

MAXIMUS

Completion Systems

SERVICE PACKERS



Magnus MDT Service Packer V-III Un-Loader Valve MANC Storm Valve



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.

Special 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		Cased Hole Size (inches)	Packer O.D (inches)	Packer I.D (inches)	Connection Box x Pin
Size (inches)	Weight (PPF)				
7"	(17-23#)	6.366 - 6.538	6.188	2.69	3 1/2 IF
	(26-32#)	6.094-6.276	5.954		
	(32-38#)	5.920-6.094	5.781		
	(38-46.4#)	5.626-5.920	5.525		
9-5/8"	(32.3-43.5#)	8.755-9.001	8.584	3.75	4 1/2 IF
	(43.5-53.5#)	8.535-8.755	8.365		
	(58.4-59.4#)	8.407-8.435	8.250		
10-3/4"	(51-55.5#)	9.760-9.850	9.50	3.75	4 1/2 IF
	(60.7-65.7#)	9.560-9.660	9.375		
	(71.1-73.2#)	9.406-9.450	9.125		
11-3/4"	(60-71#)	10.586-10.772	10.406	3.75	4 1/2 IF
13 3/8"	(48-77#)	12.275-12.715	12.000	3.75	4 1/2 IF
14"	(82.5-92.68#)	12.700-12.876	12.500	3.75	4 1/2 IF

Note*: Elastomers available: Nitrile, HNBR, HSN, Viton, Aflas



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Magnus MDT Retrievable Packer 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 slips cover more than the usual surface area to assure the packer will not move up the hole during 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 - hand or right - hand) to be transmitted through the packer.

Instead of O-rings with back-up rings, the packer is fitted with 'S' type and 'T' type high pressure seals for more reliable sealing at high temperature and pressure.

Features

- Hydraulic actuated upper hold down slips
- Positive rotational locks on all internal connections
- 'S' and 'T' type seals provides for more reliable sealing.
- Available with extra long top and bottom subs for easy break out.
- The packer easily takes medium to heavy tailpipe loads

Benefits

- Large diameter hold down buttons reduce casing damage.
- High torque rating for manipulating heavy drill pipe into tight spots.
- Wide range of sizes available
- Simple, rig - friendly operation

Applications

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



Magnus MDT Service Packer

CASING				PACKER		
O.D. (in./mm)	Weight (lb/ft, kg/m)	I.D. (in./mm)		Maximum O.D. (in./mm)	Minimum I.D. (in./mm)	STANDARD THREAD CONNECTION
		Minimum	Maximum			
4-1/2 114.3	15.1 to 17.7 22.47 to 26.34	3.696 93.88	3.826 97.18	3.593 91.26	1.750 44.45	2-3/8" I.F.
	11.6 to 13.5 17.26 to 20.09	3.920 99.57	4.00 101.6	3.781 96.04	1.750 44.45	2-3/8" I.F.
5 127.0	15.0 to 18.0 22.32 to 26.78	4.276 108.61	4.408 111.96	4.125 104.78	1.750 44.45	2-3/8" I.F.
	11.50 to 15.0 17.11 to 22.32	4.408 111.96	4.560 115.82	4.250 107.95	1.750 44.45	2-3/8" I.F.
5-1/2 139.7	17.0 to 23.0 25.30 to 34.22	4.670 118.62	4.892 124.26	4.500 114.30	1.750 44.45	2-3/8" I.F.
	13.0 to 17.0 19.34 to 25.30	4.892 124.26	4.04 128.12	4.641 117.88	1.750 44.45	2-3/8" I.F.
7.00 177.8	38.0 to 46.4 56.54 to 69.04	5.625 142.90	4.920 150.37	5.525 140.34	2.688 68.28	3-1/2" I.F.
	32.0 to 38.0 47.62 to 56.54	5.920 150.37	6.094 154.79	5.781 146.84	2.688 68.28	3-1/2" I.F.
	26.0 to 32.0 38.69 to 47.62	6.094 154.79	6.276 159.41	5.954 151.23	2.688 68.28	3-1/2" I.F.
	17.0 to 23 25.30 to 34.22	6.366 161.70	6.538 166.07	6.188 157.18	2.688 68.28	3-1/2" I.F.
7-5/8 193.7	33.7 to 39.0 50.15 to 58.03	6.625 168.28	6.765 171.83	6.453 163.91	2.688 68.28	3-1/2" I.F.
	24.0 to 29.7 86.90 to 88.39	6.875 174.63	7.025 178.44	6.670 169.42	2.688 68.28	3-1/2" I.F.
9-5/8 244.5	58.4 to 59.4 86.90 to 88.39	8.407 213.54	8.435 214.25	8.250 209.55	3.750 95.25	4-1/2" I.F.
	43.5 to 53.5 64.73 to 79.61	8.535 216.79	8.755 222.38	8.365 212.47	3.750 95.25	4-1/2" I.F.
	32.3 to 43.5 48.06 to 64.73	8.755 222.38	9.001 228.63	8.584 218.03	3.750 95.25	4-1/2" I.F.
10-3/4 273.1	71.1 to 73.2 105.80 to 108.92	9.406 238.91	9.450 240.03	9.125 231.78	3.750 95.25	4-1/2" I.F.
	60.7 to 65.7 90.32 to 97.76	9.560 242.82	9.660 245.36	9.375 238.13	3.750 95.25	4-1/2" I.F.
	51.0 to 55.5 75.89 to 82.54	9.760 247.90	9.850 250.19	9.500 241.30	3.750 95.25	4-1/2" I.F.
11-3/4 298.5	60.0 to 71.0 89.28 to 105.65	10.586 268.88	10.772 273.61	10.406 264.31	3.750 95.25	4-1/2" I.F.
13-3/8 339.7	48.0 to 77.0 71.42 to 114.58	12.275 311.79	12.715 322.96	12.000 304.80	3.750 95.25	4-1/2" I.F.



