 20.0	4.778	5.004	4.625
6-5/8	24.0 - 32.0	5.675	5.921	5.500
7	26.0 - 32.0	6.094	6.276	5.875
	20.0 - 26.0	6.276	6.456	5.969
7-5/8	24.0 - 29.7	6.875	7.025	6.672
	33.7 - 39.0	6.625	6.765	6.453
8-5/8	28.0 - 40.0	7.725	8.017	7.531
9-5/8	40-53.5	8.53	8.835	8.250



Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

Magnus WBP Wireline Set Bridge Plug (Top Set)

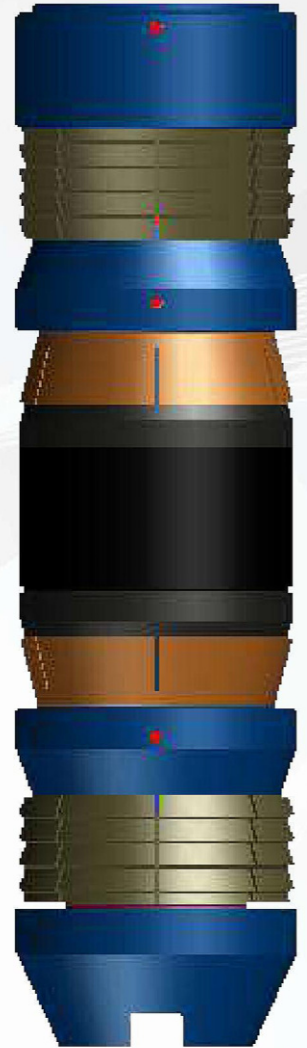
The Magnus WBP Bridge Plug is designed to have excellent running characteristics and securely sets in any grade casing including P-110.

Magnus WBP Bridge Plug could be set using various available wireline pressure setting tools and could also be run and set using hydraulic setting tool however utilizing the available wireline adaptor kit.

The grey cast iron construction allows rapid drill-out while maintaining sufficient strength when set.

O The Magnus WBP Bridge Plug is rated to 10,000 Psi., suitable up to 350 F temperature rating.

Assorted elastomers i.e. Viton, Aflas are also available for high temperature applications.



FEATURES:

- Field-proven design
- Constructed of drillable materials
- Standard packing element rated at 300°F
- One-piece slips
- Top set with shear stud

APPLICATIONS:

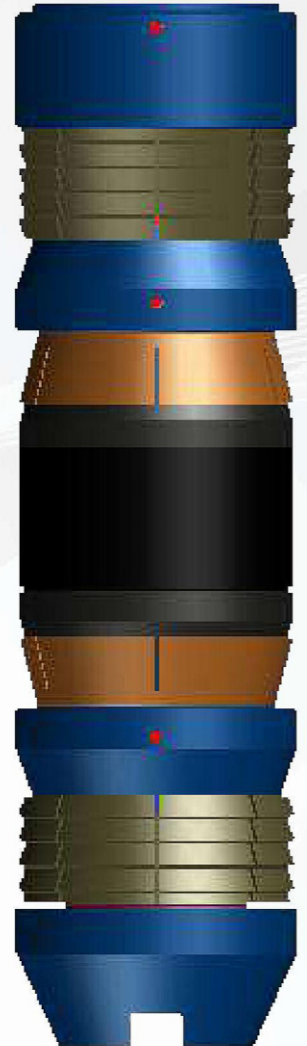
- Well abandonment
- Temporary and permanent zonal isolation
- Squeeze cementing
- Fracturing



Magnus WBP Wireline Set Bridge Plug (Top Set)

Casing & Packer Dimension Table

CASING				PLUG		
SIZE (IN)	WEIGHT (LB/FT)	MIN. I.D. (IN.)	MAX. I.D. (IN)	PRESSEUE RATING (PSI)	O.D. (IN.)	SET FORCE (LB-kg)
2-3/8	4.0 - 5.8	1.780	2.074	10,000	1.750	9,000
2-7/8	6.4 - 6.5	2.340	2.525	10,000	2.220	9,000
3-1/2	5.75 - 10.3	2.867	3.258	10,000	2.750	9,000
4	5.6 - 14.0	3.340	3.732	10,000	3.140	20,000
4-1/2	9.5 - 15.1	3.826	4.090	10,000	3.562	33,000
5	11.5 - 20.8	4.154	4.560	10,000	3.937	33,000
5-1/2	13.0 - 23.0	4.580	5.044	10,000	4.312	33,000
5-3/4	14.0 - 25.2	4.890	5.290	10,000	4.700	33,000
6-5/8	17.0 - 32.0	5.595	6.135	10,000	5.375	50,000
7	17.0 - 35.0	6.000	6.538	10,000	5.687	50,000
7	17.0 - 29.0	6.088	6.629	10,000	5.900	50,000
7-5/8	20.0 - 39.0	6.625	7.125	10,000	6.312	50,000
8-5/8	24.0 - 49.0	7.310	8.097	10,000	7.144	50,000
9-5/8	29.3 - 58.4	8.297	9.083	8,000	8.125	50,000
10-3/4	32.7 - 60.7	9.525	10.325	5,000	9.440	50,000
11-3/4	38.0 - 60.0	10.641	11.284	4,000	10.437	50,000
	60.0 - 83.0	10.368	10.935	4,000	9.937	50,000
13-3/8	48.0 - 84.5	12.202	12.879	3,000	11.880	50,000
16.0	65.0 - 118.0	14.576	15.444	2,000	14.125	50,000
18-5/8	87.5	17.480	18.000	2000	17.125	50,000
20.0	94.0 - 133.0	18.537	19.364	2,000	18.375	50,000



*Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas*

Magnus WPCR Cement Retainer (Wireline Set)

Magnus WPCR can also be set on tubing/drill pipe/coil tubing using Hydraulic Setting Tool.

Oposing slips are carburized wicker type One-piece slips located above and below the rubber packing elements. The slips keep the cement retainer securely set in high hardness alloy grade casings including P-110.

The packing elements are contained by brass back-up rings that eliminate extrusion of the elements at high temperatures and pressures.

Magnus WPCR utilizes a wireline adapter kit (WLAK) to connect to Baker PST and run in hole.

Once set, a stringer is run on tubing/drill pipe or coil tubing in second trip and stung in to the WPCR cement retainer.

Squeeze operation can now begin and the operator controls the two way valve from the surface to hold the final squeeze pressure under the retainer or test tubing or keep hydrostatic pressure off the squeeze by manipulating the stringer assembly.

Straight pick up closes the valve and set down weight opens the valve. This retainer is ideal for where squeeze cementing operations are being performed.

FEATURES:

- Cast iron drillable design
- Simple, surface-controlled valve automatically closes when the stringer is removed
- Converts between mechanical or wireline set by changing top slips
- Components rotationally locked for easy drill out
- Converts to a PBP Bridge Plug
- Temperature rating to 400 ° Fahrenheit
- Differential pressure rating to 10,000 psi thru 8-5/8"



Magnus WPCR Cement Retainer (Wireline Set)

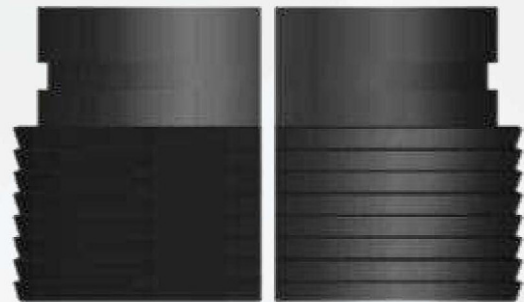
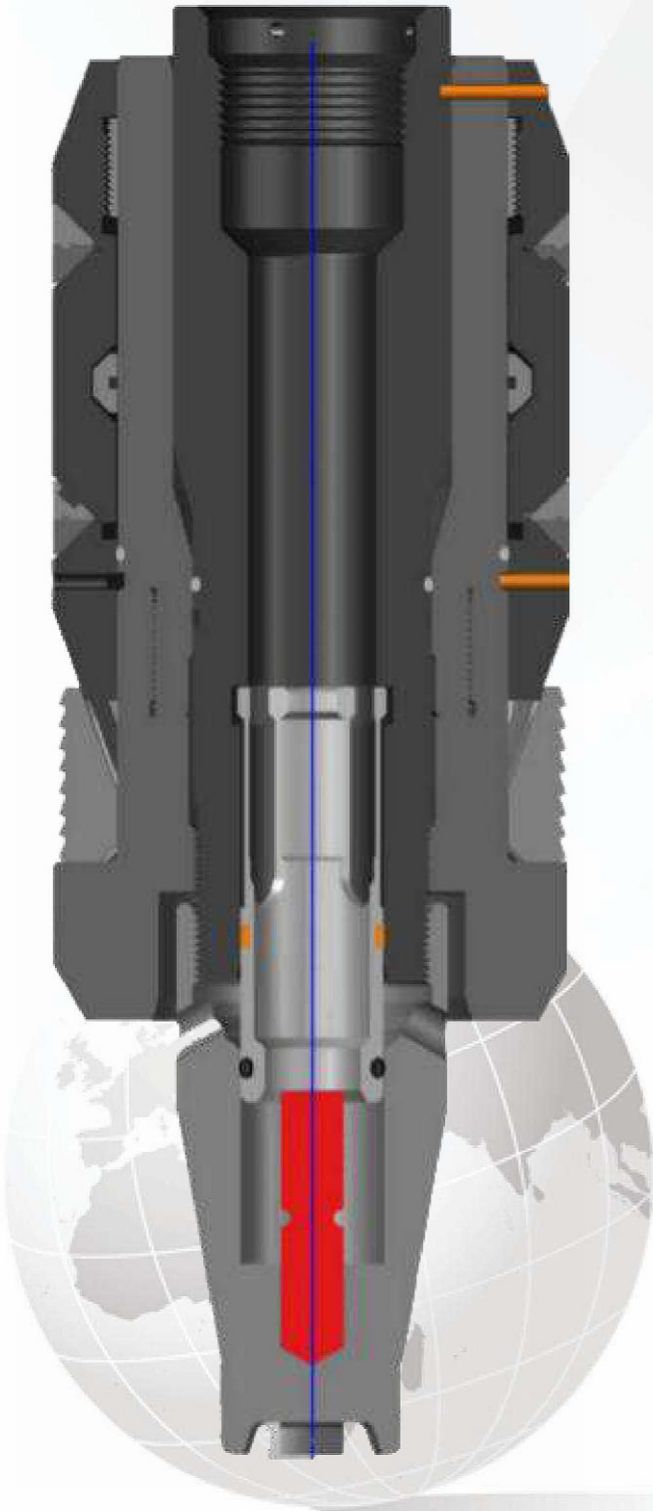
Casing & Packer Dimension Table

