LINER HANGER SYSTEM

Liner Hanger hangs the liners within an oil well. Different Liner Hangers have different hanging capacity. Liner hangers can be categorized on various bases such as setting mechanism – mechanical or hydraulic, rotating or non-rotating and other features. Liner hanger system comprises of complete hook up required for effective & smooth operation & running of hanging liners.

TYPES OF LINER HANGERS

HYDRAULIC SET
- ROTATING
  - PROTECTD SLIP SINGLE CONE ("HSN")
    - PROTECTD SLIP SINGLE CONE ("HPR")
  - TANDEM CONE ("HTN")
    - TANDEM CONE ("HTR")

MECHANICAL SET
- ROTATING
  - SINGLE CONE ("MSN")
  - TANDEM CONE ("MTN")
- NON-ROTATING
  - SINGLE CONE ("MSR")
  - TANDEM CONE ("MTR")
HYDRAULIC SET LINER HANGERS:

Hydraulically Set Liner Hangers are good for inclined wells. It is set by differential pressure. For setting hydraulically set liner hanger, a ball is dropped which seats on ball seat. Activation Pressure is applied on the ball and weight is then slowly applied to setting it.

Hydraulic Set Protected Slip Single Cone Rotating Liner Hanger("HPR")

PRODUCT CODE ("HPR")-MI 5101

DESCRIPTION & APPLICATION:-

The Hydraulic set Single Cone Rotating Liner Hangers ("HPR") provides a means to rotate the liner during cementing operations insuring a more complete cement bond. It initially hangs the liner in tension .Its design is based on the hydraulic setting of slip segments, which distribute the liner weight evenly on the tapered swivel cone. The Hydraulic liner hanger may be set before or after cementing by applying pressure to running-in string. The Hydraulic liner hanger may be reciprocated during cementing and set after cementing by applying pressure against the liner wiper plug after it is landed in Landing Collar .To set the Hanger before cementing . A Landing Collar with setting ball must be run.

FEATURES:-

- Body is manufactured from mechanical tubing to equivalent grade of liner 80,000 psi to 110,000 psi yield strengths are standard. Other yield strengths and materials available on request.
- Hydraulic cylinder manufactured from material matching yield strength of liner Hanger.
- Slips are manufactured to Rockwell “C” scale hardness of 57-64 for use in the highest grade casing strings.
- Incorporated with high compressive strength thermo plastic bearing which is contacted by bearing surfaces on the cone and top collar. Bearing design is very efficient and economical and well suited for rotating moderate liner loads with normal torque during cementing operation.
Hydraulic Set Slip Tandem Cone Non-Rotating Liner Hanger ("HTN")

PRODUCT CODE ("HTN")-

DESCRIPTION & APPLICATION: MI 5103

"HSN" Hydraulic Liner Hanger are used to hang a liner in well without rotating the work string to set the hanger in deviated or horizontal wells and can be used for applications such as setting new liner through existing liners or on floating rigs. The Hanger provides full bypass in the set position during cementing operations. The hanger body is furnished with higher group of API 5CT standard materials as well as with the end connections in compliance to API standards or any premium threads as per the customer’s requirement/demand. The Hanger is provided with stub acme threads at the upper end for assembling with Tie Back Receptacle. The hanger consist of double or multiple cone on which the slips move to bite into the casing.

OPERATION: MI 5103

If pipe movement is not required hydraulic liner hangers may be set prior to cementing. This is set hydraulically by applying pressure through the running string. A setting ball is circulated or dropped to a ball seat built in the landing collar. Applied pressure acts on the internal piston, moving slips up the cone to the set position. This is done by releasing a setting ball from that surface this seats in a hydraulic latch landing collar. Applying internal hydraulic pressure to shear the hanger setting piston will force the slips upward between the cone and casing allowing the liner hanger to support the liner weight. Increasing Pressure will shear out the ball seat of the landing collar allowing circulation for cementing. The running tool may now be released with right hand rotation.

