

Wireline Tools and Equipment Catalog

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Section A

Locking Mandrels

Description	Size	
FMSS Locking Mandrel	1.500" - 2.875"	
FMSS Locking Mandrel Adapter Sub	2" - 3" Assembly	
FMSX Certified Locking Mandrel	1.875" - 2.813" Assy.	
FMSXN Certified Locking Mandrel	1.875" - 2.813" Assy.	
FMSX Locking Mandrel	1.250" - 3.813" Assy	
FMSXN Locking Mandrel	1.250" - 3.813" Assy	
B Locking Mandrel	2" - 3" Assembly	
D Locking Mandrel	2" - 3" Assembly	
D Locking Mandrel	2 1/2" - 3" Assy.	
M Locking Mandrel	2" - 2 1/2" Assembly	
T Locking Mandrel	2.750" - T1 Key - T-5 Key	
W Locking Mandrel	1.250" - 3" Assy.	
FMSR Locking Mandrel	1.710" - 3.688" Assy.	
FMSX Landing Nipple	1.875" to 2.813 "	
FMSX Certified Landing Nipple	1.875" to 2.813 "	
FMSXN Landing Nipple	1.875" to 2.813 "	
FMSXN Landing Nipple	1.875" to 2.813 "	



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At FMS, Quality Control is an issue we do not take lightly. It is of the utmost importance to in that we supply our customers with the best products possible. Our commitment to quality starts with the verification incoming materials, and continues through all phases of production, up to the final release of the product. A strict, detailed step-by-step product recisions that all services and manufacturing processes we perform are of the highest quality possible. At estiminory to our true commitment to quality, we are literated under API specification id.

We at FMS realize the needs for reliable and specialized wirelate tools and oquipment. As these needs increase so do set the need for qualified manufacturers. With the combination of many valuable years of experience in the moshine shop and wireline service fields, and our highly skilled work free, we are capable of ensuring contomers of meeting these needs. You will find a complete and divestrifed line of virieline tools and capaginers in our Product Catalog, However, if we can be of assistance to your specialized machine tool needs, please feel free to contact as a may time.





GO BACK HOME

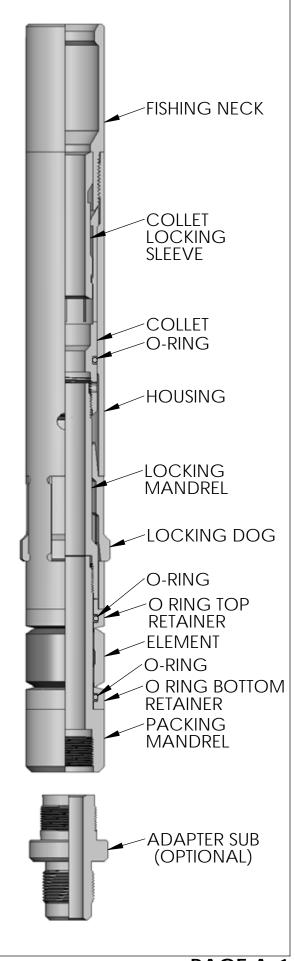
D LOCKING MANDREL



The Type "D" Collar Lock Mandrel is used to land and lock in any collar recess of API collared tubing. The sealing element is mechanically locked in the set position so that pressure differentials can be held from above or below the locking mandrel. It can be used in conjunction with pump through plugs, positive plug, safety valves, standing valves, and packoffs.



SPECIFICATIONS						
SIZE	2"	2 1/2"	3"			
FISHINGNECK I.D.	1.375"	1.812"	2.312"			
MAX O.D.	1.840"	2.281"	2.844"			
MINIMUM I.D.	.938"	1.375"	1.750"			
BOTTOM THREAD	1 5/16"-18	1 21/32"-14	2 1/8"-12			
RUNNING TOOL	2" D	2 1/2" D	3" D			
PULLING TOOL	2" GS	2 1/2" GS	3" GS			



FMSR / FMSRN LOCKING MANDREL



The FMSR Locking Mandrel is a selective lock that can be installed in the FMSR Landing Nipple. They are used in heavier weight tubing due to higher well pressure. These locking mandrels use keys that lock into a profile in the landing nipple that allow it to hold pressure differential from either above or below. This lock can be used in conjunction with pump through plugs, positive plugs, safety valves, and standing valves.

The FMSRN Locking Mandrel is the "no go" version of the usually selective locks. The keys have an angled shoulder on them instead of the square shoulder of the selective locks. A "no go" shoulder of an equalizing sub or a crossover sub made up the bottom of the lock must make contact with a bore restriction in the "no go" nipple in order to lock this mandrel in the appropriate nipple. This locking mandrel can be used in conjunction with pump through plugs, positive plugs, safety valves, bottom hole chokes, and standing valves.

SPECIFICATIONS				D PACKING		
SIZE	1.710"	1.781"	1.875"		RIN	IG
MINIMUM I.D.	.750"	.875"	.875"		- ^ \	APTER SUB
FISHINGNECK I.D.	1.062"	1.375"	1.375"			PTIONAL)
BOTTOM THREAD	1 1/8"-16	1 3/8"-14	1 3/8"-14			,
CONNECTION	1 1/6 -10	1 3/0 -14	1 3/0 -14			
RUNNING TOOL	*	*	1 7/8" FMSR		} B /	4CK
PULLING TOOL	1 1/2" GS	2" GS	2" GS			
SIZE	2.000"	2.125"	2.188"	2.313"	2.562"	3.688"
MINIMUM I.D.	.875"	.875"	1.125"	1.125"	1.375"	2.375"
FISHINGNECK I.D.	1.375"	1.375"	1.812"	1.812"	1.812"	3.125"
BOTTOM THREAD	1 2 /0" 1 4	1 2 /0" 14	1 2 / 4 1 1 2	1 3/4"-12	2" 12CLD	3 1/16"-12SLB
CONNECTION	1 3/8"-14	1 3/8"-14	1 3/4"-12	1 3/4 -12	2"-12SLB	3 1/10 -123LD
RUNNING TOOL	2" FMSR	2 1/8" FMSR	2 3/16" FMSR	2 5/16" FMSR	2 9/16" FMSR	3 11/16" FMSR
PULLING TOOL	2" GS	2" GS	2 1/2" GS	2 1/2" GS	2 1/2" GS	4" GS

FISHINGNECK

EXPANDER

KEY HOUSING

KEY SPRING

PACKING

MANDREL

RING

CENTER

END PACKING

VEE PACKING

PACKING RING
VEE PACKING

-KEY

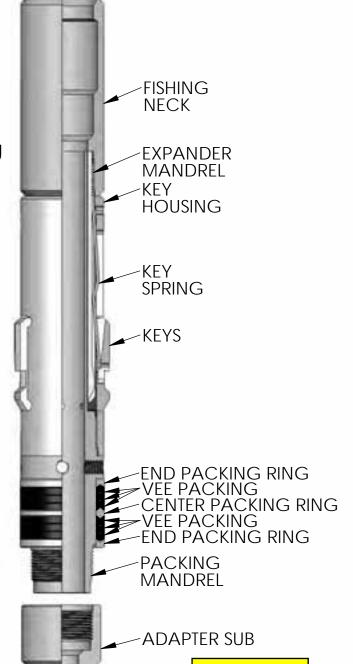
MANDREL

FMSX / FMSXN LOCKING MANDREL



The FMSX Locking Mandrel operates in the same way as the FMSR Locking Mandrel. The FMSX Locking Mandrel is used in standard weight tubing. The FMSR Locking Mandrel is used in heavy weight tubing.

The FMSXN Locking Mandrel is the "no go" version of the usually selective locks. The keys have an angled shoulder on them instead of the square shoulder of the selective locks. A "no go" shoulder of an equalizing sub or a crossover sub made up on the bottom of the lock must make contact with a bore restriction in the "no go" nipple in order to lock this mandrel in the appropriate nipple. This locking mandrel can be used in conjunction with pump through plugs, positive plugs, safety valves, bottom hole chokes, and standing valves.





SPECIFICATIONS					
SIZE	1.875"	2.313"	2.750"	2.813"	
MINIMUM I.D.	1.000"	1.375"	1.750"	1.750"	
FISHINGNECK I.D.	1.375"	1.812"	2.313"	2.313"	
BOTTOM THREAD CONNECTION	1 3/8"-14	1 3/4"-12	2 1/4"-12SLB	2 1/4"-12SLB	
RUNNING TOOL	2" FMSX	2 1/2" FMSX	3" FMSX	2.81" FMSX	
PULLING TOOL	2" GS	2 1/2" GS	3" GS	3" GS	

BACK

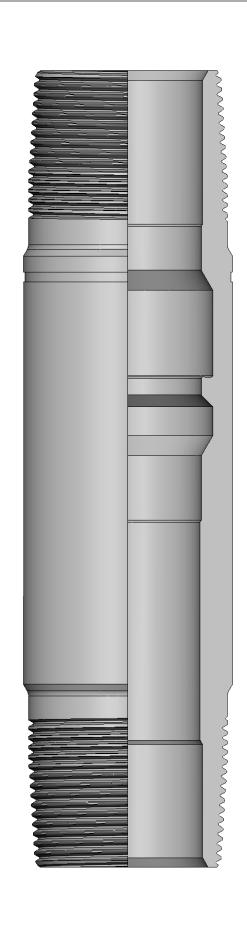
FMSX / FMSXN LANDING NIPPLE



The FMSX/FMSXN Landing Nipple is designed for the FMSX/FMSXN Locking Mandrel to lock into the profile of the nipple.



FMSX SPECIFICATIONS	FMSXN SPECIFICATIONS
1.875"	1.875"
2.313"	2.313"
2.750"	2.750"
2.813"	2.813"





Section B

Bailers

Description	Size
Dump Bailers	1 1/4" - 2 1/4"
1 Pc. Sand Bailer w/ Ball Bottom	1" to 3"
2 Pc. Sand Bailer w/ Ball Bottom	1" to 3"
Drive Down Bailer	1" - 2 1/4"" <mark>(Ball Bottom) (Flapper Bottom)</mark>
Sample Bailer	1" - 2 1/2""
Hydrostatic Bailer	1 1/4" - 3"
Junk Basket for Hydrostatic Bailer	2" to 3" Assy
Junk Basket w/ Collar Stop	2" to 3" Assy
Junk Basket w/ Solid Bottom	2" to 3" Assy

GO BACK HOME

DUMP BAILER

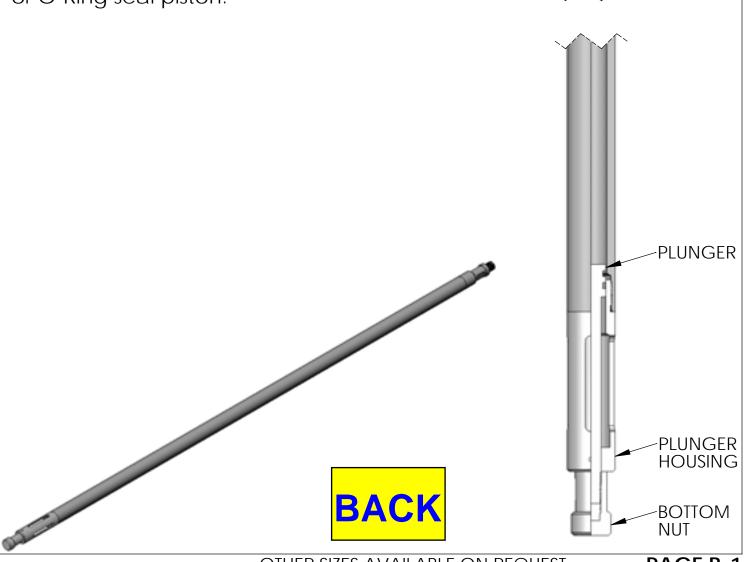


The FMS Dump Bailer is designed to allow a variety of fluids to be dumped within the well on top of any sub-surface device.

Wireline Dump Bailers are available in a variety of sizes.

The bottom shoe of the Wireline Dump Bailer should always be matched with the downhole device upon which fluid is to be dumped.

Bottom assemblies are available with glass shear disc or O-Ring seal piston.



TOP SUB

BARREL

ONE PIECE SAND BAILER

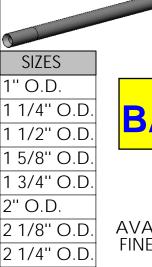


The FMS Bailer is a wireline service tool used to remove sand, mud, salt, or small pieces of junk from the tubing or casing. The Sand Bailer is also used to clear debris which has settled on top of sub-surface equipment, preventing the recovery of the equipment by regular wireline operations.

The Sand Bailer is a pump-type tool which operates on the principle of a conventional lift pump with piston.

The Sand Bailer consists of a piston and check valve encased in an outer cylinder. At the lower end of the bailer there is a ball check valve or a flapper-type valve, which allows sand and debris to enter the tube. By lightly stroking up and down with the wireline tool string the bailer acts to suck sand or debris into the cylinder through the ball or flapper bottom and trapping the substances inside the tube.

Various bottom shoe sizes and configurations, as well as extension tubes for the Sand Bailer are available on request.



3" O.D.

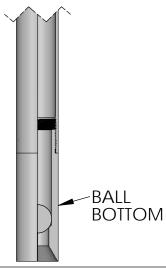


OR

COARSE THREAD







TOP SUB

FISHING

NECK

ROD

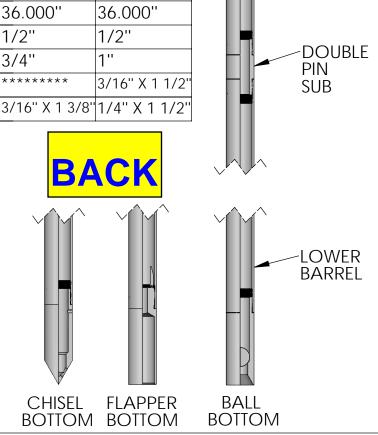
BARRFI

TWO PIECE SAND BAILER



The Sand Bailer is a pump action type bailer designed to remove sand and small debris in the tubing string, through the upward stroking motion of the pump section. Sand and debris are held in the load barrel through the use of different style check bottoms. A Targe percentage of wireline service involves sand bailing prior to the actual pulling or setting of subsurface flow controls.

		ICATIONS	
SIZE	1"	1 1/4"	1 3/8"
FISHINGNECK O.D.	1.000"	1.188"	1.188"
MAX O.D.	1.000"	1.250"	1.375"
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10
LENGTH-OPENED	144.875"	146.688"	146.438"
CLOSED (BALL)	108.875"	110.688"	110.438"
LENGTH-OPENED	144.563"	150.000"	145.125"
CLOSED (FLAPPER)	108.563"	114.000"	109.125"
PLUNGER STROKE	36.000"	36.000"	36.000"
BALL (PISTON)	3/8"	1/2"	1/2"
BALL	5/8"	3/4"	3/4"
COARSE THREAD	*****	3/16" X 1 1/4"	*****
FINE THREAD	3/16" X 1"	1/4" X 1 1/4"	3/16" X 1 3.
SIZE	1 3/4"	2"	
FISHINGNECK O.D.	1.375"	1.375"	
MAX O.D.	1.750"	2.000"	B
PIN CONNECTION	15/16"-10	15/16"-10	
LENGTH-OPENED	147.500"	112.500"	
CLOSED (BALL)	111.500"	112.500"	
LENGTH-OPENED	146.625"	146.625"	
CLOSED (FLAPPER)	110.625"	110.625"	
PLUNGER STROKE	36.000"	36.000"	
BALL (PISTON)	5/8"	5/8"	
BALL	1 1/8"	1 1/4"	
COARSE THREAD	3/16" X 1 3/4"	*****	CHISE
FINE THREAD	1/4" X 1 3/4"	3/16" X 2"	BOTTO
OTUED 01750 AV //			•



1 1/2"

1.188"

1.500"

<u>15/16</u>"-10

146.438"

110.438"

146.250" 110.250" TOP SUB

FISHING NECK

UPPER BARREL

PLUNGER

WASHER

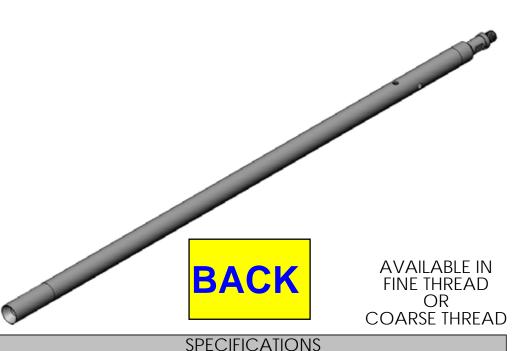
NUT

PLUNGER

DRIVE DOWN BAILER (BALL BOTTOM)

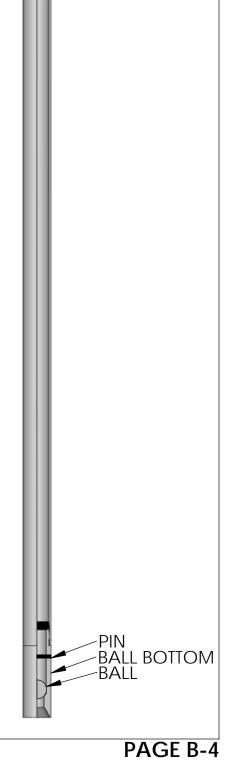


Drive Down Bailers are made of a barrel to hold the sand and a ball or flapper type check valve on the bottom. Usually, the very bottom of these bailers are cut off at an angle to make a horseshoe shape. They are used successfully in bailing mud and shale and are loaded merely by running them down in the mud and pulling back out.



SPECIFICATIONS					
SIZE	1 1/4"	1 1/2"	1 5/8"	1 3/4"	
FISHING NECK O.D.	1.188"	1.188"	1.375"	1.375"	
MAX O.D.	1.250"	1.500"	1.625"	1.750"	
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	
MADE UP LENGTH	60.938"	60.875"	60.938"	60.938"	
BALL	3/4"	1"	1"	1 1/8"	
STEEL PIN	3/16 X 1 1/4"	3/16 X 1 1/2"	3/16 X 1 5/8"	3/16 X 1 3/4"	

OTHER SIZES AVAILABLE ON REQUEST



TOP SUB

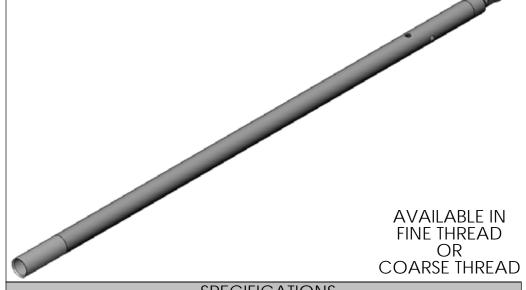
BARREL

DRIVE DOWN BAILER (FLAPPER BOTTOM)



Drive Down Bailers are made of a barrel to hold the sand and a ball or flapper type check valve on the bottom. Usually, the very bottom of these bailers are cut off at an angle to make a horseshoe shape. They are used successfully in bailing mud and shale and are loaded merely by running them down in the mud and pulling back out.





SPECIFICATIONS					
1 1/4"	1 1/2"	1 5/8"	1 3/4"		
. 1.188"	1.188"	1.375"	1.375"		
1.250"	1.500"	1.625"	1.750"		
15/16"-10	15/16"-10	15/16"-10	15/16"-10		
59.625"	60.688"	60.563"	61.063"		
	1 1/4" 0. 1.188" 1.250" 15/16"-10	1.188" 1.188" 1.250" 1.500" 15/16"-10 15/16"-10	1 1/4" 1 1/2" 1 5/8" 1.188" 1.188" 1.375" 1.250" 1.500" 1.625" 15/16"-10 15/16"-10 15/16"-10		

OTHER SIZES AVAILABLE ON REQUEST



FLAPPER BOTTOM

TOP SUB

BARREL

SAMPLE BAILER

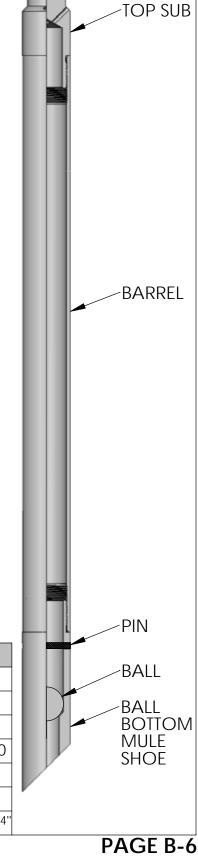


The Sand Bailer is normally attached to the bottom of a Tubing End Locator to retrieve samples of fluids and solids from the well bottom. This tool can be modified to accept a Drive Down Fishingneck.