CASING				TOOL
O.D. (IN)	WEIGHT (LB/FT)	MIN. I.D. (IN)	MAX. O.D. (IN)	MAX. O.D. (IN.)
4-1/2	9.5 - 15.1	3.826	4.090	3.593
5	11.5 - 18.0	4.276	4.560	3.937
5-1/2	13.0 - 23.0	4.670	5.118	4.312
5-3/4	14.0 - 25.2	4.890	5.290	4.700
6-5/8	17.0 - 34.5	5.575	6.135	5.375
7	17.0 - 35.0	6.004	6.538	5.688
7-5/8	20.0 - 39.0	6.625	7.125	6.312
8-5/8	24.0 - 49.0	7.511	8.097	7.125
9-5/8	29.3 - 61.1	8.375	9.063	8.125
10-3/4	32.75 - 60.7	9.660	10.192	9.440
11-3/4	60.0 - 83.0	10.192	10.772	9.937
11-3/4	38.0 - 60.0	10.772	11.150	10.440
13-3/8	48.0 - 72.0	12.347	12.715	12.000
16	65.0 - 128.0	14.438	15.250	14.125
18	70.58 - 87.5	17.088	17.250	16.650
18-5/8	87.5	17.480	18.000	17.125
20	94.0 - 133.0	18.330	19.124	18.375
30	157.73 - 310.0	28.000	29.000	27.500

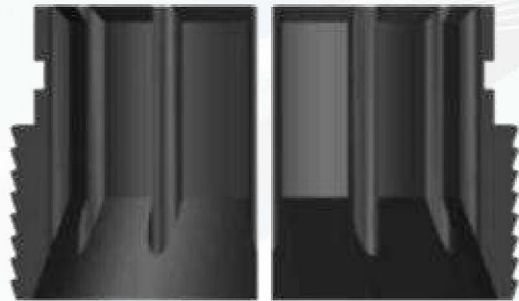


Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

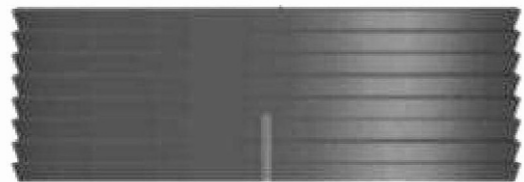
MAGNUS WPCR CEMENT RETAINER (WIRELINE SET)



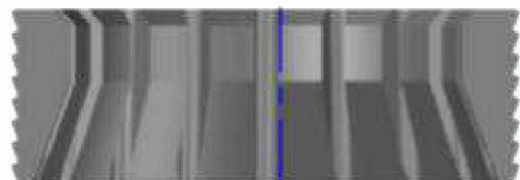
Mechanical Slip (Front view)



**Mechanical Slip
(Cross sectional view)**

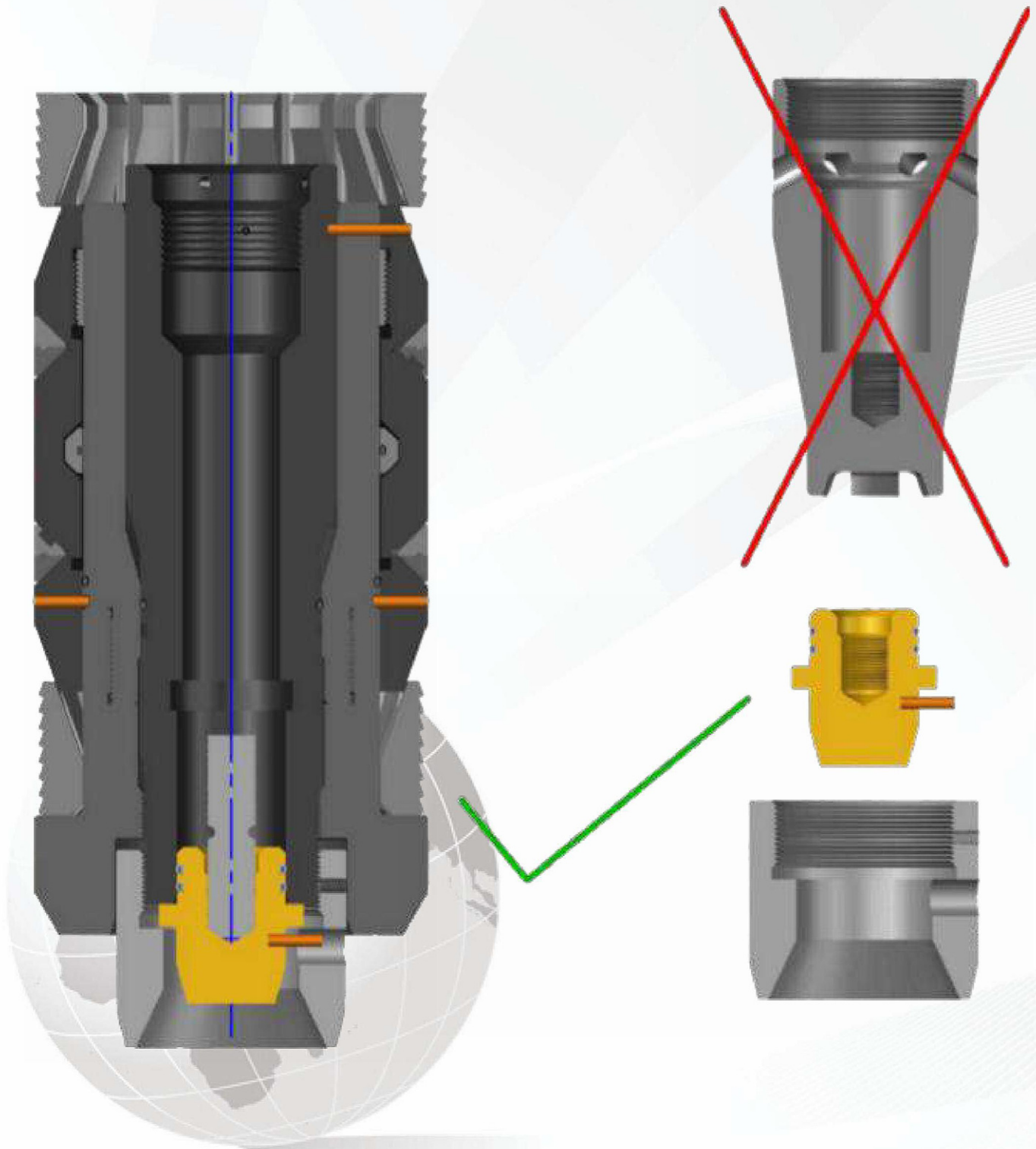


Wireline Slip (Front view)



**Wireline Slip
(Cross sectional view)**

CEMENT RETAINER TO BRIDGE PLUG CONVERSION



Magnus Stinger Assembly

Magnus Stinger Assembly is a tubing conveyed latching seal assembly that is used to operate the sliding valve in a wireline set WPCR Cement Retainer.

Magnus Stringer Assembly may be run with a Tubing Centralizer or a modified 'star guide' to provide a centralized entry into the cement retainer.

The Snap-In and Snap-Out collet serves as an indicator. Providing positive control when the work string is picked up to close the slide valve.

The snap out indicator re-engages each time the work string is lowered to open the valve. The snap out indicator helps prevent the seal from pumping out during pumping operations or tubing testing.

The snap out indicator may be removed from the cement retainer by straight pull or by rotation serving additional safety feature.



APPLICATION:

- Squeeze cementing
- Multiple uses by replacing inexpensive redress kit
- Can also be used with preset Magnus PCR mechanical cement retainers

TECHNICAL SPECIFICATION:

Casing		Stringer Assembly
Size (in.)	Weight (PPF)	Connection
5-1/2	13.0-23.0	2-3/8" EU 8 RD
7	17.0-35.0	2-7/8" EU 8 RD
9-5/8	29.3-61.1	2-7/8" EU 8 RD

Magnus Hydro-Mechanical (HM-2) Bridge Plug

The Magnus HM-2 Permanent Cast Iron Bridge Plug is designed to have excellent running characteristics and secure sets. The Magnus HM-2 plug can be set hydro-mechanically without the use of special pressure setting tools. The plug is designed for rapid drill-out while maintaining sufficient strength during the set. It is designed for high differential pressures and up to 300° F temperatures with standard nitrile element and O-ring. Different elastomers are available for higher temperatures.

The short, compact, interlocked construction assures the user that the Magnus HM-2 Plug will provide faster, safer run-in, dependable set and pack-off and hold pressure that is safe for the casing weight and grade. The interlock construction and compact size requires minimal material removal during drill out.