Magnus MDT Service Packer

SETTING PROCEDURE

Run the Magnus MDT Retrievable Packer to setting depth in conjunction with a type Magnus V-III Unloader. The unloader should remain open while running in.

Pick up the tubing and rotate 1/4 turn to the right at the packer.

Slack off weight on the packer to set the slips and compress the packing elements.

Release the torque after slacking off 6" to allow the un-loader to close and lock.

The set down weight must remain on the packer throughout well operation.

RELEASING PROCEDURE

Rotate the tubing 1/4 turn to the right and pick up on the tubing to open the V-III Unloader.

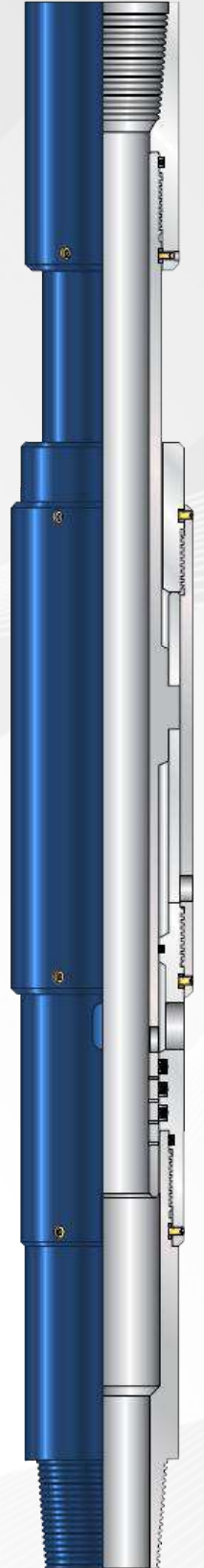
Allow time for tubing and casing pressure to equalize.

Continued upward movements of the tubing relaxes the packing elements, releases the slips, and automatically re-jays the packer.

The tool may be moved and re-set or pulled-out from the well.

SIZE (in./mm)	MINIMUM FORCE REQUIRED AT PLUG (Lb/kg-m)
4.00" 101.60	10,000 4536.00
5.00" 127.00	10,000 4536.00
5-1/2" 139.70	15,000 6804.00
7.00" 177.80	14,000 6350.40
7-5/8" 193.68	14,000 6350.40
9-5/8" 244.48	25,000 11340.00
10-3/4" 273.05	35,000 15876.00

Magnus V-III Un-loader Valve



Magnus V-III Un-loader Valve

Magnus V-III Unloader is designed as a high-pressure accessory for Magnus MDT Packer designed to withstand server operating conditions.

Magnus V-III Unloader provides a means of equalizing tubing and annulus pressures as well as a bypass to allow fluid to pass through the mandrel of the packer while running the tubing string in and out of the well.