	SPECIFICATIONS				
SIZE	1"	1 1/4"	1 1/2"	1 5/8"	1 3/4"
FISHINGNECK O.D.	1.000"	1.188"	1.188"	1.375"	1.375"
MAX O.D.	1.000"	1.250"	1.500"	1.625"	1.750"
PIN CONNECTIONS	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16"-10
MADE UP LENGTH	22.250"	22.563"	23.625"	23.688"	23.688"
BALL	5/8"	3/4"	7/8"	1"	1 1/4"
STEEL PIN	1/8" X 1"	3/16" X 1 1/4"	3/16" X 1 1/2"	3/16" X 1 5/8"	3/16" X 1 3/4"

OTHER SIZES AVAILABLE ON REQUEST



HYDROSTATIC BAILER

TOP SUB

SET SCREW TOP SUB

PISTON

PISTON

SAFETY

SCREW

TOP SUB

O-RING

-BARREL

-O-RING

-DOUBLE PIN SUB -O-RING

-SHFAR

HOUSING

DISC **PLUNGER**

BALL O-RING PLUNGER

-SHOE

PAGE B-7

BALL



The FMS Hydrostatic Bailer is a wireline service tool used when substances to be bailed cannot be removed by a pump bailer. This sometimes occurs when small metallic particles or other type debris become lodged on top of the dogs of a lock mandrel, etc.

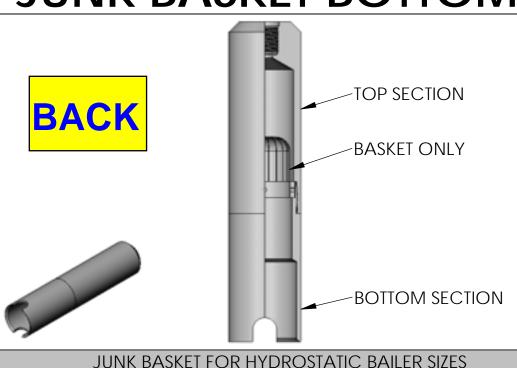
The Hydrostatic Bailer is made of a cylinder, about 5 feet long, with a shear disc mechanism at the bottom. The cylinder is at atmospheric pressure, sealed off from well pressure with an O-ring. When the obstructions is reached, the disc is sheared by downward jarring.

Different skirt sizes can be fitted for various tubing and tool sizes. Brass shear discs are available in different thicknesses for various well pressures.

HYDROSTATIC BAILER SIZE

1 1/4" O.D. 1 1/2" O.D. 1 5/8" O.D. 2" O.D. 2 1/2" O.D. 3" O.D.

JUNK BASKET BOTTOM



2 1/2"

2"

OTHER SIZES AVAILABLE ON REQUEST



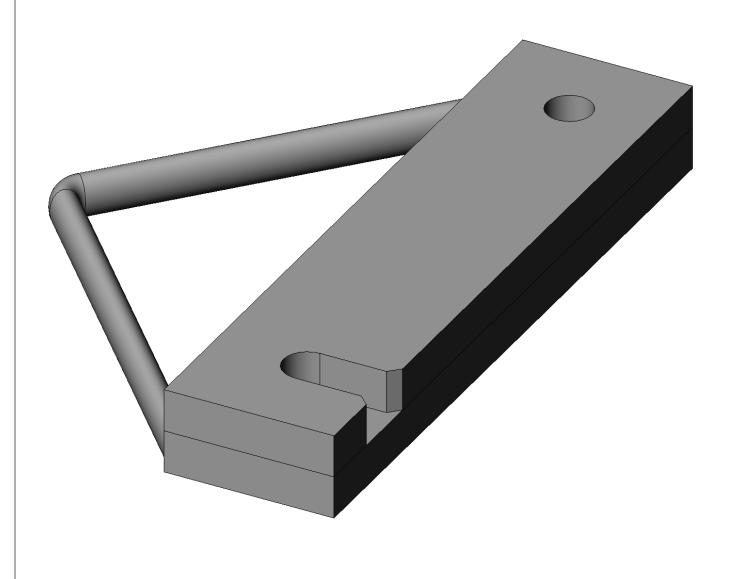
Section C FISHING EQUIPMENT

Description	Size	
Bar Fishing Clamp	Assembly	
Bull Dog Spear	2" - 3"	
Center Spear	Assembly	
Go Devil	(1 1/4" x 2') - (2 1/8" x 5')	
Heavy Duty Fishing Magnet	1 1/2" - 2.800"	
Magnet	1" - 3 1/2"	
Skirted Magnet	1 3/4" - 2.700"	
Overshot	Asssembly	
Wirefinder Retreiver (Less Skirt)	1 12" - 3"	
Wirefinder Top Sub	Top Sub	
Wirefinder Split Skirts	1.450" - 8.000"	
Solid Wirefinder	1.843" - 3.820"	
2 Prong Wireline Grab	1.843" - 3.500"	
3 Prong Wireline Grab	1.843" - 3.500"	
4 Prong Wireline Grab	1.250" - 5.500"	
Cable Grab	2" - 2 1/2"	
Wire Stripper	Assembly, Body & Nut	

GO BACK HOME

BAR FISHING CLAMP







BULL DOG SPEAR

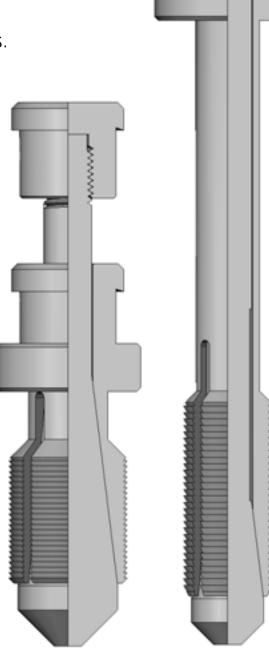


The FMS Bulldog Spear is a wireline fishing tool designed to catch the internal diameter of a wireline tool or other type "fish" requiring an internal latch.

The FMS Bulldog spear is made especially for wireline operations and is available with a wide range of hardened and tempered slips to withstand heavy fishing operations.



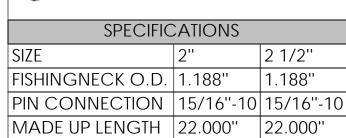




CENTER SPEAR



The Center Spear is made by welding barbs on a pointed rod. It is most commonly used when the wire is balled up and stuck in the tubing. It can be driven into the tangled wire to loosen it and facilitate the use of a two prong wire grab for final wire retrieval.



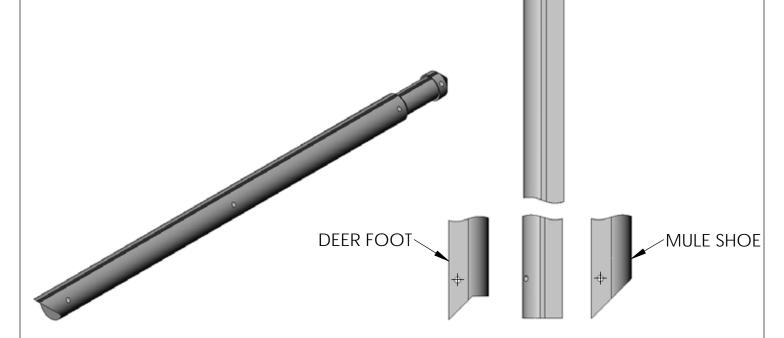
BACK

GO DEVIL



The Go Devil is dropped to cut the wireline at the rope socket when the tool string becomes stuck.





SPECIFICATIONS					
SIZE		1 1/4"	1 1/2"	1 3/4"	1 7/8"
FISHINGNECK O.D.		1.188"	1.375"	1.750"	1.750"
MAX O.D.		1.250"	1.500"	1.750"	1.875"
MADE UP LENGTH	3'	36.000"	36.000"	36.000"	36.000"
IVIADL OF LENGTH	5'	60.000''	60.000"	60.000"	60.000"

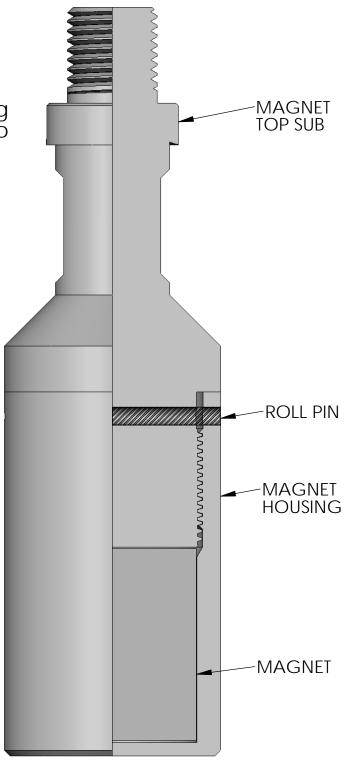
OTHER SIZES AVAILABLE ON REQUEST

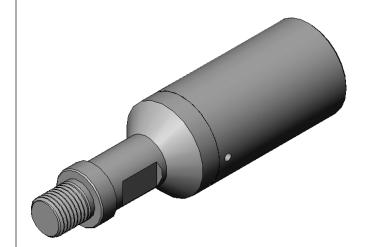
PAGE C-4

HEAVY DUTY FISHING MAGNET



The FMS Heavy Duty Magnet Fishing Tool is a wireline service tool used to magnetically attract and retrieve ferrous debris lost in the well bore.





MA	XX O.D.
1	1/2"

1 3/4"

2.700"

2 1/4"

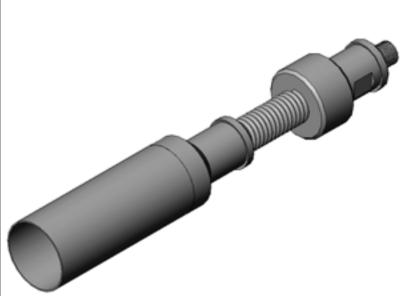


SKIRTED MAGNET

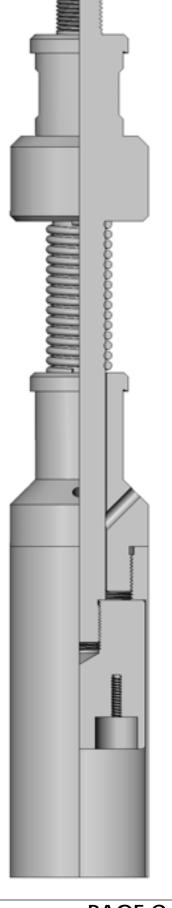


The Skirted Magnet is used to remove metal particles and debris from the tubing, which may impede normal wireline operations and prevent tools from functioning properly.





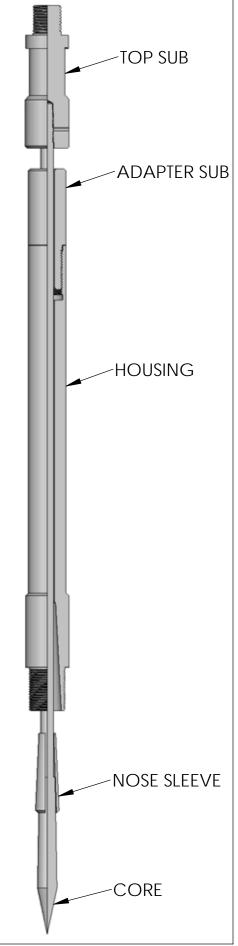
SPECIFICATIONS			
	31 23113711	10140	
SIZE	1 3/4"	2"	2 1/4"
FISHINGNECK O.D.	1.375"	1.375"	1.375"
MAX O.D.	1.750"	2.000"	2.250"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10
MADE UP LENGTH	13.500"	13.500"	13.500"

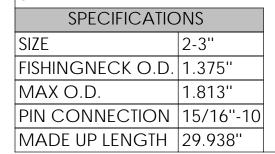


WIREFINDER RETRIEVER



The Wireline Retriever is designed to retrieve broken or cut slickline from the tubing. It locates and balls the broken wire with the aid of the Split Skirt (located at the bottom of the tool). The wire is then trapped in between the spear point and the Split Skirt. Pulling up on the tool spring wedges the broken line within the tool and the retrieving process can begin.







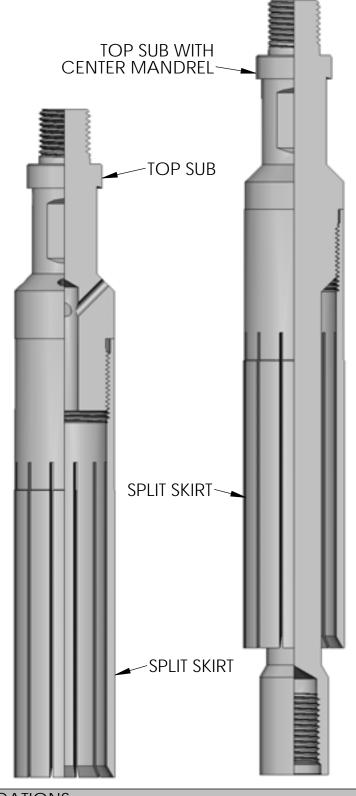
WIREFINDER SPLIT SKIRT



The Wirefinder Top Sub is used to bend or ball the uppermost part of the wire so that retrieving applications may be used.



SPECIFICATIONS WITH CENTER MANDREL				
FISHINGNECK O.D.	1.375"	1.750"		
MAX O.D.	1.687"	1.812"		
PIN CONNECTION	15/16"-10	1 1/16"-10		
BOX CONNECTION	15/16"-10	1 1/16"-10		
MADE UP LENGTH	14.125"	14.125"		



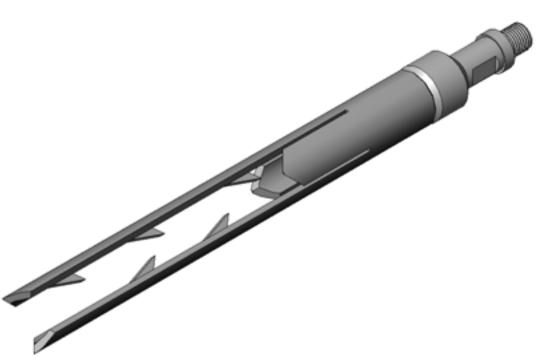
SPECIFICATIONS			
SIZE	2"	2 1/2"	3"
FISHINGNECK O.D.	1.375"	1.375"	1.375"
MAX O.D.	1.813"	2.400"	2.740"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10
MADE UP LENGTH	10.938"	11.313"	10.938"

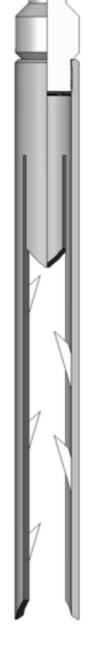
2 PRONG WIRELINE GRAB



The Two Prong Wireline Grab is used to retrieve broken wire from the tubing string. The arms include welded bards which catch the wire.







SPECIFICATIONS						
SIZES	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3''
FISHING NECK O.D.	1.000"	1.188"	1.375"	1.375"	1.375"	1.750"
MAX O.D.	1.230"	1.490"	1.740"	1.750"	2.250"	2.625"
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MADE UP LENGTH	23.875"	23.938"	23.938"	23.938"	25.250"	24.500"

OTHER SIZES AVAILABLE ON REQUEST

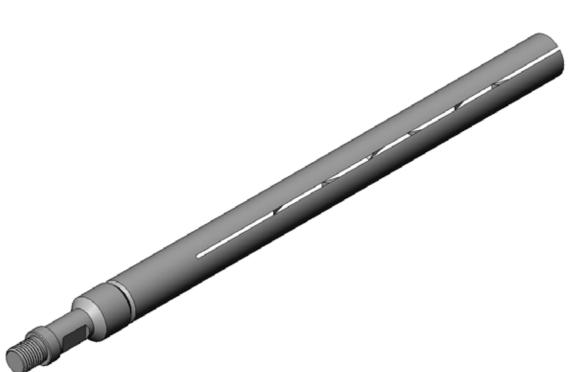
PAGE C-9

4 PRONG WIRELINE GRAB



The Four Prong Wireline Grab is used to retrieve broken wire from the tubing string. The arms include welded barbs which catch the wire.





	SP	ECIFICATIONS	
SIZE	2"	2 1/2"	3"
FISHINGNECK O.D.	1.375"	1.375"	1.750"
MAX O.D.	1.750"	2.250"	2.625"
PIN CONNECTION	15/16"-10	15/16"-10	1 1/16"-10
MADE UP LENGTH	20.438"	20.750''	21.000"

OTHER SIZES AVAILABLE ON REQUEST



Section D Gas Lift Equipment

Description	Size	
BK-2 Latch	Assembly	
RK Latch	Assembly	
R Latch	Assembly	
RA Latch	Assembly	
DK Dummy Valve	Assembly	
RD Dummy Valve	Assembly	
Gas Lift Straightening Tool	2" - 3" Assembly	
Junk Basker With Collar Stop	2" - 3" Assembly	
Junk Basker With Solid Bottom	2" - 3" Assembly	
"Ak" Kickover Tool	3 Spring	
"Ak" Kickover Tool	4 Spring	
"K" Kickover Tool	3 Spring	
"K" Kickover Tool	4 Spring	
"L" Kickover Tool	Assembly	
"L2D" Kickover Tool	Assembly	
"OK-1" Kickover Tool	2" - 3"	
"OK-5" Kickover Tool	2" - 3"	
"OM-1" Kickover Tool	2" - 3"	
"R" Kickover Tool	2" - 3"	

GO BACK HOME

K/AK KICKOVER TOOL

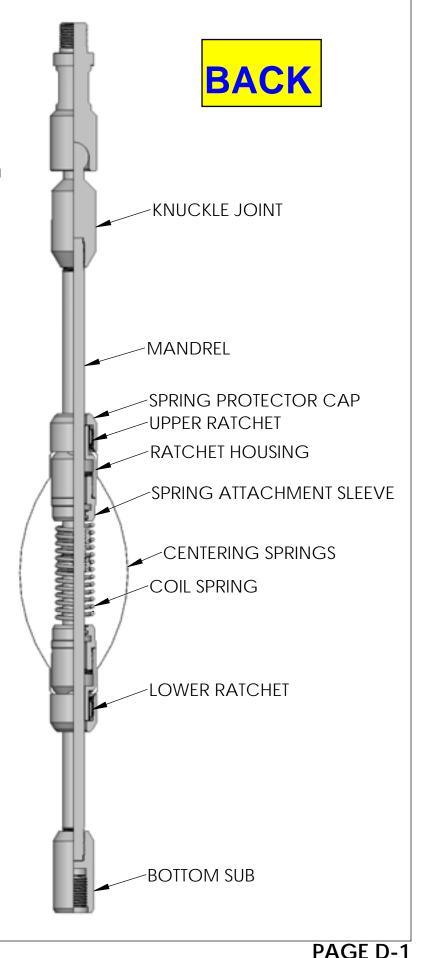


The K/KA Kickover Tools are used in selectively locating 1" retrievable wireline devices in side pocket mandrels.