FEATURES:

- Field-proven design
- Constructed of drillable materials
- Right-hand rotation releases setting tool from plug
- Standard packing element rated at 300 °f
- One-piece slips

APPLICATIONS:

- Well abandonment
- Temporary and permanent zonal isolation
- Squeeze cementing
- Fracturing
- Deviated wellbores



Magnus Hydro-Mechanical (HM-2) Bridge Plug

Casing & Packer Dimension Table

CASING		RECOMMENDED CASING RANGE		MAXIMUM O.D. OF TOOL (IN)	SURFACE PRESSURE (PSI)	TENSION FORCE REQUIRED	
SIZE (IN)	WEIGHT (LB/FT)	MIN. (IN)	MAX. (IN)			MIN. (LB.)	MAX. (LB.)
3-1/2	5.75 - 10.3	2.867	3.258	2.750	1,400	10,000	13,000
4	5.6 - 14.0	3.340	3.732	3.190	1,400	17,000	20,000
4-1/2	9.5 - 15.1	3.826	4.090	3.562	1,400	28,000	30,000
5	11.5 - 20.8	4.154	4.560	3.937	1,400	28,000	30,000
5-1/2	13.0 - 23.0	4.580	5.044	4.312	1,400	28,000	30,000
5-3/4	14.0 - 25.2	4.890	5.290	4.699	1,400	30,000	33,000
6-5/8	17.0 - 32.0	5.595	6.135	5.375	1,400	45,000	50,000
7	17.0 - 35.0	6.000	6.538	5.687	1,400	45,000	50,000
7-5/8	20.0 - 39.0	6.625	7.125	6.312	1,400	45,000	50,000
8-5/8	24.0 - 49.0	7.310	8.097	7.125	1,400	45,000	50,000
9-5/8	29.3 - 58.4	8.435	9.063	8.175	1,400	45,000	50,000
10-3/4	32.7 - 60.7	9.660	10,192	9.437	1,400	45,000	50,000
11-3/4	38.0 - 60.0	10.772	11.150	10.437	1,400	45,000	50,000
13-3/8	48.0 - 84.5	12.175	12.175	11.880	1,400	45,000	50,000



Note: All Premium & Drill Pipe connections are available on request.
Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas

MAGNUS MECHANICAL SETTING TOOL (MST)

The Magnus Mechanical Setting Tool (MST) is designed to run and mechanically set a Cement Retainer or converted Bridge Plug at any depth on tubing or drill pipe. The Magnus MST is used anytime it is advantageous to run a Cement Retainer or Bridge Plug on tubing or drill pipe. Cement Retainers can be set, pressure tested and squeezed in a single trip.

The Magnus MST and Cement Retainer or Bridge Plug are shear pinned together and the slips are held in a retracted position for safer running.

FEATURES:

- Allows single run for squeeze cementing
- Locked to cement retainer or bridge plug to avoid premature setting or loss
- Top slips partially covered to protect from accidental damage and pre-set
- Will set other manufactures cement retainer or bridge plug

APPLICATIONS:

- Setting cement retainers or bridge plugs on tubing or drill pipe
- Squeeze cementing
- Well abandonment
- Temporary and permanent zone isolation



MAGNUS MECHANICAL SETTING TOOL (MST)

Casing & Packer Dimension Table

CASING		DRAG BLOCK		MST SETTING TOOL	
SIZE (IN.)	WEIGHT (LB/FT)	EXPANDED (IN.)	COLLAPSED (IN.)	MIN. I.D. (IN.)	THREAD CONNECTION BOX UP
4-1/2	9.5 - 13.5	4.283	3.750	.75	2-3/8" EU 8 RD
5.000	18.0 - 21.0	4.375	3.815	.75	2-3/8" EU 8 RD
	15.0 - 18.0	4.490	4.015	.75	2-3/8" EU 8 RD
	11.5 - 15.0	4.660	4.230	.75	2-3/8" EU 8 RD
5-1/2	17.0 - 234.0	5.150	4.500	.75	2-3/8" EU 8 RD
	13.0 - 17.0	5.250	4.600	.75	2-3/8" EU 8 RD
6-5/8	24.0 - 32.0	6.355	5.500	1.250	2-7/8" EU 8 RD
7.000	29.0 - 38.0	6.355	5.500	1.250	2-7/8" EU 8 RD
	17.0 - 32.0	6.930	5.920	1.250	2-7/8" EU 8 RD
7-5/8	24.0 - 45.3	7.325	6.370	1.250	2-7/8" EU 8 RD
8-5/8	28.0 - 52.0	8.190	7.235	1.250	2-7/8" EU 8 RD
9-5/8	32.0 - 61.0	9.190	8.235	1.250	2-7/8" EU 8 RD
10-3/4	51.0 - 81.0	10.065	9.110	1.250	2-7/8" EU 8 RD
	32.75 - 60.7	10.425	9.470	1.250	2-7/8" EU 8 RD
11-3/4	38.0 - 65.0	11.500	10.545	1.250	2-7/8" EU 8 RD
13-3/8	48.0 - 72.0	13.450	12.110	1.250	2-7/8" EU 8 RD
16.000	84.0 - 118.0	15.190	14.000	1.250	4-1/2" IF



MAGNUS Force HYDRAULIC SETTING TOOL (HST)

The MAGNUS Force Hydraulic Setting Assembly (HST) is a hydraulic setting tool designed for setting packers and plugs without pipe manipulations in deep, high-temperature wells. It is used to set packers and plugs that are normally set with a Model "E-4" Wireline Pressure Setting Assembly (or similar wireline setting equipment). The same adapter kit that is used on wireline can be used with the HST.

The MAGNUS Force HST and packer (or plug) is run in on the tubing to the desired setting depth and a ball is dropped to the HST. Pressure is applied to close the fill ports, which also opens the setting pistons to pressure. As pressure is applied, force is transmitted to the packer (or plug) to set. Tubing tension can also be applied to supplement the setting force generated by the pressure applied.

The standard setting tool comes with three pistons, but additional pistons can be added to reduce setting pressure.

FEATURES:

- Permits setting on tubing equipment, which could previously be set only with wireline setting tools. This is particularly advantageous in high angle or deviated wells where wireline setting is extremely difficult.
- Premature setting is prevented by means of a shear screw in the cross-link sleeve.
- The tubing fills automatically as it is run in the hole through a ported top sub in the setting assembly. These ports also permit circulation through the setting assembly at any time.



MAGNUS Force HYDRAULIC SETTING TOOL (HST)

SPECIFICATION GUIDE

SIZE (IN)	TOOL OD (IN)	EFFECTIVE PISTON AREA (IN ²)/Piston	TENSION (Max. Lbs.)	CONNECTION	
				TOP	BOTTOM (BAKER E-4)
#5	2.125	1.359	138,000	Blank / SIZE #5	
#10	3.625	4.123	138,000	2-3/8 EUE / SIZE #10	
#20	3.812	6.990	138,000	2-7/8 EUE / SIZE #20	



MF Landing Nipple (Top No-Go)

MF Top No-Go, Non-Ported Landing Nipple is a tubing nipple for use with Top no-go locking devices only. It has a Polished Sealbore, Top No-Go shoulder, and a locking groove.

MF nipple locates, seals, and retains flow control accessories that have a top no-go locking device. The accessories are run and retrieved on slickline.

MF Landing Nipples are located throughout the tubing string with larger diameter seal bores at the top of the tubing string, tapering down to smaller diameter seal bores at the lower end of the tubing string, creating a tapered tubing ID.

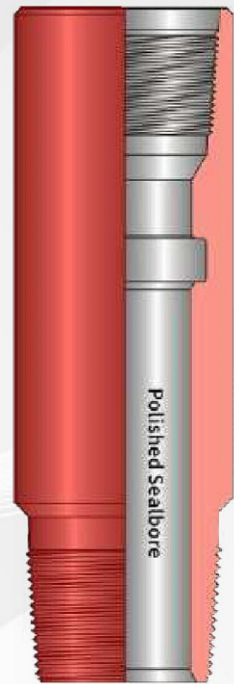
Benefits

The numerous different sizes of MF Seal Bores, allows multiple different sized MF Landing Nipples to be used in the same tubing string.

Selective locking devices allow more than 1 MF Landing Nipple of the same seal bore diameter to be used in the same tubing string.

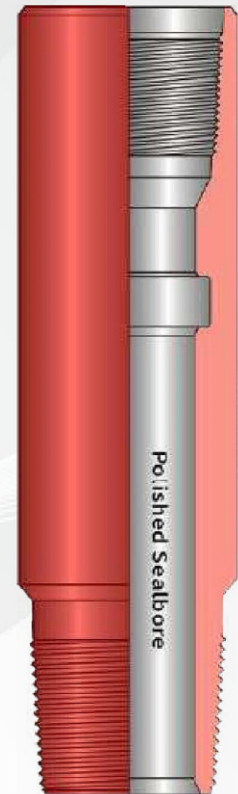
Applications

- Used to Land Instrument (Bomb) Hangers.
- Used to Land Blanking Plugs.
- Used to Land Check (Standing) Valves.
- Used to Land Injection Valves.
- Used to Land Chokes.