If reciprocal pipe movement is required to enhance bonding, the hanger may be set after cementing by pressuring against landed plugs and then releasing the running tool with right hand rotation.
Mechanical Set Slip Tandem Cone Rotating Liner Hanger("MTR")

PRODUCT CODE ("MTR")-MI 5202

DESCRIPTION & APPLICATION:-

The Model “MTR” Mechanical Set Rotating Liner Hanger is very efficient and economical choice for shallow to medium depth wells. Liner Hanger consist of a bearing which allows rotation. It initially hangs the liner in tension and then provides a means to rotate the liner during cementing operations insuring a more complete cement bond. It consist of an enclosed jay ("J") within a one piece sleeve with friction springs manufactured from spring steel material. This "J" allows the hanger to return to run-in position, if the hanger sets prematurely. The jay slot holds the slips in place below the taper cone while running in the well. The simple jay mechanism are allows the operator to set and release the hanger any number of times if necessary. The hanger consist of single cone and single set of slips. It is incorporated with high compressive strength thermo plastic bearing which is contacted by bearing surfaces on the cone and top collar. Bearing design is very efficient and economical and well suited for rotating moderate liner loads with normal torque during cementing operation. It allows large bypass area in run-in and set conditions.

OPERATION:
When Setting depth is reached the hanger is picked up couple feet and 1/4 rotation is applied (either right hand or left hand depending upon application). As the Hanger is lowered, the slips will be held stationary by the friction springs. Apply Slack-off and this will make the taper cone contact the slips and force them out-ward into the casing. The hanger is run integral with setting collar or Liner Top Packer. The Hanger provides full bypass in the set position during cementing operations. The pin on the Body comes out of the J-Slot cage after setting of Hanger, which makes mandrel free to rotate after setting while cementing.

Slips are manufactured to Rockwell “C” scale hardness of 57-64 for use in the highest grade casing strings.

MI 5202
Mechanical Set Slip Single Cone Non-Rotating Liner Hanger ("MSN")

PRODUCT CODE ("MSN")- MI5203

DESCRIPTION & APPLICATION:-

Mechanical Set Non-Rotating Liner Hanger is a versatile and economical completion Tool. The hanger is set mechanically (manipulating the work string) with either right or left hand rotation, depending on the setting tool or design. It consist of an enclosed jay ("J") within a one piece sleeve with friction springs manufactured from spring steel material. This "J" allows the hanger to return to run-in position, if the hanger sets prematurely. The jay slot holds the slips in place below the taper cone while running in the well. The simple jay mechanism are allows the operator to set and release the hanger any number of times if necessary. The hanger consist of single cone and single set of slips. It allows large bypass area in run-in and set conditions.

OPERATION:

When Setting depth is reached the hanger is picked up couple feet and 1/4 rotation is applied (either right hand or left hand depending upon application) . As the Hanger is lowered, the slips will be held stationary by the friction springs. Apply Slack-off and this will make the taper cone contact the slips and force them out- ward into the casing. The hanger is run integral with setting collar or Liner Top Packer. The Hanger provides full bypass in the set position during cementing operations. The pin on the Body comes out of the J-Slot cage after setting of Hanger, which makes mandrel free to rotate after setting while cementing.

The Hanger slips are hardness controlled to assure their biting and hanging capacity even in the highest strength casing. Slips are manufactured to Rockwell “C” scale hardness of 57-64 for use in the highest grade casing strings.

MI5203
Mechanical Set Tandem Cone Non-Rotating Liner Hanger ("MTN")

PRODUCT CODE ("MTN")-MI 5204

DESCRIPTION & APPLICATION:-

Mechanical Set Non-Rotating Liner Hanger is a versatile and economical completion Tool. The hanger is set mechanically (manipulating the work string) with either right or left hand rotation, depending on the setting tool or design. It consist of an enclosed jay ("J") within a one piece sleeve with friction springs manufactured from spring steel material. This "J" allows the hanger to return to run-in position, if the hanger sets prematurely. The jay slot holds the slips in place below the taper cone while running in the well. The simple jay mechanism are allows the operator to set and release the hanger any number of times if necessary. The hanger consist of two or more cone and two set of slips. It allows large bypass area in run-in and set conditions.