SPECIFICATIONS -K -AL	L SIZES	
FISHINGNECK O.D.	1.375"	
MAX O.D.	1.563"	
OVERALL LENGTH	29.718"	
STEEL PINS (4)	3/16" X 1.375"	
TOP PIN THREAD	15/16"-10	
BOTTOM BOX THREAD	15/16"-10	
VALVE	1"	
MANDREL TYPE	KBM, KBMG,	
IVIAINDREL LIPE	*MM, *MMG	
*REQUIRES 4.062" SPACER		

SPECIFICATIONS -AK	
FISHINGNECK O.D.	1.187"
MAX O.D.	1.313"
OVERALL LENGTH	29.938"
STEEL PINS (4)	3/16" X 1.313"
TOP PIN THREAD	15/16"-10
BOTTOM BOX THREAD	15/16"-10
VALVE	1"
MANDREL TYPE	KBU, KBUW, KA



OTHER SIZES AVAILABLE ON REQUEST



Section E Downhole Equipment

Description		Size		
Type A Circulation	ng Plug	1 1/2" - 3"		
Type W Circulating Plug		1 /3/4" - 3"		
Downhole Choke		1.875" - 2.750"		
" B " Equalizing	Sub	1 1/2" - 3"		
" H " Equalizing	Sub	1 1/2" - 3"		
DD Bridge Plug		2" - 3"		
Kobe Knockout	Plug	2" - 3"		
PS Plug		1 1/2" - 3"		
PN Plug		1 1/2" - 3"		
S Plug		2" - 21/2"		
FMSPR Plug		1.710" - 2.562"		
FMSPX Plug (Pa	icking Type)	1.500" - 3.813"		
FMSPX Plug (Gi	rommet Type)	1.500" - 2.813"		
FMSRR Plug	FMSR Equalizing Sub	1.710" - 2.562"		
FMSXX Plug	FMSX Equalizing Sub	1.500" - 3.813"		
FMSXR Plug		2" - 4"		
D Plug		1 1/2" - 3"		
Type A Standing	Valve	1 1/2" - 3"		
FMSS Lock Standing Valve 2" - 3"				
FMSS Lock Stan With Kobe Knoc		2" - 3"		
T Input Valve		2" to 3" Assembly		
T Input valve		Assembly		

GO BACK HOME

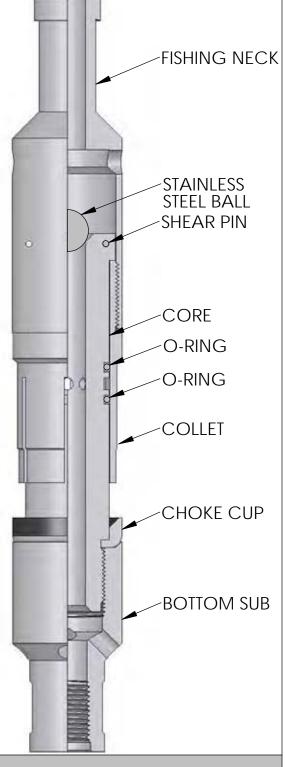
TYPE A CIRCULATING PLUG



The Type "A" Circulating Plug is a removable check valve that can be installed below a perforation. It may also be used to test the tubing from above.







SPECIFICATIONS						
SIZE	1 1/2"	2"	2 1/2"	3"		
FISHINGNECK O.D.	1.188"	1.375"	1.375"	2.313"		
OVERALL LENGTH	12.750"	14.125"	15.625"	17.563"		
SHEAR PIN	1/8" X 5/8"	1/8" X 1 3/8"	1/8" X 1 1/2"	3/16" X 1 5/8"		
STAINLESS STEEL BALL	3/4"	7/8''	7/8"	1 5/8"		
FLOW AREA	0.135"	0.159"	0.159"	0.280''		
BOTTOM THREAD	15/16"-10	15/16"-10	15/16"-10	NONE		

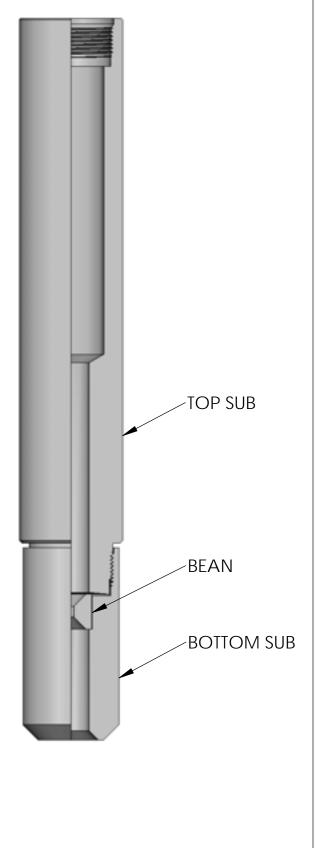
OTHER SIZES AVAILABLE ON REQUEST

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DOWNHOLE CHOKE







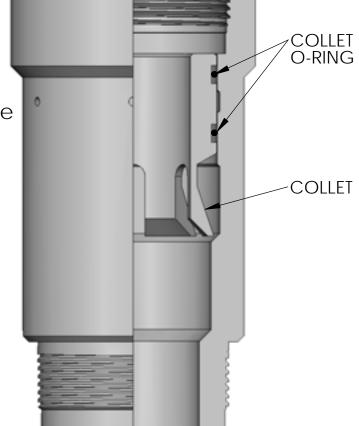
SPECIFICATIONS

SIZES 1.875" 2.313" 2.750"

FMSX / FMSR EQUALIZING SUB



The FMSX Equalizing Subs are used as a means of equalizing pressure differentials across a flow control device. They are designed to be used with large bore mandrels such as FMSX Locking Mandrel. The maximum O.D. ring on the FMSX Equalizing Sub serves as a no-go ring for type FMSXN Locking Mandrels. FMSR Equalizing Sub are available for use with FMSR Locking Mandrels.







FMSX - SPECIFICATIONS					
SIZE	1.875"	2.313"	2.750"	2.813"	
MAX O.D.	1.870"	2.305"	2.745"	2.745"	
MIN. I.D.	.875"	1.218"	1.625"	1.625"	
FMSR - SPECIFIC ATIONS					

GO TO
FMSXX/FMSRR PLUGS

IVIIIN. I.D.	.075	1.210	1.025	1.025			
	FMSR - SPECIFICATIONS						
SIZE	1.710"	1.781"	1.875"	2.125"	2.188"	2.313"	2.562"
MAX O.D.	1.706"	1.776"	1.870"	2.120"	2.183"	2.308"	2.557"
MIN. I.D.	.625"	.780''	.780''	.780"	1.000"	1.000"	1.190"

OTHER SIZES AVAILABLE ON REQUEST

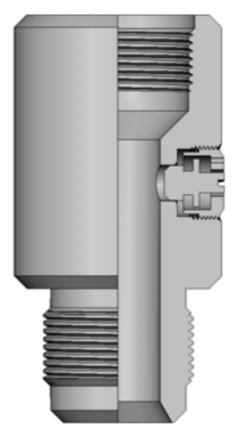
PAGE E-3

HOUSING

B / H EQUALIZING SUB



The Type "B" and "H" Equalizing Subs allow an equalization of a pressure differential across a locking mandrel so that the locking mandrel can be safely and properly retrieved. It also provides a means to allow fluid to bypass around a locking mandrel as it is lowered into a landing nipple. A running prong and pulling prong are needed to equalize these subs. The prong lifts a spring loaded equalizing dart off "seat" which will allow either fluid bypass or pressure equalizing. The Type "B" and "H" subs are identical except the internal diameters of the "H" subs are larger than the "B" subs.



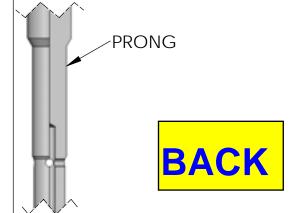


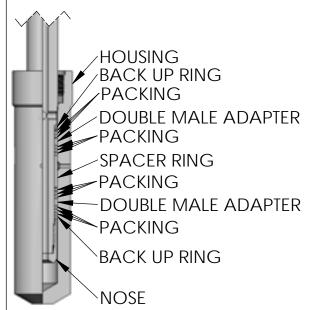
SPECIFICATIONS - "B"						
SIZE	2"	2 1/2"	3"			
O.D.	1.750"	2.150"	2.625"			
I.D.	.531"	.719"	1.156"			
THREAD SIZE	1 3/16"-14	1 9/16"-12	2"-12			
FLOW AREA (SQ. IN.)	.003"	.003"	.003"			

SPECIFICATIONS - "H"					
SIZE	1 1/2"	2"	2 1/2"	3"	
O.D.	1.418"	1.750"	2.150"	2.710"	
I.D.	.563"	.688''	.875"	1.50"	
THREAD SIZE	7/8''-14	1 3/16"-14	1 9/16"-12	2"-12	
FLOW AREA (SQ. IN.)	.003"	.003"	.003"	.003"	

FMSPR / FMSPX PLUG (PACKING TYPE)







SPECIFICATIONS - FMSPX						
SIZE	1.500"	1.625"	1.875"			
FISHINGNECK O.D.	1.000"	1.000"	1.375"			
NO GO O.D.	1.490"	1.615"	1.865"			
THREAD CONNECTION	1 1/8"-16	1 1/8"-16	1 3/8"-14			
PRONG RUNNING/	1 3/8" JDC OR	1 3/8" JDC OR	2" JDC OR			
PULLING TOOL	1 1/4" SB	1 1/4" SB	2" SB			
EQUALIZING FLOW						
AREA (SQ. IN.)	.049''	.049''	.070''			
SIZE	2.313"	2.750"	2.813"			
FISHINGNECK O.D.	1.375"	1.375"	1.375"			
NO GO O.D.	2.300"	2.740"	2.800"			
THREAD CONNECTION	1 3/4"-12	2 1/4"-12SLB	2 1/4"-12SLB			
PRONG RUNNING/	2" JDC OR	2" JDC OR	2" JDC OR			
PULLING TOOL	2" SB	2" SB	2" SB			
EQUALIZING FLOW						
AREA (SQ. IN.)	.175"	.175"	.175"			

The Type FMSPX Plug is a positive plug used in conjunction with the Type FMSX Landing Nipple. This plug might be used to test tubing or to plug tubing to perform repairs or replacement of surface equipment. Equalization is achieved by pulling the equalizing prong from the plug assembly.

The Type FMSPR Plug is a positive plug used in conjunction with the Type FMSR Landing Nipple. This plug might be used to test tubing or to plug tubing to perform repairs or replacement of surface equipment. Equalization is achieved by pulling the equalizing prong from the plug assembly.

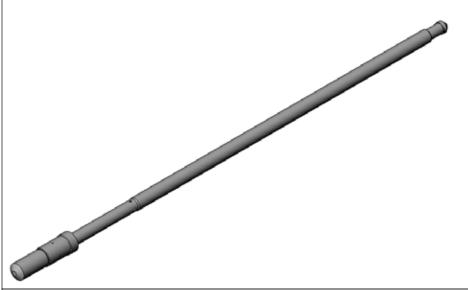
SPECIFICATIONS - FMSPR							
SIZE	1.710"	1.781"	1.875"	2.125"	2.188"	2.313"	2.562"
FISHINGNECK O.D.	1.187"	1.187"	1.187"	1.187"	1.375"	1.375"	1.375"
NO GO O.D.	1.700"	1.770"	1.865"	2.115"	2.175"	2.300"	2.550"
THREAD CONNECTION	1 1/8"-16	1 3/8"-14	1 3/8"-14	1 3/8"-14	1 3/4"-12	1 3/4"-12	2"-12SLB
PRONG RUNNING/	1 1/2" JDC OR	1 1/2" JDC OR	1 1/2" JDC OR	1 1/2" JDC OR	2" JDC OR	2" JDC OR	2" JDC OR
PULLING TOOL	1 1/2" SB	1 1/2" SB	1 1/2" SB	1 1/2" SB	2" SB	2" SB	2" SB
EQUALIZING FLOW							
AREA (SQ. IN.)	.049''	.049''	.049''	.049''	.049''	.049''	.049''

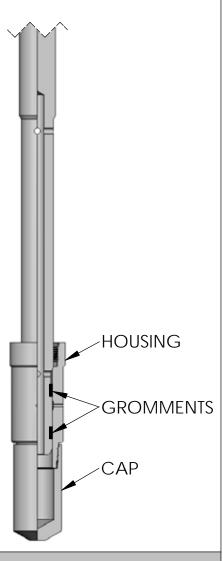
FMSPX PLUG (GROMMET TYPE)



The Type FMSPX Plug is a positive plug used in conjunction with the Type FMSX Locking Mandrel to hold pressure from above and below in a Type FMSX Landing Nipple. This plug might be used to test tubing or to plug tubing to perform repairs or replacement of surface equipment. Equalization is achieved by pulling the equalizing prong from the plug assembly.







PRONG

SPECIFICATIONS							
SIZE	1.500"	1.625"	1.875"	2.313"	2.750"	2.813"	
FISHINGNECK O.D.	1.00"	1.00"	1.375"	1.375"	1.375"	1.375"	
NO GO O.D.	1.490"	1.615"	1.865"	2.300"	2.740"	2.795"	
THREAD CONNECTION	1 1/8"-16	1 1/8"-16	1 3/8"-14	1 3/4"-12	2 1/4"-12SLB	2 1/4"-12SLB	
PRONG RUNNING/ PULLING TOOL	1 3/8"JDC OR 1 1/4" SB	1 3/8"JDC OR 1 1/4" SB	2"JDC OR 2" SB	2"JDC OR 2" SB	2"JDC OR 2" SB	2"JDC OR 2" SB	
EQUALIZING FLOW AREA (SQ. IN.)	.049''	.049"	.070''	.175"	.175"	.175"	

FMSRR / FMSXX PLUGS



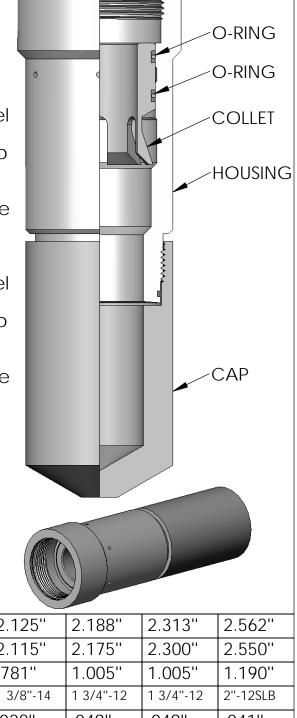


The Type "FMSRR" Plug is a positive plug used in conjunction with the Type "FMSR" Locking Mandrel to hold pressure from above and below in a Type "FMSR" Landing Nipple. This plug might be used to test tubing or to plug tubing to perform repairs or replacement of surface equipment. Equalization is achieved by shifting an equalizing valve into the open position before the mandrel in unlocked.

The Type "FMSXX" Plug is a positive plug used in conjunction with the Type "FMSX" Locking Mandrel to hold pressure from above and below in a Type "FMSX" Landing Nipple. This plug might be used to test tubing or to plug tubing to perform repairs or replacement of surface equipment. Equalization is achieved by shifting an equalizing valve into the open position before the mandrel in unlocked.

GO TO FMSX/FMSR EQUALIZING

SPECIFICATIONS - FMSRR						
SIZE	1.710"	1.781"				
NO GO O.D.	1.700"	1.770"				
MINIMUM I.D.	.625"	.781"				
THREAD CONNECTION	1 1/8"-16	1 3/8"-14				
EQUALIZING FLOW AREA (SQ. IN.)	.049"	.028''				



			_			
SIZE	1.875"	2.000"	2.125"	2.188"	2.313"	2.562"
NO GO O.D.	1.865"	1.990"	2.115"	2.175"	2.300"	2.550"
MINIMUM I.D.	.781''	.781"	.781''	1.005"	1.005"	1.190"
THREAD CONNECTION	1 3/8"-14	1 3/8"-14	1 3/8"-14	1 3/4"-12	1 3/4"-12	2"-12SLB
EQUALIZING FLOW AREA (SQ. IN.)	.028''	.028"	.028''	.049"	.049"	.041''

SPECIFICATIONS - FMSXX							
SIZE	1.500"	1.625"	1.875"	2.313"	2.750"	2.813"	
NO GO O.D.	1.490"	1.615"	1.865"	2.300"	2.740"	2.800"	
MINIMUM I.D.	.625"	.625"	.875"	1.223"	1.630"	1.630"	
THREAD CONNECTION	1 1/8"-16	1 1/8"-16	1 3/8"-14	1 3/4"-12	2 1/4"-12SLB	2 3/4"-12SLB	
EQUALIZING FLOW AREA (SQ. IN.)	.014"	.049"	.028''	.014"	.055"	.055"	

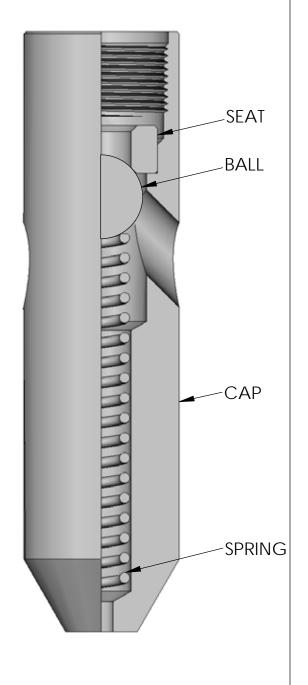
FMSR PUMP THROUGH PLUG



The Type FMSR Pump Through
Plug is used in conjunction with the
Type FMS Locking Mandrel and the
Type FMSX Equalizing Sub Assembly
to hold pressure from below in a Type
FMSX Landing Nipple. The plug has
pump through capabilities that would
allow an operator to pump fluids into
well bore.







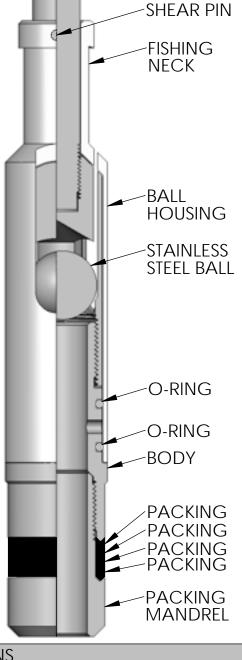
SPECIFICATIONS						
SIZE	2"	2 1/2"	3"			
MAX O.D.	1.750"	2.000"	2.570"			
THREAD CONNECTION	1 3/8"-14	1 3/4"-12	2 1/4"-12 SLB			
FLOW AREA (SEAT HOLE) (SQ. IN.)	.371"	.690"	1.107"			

TYPE A STANDING VALVE



The "A" Series Equalizing Standing Valves are designed to hold pressure from above for use in intermittent gas lift wells to contain fluid in the tubing during an injection cycle.





POST



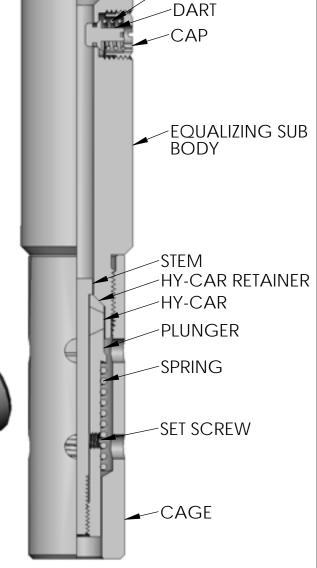
SPECIFICATIONS						
SIZE	1 1/4"	1 1/2"	2"	2 1/2"		
FISHINGNECK O.D.	0.875"	0.875"	1.375"	1.375"		
OVERALL LENGTH	10.500"	10.750"	12.625"	12.875"		
SHEAR PIN	3/16" X 7/8"	3/16" X 7/8"	3/16" X 1 3/8"	3/16" X 1 3/8"		
S.S. BALL	3/4"	3/4"	1 1/4"	1 1/2"		
NO GO O.D.	1.313"	1.480"	1.860"	2.295"		
FLOW AREA	0.135"	0.071"	0.233"	0.282"		
RUNNING TOOL	1 1/4" JDC	1 1/4" JDC	2" JDS	2" JDS		
PULLING TOOL	1 1/4" JDC	1 1/4" JDC	2" JDS	2" JDS		

"D" PLUG (2" - 3")



The Type "D" Equalizing Plug is a plug that is designed to hold pressure from below. It can be used in conjunction with many locking devices to bleed off a well in order to perform repairs or replacement of surface equipment. It also has pump through capabilities that would allow an operator to kill a well. A pulling prong is needed to equalize these subs. The prong lifts a spring loaded equalizing dart off "seat" which allows either fluid bypass or pressure equalizing.