MF Landing Nipple (Top No-Go)

Tubing O.D.		Seal Bore I.D.		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.
1.660	42.15	1.187	30.15	1.875	47.63
		1.250	31.75		
1.900	48.26	1.437	36.50	2.109	53.57
		1.500	38.10		
2-1/16	53.37	1.562	39.67	2.250	57.15
		1.625	41.28		
2-3/8	60.33	1.781	45.24	2.560	65.02
		1.812	46.02		
		1.875	47.63		
2-7/8	73.02	2.062	52.37	3.109	78.97
		2.125	53.98		
		2.188	55.58		
		2.250	57.15		
		2.312	58.72		
3-1/2	88.90	2.562	65.07	3.687	93.65
		2.750	69.85		
		2.812	71.42		
4-1/2	114.30	3.688	93.68	5.200	132.08
		3.750	95.25		
		3.812	96.82		



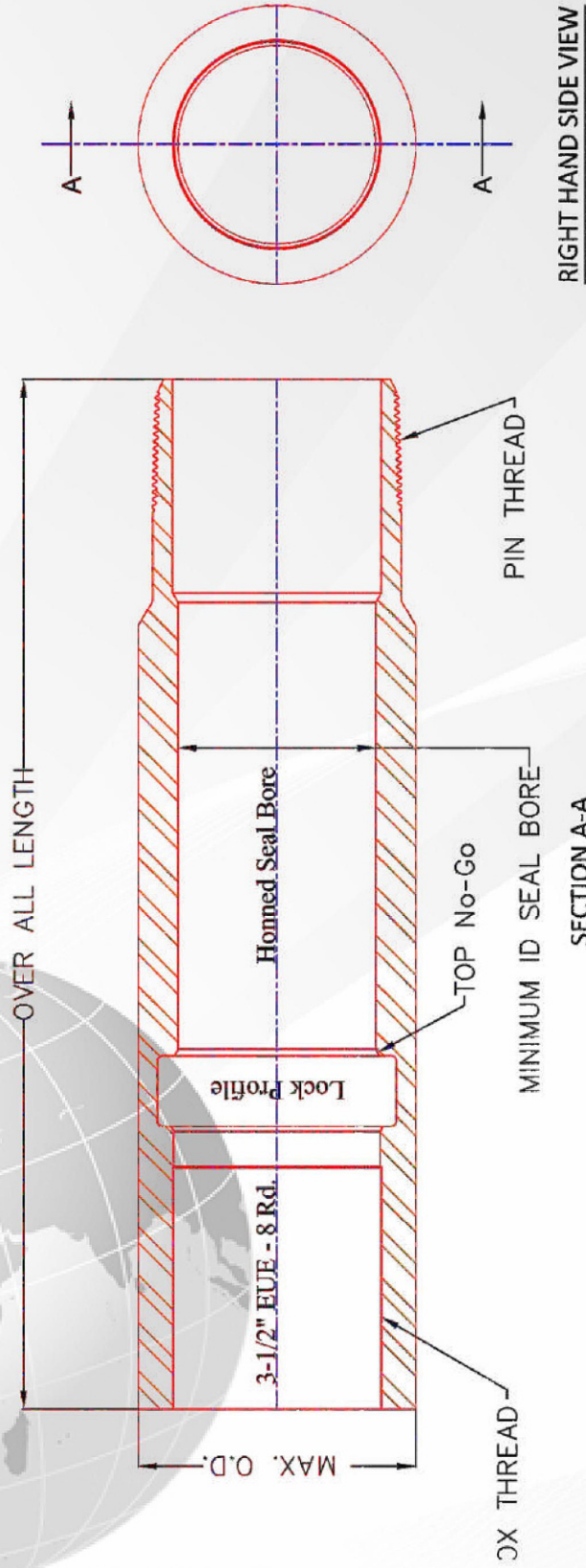
MF Landing Nipple (Top No-Go)

Completion Systems

LANDING NIPPLE PROFILE CHART

TOP NO-GO LANDING NIPPLES												SELECTIVE LANDING NIPPLES												BOTTOM NO-GO TYPE LANDING NIPPLES											
Baker-style "MF"						Otis-Style "MX"						Baker-Style "MR"						Otis-Style "MXN"																	
TUBING O.D.	SEAL BORE		MIN O.D.* Box by Pin Threads		SEAL BORE		NIPPLE O.D. Pin by Pin Threads.		SEAL BORE		NO-GO I.D.		SEAL BORE		MIN O.D.* Box by Pin Threads		SEAL BORE		NO-GO I.D.		NIPPLE O.D. Pin by Pin Threads.														
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm													
1.66	1.187	30.15	1.875	47.63	1.187	30.15	1.135	28.83	1.187	30.15	1.135	28.83	1.187	30.15	1.135	28.83	1.187	30.15	1.135	28.83	1.187	30.15													
	1.250	31.75	2.109	53.57	1.250	31.75	1.198	30.43	1.250	31.75	1.198	30.43	1.250	31.75	1.135	28.83	1.250	31.75	1.135	28.83	1.250	31.75													
1.9	1.437	36.50	2.109	53.57	1.437	36.50	1.385	35.18	1.437	36.50	1.385	35.18	1.437	36.50	1.385	35.18	1.437	36.50	1.385	35.18	1.437	36.50													
	1.500	38.10	2.250	57.15	1.500	38.10	1.447	36.75	1.500	38.10	1.447	36.75	1.500	38.10	1.448	36.78	1.500	38.10	1.448	36.78	1.500	38.10													
2.063	1.562	39.67	2.250	57.15	1.562	39.67	1.510	38.35	1.562	39.67	1.510	38.35	1.562	39.67	1.510	38.35	1.562	39.67	1.510	38.35	1.562	39.67													
	1.625	41.28	2.560	65.02	1.625	41.28	1.572	39.93	1.625	41.28	1.572	39.93	1.625	41.28	1.536	39.01	1.625	41.28	1.536	39.01	1.625	41.28													
2.375	1.781	45.24	2.560	65.02	1.781	45.24	1.728	43.89	1.781	45.24	1.728	43.89	1.781	45.24	1.728	43.89	1.781	45.24	1.728	43.89	1.781	45.24													
	1.812	46.02	3.109	78.97	1.812	46.02	1.760	44.70	1.812	46.02	1.760	44.70	1.812	46.02	1.760	44.70	1.812	46.02	1.760	44.70	1.812	46.02													
2.875	1.875	47.63	3.109	78.97	1.875	47.63	1.822	46.28	1.875	47.63	1.822	46.28	1.875	47.63	1.822	46.28	1.875	47.63	1.822	46.28	1.875	47.63													
	2.062	52.37	3.109	78.97	2.062	52.37	1.965	49.91	2.062	52.37	1.965	49.91	2.062	52.37	1.965	49.91	2.062	52.37	1.965	49.91	2.062	52.37													
3.5	2.125	53.98	3.109	78.97	2.125	53.98	2.035	51.69	2.125	53.98	2.035	51.69	2.125	53.98	2.035	51.69	2.125	53.98	2.035	51.69	2.125	53.98													
	2.188	55.58	3.109	78.97	2.188	55.58	2.035	51.69	2.188	55.58	2.035	51.69	2.188	55.58	2.035	51.69	2.188	55.58	2.035	51.69	2.188	55.58													
4.5	2.50	63.50	3.109	78.97	2.50	63.50	2.197	55.8	2.50	63.50	2.197	55.8	2.50	63.50	2.197	55.8	2.50	63.50	2.197	55.8	2.50	63.50													
	2.312	58.72	3.109	78.97	2.312	58.72	2.259	57.38	2.312	58.72	2.259	57.38	2.312	58.72	2.259	57.38	2.312	58.72	2.259	57.38	2.312	58.72													
5.5	2.562	65.07	3.109	78.97	2.562	65.07	2.442	62.03	2.562	65.07	2.442	62.03	2.562	65.07	2.442	62.03	2.562	65.07	2.442	62.03	2.562	65.07													
	2.750	69.85	3.109	78.97	2.750	69.85	2.697	68.5	2.750	69.85	2.697	68.5	2.750	69.85	2.697	68.5	2.750	69.85	2.697	68.5	2.750	69.85													
6.5	2.812	71.42	3.109	78.97	2.812	71.42	2.759	70.08	2.812	71.42	2.759	70.08	2.812	71.42	2.759	70.08	2.812	71.42	2.759	70.08	2.812	71.42													
	3.688	93.68	3.109	78.97	3.688	93.68	3.625	92.08	3.688	93.68	3.625	92.08	3.688	93.68	3.625	92.08	3.688	93.68	3.625	92.08	3.688	93.68													
7.5	3.750	95.25	3.109	78.97	3.750	95.25	3.700	93.98	3.750	95.25	3.700	93.98	3.750	95.25	3.700	93.98	3.750	95.25	3.700	93.98	3.750	95.25													
	3.812	96.82	3.109	78.97	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82													
8.5	3.812	96.82	3.109	78.97	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82	3.759	95.48	3.812	96.82													
	4.940	125.48	3.109	78.97	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48													
9.5	4.940	125.48	3.109	78.97	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48	4.940	125.48													
	5.200	132.08	3.109	78.97	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08													
10.5	5.200	132.08	3.109	78.97	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08	5.200	132.08													
	6.200	157.48	3.109	78.97	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48													
11.5	6.200	157.48	3.109	78.97	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48	6.200	157.48													
	7.200	182.88	3.109	78.97	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88													
12.5	7.200	182.88	3.109	78.97	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88	7.200	182.88													
	8.200	208.28	3.109	78.97	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28													
13.5	8.200	208.28	3.109	78.97	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28	8.200	208.28													
	9.200	233.68	3.109	78.97	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68													
14.5	9.200	233.68	3.109	78.97	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68	9.200	233.68													
	10.200	259.08	3.109	78.97	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08													
15.5	10.200	259.08	3.109	78.97	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08	10.200	259.08													
	11.200	284.48	3.109	78.97	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48													
16.5	11.200	284.48	3.109	78.97	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48	11.200	284.48													
	12.200	309.88	3.109	78.97	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88													
17.5	12.200	309.88	3.109	78.97	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88	12.200	309.88													
	13.200	335.28	3.109	78.97	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28													
18.5	13.200	335.28	3.109	78.97	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28	13.200	335.28													
	14.200	360.68	3.109	78.97	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68													
19.5	14.200	360.68	3.109	78.97	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68	14.200	360.68													
	15.200	386.08	3.109	78.97	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08	15.200	386.08													
20.5	15.200	386.08	3.109	78.97	15.200	386.08	15.200	386.08	15.200																										

2.250" MF Landing Nipple (Top No - Go)



MR Landing Nipple (Bottom No-Go)

MR Bottom No-Go Non-Ported Landing Nipple is a tubing nipple for use with bottom no-go locking devices only. It has a Polished Sealbore, bottom no-go shoulder, and a locking groove.