OPERATION:

When Setting depth is reached the hanger is picked up couple feet and 1/4 rotation is applied (either right hand or left hand depending upon application). As the Hanger is lowered, the slips will be held stationary by the friction springs. Apply Slack-off and this will make the taper cone contact the slips and force them out- ward into the casing. The hanger is run integral with setting collar or Liner Top Packer. The Hanger provides full bypass in the set position during cementing operations. The pin on the Body comes out of the J-Slot cage after setting of Hanger, which makes mandrel free to rotate after setting while cementing.

The Hanger slips are hardness controlled to assure their biting and hanging capacity even in the highest strength casing. Slips are manufactured to Rockwell “C” scale hardness of 57-64 for use in the highest grade casing strings.
LINER TOP PACKERS

LINER TOP PACKERS connect liner to the running tool. Liner Top Packer is designed for isolation of liner top, once the hanger is set and cementing operations have completed. These packers are furnished with higher group API 5CT standard materials. The end connections are in compliance with API standards or can be provided with any premium threads as per customer requirement. These packers are suitable for deviated or horizontal wells and have integral setting collar to rotate the Liner hanger running in and cementing.

TYPES OF LINER TOP PACKERS

- COMPRESSION SET LINER TOP PACKERS ("CPW"), ("CPS"), ("CPD")
- LINER TIE BACK SEAL PACKER ("LTP")
LINER TOP PACKER - COMPRESSION SET

PRODUCT CODE ("CPW") Without Slips-MI 5121
PRODUCT CODE ("CPS") Single Slip-MI 5123
PRODUCT CODE ("CPD") Double Slip-MI 5124

DESCRIPTION & APPLICATION:

Compression Liner Top Packers are set by applying set-down weight by the setting dogs of the packer setting tool through the setting collar or Tie back Receptacle after cementing using the packer setting dogs on the liner running tool. It provide an excellent secondary seal that can be used to control annular gas migration or protect sensitive zones from well hydrostatics after cementing. These Liner Packer can be run independently as set on bottom liner Packers, as the top pack-off on a scab liner assembly or with most Liner Hangers to assist in sealing the liner to the casing. The liner top packers are available with and without hold down slips depending on customer requirement. Weight is applied by the work string to energize the element which is then locked in place with the internal ratchet assembly.

The packing element provide the required sealing effect and consist of a internal ratchet assembly which locks the element and does not allow the elements to deflate from its position once set.

If the Packer is run with hold down slips, the slips are set by compression after the cone has been sheared. The slips prevent light liners from moving.

USES:
- To isolate the liner top after the hanger is set and cementing operations are completed.
- Isolate formation pressure below the liner top from the casing ID above.
- Isolate treating pressures below the liner-top during fracture or acid work.
- It can be used as a tie-back completion or production packer.
LINER TIE BACK SEAL PACKER

PRODUCT CODE ("LTP") - MI 5122

DESCRIPTION & APPLICATION:

Compression Liner Top Packers are set by applying set-down weight by the setting dogs of the packer setting tool through the setting collar or Tie back Receptacle after cementing using the packer setting dogs on the liner running tool. It provides an excellent secondary seal that can be used to control annular gas migration or protect sensitive zones from well hydrostatics after cementing. These Liner Packer can be run independently as set on bottom liner Packers, as the top pack-off on a scab liner assembly or with most Liner Hangers to assist in sealing the liner to the casing. The liner top packers are available with and without hold down slips depending on customer requirement. Weight is applied by the work string to energize the element which is then locked in place with the internal ratchet assembly.

The packing element provides the required sealing effect and consists of an internal ratchet assembly which locks the element and does not allow the elements to deflate from its position once set.

If the Packer is run with hold down slips, the slips are set by compression after the cone has been sheared. The slips prevent lightweight liners from moving.