VALVE SPRING

SPECIFICATIONS						
SIZE	2"	2 1/2"	3"			
MAX O.D.	1.750"	2.125"	2.625"			
I.D. BORE	.531	.719	1.156"			
THREAD CONNECTION	1 3/16"-14	1 9/16"-12	2"-12			
FLOW AREA PUMP DOWN (SQ.IN.)	.221	.406''	1.049"			
FLOW AREA EQUALIZING BUTTON (SQ.IN.)	.003"	.003"	.003"			
SET SCREW	1/4"-12 X 1/4"	1/4"-12 X 1/4"	1/4"-12 X 1/4"			

OTHER SIZES AVAILABLE ON REQUEST



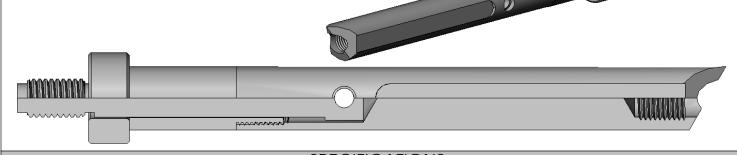
Section F Probes & Prongs

Description	Size	
A Probe	1 3/4" - 3"	
AC Probe	2" - 3"	
B Probe	1 1/2" - 3"	
N-1 Probe	2" - 2 1/2"	
Prongs	P-100 Thru. P-572	
DD Bridge Plug Pulling Prong	2" - 3"	
DK Ball Valve Pulling Prong	2" & 2 1/2"	
DK Ball Valve Running Prong	2" - 3"	
DER - XL Pulling Prong	2" - 3"	
DX Pulling Prong	2" - 3"	
DX Running Prong	2" - 3"	
HX Pulling Prong	2" - 3"	
HX Running Prong	2" - 3"	
FMSSR Pulling Prong	1.710" - 3.688"	
FMSSR Running Prong	1.710" - 3.688"	
FMSXX Pulling Prong	1.500" - 3.813	
FMSXX Running Prong	1.500" - 3.813	
Prong Crossover	3/8" - 3/4"	
A Shanks	1 3/4" to 3" Assy	
N - 1 Shanks	2" & 2 1/2" Assy	

GO BACK HOME

A PROBE

The A Probe is a wireline manipulated device that is used to close the dogs (or lock) on a Baker Style Locking Mandrel in order to remove it from the well.



SPECIFICATIONS						
SIZE	1 1/2"	2"	2 1/2"	3"		
PIN CONNECTION	3/8"-16	1/2"-13	1/2"-13	5/8"-11		
BOX CONNECTION	7/16"-14	1/2"-13	1/2"-13	5/8"-11		
O.D.	0.724"	0.832"	1.137"	1.387"		
OVERALL LENGTH	7.469"	9.063"	9.063"	10.656"		
NECK	0.938"	1.188"	1.500"	2.063"		

B PROBE

The B Probe is a wireline manipulated device that in used to close the dogs (or locks) on a Baker top or bottom No Go Style lock mandrel in order to remove it from the well.





SPECIFICATIONS						
SIZE	1 1/4"	1 1/2"	2"	2 1/2"	3"	
PIN CONNECTION	3/8"-16	1/2"-13	1/2"-13	1/2"-13	5/8"-11	
BOX CONNECTION	1/4"-20	7/16"-14	1/2"-13	1/2"-13	5/8"-11	
O.D.	.4956''	0.698"	0.832"	1.137"	1.387"	
OVERALL LENGTH	6.281"	6.281"	7.094"	7.219"	7.750"	
NECK	.6888''	0.938"	1.063"	1.500"	2.000"	

DXX PRONG



FMS running and equalizing prongs are commonly screwed into running and pulling tools to perform functions necessary in manipulating subsurface devices.



DXX PULLING PRONG



DXX RUNNING PRONG

P- PRONG

SPECIFICATIONS						
	THREAD	O.D.	OVERALL LENGTH			
P-100	1/2"-13	0.500"	21.375"			
P-104	1/2"-13	0.688"	21.625"			
P-141	5/8"-11	1.125"	23.375"			
P-145	1/2"-13	0.844"	22.500"			
P-176	1/2"-13	0.500"	25.188"			
P-242	1/2"-13	0.688"	22.500"			
P-420	3/8"-16	0.531"	18.000"			
P-478	3/8"-16	0.531"	17.750"			
P-479	1/2"-13	1.656"	21.375"			
P-480	1/2"-13	0.844"	21.750"			
P-481	5/8"-11	1.344"	22.375"			
P-572	5/8"-11	1.469"	23.000"			

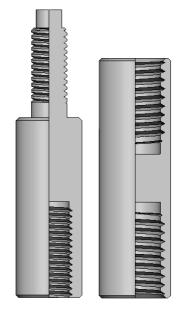
OTHER SIZES AVAILABLE ON REQUEST

PAGE F-2

PRONG CROSSOVER



FMS running and equalizing prongs are commonly screwed into running and pulling tools to perform functions necessary in manipulating subsurface devices.



SPECIFICATIONS							
PIN CONNECTION	3/8"-16	1/2"-13	5/8"-11	3/4"-10	*	*	*
BOX CONNECTION	1/2"-13	5/8"-11	1/2"-13	5/8"-11	1/2"-13 X 1/2"-13	5/8"-11 X 5/8"-11	3/4"-10 X 3/4"-10
O.D.	.687''	.813"	.625"	.750"	.687"	.750''	.937"
OVERALL LENGTH	3.000"	3.250"	3.500"	3.250"	2.500"	2.500"	2.500"

DD BRIDGE PLUG PULLING PRONG



SPECIFICATIONS				
SIZE	2"	2 1/2"		
THREAD CONNECTION	1/2"-13	5/8"-11		
O.D.	0.609	0.618"		
OVERALL LENGTH	8.844"	8.813"		

DX / HX PRONG



FMS running and equalizing prongs are commonly screwed into running and pulling tools to perform functions necessary in manipulating subsurface devices.







DX RUNNING PRONG

SPECIFICATIONS								
SIZE	2	2"	2 1	/2"	3"			
	PULLING	RUNNING	PULLING	RUNNING	PULLING	RUNNING		
THREAD CONNECTION	1/2"-13	1/2"-13	5/8"-11	5/8"-11	5/8"-11	3/4"-10		
O.D.	0.500"	0.500"	0.688"	0.688"	1.125"	1.125"		
OVERALL LENGTH	16.500"	6.500"	16.500"	6.500"	16.500"	6.500"		



HX PULLING PRONG



HX RUNNING PRONG

SPECIFICATIONS								
SIZE	2	2"	2 1	/2"	3"			
	PULLING	RUNNING	PULLING	RUNNING	PULLING	RUNNING		
THREAD CONNECTION	1/2"-13	1/2"-13	5/8"-11	5/8"-11	5/8"-11	5/8"-11		
O.D.	0.650"	0.650"	0.844"	0.844"	1.480"	1.480"		
OVERALL LENGTH	16.500"	6.500"	16.500"	6.500"	17.250"	7.500"		

OTHER SIZES AVAILABLE ON REQUEST

PAGE F-4

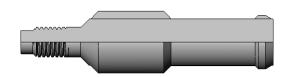
FMSRR / FMSXX PRONG



FMS running and equalizing prongs are commonly screwed into running and pulling tools to perform functions necessary in manipulating subsurface devices.







FMSRR RUNNING PRONG

SPECIFICATIONS								
SIZE	1.7	710" 1.781"/2.125"			2.188"/2.313"		2.562"	
	PULLING	RUNNING	PULLING	RUNNING	PULLING	RUNNING	PULLING	RUNNING
THREAD LENGTH	1/2"-13	3/8"-16	1/2"-13	1/2"-13	5/8"-11	5/8"-11	5/8"-11	5/8"-11
O.D.	0.715"	0.712"	0.870"	0.865"	1.093"	1.109"	1.300"	1.340"
OVERALL LENGTH	12.438"	4.844''	12.625"	5.225"	13.938"	5.750"	12.813"	5.281"





FMSXX RUNNING PRONG

SPECIFICATIONS										
SIZE	1.5	00''	1.6	25"	1.8	75''	2.3	13"	2.750"	/2.813"
	PULLING	RUNNING								
THREAD LENGTH	1/2"-13	3/8"-16	1/2"-13	3/8"-16	1/2"-13	1/2"-13	5/8"-11	5/8"-11	5/8"-11	3/4"-10
O.D.	0.715"	0.712"	0.715"	0.712"	0.969"	0.962"	1.300"	1.340"	1.710"	1.710"
OVERALL LENGTH	12.438"	4.844"	12.438"	4.844''	12.250"	4.938"	12.813"	5.125"	13.000"	5.500"

OTHER SIZES AVAILABLE ON REQUEST

PAGE F-5



Section G	Stops		
Description	Size		
Type A Tubing Stop	1 3/4" - 4"		
Spring Loaded Tubing Stop	2" - 4"		
Type " A-1 " Tubing Stop	2" & 2 1/2"		
G Stop	2" - 3"		
Collar Stop	2" - 4"		

GO BACK HOME

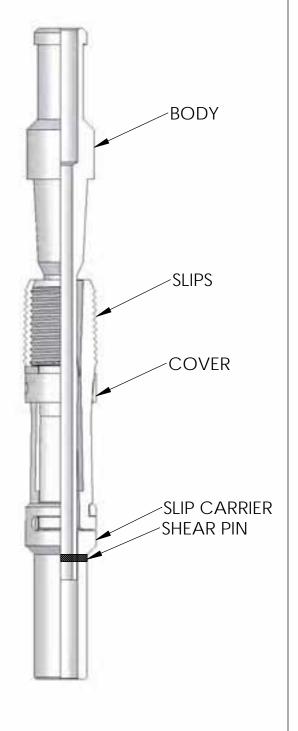
TYPE A TUBING STOP



The Type "A" Tubing Stop is designed for use in integral joint tubing strings where a coupling recess is not available. It is used primarily as an cnchoring device in packoff applications.





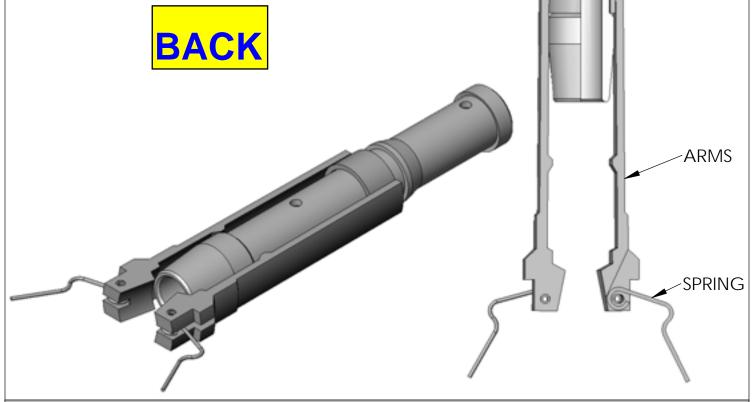


SPECIFICATIONS							
SIZE	1 1/4"	1 1/2"	2''	2 1/16"	2 1/2"	3"	
MIN. I.D.	.438''	.625''	.703"	.625"	1.047"	1.500"	
FISHING NECK O.D.	.875"	1.188"	1.375"	1.188"	1.750"	2.313"	
MAX O.D. SLIPS RETRACTED	1.234"	1.438"	1.750"	1.438"	2.188"	2.719"	
RUNNING TOOL	1 1/4"JDC	1 1/2"JDC	2"JDC	1 1/2"JDC	2 1/2"JDC	3"JDC	
PULLING TOOL	1 1/4"JDC	1 1/2"JDC	2"JDC	1 1/2"JDC	2 1/2"JDC	3"JDC	
SHEAR PIN SIZE	1/8"	3/16"	3/16"	3/16"	1/8"	3/16"	

COLLAR STOP



The Collar Stop is designed to locate in the collar recess of API upset and non-upset tubing. By lowering the stop to the desired depth and lifting upward, the latch springs are tripped allowing the stop arms to expand into the collar recess. Downward jarring on the inner mandrel pushes it down behind the collar stop arms locking them into places in the collar recess.



SPECIFICATIONS					
SIZE	2"	2 1/2"	3"		
MIN. I.D.	0.875"	1.125"	1.625"		
FISHINGNECK O.D.	1.375"	1.750"	2.313"		
RUNNING TOOL	2 1/2" "F"	2 1/2" "F"	3" "F"		
PULLING TOOL	2" "JDC"	2 1/2" "JDC"	3" "JDC"		

OTHER SIZES AVAILABLE ON REQUEST

BODY

RING



Section H

Surface Equipment

Description	Size	
Gin Pole	Assembly	
Gin Pole Step	Assembly	
FMS Hay Pulley	7", 12" & 16"	
Line Wiper	FMS Assembly	
Lubricators	5,000 & 10,000 PSI.	
Lubricator Clamp	2" to 3" Assy.	
Pump in Sub with Weco Union	2 1/2" - 3" 5,000 PSI	
Pump in Sub with Weco Union	2 1/2" - 3" 10,000 PSI	
Quick Union	2" to 5" Assembly	
Stuffing Box with Staff Assy.	5,000 PSI 7", 12" & 16"	
Stuffing Box with Staff Assy.	10,000 PSI 12" & 16"	
Stuffing Box with Staff Assy.	15,000 PSI 12" & 16"	
Hydrolic Packing Nut - BT	Assembly	
Hydrolic Packing Nut - FMS	Assembly	
Tree Connections		
Aluminum Bronze Parts	Glands & Sleeves	
Aluminum Bronze Kits	Kits	
Wire Clamp	Assembly	
Wire Tester	Assembly	

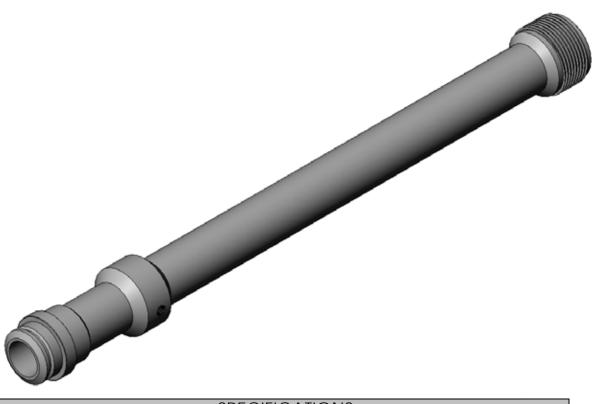
GO BACK HOME

LUBRICATOR



The Lubricator is a device to allow the weight bars and equipment you are attempting to lower into the well to be first subjected to well pressure.





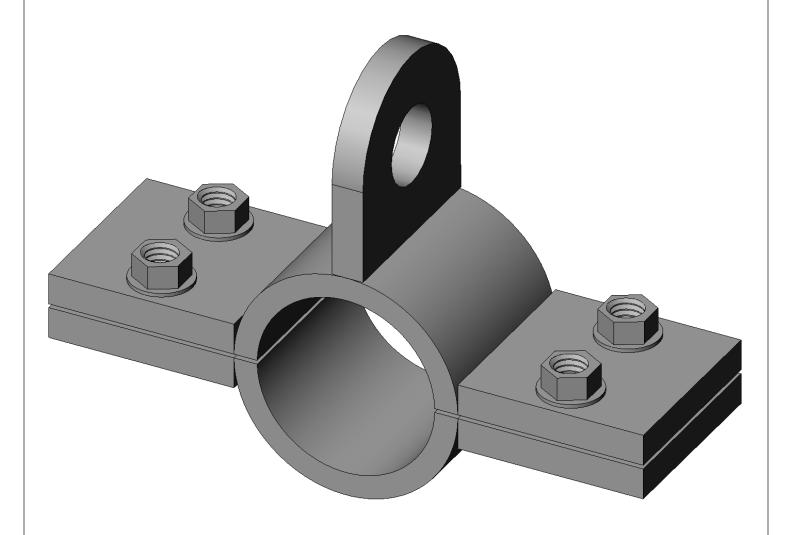
SPECIFICATIONS				
5,000 PSI LUBRICATOR ASSEMBLY	10,000 PSI LUBRICATOR ASSEMBLY			
W/ 2 1/2" Q.U. CONNECTIONS	W/ 2 1/2" Q.U. CONNECTIONS			
2" X 8' W/ 2 1/2" UNION	2" X 8' W/ 2 1/2" UNION			
2 1/2" X 8' W/ 2 1/2" UNION	2 1/2" X 8' W/ 2 1/2" UNION			
3" X 4' W/ 2 1/2" UNION	3" X 4' W/ 2 1/2" UNION			
3" X 8' W/ 2 1/2" UNION	3" X 8' W/ 2 1/2" UNION			
2 7/8" 8RD BLEED OFF SUB				
3 1/2" 8RD BLEED OFF SUB				





LUBRICATOR CLAMPS





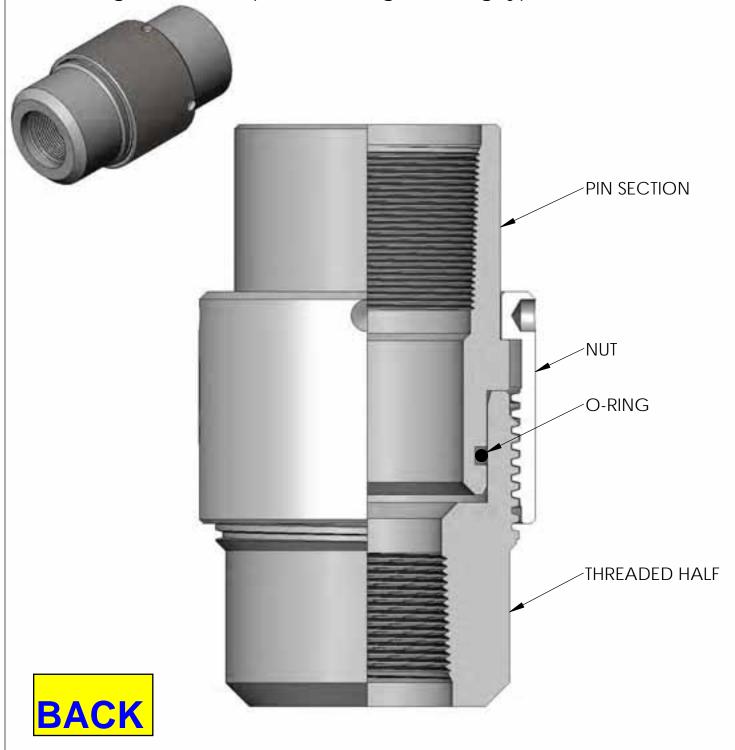


PUMP IN SUB Frederick's Machine 2 1/2" QUICK UNION THREAD HALF 1502 WECO-**SPLIT NUT** 2 1/2" QUICK UNION PIN SECTION **BACK SPECIFICATIONS** NUT -2 1/2" I.D. - 5,000 PSI W.P. 3" I.D. - 5,000 PSI W.P. 2 1/2" I.D. - 10,000 PSI W.P. 3" I.D. - 10,000 PSI W.P.

QUICK UNION



Quick Unions are screwed onto Pup-Joints to form a Lubricator. They are used to attach sections of lubricator together to accommodate the required tool string length. The Quick Union is designed to hold pressure using an o-ring type seal.