MR nipple locates, seals, and retains flow control accessories that have a bottom no-go locking device. The accessories are run and retrieved on slickline.

MR Landing Nipples are typically located at the bottom of the tubing string as the last profile, with only a slickline re-entry guide lower in the tubing string.

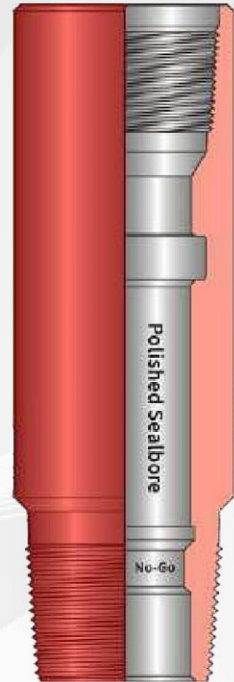
Benefits

The Bottom No-Go ensures simple and positive landing of wireline tools.

The Bottom No-Go prevents the loss of wireline tools when they are inadvertently dropped or released during running or retrieving.

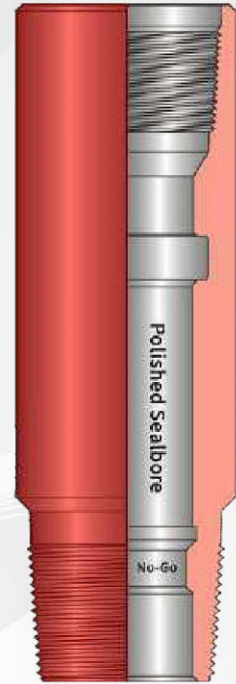
Applications

- Used to Land Instrument (Bomb) Hangers.
- Used to Land Blanking Plugs.
- Used to Land Check (Standing) Valves.
- Used to Land Injection Valves.
- Used to Land Chokes.



MR Landing Nipple (Bottom No-Go)

Tubing O.D.		Seal Bore I.D.		No-Go		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.	in.	mm.
1.660	42.15	1.187	30.15	1.135	28.83	1.875	47.63
		1.250	31.75	1.198	30.43		
1.900	48.26	1.437	36.50	1.385	35.18	2.109	53.57
		1.500	38.10	1.447	36.75		
2-1/16	53.37	1.562	39.67	1.510	38.35	2.250	57.15
		1.625	41.28	1.572	39.93		
2-3/8	60.33	1.781	45.24	1.728	43.89	2.560	65.02
		1.812	46.02	1.760	44.70		
		1.875	47.63	1.822	46.28		
2-7/8	73.03	2.062	52.37	1.965	49.91	3.109	78.97
		2.125	53.98	2.035	51.69		
		2.250	57.15	2.197	55.80		
		2.312	58.75	2.259	57.38		
3-1/2	88.90	2.562	65.07	2.442	62.03	3.687	93.65
		2.750	69.85	2.697	68.50		
		2.812	71.42	2.759	70.08		
4-1/2	114.30	3.688	93.68	3.625	92.08	5.200	132.08
		3.750	95.25	3.700	93.98		
		3.812	96.82	3.759	95.48		



Completion Systems

LANDING NIPPLE PROFILE CHART

		TOP No-Go LANDING NIPPLES						SELECTIVE LANDING NIPPLES						BOTTOM NO-GO TYPE LANDING NIPPLES																							
		Baker-style "MF"			Otis-Style "MX"			Baker-Style "MR"			Otis-Style "MXN"																										
TUBING O.D.	In.	SEAL BORE		MIN O.D.* Box by Pin Threads	SEAL BORE		NIPPLE O.D. Pin by Pin Threads.	SEAL BORE		NO-GO I.D.	MIN O.D.* Box by Pin Threads		SEAL BORE		NO-GO I.D.	NIPPLE O.D. Pin by Pin Threads.																					
		In.	mm		In.	mm		In.	mm		In.	mm	In.	mm		In.	mm	In.	mm	In.	mm																
1.66	42.15	1.187	30.15	1.875	47.63	1.187	30.15	1.135	28.83	1.875	47.63	1.187	30.15	1.135	28.83	1.875	47.63																				
		1.250	31.75	2.109	53.57	1.250	31.75	1.198	30.43	1.250	31.75	1.875	47.63	1.250	31.75	1.135	28.83	1.890	48.01																		
1.9	48.26	1.437	36.50	2.109	53.57	1.437	36.50	1.385	35.18	2.109	53.57	1.437	36.50	1.385	35.18	2.109	53.57																				
		1.500	38.10	2.250	57.15	1.500	38.10	1.447	36.75	2.250	57.15	1.500	38.10	1.447	36.75	2.250	57.15	1.500	38.10	1.448	36.78	2.130	54.10														
2.063	53.37	1.562	39.67	2.250	57.15	1.562	39.67	1.510	38.35	2.250	57.15	1.562	39.67	1.510	38.35	2.250	57.15	1.562	39.67	1.510	38.35	2.250	57.15	1.562	39.67	1.510	38.35	2.250	57.15	1.562	39.67	1.510	38.35	2.250	57.15		
		1.625	41.28	2.560	65.02	1.625	41.28	1.572	39.93	2.560	65.02	1.625	41.28	1.572	39.93	2.560	65.02	1.625	41.28	1.536	39.01	2.560	65.02	1.625	41.28	1.536	39.01	2.560	65.02	1.625	41.28	1.536	39.01	2.560	65.02		
2.375	60.33	1.781	45.24	2.560	65.02	1.781	45.24	1.728	43.89	2.560	65.02	1.781	45.24	1.728	43.89	2.560	65.02	1.781	45.24	1.728	43.89	2.560	65.02	1.781	45.24	1.728	43.89	2.560	65.02	1.781	45.24	1.728	43.89	2.560	65.02		
		1.812	46.02	2.875	73.02	1.812	46.02	1.760	44.70	2.875	73.02	1.812	46.02	1.760	44.70	2.875	73.02	1.812	46.02	1.760	44.70	2.875	73.02	1.812	46.02	1.760	44.70	2.875	73.02	1.812	46.02	1.760	44.70	2.875	73.02		
2.875	73.02	1.875	47.63	3.109	78.97	1.875	47.63	1.822	46.28	3.109	78.97	1.875	47.63	1.822	46.28	3.109	78.97	1.875	47.63	1.791	45.49	3.109	78.97	1.875	47.63	1.791	45.49	3.109	78.97	1.875	47.63	1.791	45.49	3.109	78.97		
		2.062	52.37	3.109	78.97	2.062	52.37	1.965	49.91	3.109	78.97	2.062	52.37	1.965	49.91	3.109	78.97	2.062	52.37	1.965	49.91	3.109	78.97	2.062	52.37	1.965	49.91	3.109	78.97	2.062	52.37	1.965	49.91	3.109	78.97		
3.5	88.90	2.125	53.98	3.687	93.65	2.125	53.98	2.035	51.69	3.687	93.65	2.125	53.98	2.035	51.69	3.687	93.65	2.125	53.98	2.035	51.69	3.687	93.65	2.125	53.98	2.035	51.69	3.687	93.65	2.125	53.98	2.035	51.69	3.687	93.65		
		2.188	55.58	3.687	93.65	2.188	55.58	2.197	55.8	3.687	93.65	2.188	55.58	2.197	55.8	3.687	93.65	2.188	55.58	2.197	55.8	3.687	93.65	2.188	55.58	2.197	55.8	3.687	93.65	2.188	55.58	2.197	55.8	3.687	93.65	2.188	55.58
4.5	114.3	2.312	58.72	5.200	132.08	2.312	58.72	2.259	57.38	5.200	132.08	2.312	58.72	2.259	57.38	5.200	132.08	2.312	58.72	2.205	56.01	5.200	132.08	2.312	58.72	2.205	56.01	5.200	132.08	2.312	58.72	2.205	56.01	5.200	132.08		
		2.562	65.07	5.200	132.08	2.562	65.07	2.442	62.03	5.200	132.08	2.562	65.07	2.442	62.03	5.200	132.08	2.562	65.07	2.442	62.03	5.200	132.08	2.562	65.07	2.442	62.03	5.200	132.08	2.562	65.07	2.442	62.03	5.200	132.08		
4.5	114.3	2.750	69.85	5.200	132.08	2.750	69.85	2.697	68.5	5.200	132.08	2.750	69.85	2.697	68.5	5.200	132.08	2.750	69.85	2.635	66.93	5.200	132.08	2.750	69.85	2.635	66.93	5.200	132.08	2.750	69.85	2.635	66.93	5.200	132.08		
		2.812	71.42	5.200	132.08	2.812	71.42	2.759	70.08	5.200	132.08	2.812	71.42	2.759	70.08	5.200	132.08	2.812	71.42	2.666	67.72	5.200	132.08	2.812	71.42	2.666	67.72	5.200	132.08	2.812	71.42	2.666	67.72	5.200	132.08		
4.5	114.3	3.688	93.68	5.200	132.08	3.688	93.68	3.625	92.08	5.200	132.08	3.688	93.68	3.625	92.08	5.200	132.08	3.688	93.68	3.625	92.08	5.200	132.08	3.688	93.68	3.625	92.08	5.200	132.08	3.688	93.68	3.625	92.08	5.200	132.08		
		3.750	95.25	5.200	132.08	3.750	95.25	3.700	93.98	5.200	132.08	3.750	95.25	3.700	93.98	5.200	132.08	3.750	95.25	3.700	93.98	5.200	132.08	3.750	95.25	3.700	93.98	5.200	132.08	3.750	95.25	3.700	93.98	5.200	132.08		
4.5	114.3	3.812	96.82	5.200	132.08	3.812	96.82	3.759	95.48	5.200	132.08	3.812	96.82	3.759	95.48	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08		
		3.812	96.82	5.200	132.08	3.812	96.82	3.759	95.48	5.200	132.08	3.812	96.82	3.759	95.48	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08	3.812	96.82	3.725	94.62	5.200	132.08		

*NIPPLE O.D. IS NORMALLY COUPLING O.D. NIPPLE CANNOT BE SMALLER THAN THE DIMENSION SHOWN.