USES:

- To isolate the liner top after the hanger is set and cementing operations are completed
- Isolate formation pressure below the liner top from the casing ID above
- Isolate treating pressures below the liner-top during fracture or acid work
- It can be used as a tie-back completion or production packer.
TIE BACK SEAL NIPPLE WITH CHEVRON SEAL MODEL "TSN"

PRODUCT CODE - MI 5181

DESCRIPTION & APPLICATION:-

The tie-back seal nipple is designed for high pressure liner tieback completions. The "MTSN" consist of Glass filled Teflon Chevron seal rated to 10,000 psi and 400 deg F and honed bore, one-piece mandrel which is constructed of high strength material. It is constructed of material that matches the grade of the liner casing, when it is landed provides a continuous bore diameter to that of the liner. The" MTSN" also consist of mule shoe bottom, locator sub and circulation ports.

Tie Back Seal Nipple seals into the polished bore receptacle of an existing Liner. It is used to tie back to surface or some point above the Liner by It provides a pressure competent connection which can be retrievable or cemented in place as the Seal Mandrel engages the Tie Back Receptacle.

The "MTSN" is manufactured as per API 5CT standards and can be provided with premium seals, CRA Material and premium threads as per customer requirement. It is available in lengths from 6ft to 40 ft.
HYDRAULIC LANDING COLLAR with BALL SEAT "HLC"

PRODUCT CODE -MI 5131

DESCRIPTION & APPLICATION:-

‘HLC’ Hydraulic Landing Collar is used when setting liner hanger prior to cementing. It is also used to catch and lock (rotationally) the liner wiper plug. A ball dropped from surface seats on the ball seat in the Landing Collar and allows the hydraulic tool to actuate by applied pressure. The ball and seat are then sheared. A setting ball seat in the shear seat of the allowing pressure to be applied to the hanger to set the slips. Increasing the pressure after setting the hanger shears the ball seat allowing full circulation for cementing operations. The shear rating of the ball seat is adjustable to meet the requirements of the hanger. It incorporates a latch with Non- rotational Mechanism to accept, lock and seal the Liner Wiper Plug upon completion of cementing.

Features/Benefits:

Drillable Ceramic Ball Seat

The Ball seat is made of ceramic material in order to eliminate erosion of the critical sealing area during high rates of circulation. These inserts are made of drillable cast aluminum for easy drill out and are compatible with all bit types including PDC.

Anti-Rotation Feature

It has anti rotation feature and rotationally locks the plug for easy drilling

Positive Latch

It consists of a buttress latch thread which assures that the wiper plug will not move after it has bumped.

Integrity

The Burst, collapse, tensile, and torsional ratings are typically equal to or better than casing specifications.
MECHANICAL LANDING COLLAR "MLC"

PRODUCT CODE - MI 5132

DESCRIPTION & APPLICATION:-
“MLC” Landing Collar consist of Latch down seat and seal with anti-rotation profile and latch assembly to receive the liner wiper plug, lock it and seal it after cementing is completed. It provides an additional back up to the float collar and/or shoe to ensure that cement remains in place after displacement. The landing collar is normally run one or two joints above the float shoe or just above the float collar. It is majorly used while running a mechanical set liner hanger. It is internally constructed with aluminum alloy for easy drill ability. Its body is manufactured of material with equivalent properties of the liner casing.

TIE BACK RECEPTACLE ("TBR")

PRODUCT CODE - MI 5111

DESCRIPTION & APPLICATION:-
Mackeral Tie Back Receptacle provides a high integrity honed seal bore above the liner hanger which provides landing, sealing and extending additional liner to the point further up the hole or the surface. It is also provides the extension which is later used for setting tie back liner top packer. It is also used for protecting the running tool assembly during running in of hook-up in the hole. Junk Screen can be used to enhance the debris protection system.