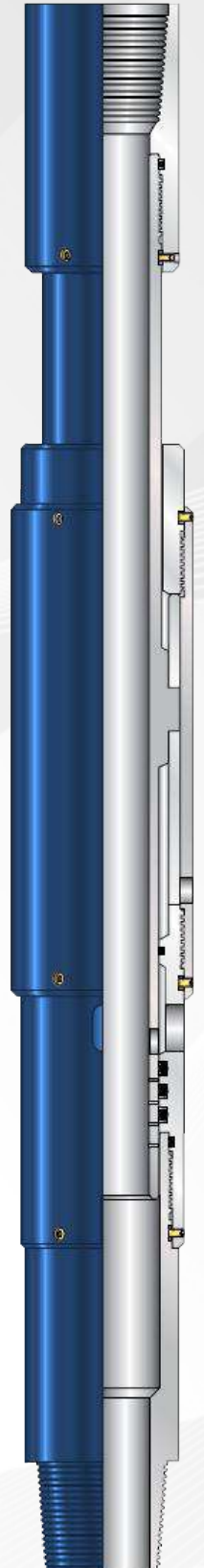
Circulating can be established to spot fluids to the packer or circulating debris from the hole.

Special Features:

- Standard slot lock in open and closed positions
- Standard slot is right-hand close, right-hand open
- Additional J-slot arrangements available

Tool Dimension Table

Size (inches)	Packer O.D (inches)	Packer I.D (inches)	Connection Box x Pin
3-1/2"	5.500	2.69	3 1/2 IF
4-1/2"	7.250	3.75	4 1/2 IF



Magnus MANC Storm Valve



JAS-ANZ



MA5703101X
OHSAS 18001-2007

Magnus MANC Storm Valve

The Maximus 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.

An ideal tool to perform wellhead repairs.

The running string can be re-connect and the valve opened to equalize the pressure for packer retrieval.

The Storm Valve features an expendable plug that provides through bore access for circulation or for wire line 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 P-110 30-36 HRc.
- Tool joint connections

Benefits

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

Applications

- Weather related emergencies
- Wellhead repair



Magnus MANC Storm Valve

SIZE (IN. / mm)	MIN. I.D. (IN./mm)	MAX. O.D. (IN./mm)	THREAD CONNECTION BOX UP / PIN DOWN
4-3/4" (120.65 mm.)	1.49" (37.85 mm.)	4.75" (120.65 mm.)	3-1/2" IF
6-1/8" (155.56 mm.)	2.00" (50.80 mm.)	6.125" (155.58 mm.)	4-1/2" IF

Operation

Normal well conditions will allow ample drill pipe to be run below the storm packer for proper weight and for proper well circulation.

If the drill pipe weight is less than 20,000 lb., drill collars should be run below the tool for weight.

Make-Up (Recommended)

After the storm packer has been set in the slips on its pick up joints, make up the lower half of the storm valve, making sure all breaks are tong tight and lock screws are secure.

Hand make up the top back off sub on the drill pipe.

Pick up on joint or stand and stab into the mating parts.

Hand rotate twenty (20) rounds to the right. Tighten drill pipe connection holding back ups on the top connectors.

Remove tongs and continue hand make up of the back off sub and tighten as you would any safety joint.

Check the left hand break out several times, assuring proper torque.

CAUTION : DO NOT LIFT DRILL STRING UNTIL BACK OUT THREADS ARE FULLY ENGAGED.



Magnus MANC Storm Valve

Set and back out procedure

After reaching setting depth, rotate and set storm packer, set weight on packer.

Maintain a neutral weight (0) and rotate the back out sub twelve (12) rounds to the left. At this point the valve is closed and threads are still engaged.

Pressure may now be applied to assure valve is operational.

Test only to $\frac{1}{2}$ the test pressure required to shear the pump out plug.

Release the pressure. An additional ten (10) rounds will totally release from tool.

Re-connect Procedure

To re-connect drill pipe to storm valve, lower the drill pipe slowly and tag the top of the valve with maximum of 1,000 lb. of weight on the valve.

During re-connect, be prepared to handle any pressure from the drill pipe and casing side, with 1,000 lb. of weight set on the valve, rotate five (5) rounds to the right and then pull 2,000 lb. tension on the tool to assure the threads are engaged.

Slack down to neutral weight (0) and rotate an additional five (5) rounds to the right. At this point the valve is closed and in a position to pump out the pre-loaded plug.

This procedure is recommended if extended circulation periods at rates of 10 BPM or greater are needed.

If the pump out plug is not to be sheared, a total of twenty-two (22) rounds to the right to be applied, opening the valve fully for pumping.

A maximum rate of nine (9) barrels per minute is recommended with the plug in place.