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MX Landing Nipples Selective

MX Landing Nipples are fully selective nipples, used to land, lock and seal X-type locking mandrels with attached flow control device in the production tubing string.

The internal profile of MX Landing Nipples includes a selective profile, a locking recess, and a polished sealbore.

When installed, the locking dogs in the X-type lock move out into the recess of the nipple, anchoring the lock and positioning the lock packing in the polished seal bore section of the nipple.

MX Landing Nipples are made from 4140, L-80 low alloy steel, 9Cr 1Mo Steel.



Tubing O.D.		Sealbore I.D.		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.
1.660	42.15	1.250	31.75	2.200	55.88
1.900	48.26	1.500	38.10	2.500	63.50
2.063	53.37	1.625	41.27	2.325	59.06
2.375	60.33	1.875	47.62	3.063	77.80
2.875	73.02	2.312	58.72	3.668	93.17
3.500	88.90	2.750	69.85	4.500	114.3
		2.812	71.42		
4.500	114.30	3.812	96.82	5.563	141.3

MXN Landing Nipples (No-Go) Non-Selective

MXN Landing Nipples are non selective nipples, used to land, lock and seal XN-type locking mandrels with attached flow control device in the production tubing string.

The internal profile of MXN Landing Nipples includes a No-Go profile, a locking recess, and a polished sealbore.

When installed, the locking dogs in the XN-type lock move out into the recess of the nipple, anchoring the lock and positioning the lock packing in the polished seal bore section of the nipple.

MXN Landing Nipples are made from 4140, L-80 low alloy steel, 9Cr 1Mo Steel.



Tubing O.D.		Sealbore I.D.		No-Go		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.	in.	mm.
1.660	42.15	1.250	31.75	1.135	28.83	1.890	48.01
1.900	48.26	1.500	38.10	1.448	36.78	2.130	54.10
2.063	53.37	1.625	41.28	1.536	39.01	2.340	59.44
2.375	60.33	1.875	47.63	1.791	45.49	2.710	68.83
2.875	73.02	2.312	58.72	2.205	56.01	3.230	82.04
3.500	88.90	2.750	69.85	2.635	66.93	4.250	107.95
		2.812	71.42	2.666	67.72		
4.500	114.30	3.812	96.82	3.725	94.62	4.940	125.48

MOR Landing Nipple Selective (Non-Ported)

MOR Selective Non-Ported Landing Nipple is a tubing nipple for use with selective locking devices only.

The MOR Nipple is designed to be used in the heaviest weight, higher rated pressure tubing. It has a Polished Sealbore and a locking groove.

MOR nipple locates, seals, and retains flow control accessories. The accessories are run and retrieved on slickline.

MOR Landing Nipples are typically located above MORN Bottom No-Go Landing Nipples.

Benefits

- Triple groove locking groove ensures higher pressure ratings.
- Multiple different seal bore sizes allow for numerous ID options.

Applications

- Used to Land Instrument (Bomb) Hangers.
- Used to Land Blanking Plugs.
- Used to Land Check (Standing) Valves.
- Used to Land Injection Valves.
- Used to Land Bottom Hole Chokes.



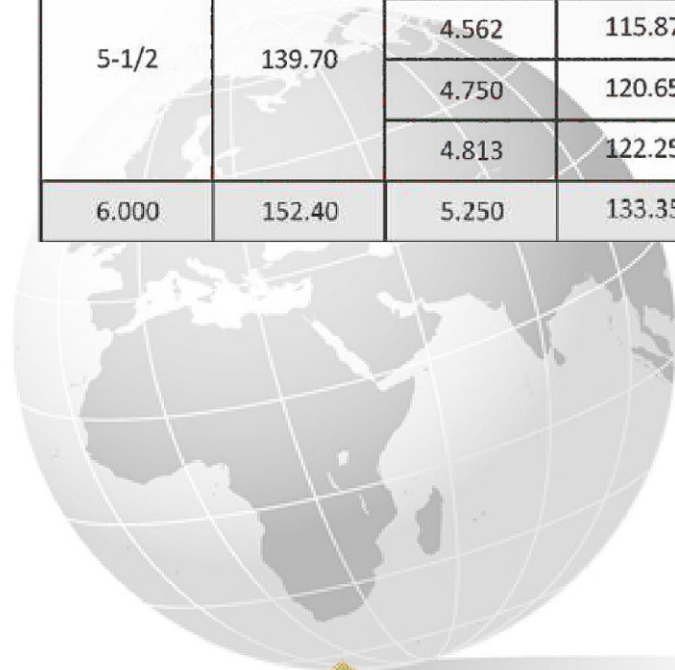
MOR Landing Nipple Selective (Non-Ported)

Tubing O.D.		Sealbore I.D.		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.
1.315	33.40	0.714	18.14	1.900	48.26
1.660	42.16	1.125	28.58	2.200	55.88
1.900	48.26	1.375	34.93	2.500	63.50
2-3/8	60.33	1.500	38.10	3.063	77.80
		1.625	41.28		
		1.710	43.43		
		1.781	45.24		
		1.781	45.24		
		1.875	47.63		
2-7/8	73.03	1.905	48.39	3.668	93.17
		1.940	49.28		
		2.000	50.80		
		2.125	53.98		
		2.188	55.58		
		2.313	58.75		
3-1/2	88.90	2.380	60.45	4.500	114.30
		2.437	61.90		
		2.562	65.07		
		2.875	73.03		



MOR Landing Nipple Selective (Non-Ported)

Tubing O.D.		Sealbore I.D.		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.
4.000	101.60	3.000	76.20	5.000	127.00
		3.125	79.38		
		3.250	82.55		
4-1/2	114.30	3.437	87.30	5.563	141.30
		3.688	93.68		
		3.813	96.85		
5.000	127.00	3.840	97.54	Coupling OD	
		3.875	98.43		
		4.000	101.60		
		4.125	104.78		
5-1/2	139.70	4.313	109.55		
		4.562	115.87		
		4.750	120.65		
		4.813	122.25		
6.000	152.40	5.250	133.35		



MORN Landing Nipple Non-Selective (Bottom No-Go)

MORN Bottom No-Go Non-Ported Landing Nipple is a tubing nipple for use with bottom no-go locking devices only. The MORN Nipple is designed to be used in the heaviest weight, higher rated pressure tubing. It has a sealbore, bottom no-go shoulder, and a locking groove.

The Model MORN nipple locates, seals, and retains flow control accessories that have a bottom no-go locking device. The accessories are run and retrieved on slickline.

MORN Landing Nipples are typically located at the bottom of the tubing string as the last profile, with only a slickline re-entry guide lower in the tubing string.

When placing a MORN Bottom No-Go Landing Nipple in the work string ensure that the MORN is the last landing nipple in the completion string.



Benefits

- The Bottom No-Go ensures simple & positive landing of slickline tools.
- The Bottom No-Go prevents the loss of slickline tools.

Applications

- Used to Land Instrument (Bomb) Hangers.
- Used to Land Blanking Plugs.
- Used to Land equalizing Check (Standing) Valves.
- Used to Land Injection Valves.
- Used to Land Chokes.



MORN Landing Nipple Non-Selective (Bottom No-Go)

Tubing O.D.		Sealbore I.D.		No-Go		Min O.D. Box by Pin Threads	
in.	mm.	in.	mm.	in.	mm.	in.	mm.
1.900	48.26	1.375	34.93	1.250	31.75	2.500	63.50
2-3/8	60.33	1.500	38.10	1.345	34.16	3.063	77.80
		1.710	43.43	1.560	39.62		
		1.781	45.24	1.640	41.66		
		1.875	47.63	1.716	43.59		
2-7/8	73.03	2.000	50.80	1.881	47.78	3.668	93.17
		2.125	53.98	1.937	49.20		
		2.188	55.58	2.010	51.05		
		2.313	58.75	2.13	54.13		
3-1/2	88.90	2.562	65.07	2.329	59.16	4.500	114.30
		2.875	73.03	2.585	65.66		
4.000	101.60	3.125	79.38	2.907	73.84	5.000	127.00
		3.250	82.55	3.088	78.44		
4-1/2	114.30	3.688	93.68	3.456	87.78	5.563	141.30
5.000	127.00	4.000	101.60	3.748	95.20	Coupling OD	
		4.125	104.78	3.912	99.36		
5-1/2	139.70	4.313	109.55	3.987	101.27		
		4.562	115.87	4.445	112.90		
		4.750	120.65	4.521	114.83		
		4.813	122.25	4.725	120.02		
6.000	152.40	5.250	133.35	5.018	127.46		



MXA - Sliding Sleeve Selective

MXA Sliding Sleeve is a communication device with a ported inner sleeve that can be opened or closed using a shifting tool by standard slickline or coiled tubing methods. Equalizing holes in the inner sleeve provide pressure equalization between the tubing and casing annulus as the sleeve is opened. The Sliding Sleeve is made up to and forms part of the tubing string.

The MXA Sliding Sleeve is a shift-up-to-open tool.