FEATURES AND ADVANTAGE:-
- Honed ID provides reliable seal bore that allows Tie back seal mandrel and Tie back packer to form a effective seal against it
- The covering the running tool assembly during the running in, it works as shield for the running tool preventing from damage.
- This is threaded with Liner Top Packer or with the Setting Collar this feature prevents the backing of.
- Chamfer provided on the top of facilitate to the easy entry of running tool, minimize the risk of damaging the liner top.
RETRIEVABLE CEMENTING PACK OFF BUSHING ("RPB")

PRODUCT CODE - MI 5211

DESCRIPTION & APPLICATION:
The Retrievable Pack off Bushing provides a positive seal between the setting tool and the liner, securely holding all cementing and plugs bumping pressures. It features temperature and pressure resistant seals which are designed to hold differential pressure from either direction. It also reduces piston force on the drill pipe during cementing operations. After the completion of the cementing, it is retrieved with the setting tool, leaving the liner top unrestricted.

The Retrievable Pack off Bushing with polished nipple is installed in the setting collar and then the setting tool can be made up. When installed, the polished extension nipple locks the retaining dogs into the Retrievable Pack off Bushing Profile.

DRILLABLE CEMENTING PACK OFF BUSHING ("DPB")

PRODUCT CODE - MI 5212
DESCRIPTION & APPLICATION:
The Drillable Pack off Bushing provides a positive seal between the setting tool and the liner, securely holding all cementing and plugs bumping pressures. It features temperature and pressure resistant seals which are designed to hold differential pressure from either direction. A close tolerance seal against drillable cementing seal joint ensures no communication between the liner casing and upper annular areas. All seals are HNBR material. It is designed for easy removal with tooth or bits and its unique cutaway design ensures that no residual bushing material will be left after drill out to interfere with re-entry into, or passage through, the liner assembly.
TOP DRESS MILL ("TDM")

PRODUCT CODE - MI 5216

DESCRIPTION & APPLICATION:-

TOP DRESS MILL is used to scrap and clean and dress very close to the liner top. This assures the liner-top tieback packers are set and sealed in a clean and properly prepared section of casing. The "TDM" is provided with drill-pipe connections and are sized for specific lengths by the use of a spacer nipple.

CLEAN OUT BLADE MILL ("CBM")

PRODUCT CODE - MI 5221

DESCRIPTION & APPLICATION:-

The Clean Out Blade mill is a soft-bodied mill that vibrates inside the receptacle, removing deposited material from its highly polished surface to allow optimal contact with the seal nipple. It is used to clean out the inner surface of Tie back receptacle. For seal nipple packer applications, the "TDM" & "CBM" mills are run in with a casing scraper to ensure a properly prepared area for the packer to set and seal in.
HANDLING NIPPLE ("HNN")

PRODUCT CODE - MI 5136

JUNK SCREEN MODEL ("JNS")

PRODUCT CODE - MI 5141

DESCRIPTION & APPLICATION:-

The Junk Screen prevents debris from setting on top of the setting tool and helps in ease of retrieval. It also prevents debris from damaging the polished bore Tieback Receptacle and it is run as part of the setting tool assembly.
SEAL JOINT MODEL "SLJ"

PRODUCT CODE -MI 5146

DESCRIPTION & APPLICATION:-

Slick Joint provides the Mandrel with ground O.D. to provide a sealing surface for the Pack-off Bushing. Groove is provided at the bottom end to attach the Liner Wiper Plug.

SEAL JOINT MODEL "SLR"

PRODUCT CODE -MI 5147

DESCRIPTION & APPLICATION:-

The Slick Joint is used in combination with the Retrievable Pack off bushing and provides a seal between the liner and setting tool during cementing operations. The slick joint stinger is stabbed into the bushing inner V-Ring Seal Pack off assembly and the bushing OD is sealed and located in the pack off busing profile within the setting collar or the liner top packer to provide high integrity seal. This method significantly reduces the upward hydraulic force on the drill pipe during cementing operations. After the cement job the slick joint and the retrievable pack off bushing are pulled out of the liner top with no drill out required.
LINER WIPER PLUG MODEL "LWP"

PRODUCT CODE - MI 5151

DESCRIPTION & APPLICATION:-

Mackeral Latch down liner wiper plug is used along with Drill pipe wiper plug to displace cement through the ID of a liner during cementing operations. The Latch Down Liner wiper plug is compatible with the Landing Collar and latches into the Landing collar latch profile. It has an extremely good record of displacing cement and bumping in the landing collar and is an ideal choice for any application in which a ball seat in the wiper plug is not required or a dual plug system is not wanted.