FMS STUFFING BOX

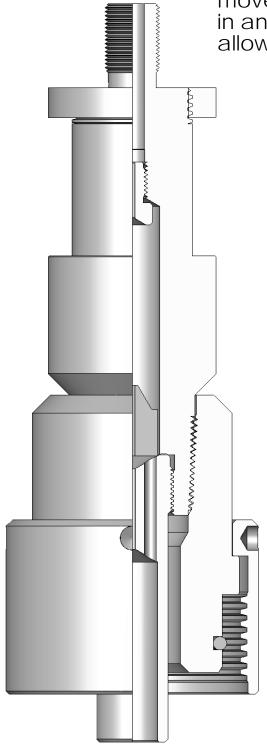


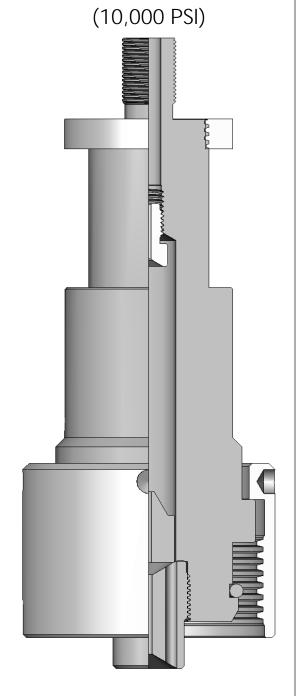
(5,000 PSI)



GO TO
STAFF ASSEMBLY

The Wireline Stuffing Box is designed to allow the movement of solid wireline in and out of the well without allowing well pressure to escape.



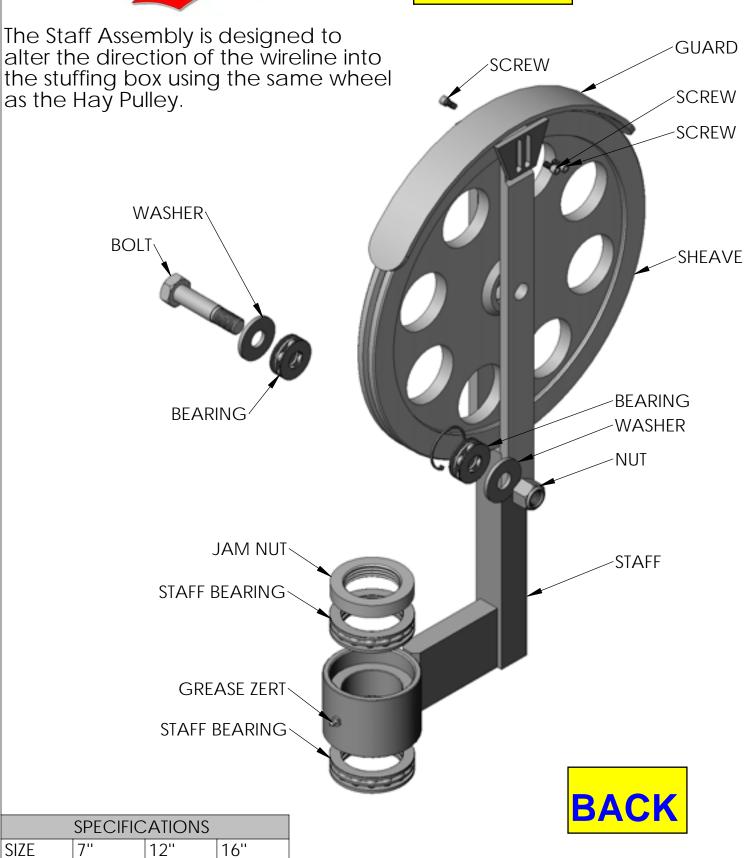


The FMS Stuffing Box is also available in 15,000 PSI

STAFF ASSEMBLY



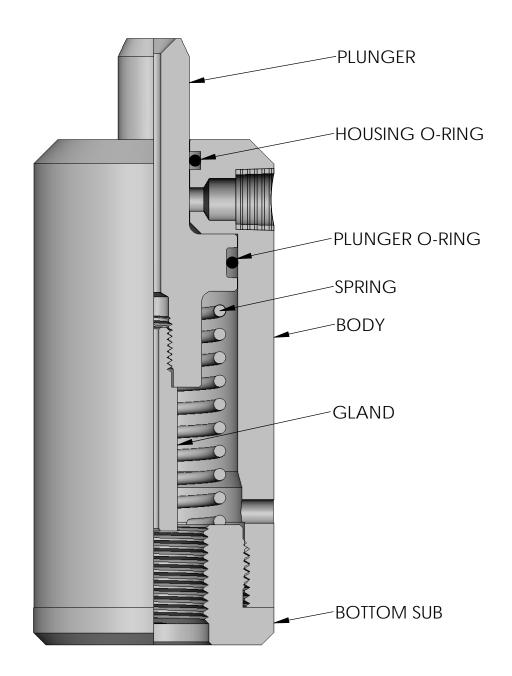
GO TO
STUFFING BOX



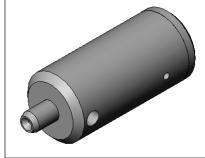
HYDRAULIC PACKING NUT - BT



The Stuffing Box Hydraulic Packing Nut allows you to operate the packing nut from a remote location for convenience as well as a safer way to packoff the wireline.



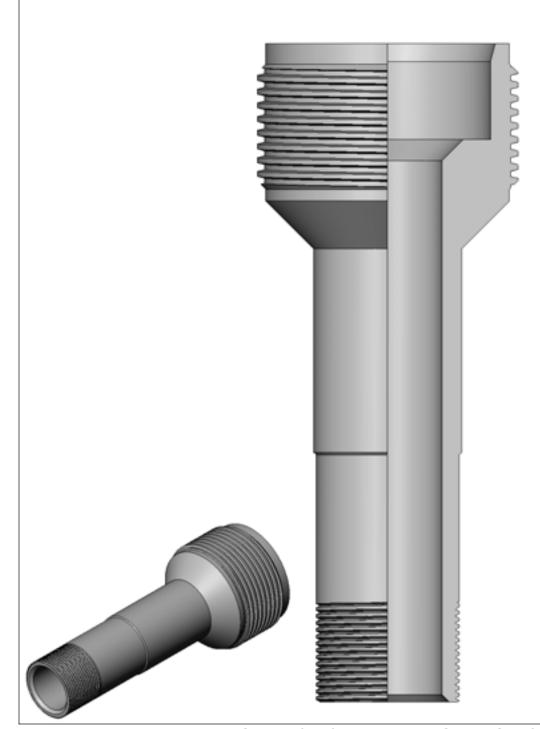




TREE CONNECTION



Tree Connections are used to connect the bottom of the wireline valve to the connection on top of the tree.





WIRE TESTER



The Wireline Tester was designed as a field testing procedure to identify deterioration of wire mechanical properties.





Section I

Packoff Tools

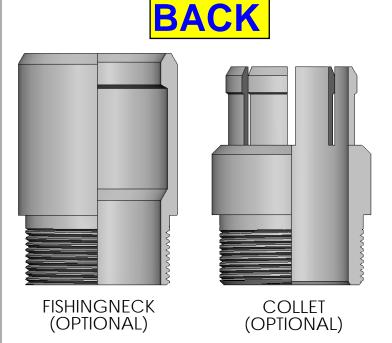
Description	Size	
"G" Packoff	2" to 3" Assembly	
"K-3" Packoff	2" to 2 1/2" Assy.	
O Ring Type Landing Shoe	2" to 3" Assembly	
O Ring Type Receptacle	2" NU, LP to 3"NU,LP Assy	
"A-4" Packoff	2" to 3" Assembly	
Packing Type Landing Shoe	2" to 3" Assembly	
Packing Type Receptacle	2" to 3" Assembly	
Spacer Pipe	1" X 5" to 1 1/2" X 10"	

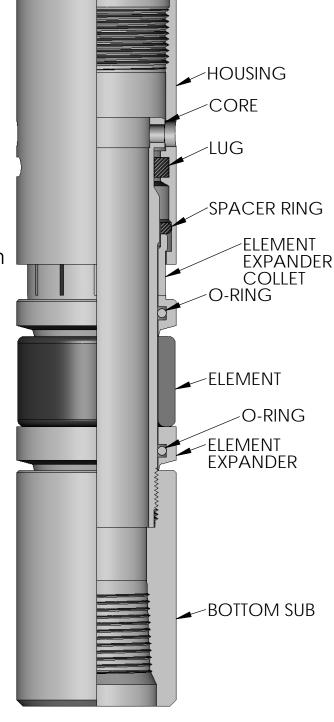
GO BACK HOME

G PACKOFF



The Type "G" Packoff is used to straddle and seal off holes in the tubing. The upper and lower Type "G" Packoffs are usually joined by spacer pipe. Upper and lower tubing stops are used to keep the packoff assemblies in the locked position. In special applications, an upper or lower can be used as a tubing plug in situations where during well completion, landing nipples were not installed.





SPECIFICATIONS						
SIZE	2"	2 1/2"	3''			
UPPER CONNECTION	1 5/8"-12	2 1/16"-12	2 1/2"-12			
LOWER CONNECTION	1"-10RD	1 1/2"-10RD	2"-10RD			
MAX O.D.	1.840"	2.275"	2.695"			
MINIMUM I.D.	1.063"	1.500"	1.672"			
FISHING NECK I.D. (OPTIONAL)	1.375"	1.81"	2.31"			





C1		
Secti		

Tool String

(Page 1)

		(Page I)		
Description	Size			
Blind Box	3/4" to 5 1/2"			
Bottom Hole Pressure Soft Release	1 1/2" Assembly			
Broaches	2" to 4" Assemblies Diamond Paddle Pinea			
Bull Dog Spear	2" to 3"			
Center Spear	Assembly			
Steel Centralizer	1 1/2" to 3.750"			
Teflon Centralizer	2" to 3" Assembly			
Adjustable Bow Spring Centralize	r			
FMS Check Set Tool	1.250" to 3.813" Assy.			
Impression Block	3/4" to 8"			
Spang Jars	1"X18" to 2 1/2'X30"			
Tubular Jars	3/4" to 2 1/2"X30"			
Knuckle Jar	1 1/4" to 2 1/8"			
Knuckle Joint	3/4" to 2 1/2"			
Paraffin Cutter (gauge ring)	.750" to 6.00"			
Paraffin Scratcher	Assembly			
Single Strand Rope Sockets	3/4" to 2 1/8" Assy.			
Brass Wedge Rope Socket	.092" Wire to .187" Wire	e		
Multi Strand Rope Socket	1 1/4" to 2 1/8" Assy.			
Stem	3/4"X2' to 2 1/8"X5'			
Leaded Stem	1"X2' to 1 7/8"X5'			
Roller Stem with Teflon Wheels	1 1/4"X3' to 1 7/8"X5'			
Tubing End Locator	1 1/4" OD to 2 1/4" OD			
Tubing Brushes	2" to 3" Assembly			







Section J

Tool String

(Page 2)

Description	Size	
Tubing Swedge	1.250" to 3.800"	
Nipple Locator	1.875" To 2.813" Assy + Collet	
No Go Subs	1 1/4" to 3"	

GO TO PAGE 1

GO BACK HOME

BLIND BOX

Frederick's Machine

The Blind Box is a one piece wireline tool made from soild bar alloy steel that has a fishingneck and threads on one end, to facilitate attachment to the wireline string, and a flat bottom on the other end for delivering blows. The Blind Box is actually used as a downhole "hammer," striking objects or bedris with jarring force.





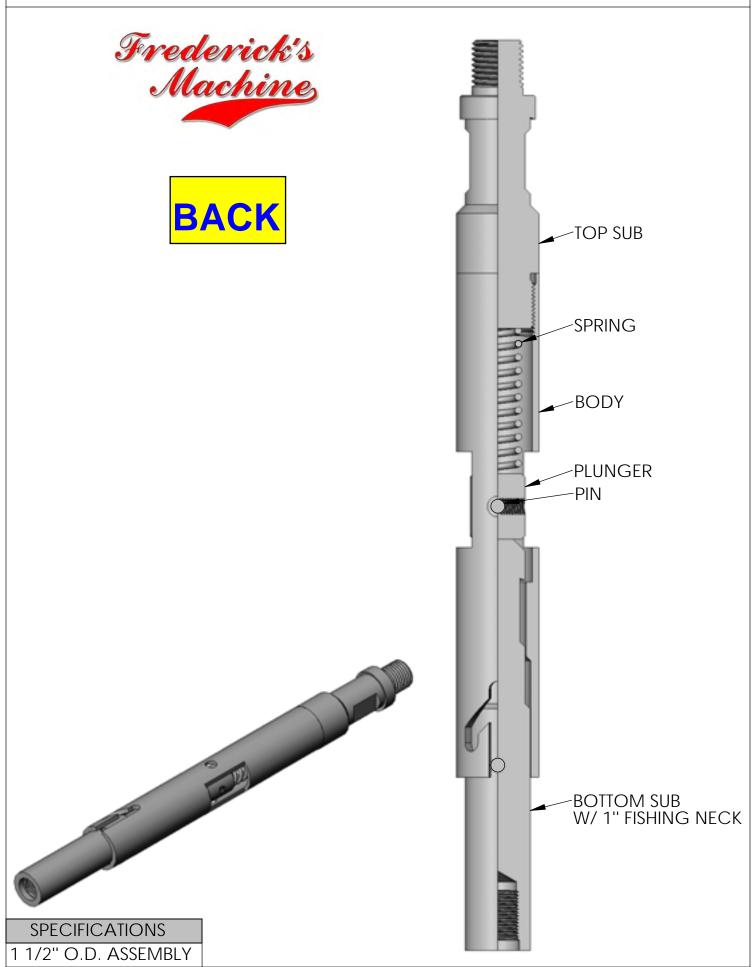


SPECIFICATIONS							
SIZE	3/4"	1"	1 1/4"	1 1/2"	2''	2 1/2"	3"
FISHINGNECK O.D.	0.688"	0.875"	1.188"	1.188"	1.375"	1.375"	1.750"
MAX O.D.	0.750"	1.000"	1.250"	1.500"	1.750"	2.250"	2.625"
PIN CONNECTION	1/2"-13	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MADE UP LENGTH	8.375"	8.250"	8.000"	8.875"	8.875"	9.875"	9.875"

OTHER SIZES AVAILABLE ON REQUEST

PAGE J-1

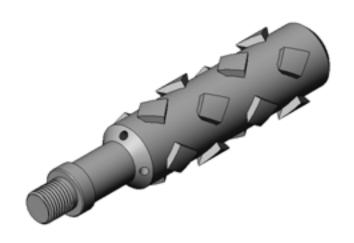
BOTTOM HOLE PRESSURE SOFT RELEASE

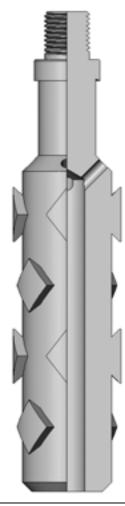


DIAMOND BROACH

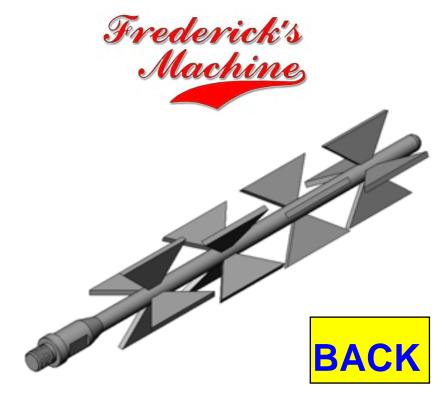


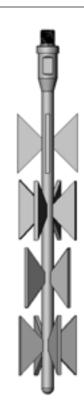
The FMS Broaching Tool is a wireline service tool designed to remove excess cement, salt, barium, or other deposits that have accumulated on the tubing wall, restricting the I.D. and flow area.





PADDLE BROACH





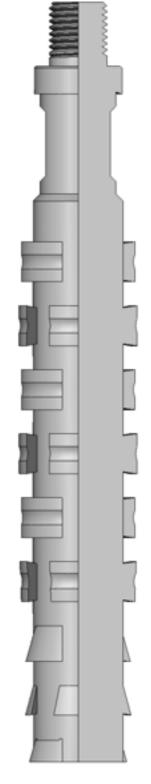
PINEAPPLE BROACH



The Pineapple Broach is used to cut burrs in the tubing I.D. caused by perforation, rust, bent tubing, etc.







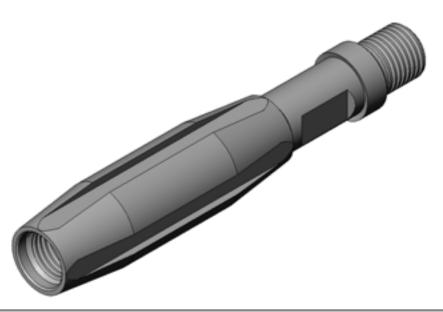
SPECIFICATIONS					
SIZE	2"	2 1/2"	3"		
FISHING NECK	1.375"	1.375"	1.750"		
MAX O.D.	1.910"	2.347"	2.897"		
PIN CONNECTION	15/16"-10	15/16"-10	1 1/16"-10		
MADE UP LENGTH	11.500"	11.500"	15.000"		

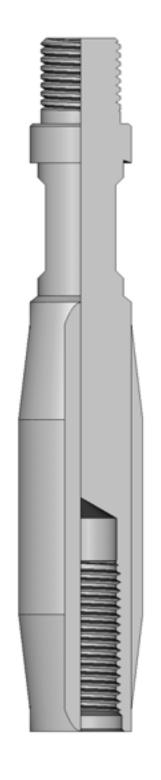
STEEL CENTRALIZER



The Tubing Centralizer is used to help keep the tool string in the center of the tubing. The diameter is machined near the tubing drift specification. Fluid bypass slots are machined to assist the tool string downhole.







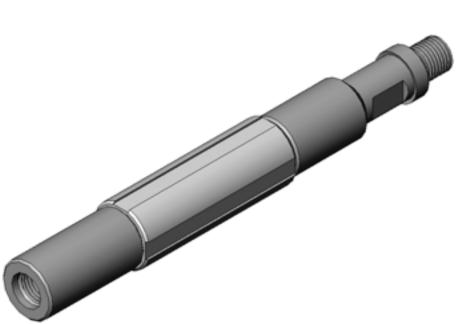
SPECIFICATIONS				
SIZE	2''	2 1/2"	3''	
FISHING NECK O.D.	1.375"	1.375"	1.750"	
MAX O.D.	1.843"	2.281"	2.718"	
PIN & BOX CONNECTIONS	15/16"-10	15/16"-10	1 1/16"-10	
MADE UP LENGTH	10.000"	10.000"	10.000"	

TEFLON CENTRALIZER

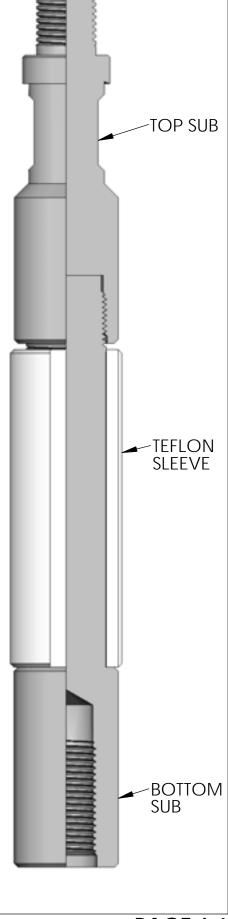


The Teflon Centralizer is used to help keep the tool string in the center of coated tubing. The diameter is machined near the the tubing drift specification. Fluid bypass slots are machined to assist the tool string downhole.