Features and Benefits

- Compact and simple field proven design
- Standard MXA Sliding Sleeve is manufactured using 4140 18-22Rc Alloy Steel with Viton elastomers for Standard and H2S Service.
- MX Selective Nipple Profile to land slickline tools.

Technical Details

- **Minimum ID:** Seal Bores.
- **Opening Direction:** UP
- **Drift Diameter:** 0.0010" to 0.0015" smaller than seal bore Min. I.D.
- **Shifting Tools:** "B" & "BO"
- **Separation Sleeve:** MXS
- **Blanking Plug:** MPX
- **Standing Valve:** MVX



MXA - Sliding Sleeve Selective

Seal Bore ID	Flow Area (Ports)		Flow Area (Min ID)		Max OD	Shifting Tool "MB"
	in.	Sq in.	Sq cm.	Sq in.		
1.875	2.355	15.19	2.762	17.82	3.063	1.875
2.312	3.974	25.64	4.199	27.09	3.668	2.312
2.750	7.212	46.53	5.940	38.32	4.281	2.750
2.812			6.211	40.07	4.281	2.812
3.312	11.426	73.72	8.611	55.55	5.680	3.250
3.812			11.413	73.63	5.680	3.812
4.312	10.598	68.37	14.596	94.17	6.400	4.312
4.562			16.337	105.40	7.500	4.562

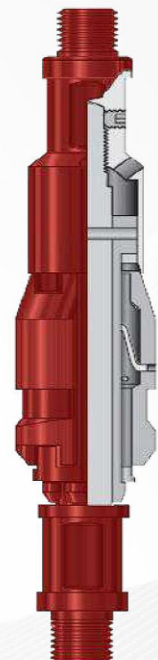
MB Shifting Tool

MB Shifting Tool is designed to selectively locate and shift most sliding sleeves. This is accomplished by the "MB" Shifting Tool keys engaging the Inner Sleeve of the Sliding Sleeve, depending on the direction the tool is run, up or down, the sleeve is shifted.

MB Shifting Tools are supplied standard with self-releasing keys, allowing the shifting tool to disengage.

Self-releasing keys also allow multiple Sliding Sleeves to be shifted in 1 trip.

MB Shifting Tools can also be supplied dressed with Shear-To-Release keys allowing the Shifting Tool to shift only 1 Sliding Sleeve.



MB Shifting Tool

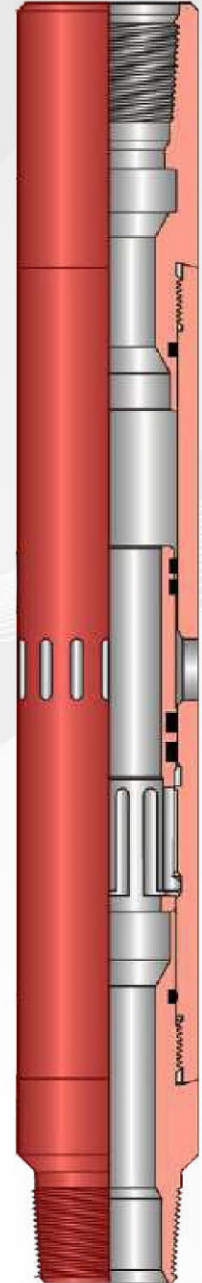


ML Sliding Sleeve (Selective) For standard well environment

ML sliding sleeve is a device used to establish communication, when desired, between the tubing and annulus.

ML Sliding Sleeve has sealbores above and below the ports, and a top No-Go shoulder and locking groove.

The ML sliding sleeve locates, seals and retains Top No-Go control accessories.



ML SLIDING SLEEVE SPECIFICATIONS			
Tubing O.D.	ML Sliding Sleeve		
in.	Sealbore I.D.	Size	Sleeve O.D. (in.)
1.900	1.437	1.43	2.375
	1.500	1.50	
2.3/8	1.781	1.78	2.910
	1.812	1.81	
	1.875	1.87	
2.7/8	2.250	2.25	3.410
	2.312	2.31	
3.1/2	2.750	2.75	4.500
	2.812	2.81	
4.1/2	3.688	3.68	5.500
	3.812	3.81	

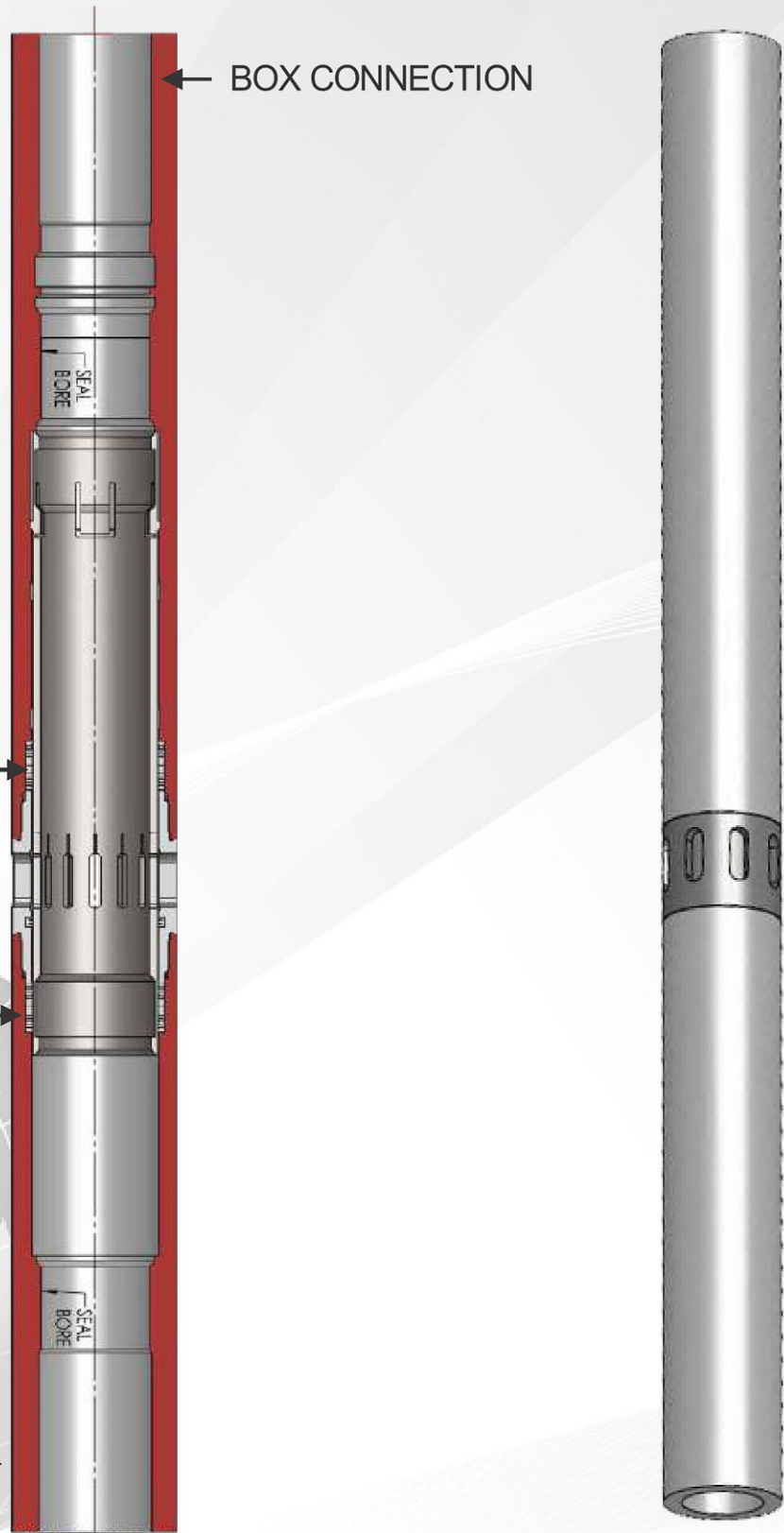
MD-2 Shifting Tool To shift open & close ML Sliding Sleeve

MD-2 shifting tool is used to provide a safe, selective and controlled method of opening and closing Model 'ML' sliding sleeve.

MD-2 SHIFTING TOOL SPECIFICATIONS			
ML Sliding Sleeve Size	Shifting Tool Collet Size	Top Thread Connection	Fishing Neck Size
I.D.	O.D.	Size	O.D.
1.43	1.468	15/16 - 10	1.188
1.50	1.531		
1.78	1.807	15/16 - 10	1.375
1.81	1.843		
1.87	1.906		
2.25	2.281	15/16 - 10	1.750
2.31	2.343		
2.75	2.781	1.1/16 - 10	2.312
2.81	2.843		
3.68	3.743	1.1/16 - 10	2.312
3.81	3.867		



**MXA - Sliding Sleeve
Non-Elastomeric**



MXA - Sliding Sleeve Non-Elastomeric

MXA Non-Elastomeric Sliding Sleeve is a communication device with a ported inner sleeve that can be opened or closed using a shifting tool by standard slickline or coiled tubing methods. Equalizing holes in the inner sleeve provide pressure equalization between the tubing and casing annulus as the sleeve is opened.

The MXA Sliding Sleeve is a shift-up-to-open tool.

The MXA Non-Elastomeric Sliding Sleeve is designed for use in high temperature wells to establish a means of communication between the tubing string and the casing annulus for single-tubing or multiple-tubing string completions.

MXA Sliding Sleeve may be used for directing flow from the casing to the tubing in alternate or selective completions. Other applications include killing a well, spot acidizing and fracturing, or equalizing pressure between an isolated formation and the tubing string.