The Latch down liner wiper plug is shear-pin to the bottom of running tools. The Drill Pipe Wiper Plug is released behind the cement. The Latch down liner wiper plug is displaced through the liner, acting as a mechanical barrier behind the cement. It lands in the landing collar, and pressure can be applied as required.

Features & Benefits:-

- Latch down liner wiper plug can wipe liners of the same size. This is also provide design operational flexibility.
- Interlocking lugs between the Latch down liner wiper plug nose and the landing collar prevent rotation of the plug during drilling out operation.
- The design of the Latch down liner wiper plug is robust. The sturdy body can withstand high bump pressures when it latches in either the or landing collar.
- Nitrile fins and O-rings are standard; other elastomers are available on request.
LINER WIPER PLUG WITH BALL SEAT MODEL "LWB"

PRODUCT CODE - MI 5152

DESCRIPTION & APPLICATION:-

Mackeral Latch down liner wiper plug with ball seat is used along with Drill pipe wiper plug to displace cement through the ID of a liner during cementing operations. It consist of ball seat profile on the top to receive a ball when the liner hanger is set by dropping a ball in the setting tool.

TOP SET COUPLING MODEL "TSC"

PRODUCT CODE - MI 5171

DESCRIPTION & APPLICATION:-

TOP SET COUPLING is generally used with Liner Hangers with Liner Top Packers. Other End of Top Set Coupling is threaded as per running tool.
DRILL PIPE WIPER PLUG MODEL "DWP"

PRODUCT CODE -MI 5156

DESCRIPTION & APPLICATION:-

The drill pipe wiper plug is released from the Plug dropping cementing head to follow the cement down the drill pipe. Mackeral Drill Pipe Wiper Plug effectively cleans the cement from the ID of the drill pipe and liner hanger running tools and separates the cement from the displacing fluid. The Drill pipe wiper Plug is installed in a Plug Dropping Head at the top of the liner run-in string. Prior to pumping displacement fluid, the Drill pipe wiper Plug is released from the Plug Dropping Head at surface, and is pumped down to displace cement from the liner run-in string. At the bottom of the liner run-in string, the Drill pipe wiper Plug lands and latches into the Liner Wiper Plug at which time hydraulic pressure is applied to release the Liner Wiper Plug. The two [2] plugs are displaced together through the liner to the Landing Collar.

FEATURES:

- Composed entirely of PDC drillable materials, it is allow trouble-free drill-out, helping to conserve rig time.
- Latch ring rotationally locks the wiper plug. This feature facilitates drill-out reducing rig time.
- Seal ring provides a positive bi-directional seal with it.
- When the wiper plug latches in, it allows for a positive shear indication.
- Fins and O-rings are made of Nitrile as standard material, which is suitable for most well conditions.

APPLICATION:-

- Wiping any drill pipe in conjunction with a Liner Wiper Plug.
- Wiping drill pipe before it is pulled out of the hole.
SETTING COLLAR MODEL "SNC"

PRODUCT CODE -MI 5191

DESCRIPTION & APPLICATION:-

The model “SNC” setting collar is a basic releasing collar used to carry the liner into the well. The right hand releasing thread ensures easy releasing of the setting tool.

The Setting Collar is made up on top of the Liner Hanger and is recommended for use when a liner extension is not planned.

The fluted top guide assures centering of the liner in the hole and its shape provides an internal guide for smooth running of the tools into the liner.