SPECIFICATIONS					
SIZE	2"	2 1/2"	3"		
FISHINGNECK O.D.	1.375"	1.375"	1.750"		
MAX O.D.	1.843"	2.281"	2.718"		
PIN & BOX CONNECTIONS	15/16"-10	15/16"-10	1 1/16"-10		
MADE UP LENGTH	11.500"	11.500"	12.000"		
SET SCREW	1/4"-20 X 1/4"	1/4"-20 X 1/4"	1/4"-20 X 3/8"		

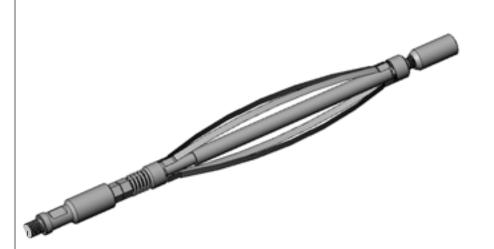


ADJUSTABLE BOW SPRING CENTRALIZER

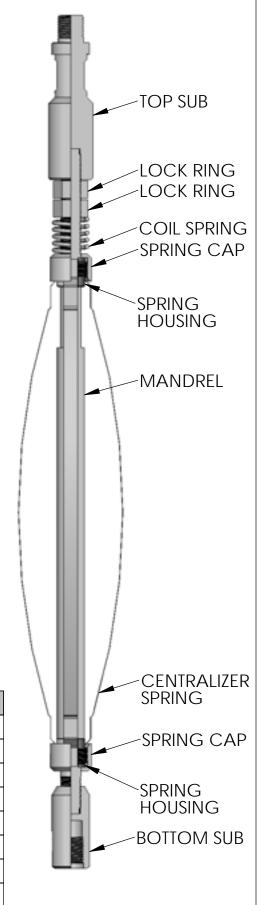
Frederick's Machine

The Adjustable Wireline Centralizer comes in two models, one with a range from 1 1/2" to 8 1/2" O.D., and one with a range from 1 7/8" to 9" O.D. Through the use of an adjustment nut and coil spring, the O.D. of the centralizer springs can be adjusted to fit your specific application.





SPECIFICATIONS					
SIZE	1 1/2"	1 7/8"			
FISHING NECK O.D.	1.375"	1.375"			
PIN & BOX CONNECTIONS	15/16"-10	15/16"-10			
MAX O.D.	1.500"	1.875"			
BOW SPRING RANGE	1 1/2" TO 8 1/2"	1 1/2" TO 9"			
MADE UP LENGTH	45.750"	45.750"			
LOCKING SET SCREWS	(3) 1/4"-20 X 1/4"	(3) 1/4"-20 X 1/4"			
ADJUSTING SET SCREWS	(2) 1/4"-20 X 3/16"	(2) 1/4"-20 X 3/16"			



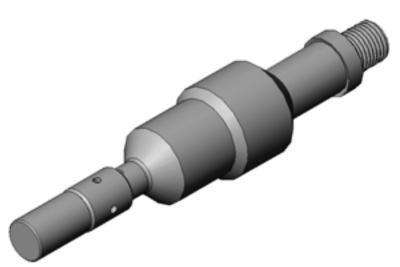
PAGE J-7

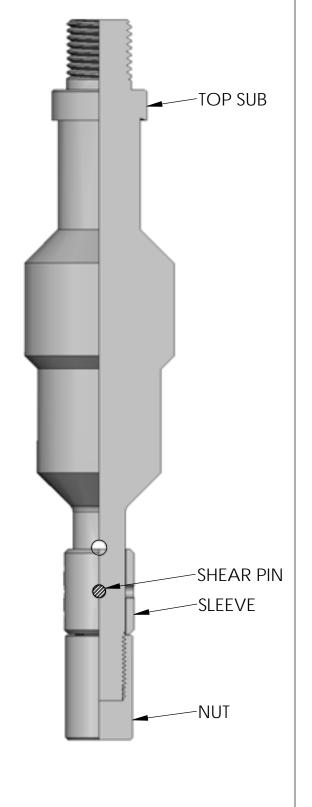
FMS CHECK TOOL SET



These tools are used to insure that the FMSX and FMSR Locking Mandrels have properly been set in the appropriate landing nipple. A sheared pin in the tool, once it has been run, indicates that the lock has been properly set. It is lowered downhole to the locking mandrel using stander wireline tools.





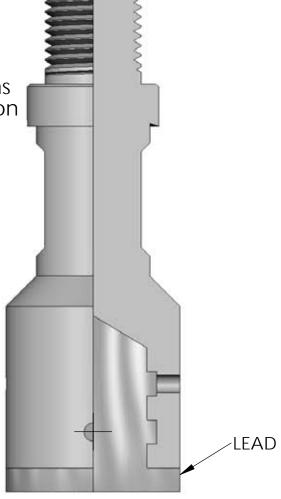


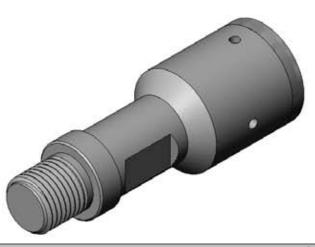
SPECIFICATIONS						
SIZE	1 1/2",1.710"	2"	2.125"	2.188"	2 1/2",2.562"	3"
FISHINGNECK O.D.	1.188"	1.375"	1.375"	1.375"	1.375"	1.750"
THREAD CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10
BRASS SHEAR PIN	3/16" X 1 1/4"	1/4" X 1 5/8"	1/4" X 1 5/8"	1/4" X 1 7/8"	1/4" X 1 7/8"	1/4" X 2 1/2"

IMPRESSION BLOCK

Frederick's Machine

The Impression Block consists of a steel housing with a lead insert. Impression Blocks are used during fishing operations to determine the shape, size and position of the object being fished.







SPECIFICATIONS								
SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	
FISHINGNECK O.D.	0.688"	0.875"	1.188"	1.188"	1.375"	1.375"	1.750''	
MAX O.D.	0.750"	1.000"	1.250"	1.500"	1.750"	2.250"	2.625"	
PIN CONNECTION	1/2"-13	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16''-10	1 1/16"-10	
MADE UP LENGTH	4.875"	5.250"	5.500"	5.500"	6.000"	6.000"	6.000"	

OTHER SIZES AVAILABLE ON REQUEST

TUBULAR JARS



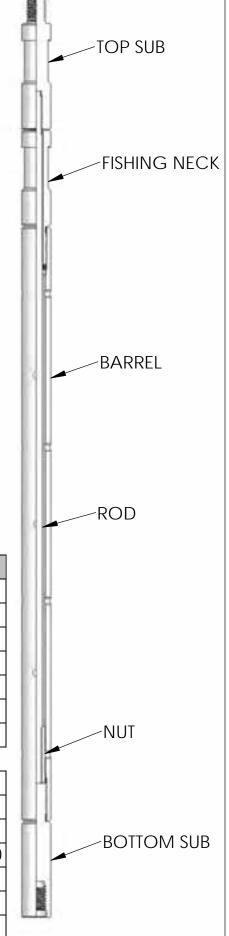
The Tubular Jar, through wireline manipulation, can be used to provide an upward or downward impact. The intensity of the jarring impact depends on the weight of the wireline stem above the jar, the stroke length of the jar, and the density of the well fluid. The perforated body of the Tubular Jar allows fluid bypass, reducing the effects of the well fluid density on the jarring impact.



SPECIFICATIONS								
SIZE	3/4"	7/8''	1''	1 1/4"				
FISHINGNECK O.D.	0.688"	0.750''	0.875"	1.188"				
MAX O.D.	0.750"	0.875"	1.000"	1.250"				
PIN & BOX CONNECTIONS	1/2"-13	1/2"-13	5/8"-11	15/16"-10				
MADE UP LENGTH (CLOSED)	20.813"	20.813"	31.438"	32.563"				
MADE UP LENGTH (OPENED)	34.813"	34.813"	51.438"	52.563"				
STEEL LOCKING PIN	1/8" x 3/4"	1/8" x 7/8"	1/8" x 1"	1/8" x 1 1/4"				

SIZE	1 1/2"	1 3/4"	1 7/8"	2 1/8"
FISHINGNECK O.D.	1.375"	1.750"	1.750"	1.750"
MAX O.D.	1.500"	1.750"	1.875"	2.125"
PIN & BOX CONNECTIONS	15/16"-10	1 1/16"-10	1 1/16"-10	1 1/16"-10
MADE UP LENGTH (CLOSED)	32.563''	32.563"	32.563"	32.688"
MADE UP LENGTH (OPENED)	52.563''	52.563"	52.563"	52.688"
STEEL LOCKING PIN	1/8" x 1 1/2"	1/8" x 1 3/4"	1/8" x 1 7/8"	1/8" x 2 1/8"

OTHER SIZES AVAILABLE ON REQUEST

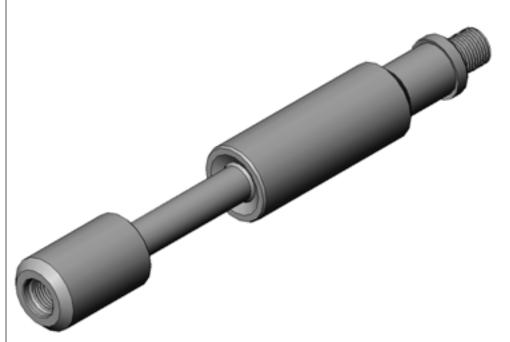


KNUCKLE JAR

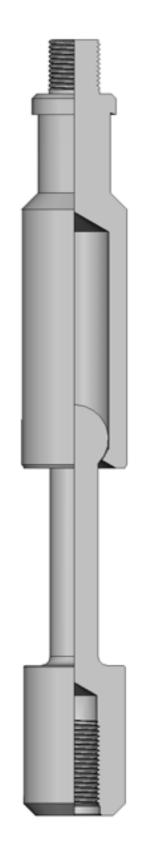


The Knuckle Jar provides a range of motion that helps to make the tool string more flexible. Because the Knuckle Jar has a stroke, it can also be used for light jarring.





SPECIFICATIONS									
SIZE			1 1/4"	1 1/2"	1 7/8"				
FISHINGNECK O.D			1.188"	1.375"	1.750"				
MAX O.D.			1.250"	1.500"	1.875"				
PIN & BOX CONNI	EC	TIONS	15/16"-10	15/16"-10	1 1/16"-10				
	CLOSED		13.500"	13.500"	13.500"				
MADE UP LENGTH	3''	OPENED	16.500"	16.500"	16.500"				
WADE OF LENGTH		CLOSED	15.500"	15.500"	15.500"				
	5''	OPENED	20.500"	20.500"	20.500"				
ROLL PINS			1/8"X1 1/4"	1/8"X1 1/2"	1/8"X1 7/8"				

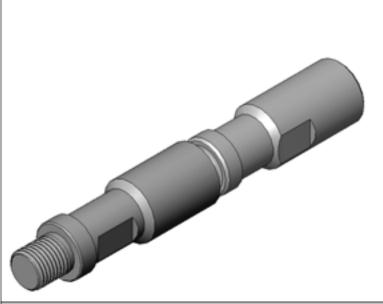


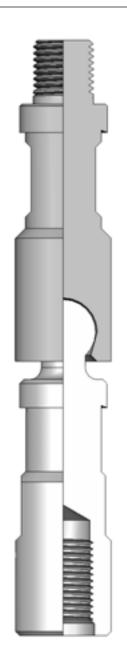
KNUCKLE JOINT



The Knuckle Joint is designed for applications where tool string rotation and/or deflection is required. It is most useful in fishing operations where the pulling tool or overshot requires flexibility to properly locate the fish.







SPECIFICATIONS								
SIZE	3/4"	7/8''	1"	1 1/4"	1 1/2"	1 3/4"	1 7/8"	2 1/2"
FISHINGNECK O.D.	0.688"	0.688"	1.000"	1.188"	1.375"	1.750"	1.750"	2.313"
MAX O.D.	0.750"	0.875"	1.000"	1.250"	1.500"	1.750"	1.875"	2.500"
PIN & BOX CONNECTIONS	1/2"-13	1/2"-13	5/8"-11	15-16"-10	15/16"-10	1 1/16"-10	1 1/16"-10	1 9/16"-10
MADE UP LENGTH	4.438"	4.438''	5.250"	7.313"	9.000"	9.125"	9.125"	11.313"

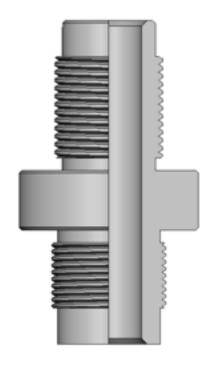
OTHER SIZES AVAILABLE ON REQUEST

NO GO SUB

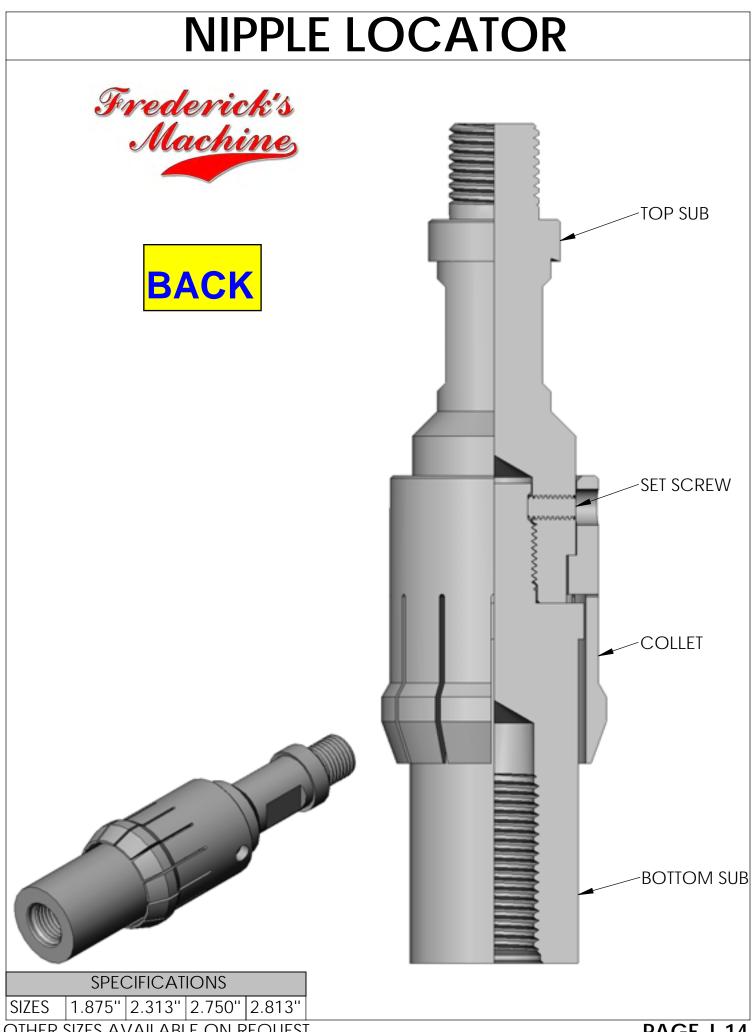


The Type N No Go sub is used in conjunction with the FMSS Locking Mandrel when a Type N No Go Mandrel is to be used. The N No Go Sub is screwed on to the locking section of the FMSS Mandrel just below the packing section to convert into the Type N No Go Mandrel.









OTHER SIZES AVAILABLE ON REQUEST

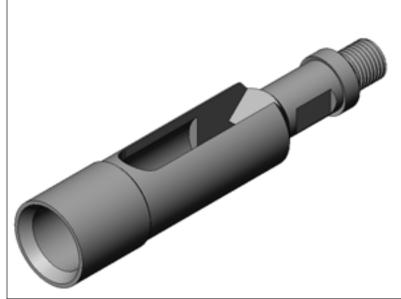
PARAFFIN CUTTER (GAUGE RING)



The Paraffin Cutter (Gauge Ring) has many different purposes. It can be used to calibrate tubing, locate landing nipples, and remove paraffin and other deposits from the tubing wall.







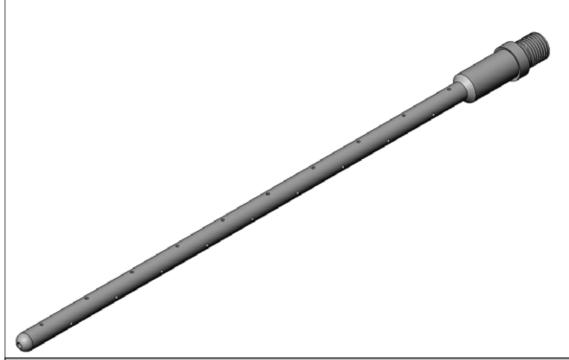
SPECIFICATIONS								
SIZE	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"		
FISHINGNECK O.D.	1.000"	1.188"	1.188"	1.375"	1.375"	1.750"		
MAX O.D.	1.240"	1.483"	1.750"	1.906"	2.343"	2.906"		
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10		
MADE UP LENGTH	6.500"	6.500"	8.000"	8.500"	8.500"	8.500"		

PARAFFIN SCRATCHER



The Paraffin Scratcher is designed to scratch paraffin and scale from the I.D. of tubing by placing pieces of wireline, cut to specific lengths and threaded through a number of spirally drilled holes, along its 5/8" diameter body and running it up and down inside the tubing.





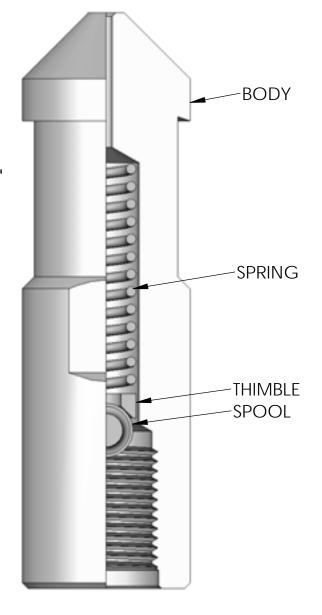
SPECIFICATIONS							
SIZE	2"	2 1/2"	3"				
FISHING NECK O.D.	1.188"	1.188"	1.188"				
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10				
MADE UP LENGTH	22.000"	22.000"	22.000"				

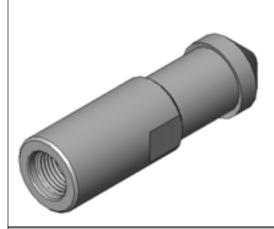
SINGLE STRAND ROPE SOCKET



The Single Strand Rope Socket is the means used to attach single strand wireline with the wireline tool string. The spool type rope socket is recommended for use with .066"-.092" line.







SPECIFICATIONS								
SIZE	3/4"	7/8''	1"	1 1/4"	1 1/2"	1 3/4"	1 7/8"	2 1/8"
FISHING NECK O.D.	0.688"	0.750"	1.000"	1.188"	1.375"	1.750"	1.750"	1.750"
MAX O.D.	0.750"	0.875"	1.000"	1.250"	1.500"	1.750"	1.875"	2.125"
THREAD CONNECTION	1/2"-13	1/2"-13	5/8"-11	15/16"-10	15/16"-10	1 1/16"-10	1 1/16"-10	1 1/16"-10
LENGTH	5.688"	5.688"	5.688"	6.188"	6.188"	7.000"	7.000"	7.000"

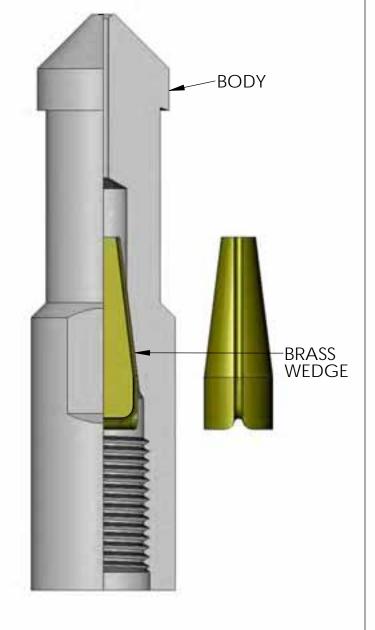
OTHER SIZES AVAILABLE ON REQUEST

BRASS WEDGE ROPE SOCKET



The Brass Wedge Rope Socket is used as a means of connecting the wireline to the wireline tool string. The line is run through the body and around the brass wedge. With the line set in the provided groove of the brass wedge, the line and brass wedge are pulled tightly into the taper of the body. Recommended for use with .092"-.187" line.