Technical Details

- **Temperature Rating:** 350F
- **Pressure Rating:** 7,000 Psi.
- **Shifting Tools:** "B" & "BO"
- **V-Packings:** Non Elastomeric material. All O-rings are Viton
- **Metallurgy:** L-80, 18-22 HRc as standard body material
- **Metallurgy:** 9Cr. 1Mo. & 13Cr. body material also available
- **Suitable for Well Environment:** H₂ & Co₂ as per NACE MR-01-75



MXA - Sliding Sleeve Non-Elastomeric

Seal Bore ID	Flow Area (Ports)		Flow Area (Min ID)		Max OD	Shifting Tool "MB"
	in.	Sq in.	Sq cm.	Sq in.		
1.875	2.355	15.19	2.762	17.82	3.063	1.875
2.312	3.974	25.64	4.199	27.09	3.668	2.312
2.750	7.212	46.53	5.940	38.32	4.281	2.750
2.812			6.211	40.07	4.281	2.812
3.312	11.426	73.72	8.611	55.55	5.680	3.250
3.812			11.413	73.63	5.680	3.812
4.312	10.598	68.37	14.596	94.17	6.400	4.312
4.562			16.337	105.40	7.500	4.562

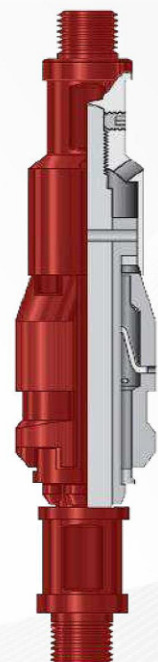
MB Shifting Tool

MB Shifting Tool is designed to selectively locate and shift most sliding sleeves. This is accomplished by the "MB" Shifting Tool keys engaging the Inner Sleeve of the Sliding Sleeve, depending on the direction the tool is run, up or down, the sleeve is shifted.

MB Shifting Tools are supplied standard with self-releasing keys, allowing the shifting tool to disengage.

Self-releasing keys also allow multiple Sliding Sleeves to be shifted in 1 trip.

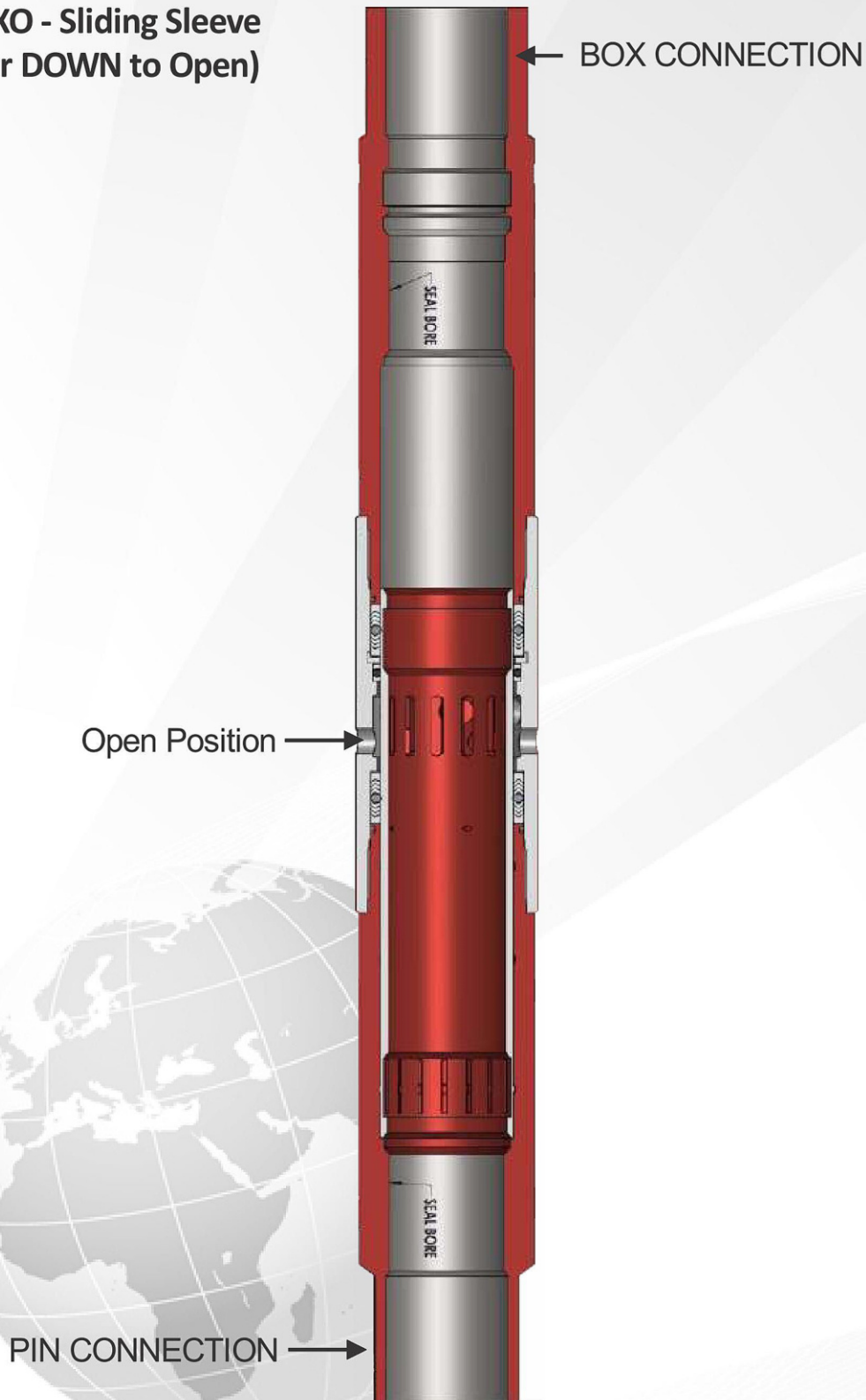
MB Shifting Tools can also be supplied dressed with Shear-To-Release keys allowing the Shifting Tool to shift only 1 Sliding Sleeve.



MB Shifting Tool



MXO - Sliding Sleeve (Jar DOWN to Open)



MXO - Sliding Sleeve Selective (Jar DOWN to Open)

MXO Sliding Sleeve is a communication device with a ported inner sleeve that can be opened or closed using a shifting tool by standard slickline or coiled tubing methods. Equalizing holes in the inner sleeve provide pressure equalization between the tubing and casing annulus as the sleeve is opened. The Sliding Sleeve is made up to and forms part of the tubing string.

The MXO Sliding Sleeve is a shift-down-to-open tool.

Features and Benefits

- Compact and simple field proven design
- Standard MXO Sliding Sleeve is manufactured using 4140 18-22Rc Alloy Steel with Viton elastomers for Standard and H2S Service.
- MX Selective Nipple Profile to land slickline tools.

Technical Details

- **Minimum ID:** Seal Bores.
- **Opening Direction:** UP
- **Drift Diameter:** 0.0010" to 0.0015" smaller than seal bore Min. I.D.
- **Shifting Tools:** "B" & "BO"
- **Separation Sleeve:** MXS
- **Blanking Plug:** MPX
- **Standing Valve:** MVX



MXO - Sliding Sleeve Selective (Jar DOWN to Open)

Seal Bore ID	Flow Area (Ports)		Flow Area (Min ID)		Max OD	Shifting Tool "MB"
	in.	Sq in.	Sq cm.	Sq in.		
1.875	2.355	15.19	2.762	17.82	3.063	1.875
2.312	3.974	25.64	4.199	27.09	3.668	2.312
2.750	7.212	46.53	5.940	38.32	4.281	2.750
2.812			6.211	40.07	4.281	2.812
3.312	11.426	73.72	8.611	55.55	5.680	3.250
3.812			11.413	73.63	5.680	3.812
4.312	10.598	68.37	14.596	94.17	6.400	4.312
4.562			16.337	105.40	7.500	4.562

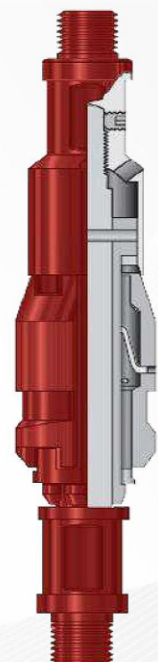
MB Shifting Tool

MB Shifting Tool is designed to selectively locate and shift most sliding sleeves. This is accomplished by the "MB" Shifting Tool keys engaging the Inner Sleeve of the Sliding Sleeve, depending on the direction the tool is run, up or down, the sleeve is shifted.

MB Shifting Tools are supplied standard with self-releasing keys, allowing the shifting tool to disengage.

Self-releasing keys also allow multiple Sliding Sleeves to be shifted in 1 trip.

MB Shifting Tools can also be supplied dressed with Shear-To-Release keys allowing the Shifting Tool to shift only 1 Sliding Sleeve.



MB Shifting Tool



MX & MXN Lock Mandrels

MX Lock Mandrel that is selective by running tool to land and lock inside MX series landing nipples.

The MXN is a No-Go lock mandrel that is selective by running tool to land and lock inside MXN series landing nipples.

Featuring Non-Elastomeric seals stack for standard and sour well environment to defy HTHP situations.

Connections: Internal fishing neck on top & Pin connection below.

Metallurgy: L-80, 9Cr. 1Mo., 13Cr. 80Ksi. As per NACE MR-01-75

Sealbore I.D.	Nipple Profile	Seal Stack Type
2.313	MX Profile	Chevron V-Seals
2.750	MX Profile	Chevron V-Seals
2.813		
3.688	MX Profile	Chevron V-Seals
3.813		

MXN Lock Mandrel No-Go Type

Sealbore I.D.	Nipple Profile	Seal Stack Type
2.313	MXN Profile	Chevron V-Seals
2.750	MXN Profile	Chevron V-Seals
2.813		
3.688	MXN Profile	Chevron V-Seals
3.813		