SWAB ASSEMBLY MODEL "SWA"

PRODUCT CODE -MI 5176

DESCRIPTION & APPLICATION:-

Swab Cup Assembly is used with hydraulic set Liner Hanger to run liner in deviated wells. It is also used to run slotted liners. It has two wire meshed swab cup element. This provides extra sealing during setting of liner hanger and cementing job.
HYDRAULIC RELEASE LINER HANGER RUNNING TOOL  
MODEL "HRT"  
PRODUCT CODE -MI 5168  

DESCRIPTION & APPLICATION:-

Hydraulic Running Tool is used to run and set the liner hanger with or without Liner Top Packer. The Running Tool is made with Setting Sleeve & assembly is run on drill string to the bottom. The Hydraulic Release Drilldown Liner Setting Tool connects to the Liner Setting Sleeve profile provides a means to carry a liner down hole, set a liner hanger and release from the liner prior to or, if desired, after cementing. The primary releasing mechanism is hydraulic with an emergency mechanical back-up release system. This tool carries the weight of the liner on a fully supported Collets assembly with no threads that could back off and drop the liner while running in the hole. High torque ratings of the Hydraulic release Running Tool system allow aggressive rotation if required to work a liner to bottom.

Features & Benefits:-

- Constructed of high strength material to provide high load capacity.
- Push, pull and rotate while running the liner down hole. The design of this tool allows right-hand rotation of the work string and liner with the tool in tension, compression or neutral
- Rotation after release when running a rotating liner hanger. Multiple torque fingers permit rotation of the liner during cementing after the hanger is set and the running tool released from the liner.
- No rotation to release after actuating the hydraulic cylinder. The tool is retrieved by straight pickup. The collet is retained in the released position by an internal body lock ring to prevent re-engagement into the setting sleeve profile.
- Release pressure and torque are adjustable to allow use in a wide variety of running conditions and/or applications.
- The HRD-E liner setting sleeve provides a smooth ID for passage of seals and other tools run through the liner top.
- Secondary mechanical release in the event the primary hydraulic releasing mechanism fails to operate; the setting tool may be released mechanically by 1/4 turn to left. Special secondary set-down weight shear required for full mechanical release.
MECHANICAL RELEASE NON-ROTATING LINER HANGER RUNNING TOOL MODEL "MNT"

PRODUCT CODE -MI 5166

DESCRIPTION & APPLICATION:-

Model" MNT" is a non-rotating running tool which conveys the liner assembly into the well and it is then released by compression and with right hand rotation after setting the hanger. "MNT" is constructed with standard API drill box cementing seal joint box for direct connection to a retrievable seal joint or drillable seal joint.

MECHANICAL ROTATING LINER HANGER RUNNING TOOL MODEL "MRT"

PRODUCT CODE -MI 5167

DESCRIPTION & APPLICATION:-

"MRT" Setting Tool is used to set rotating liner hanger. The Setting Tool is provided with Spring loaded top sub with tool joint connection, rotating Dog Sub that engages with the setting collar. This dog sub transfers torque from drill string, to the liner, while in tension or compression for the purpose of setting Mechanical Liner Hanger, Rotating Liner Hanger during Cementing operation , or insuring setting tool engagement during run-in.
MECHANICAL LINER HANGER RUNNING WITH PACKER SETTING TOOL "MCT"

PRODUCT CODE - MI 5169

DESCRIPTION & APPLICATION:

"MCT" is a liner hanger running setting cum packer setting tool that conveys the liner, wiper plugs, seal assembly and hanger assembly into the well. It is a non-rotating tool that can be released in compression with right hand rotation after setting the liner hanger and completion of cementing. It also serves as pack-off tool when the liner runs with the liner top pack-offs. The "MCT" is provided with slots on the body for circulation purposes. The face of Setting Dog of the Running Tool is knurled for sufficient grip. With the Liner hung and the setting tool released the string is picked up to release the setting dogs. Setting Weight back down on the string will activate and lock the pack off in the set position.

TOP SET PACKER SETTING TOOL MODEL "TST"

PRODUCT CODE - MI 5161

DESCRIPTION & APPLICATION:

Top Set Packer Setting Tool used along with the liner setting tool. "TST" is provided with slots on the body for circulation purposes. It is used when running liner equipment with liner top pack-offs. After setting the Liner hanger and releasing the running tool, the string is picked up to release the setting dogs. Setting weight back down on the string will activate and lock the pack-off in the set position.