SPECIFICATIONS							
SIZE	1 1/4"	1 1/2"	1 3/4"	1 7/8"			
FISHINGNECK O.D.	1.188"	1.375"	1.750"	1.750"			
MAX O.D.	1.250"	1.500"	1.750"	1.875"			
THREAD CONNECTION	15/16"-10	15/16"-10	1 1/16"-10	1 1/16"-10			
OVERALL LENGTH	5.250"	4.813"	5.125"	5.125"			

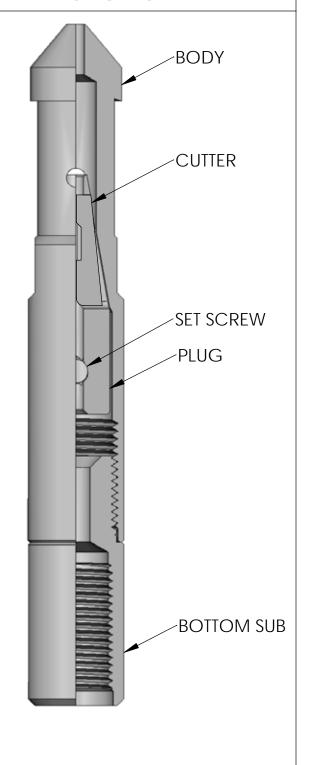
MULTI STRAND ROPE SOCKET



The Multi-Strand Rope Socket is the means used to attach multi-strand lines with the wireline tool string. The slip type rope socket is designed for use with small stranded lines up through 3/16" diameter.







SPECIFICATIONS								
SIZE	1 1/4"	1 1/2"	1 3/4"	1 7/8"				
FISHINGNECK O.D.	1.188"	1.375"	1.750"	1.175"				
MAX O.D.	1.250"	1.500"	1.750"	1.875"				
THREAD CONNECTION	15/16"-10	15/16"-10	1 1/16"-10	1 1/16"-10				
OVERALL LENGTH	8.750"	9.000"	9.188"	9.188"				
SET SCREW	3/8"-16 X 5/16"	3/8"-16 X 5/16"	3/8"-16 X 5/16"	3/8"-16 X 5/16"				

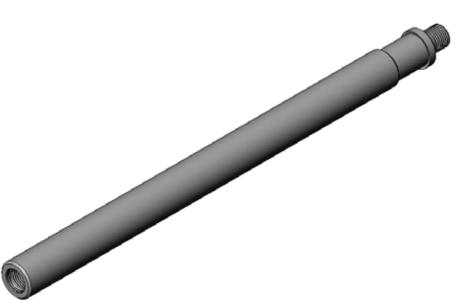
OTHER SIZES AVAILABLE ON REQUEST

STEM

Frederick's Machine

The Wireline Stem, also called a weight bar, is used to add weight to the wireline tool string to counteract the wellbore pressure allowing the easy descent of the tool string. It is also used to increase the effectiveness of jarring operations.





SPECIFICATIONS									
SIZE		3/4"	1"	1 1/4"	1 1/2"	1 3/4"	1 7/8"	2 1/8"	
FISHINGNECK O.D.		0.688"	0.875"	1.188"	1.375"	1.750"	1.750"	1.750"	
MAX O.D.		0.750"	1.000"	1.250"	1.500"	1.750"	1.750"	2.125"	
PIN & BOX CONNEC	TIONS	1/2"-13	5/8"-11	15/16"-10	15/16"-10	1 1/16"-10	1 1/16"-10	1 1/16"-10	
	2'	24.000"	24.000"	24.000"	24.000"	24.000"	24.000"	24.000"	
MADE UP LENGTH	3'	36.000"	36.000"	36.000"	36.000"	36.000"	36.000"	36.000"	
	5'	60.000"	60.000"	60.000"	60.000"	60.000"	60.000"	60.000"	

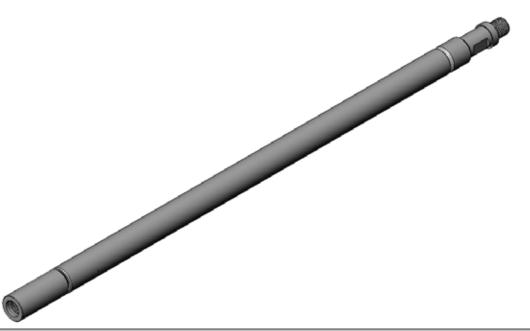
OTHER SIZES AVAILABLE ON REQUEST

LEADED STEM



The Wireline Stem, also called a weight bar, is used to add weight to the wireline tool string to counteract the wellbore pressure allowing the easy descent of the tool string. It is also used to increase the effectiveness of jarring operations.





SPECIFICATIONS									
SIZE		1"	1 1/4"	1 1/2"	1"	1 7/8"			
FISHING NECK O.D.		1.000"	1.188"	1.375"	1.375"	1.000"			
MAX O.D.		1.000"	1.250"	1.500"	1.750"	1.875"			
PIN & BOX CONNECT	TIONS	5/8"-11	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10			
	2'	24.000"	24.000"	24.000"	24.000"	24.000"			
MADE UP LENGTH	3'	36.000"	36.000"	36.000"	36.000"	36.000"			
	5'	60.000"	60.000"	60.000"	60.000"	60.000''			

OTHER SIZES AVAILABLE ON REQUEST

ROLLER STEM



The Roller Stem is incorporated into the wireline tool string to facilitate maneuverability within the tubing. The rollers on the stem also allow the tool string to move easier through deviated tubing. The wheels are available in steel and teflon.





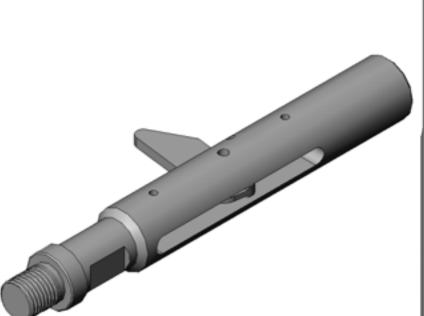
SPECIFICATIONS								
SIZE		1 1/4"	1 1/2"	1 3/4"	1 7/8"			
FISHING NECK O.D.		1.188"	1.375"	1.750"	1.750"			
MAX O.D.		1.250"	1.500"	1.750"	1.875"			
PIN & BOX CONNECTIONS		15/16-10"	15/16-10"	1 1/16-10"	1 1/16-10"			
ROLLERS O.D.		1.438"	1.844"	2.625"	2.625"			
ROLL PIN		3/8"x1 1/4"	3/8"x1 1/2"	3/8"x1 3/4"	3/8"x1 3/4"			
	2'	24.000"	24.000"	24.000"	24.000"			
MADE UP LENGTH	3'	36.000"	36.000"	36.000"	36.000"			
	5'	60.000"	60.000"	60.000"	60.000"			

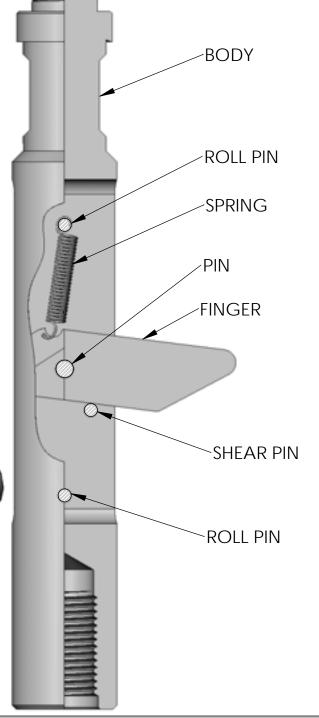
TUBING END LOCATOR



The Tubing End Locator is used to determine the depth of the tubing through the use of a spring loaded finger. The spring loaded finger catches the end of the tubing when pulled upward, registering a reading on the surface weight indicator.







SPECIFICATIONS							
SIZE	1 1/4", 1 1/2"	2", 2 1/2"	3"				
FISHING NECK O.D.	1.188"	1.375"	1.375"				
MAX O.D.	1.250"	1.750"	2.500"				
PIN CONNECTION	15/16"-10	15/16" - 10	15/16" - 10				
MADE UP LENGTH	10.625"	10.438"	10.438"				
SHEAR PIN	3/16" X 1 1/4"	3/16" X 1 3/4"	3/16" X 1 3/4"				

OTHER SIZES AVAILABLE ON REQUEST

TUBING SWEDGE



The Tubing Swedge is used to bend out irregular places and other obstructions within the tubing string. It is equipped with a central bore and angled fluid ports for ample fluid bypass.







SPECIFICATIONS							
SIZE	1 1/4"	1 1/2"	2"	2 1/2"	3"		
FISHING NECK O.D.	1.000"	1.188"	1.375"	1.375"	1.750"		
MAX O.D.	1.230"	1.531"	1.906"	2.343"	3.870"		
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10	15/16"-10	15/16"-10		
MADE UP LENGTH	6.250"	7.000"	8.000"	9.250"	9.250"		



Section K

Pulling Tools

Description	Size	
GG Pulling Tool	2"X1" to 3"X 2 5/16"	
GG Pulling Tool for BK Latch	Assembly	
GS Pulling Tool	1 1/4" to 7" Assembly	
GS Pulling Tool Core Extension	2" to 3" Assembly	
GS Pinning Tool	2" to 3" Assembly	
GR Adapter	1 1/2" to 3" Assembly	
JD & JU Pulling Tool	1 1/4" to 4" Assy.	
PRS Pulling Tool	2" to 5" Assembly	
R Pulling Tool	1 1/4" to 4" Assy.	
S Pulling Tool	1 3/16" to 4" Assy.	
SB Heavy Wall Pulling Tool	2" Assembly	
SB Core Wrench Combination	2 & 2 1/2"	
2 Legged Pulling Tool	2" to 3" Assembly	
3 Legged Pulling Tool	2" to 3" Assembly	
Pump In Sub with Weco Union	2 1/2" ID 5,000 psi to	
	3" ID 10,000 psi	

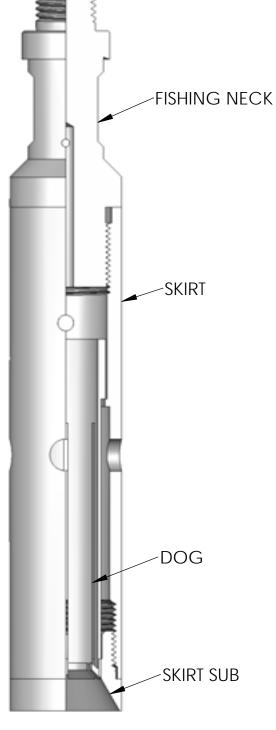
GO BACK HOME

GG PULLING TOOL



The FMS "GG" Pulling Tool is a nonreleasable pulling tool primarily used to extract prongs from "PS" and "PN" Plugs.





SPECIFICATIONS						
SIZE	2" X 1"	2" X 1 3/16"	2" X 1 3/8"			
FISHINGNECK O.D.	1.375"	1.375"	1.375"			
MAX O.D.	1.750"	1.750"	1.843"			
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10			
MADE UP LENGTH	10.813"	8.813"	9.563"			
GRABS (FISHINGNECK SIZE)	1" FN	1 3/16" FN	1 3/8" FN			

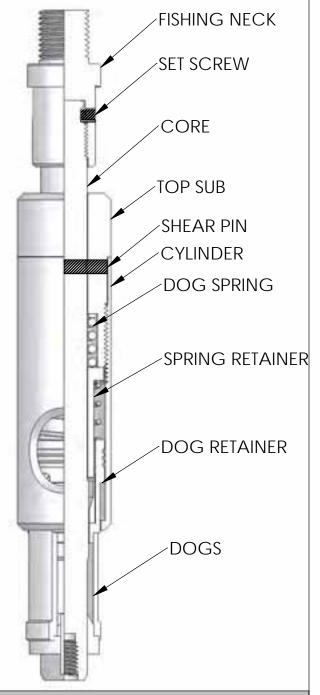
GS PULLING TOOL



The FMS "GS" Running/Pulling Tool is a shear down releasing tool used to run or pull subsurface devices which have internal fishing necks.

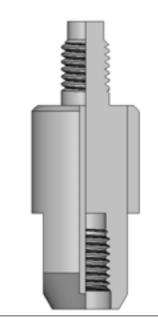






SPECIFICATIONS							
SIZE	1 1/2"	2"	2 1/2"	3"			
FISHNECK O.D.	1.188"	1.375"	1.750"	2.313"			
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10			
MAX O.D.	1.469"	1.750"	2.160"	2.719"			
BOTTOM CONNECTION	1/2"-13	1/2"-13	5/8"-11	5/8"-11			
SHEAR PIN	3/16" X 1 7/32"	1/4" X 1 39/64"	1/4" X 1 31/32"	1/4" X 2 31/64"			
FISHINGNECK ENGAGES	1.062"	1.375"	1.812"	2.313"			
REACH	1.656"	1.687"	1.625"	1.651"			
MADE UP LENGTH	10.750"	11.625"	11.875"	12.125"			
SET SCREW	1/4"-20 X 1/4"	1/4"-20 X 1/4"	1/4"-20 X 1/4"	1/4"-20 X 5/16"			

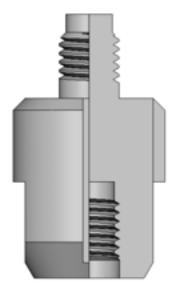
GS PULLING TOOL CORE EXTENSION





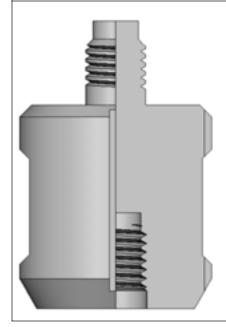


2" ASSEMBLY

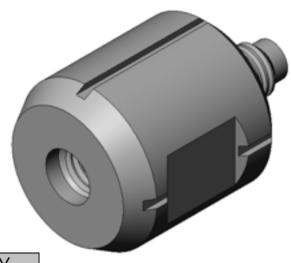




2 1/2" ASSEMBLY







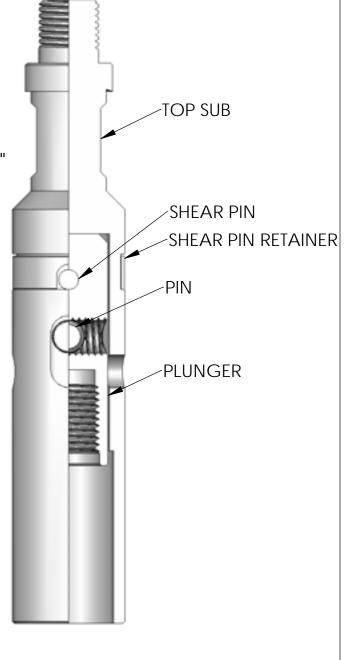
OTHER SIZES AVAILABLE ON REQUEST

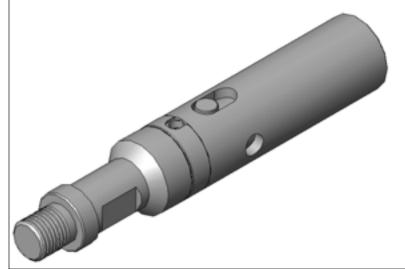
GR ADAPTER



The FMS "GR" Adapter is used in conjunction with the "GS" Pulling Tool to convert it into a "jar up to released" type tool.







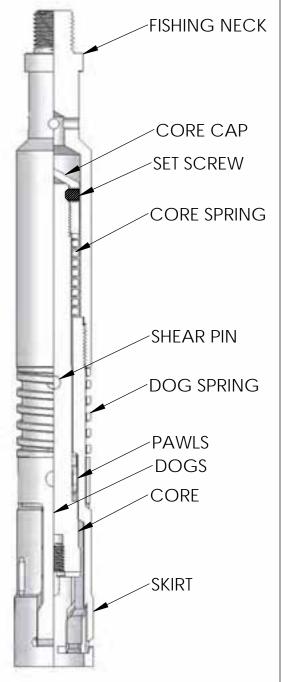
		SPECIFICATIONS		
SIZE	1 1/2"	2"	2 1/2"	3", 4"
FISHINGNECK O.D.	1.188"	1.375"	1.750"	2.313"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MAX O.D.	1.460"	1.813"	2.125"	2.725"
SHEAR PIN	1/4" X 1 5/16"	5/16" X 1 11/16"	5/16" X 2"	3/8" X 2 1/2"
BOX CONNECTION	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MADE UP LENGTH	8.375"	8.375"	8.875"	9.313"

JD PULLING TOOL



The FMS "J" Series Pulling Tool, through minor component changes, is a shear down or shear up releasing tool used in pulling subsurface devices which have external fishing necks. To accommodate the many different types of devices, the core of the "J" Series tools is made in various lengths and can be changed in the field.





SPECIFICATIONS							
SIZE	1 1/4"	1 3/8"	1 1/2"	1 5/8"	2"	2 1/2"	3"
FISHINGNECK O.D.	1.188"	1.188"	1.188"	1.188"	1.375"	1.375"	1.750"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10
MAX O.D.	1.290"	1.375"	1.422"	1.625"	1.859"	2.250"	2.796"
BOTTOM CONNECTION	1/4"-20	1/4"-20	1/2"-13	1/2"-13	1/2"-13	1/2"-13	1/2"-13
SHEAR PIN	3/16" X 1 9/64"	3/16" X 1 9/64"	3/16" X 1 11/64"	3/16" X 1 11/64"	3/16" X 1 31/64"	3/16" X 1 27/32"	3/16" X 1 11/32"
FISHINGNECK ENGAGES	0.875"	1.000"	1.187"	1.187"	1.375"	1.750"	2.313"
REACH	JDC-1.937" JDS-2.688"	JDC-1.875" JDS-2.625"	JDC-1.093" JDS-1.843"	JDC-1.093" JDS-1.843"	JDC-1.437" JDS-2.250"	JDC-1.312" JDS-2.187"	JDC-1.437" JDS-2.125"
MADE UP LENGTH	12.063"	12.156"	13.063"	13.000"	14.391"	14.891"	15.000"
SET SCREW	NONE	NONE	1/4"-20 X 3/16"	1/4"-20 X 3/16"	5/16"-18 X 1/4"	5/16"-16 X 1/4"	3/8"-16 X 3/8"

OTHER SIZES AVAILABLE ON REQUEST

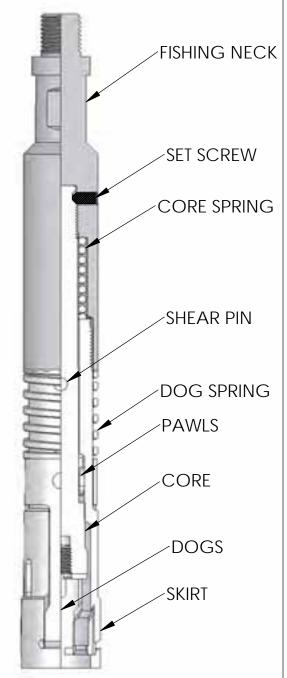
JU PULLING TOOL



THE FMS "J" Series Pulling Tool, through minor component changes, is a shear down or shear up releasing tool used in pulling subsurface devices which have external fishing necks. To accommodate the many different types of devices, the core of the "J" Series tool is made in various lengths and can be changed in the field.







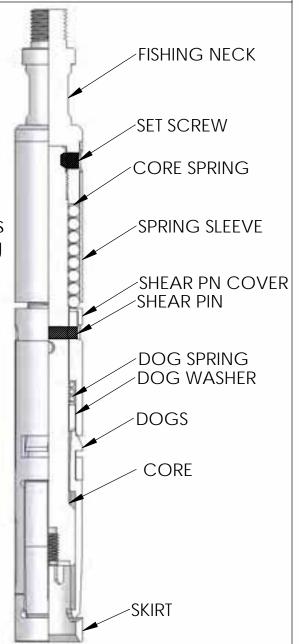
SPECIFICATIONS								
SIZE	1 1/4"	1 3/8"	1 1/2"	1 5/8"	2"	2 1/2"	3"	
FISHINGNECK O.D.	1.188"	1.188"	1.188"	1.188"	1.375"	1.375"	1.750"	
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	
MAX O.D.	1.290"	1.375"	1.422"	1.625"	1.859"	2.250"	2.797"	
BOTTOM CONNECTION	1/4"-20	1/4"-20	1/2"-13	1/2"-13	1/2"-13	1/2"-13	5/8"-11	
SHEAR PIN	3/16" X 1 9/64	3/16" X 1 9/64	3/16" X 1 11/64	3/16" X 1 11/64	3/16" X 1 31/64	3/16" X 1 27/32	3/16" X 2 21/64"	
FISHINGNECK ENGAGES	.0875"	1.000"	1.187"	1.187"	1.375"	1.750"	2.313"	
REACH	JUC-1.937" JUS-2.688"	JUC-1.000" JUS-2.625"	JUC-1.093" JUS-1.843"	JUC-1.093" JUS-1.843"	JUC-1.437" JUS-2.125"	JUC-1.312" JUS-2.187"	JUC-1.437" JUS-2.125"	
MADE UP LENGTH	12.063"	12.156"	13.063"	13.000"	14.328"	14.875"	14.750"	
SET SCREW	1/4" - 20 X 3/8"	3/8" - 18 X 1/2"	7/16" - 16 X 1/2"	7/16" - 14 X 1/2"				

R PULLING TOOL

Frederick's Machine

The FMS "R" Series Pulling Tool is a shear up releasing tool used in pulling subsurface devices which have external fishing necks. To accommodate the many different types of devices, the core on the "R" Series Pulling Tool is made in various lengths and can be changed in the field.





SPECIFICATIONS							
SIZE		1 3/16"	1 1/4"	1 1/2"	2''	2 1/2"	3"
FISHINGNECK O.D.		0.875"	1.000"	1.188"	1.375"	1.375"	2.313"
PIN CONNECTION		5/8"-11	5/8"-11	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MAX O.D.		1.180"	1.215"	1.425"	1.765"	2.170"	2.742"
BOTTOM CONNEC	COIT	7/16"-14	3/8"-16	3/8"-16	1/2"-13	1/2"-13	5/8"-11
SHEAR PIN		3/16" X 63/64"	3/16" X 1"	1/4" X 1 3/16"	5/16" X 1 15/32"	5/16" X 1 53/64"	3/8" X 2 25/64"
FISHINGNECK ENG	AGES	0.875"	1.000"	1.188"	1.375"	1.750"	2.313"
	RB	1.296"	1.218"	1.265"	1.219"	1.203"	1.297"
REACH	RJ	*****	1.843"	2.547"	2.547"	2.547"	2.609"
	RS	*****	2.125"	1.797"	1.984"	1.984"	2.190"
MADE UP LENGTH		12.109"	12.375"	11.500"	12.968"	13.125"	15.000"
SET SCREW		1/4"-20 X 1/4"	1/4"-20 X 1/4"	5/8"-18 X 5/16"	7/16"-14 X 1/4"	3/8"-16 X 3/8"	7/16"-14 X 3/8"

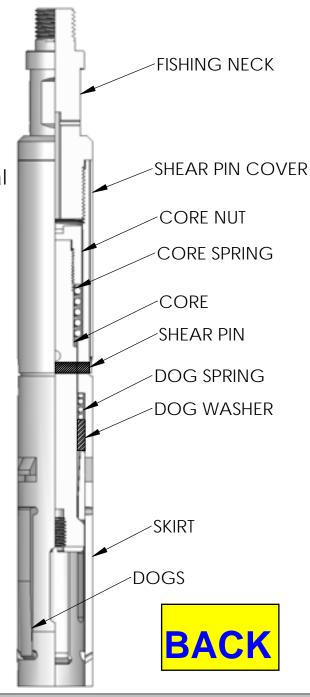
S PULLING TOOL

Frederick's Machine

The FMS "S" Series Pulling Tool is a shear down releasing tool used in pulling subsurface devices which have external fishing necks. To accommodate the many different types of devices, the core on the "S" Series Pulling Tool is made in various lengths and can be changed in the field.



SPECIFICATIONS - SM							
SIZE	1 3/16"	1 1/2"	2"				
FISHINGNECK O.D.	1.188"	1.375"	1.375"				
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10				
MAX O.D.	1.188"	1.375"	1.765"				
BOTTOM CONNECTION	3/8"-16	3/8"-16	1/2"-13				
SHEAR PIN	3/16" X 1 3/32"	3/16" X 1 3/32"	5/16" X 1 39/64"				
FISHINGNECK ENGAGES	0.875"	0.875"	1.375"				
REACH	1.680"	1.578"	1.640"				
MADE UP LENGTH	13.000"	12.859"	14.750"				

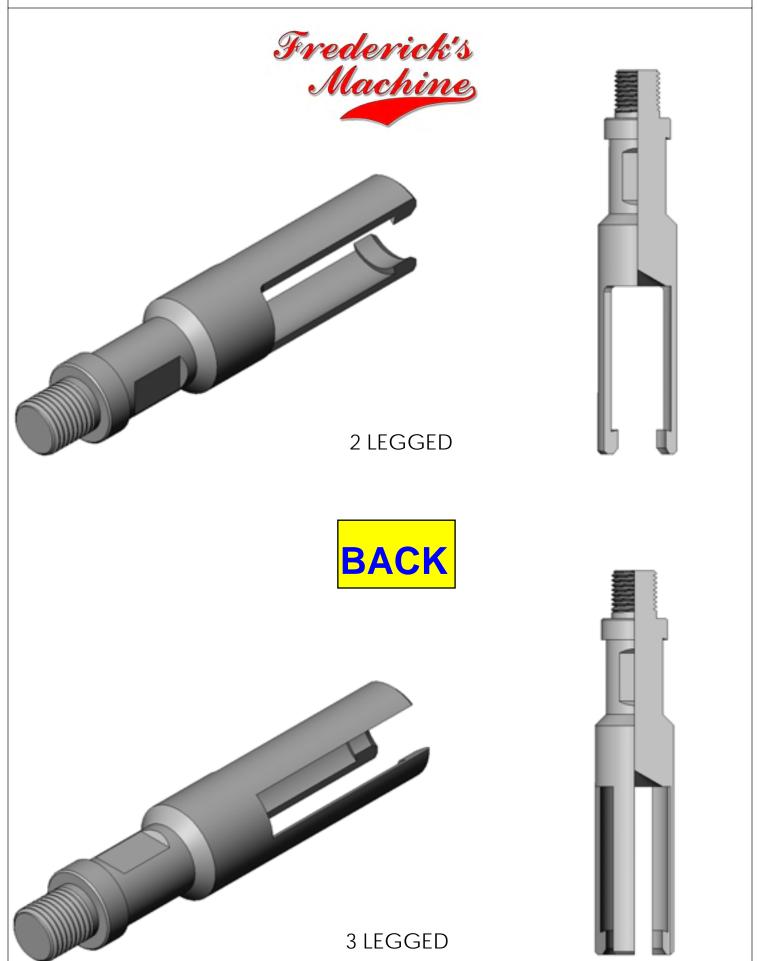


SPECIFICATIONS - SB/SS						
SIZE		1 1/4"	1 1/2"	2"	2 1/2"	3"
FISHINGNECK O.D.		1.000"	1.188"	1.375"	1.375"	2.313"
PIN CONNECTION		5/8"-11	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MAX O.D.		1.219"	1.418"	1.765"	2.175"	2.740"
BOTTOM CONNEC	BOTTOM CONNECTION		3/8"-16	1/2"-13	1/2"-13	5/8"-11
SHEAR PIN		3/16" X 1 3/32"	3/16" X 1 17/64"	1/4" X 1 39/64"	1/4" X 1 63/64"	5/16" X 2 1/8"
FISHINGNECK ENG	AGES	1.000"	1.188"	1.375"	1.750"	2.313"
REACH	SB	1.280"	1.297"	1.219"	1.281"	1.500"
INLACTI	SS	****	1.780"	2.031"	2.000"	2.210"
MADE UP LENGTH		13.750"	12.469"	14.938"	15.328"	15.313"

OTHER SIZES AVAILABLE ON REQUEST

PAGE K-8

2 LEGGED / 3 LEGGED PULLING TOOLS





Section L

Running Tools

Description		S	ize			
Running Tools	Collar Stop	JK	GA-2	JC-3	RK-1	
C-1 Running Tool	2"	to 4 "	Assemb	ly		
D Running Tool	2"	to 3"	Assemb	ly		
D Running Tool (collet type)		to 3"	Assemb	ly		
D Running Tool (for packing	type Rec)	2" to	3" Assy			
DB Running Tool	2	" & 2 1	/2" Assy	,		
G Stop Runnung Tool	2"	to 3"	Assemb	ly		
H Running Tool	2"	to 3"	Assemb	ly		
J Running Tool	1	1/2" to	4" Assy	/ .		
PS Running Tool	1	1/2" to	4" Assy	/		
T Running Tool	2"	to 3"	Assemb	ly		
W Running Tool	1	1/2" to	4" Assy	<i>.</i>		
Sidewall Cutter Running To	ool 1	3/4" to	o 3" Assy	<u>/</u>		
FMSR Running	1.71	0" to 3	3.688" A	ssy		
FMSX Running	1.5	" to 3	813" Ass	sy.		
MM Spacer Bar		Ass	embly			

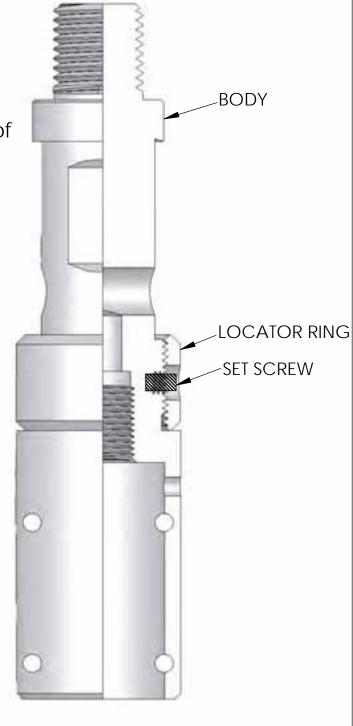
GO BACK HOME

C-1 RUNNING TOOL

Frederick's Machine

The C-1 Running Tool is capable of running and landing several types of Backer Style Locks and Plugs.







SPECIFICATIONS				
SIZE	1 1/2" , 1 3/4"	2"	2 1/2"	3"
FISHINGNECK O.D.	1.188"	1.375"	1.750"	2.313"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MADE UP LENGTH	5.875"	6.250"	5.875"	5.750"
SET SCREW	1/4"-20 X 3/8"	1/4"-20 X 3/8"	1/4"-20 X 3/8"	1/4"-20 X 3/8"
SHEAR PINS	1/8" X 1 3/8"	3/16" X 1 11/16"	3/16" X 2 1/8"	3/16" X 2 5/8"

OTHER SIZES AVAILABLE ON REQUEST

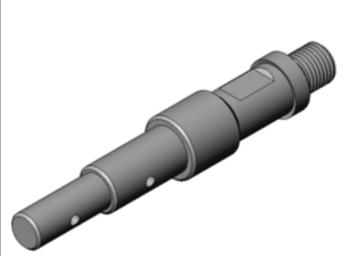
PAGE L-1

COLLAR STOP RUNNING TOOL

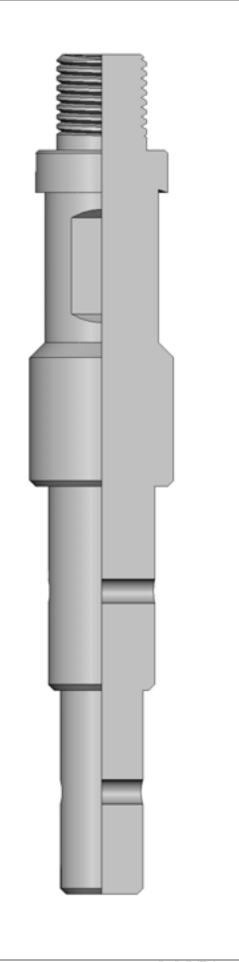


The Type F Collar Stop Running Tool is used to set the Type F Collar Stop.





SPECIFICATIONS			
SIZE	2", 2 1/2"	3"	
FISHINGNECK O.D.	1.375"	1.750"	
PIN CONNECTION	15/16"-10	15/16"-10	
MAX O.D.	1.500"	2.000"	
STEEL PIN	2": 1/4" X 1 3/16"	1/4" X 2"	
SILLL FIIN	2 1/2": 1/4" X 1 1/2"	1/4 /\ Z	

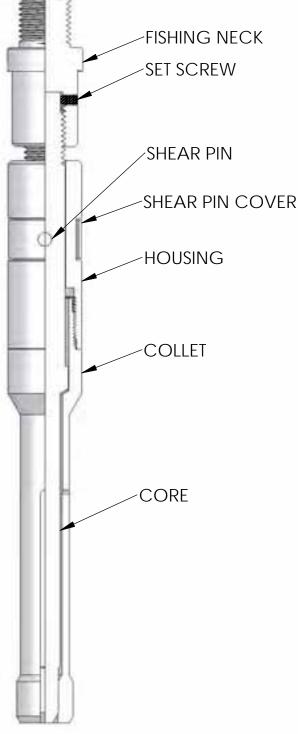


D RUNNING TOOL (COLLET TYPE)



The FMS "D" Running tool is used to run the "D" Lock and/or "DD" Bridge Plug.







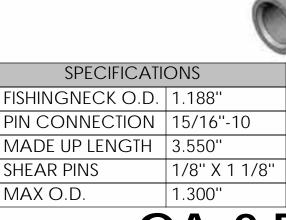
SPECIFICATIONS			
SIZE	2"	2 1/2"	3"
FISHINGNECK O.D.	1.375"	1.750"	1.750"
PIN CONNECTION	15/16"-10	15/16"-10	1 1/16"-10
MAX O.D.	1.340"	1.750"	2.125"
MADE UP LENGTH	12.500"	12.906"	12.875"
SHEAR PIN	1/4" X 1 3/16"	1/4" X 1 5/8"	1/4" X 2"
SET SCREW	1/4"-20 X 1/4"	1/4"-20 X 1/4"	1/4"-20 X 1/4"

JK RUNNING TOOL

Frederick's Machine

The JK Running Tool, in conjunction with a kickover tool, is used to install the BK and BK-2 Latches in side

pocket mandrels.







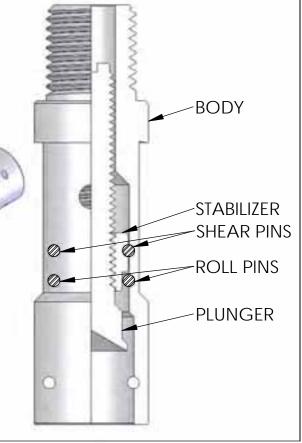
GA-2 RUNNING TOOL

Frederick's Machine

The GA-2 Running Tool is used in conjunction with the L or K Kickover Tool to install 1" valves into side

pocket mandrels.

SPECIFICATIONS				
FISHINGNECK O.D.	1.188"			
PIN CONNECTION	15/16"-10			
MADE UP LENGTH	3.375"			
ROLL PINS	1/8" X 7/8"			
SHEAR PINS	1/8" X 7/8"			
MAX O.D.	1.188"			

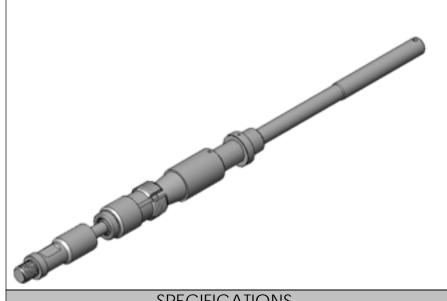


G STOP RUNNING TOOL

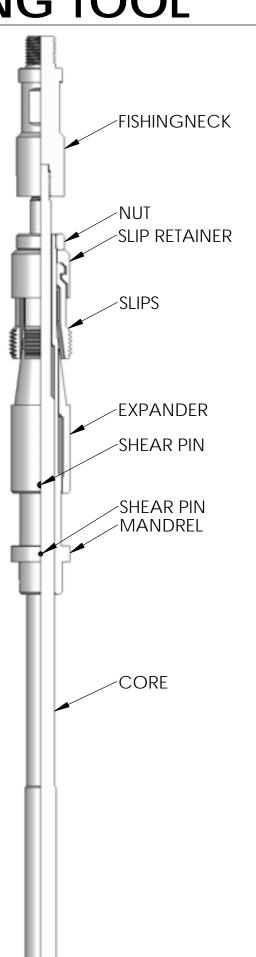


The G Stop Running Tool is used to run and set the G Stop Anchor.





SPECIFICATIONS				
SIZE	2"	2 1/2"		
FISHINGNECK O.D.	1.375"	1.375"		
PIN CONNECTION	15/16"-10	15/16"-10		
MADE UP LENGTH	30.188"	31.125"		
O.D. SLIPS (RETRACTED)	1.812"	2.275"		
O.D. SLIPS (EXPANDED)	2.015"	2.500"		
SHEAR PIN	1/8" X 1 13/16"	1/8" X 2 3/16"		



JC-3 RUNNING TOOL



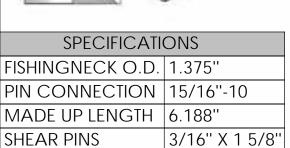
The JC-3 Running Tool is used to run the R or RA Type Latch in the appropriate MM Series Mandrel.





MAX O.D





1.750"





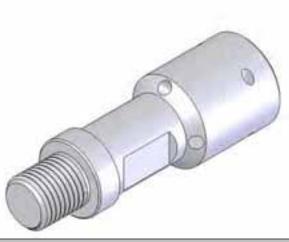
SPECIFICATIONS (LONG)			
FISHINGNECK O.D.	1.375"		
PIN CONNECTION	15/16"-10		
MADE UP LENGTH	12.000"		
SHEAR PINS	3/16" X 1 5/8"		
MAX O.D	1.750"		

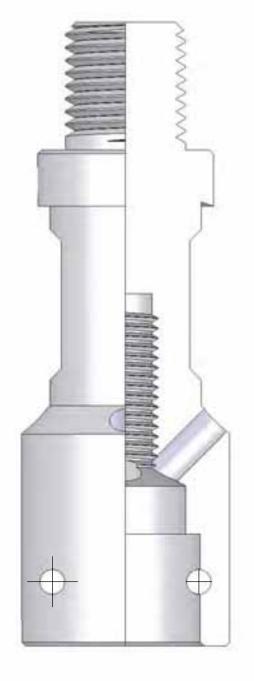
J RUNNING TOOL



The FMS "J" Running Tool is used to run and set the "S" Lock Mandrel.







SPECIFICATIONS					
SIZE	1 1/4"	1 1/2"	2"	2 1/2"	3"
FISHINGNECK O.D.	1.000"	1.188"	1.375"	1.375"	2.313"
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
BOX CONNECTION	3/8"-16	3/8"-16	1/2"-13	1/2"-13	5/8"-11
MAX O.D.	1.125"	1.420"	1.625"	2.125"	2.500"
MADE UP LENGTH	2.375"	3.500"	3.688"	3.688"	4.625"
SHEAR PINS	1/8" X 1 1/16"	1/8" X 1 3/8"	3/16" X 1 9/16"	3/16" X 2 1/16"	1/8" X 1 1/16"

PS RUNNING TOOL



The FMS "PS" Running Tool is used to run and set the "PS" and "PN" lock and plug assembly.







SPECIFICATIONS					
SIZE	1 1/4"	1 1/2"	2"	2 1/2"	3"
FISHINGNECK O.D.	1.000"	1.188"	1.375"	1.750"	2.313"
PIN CONNECTION	5/8"-11	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10
MAX O.D.	1.188"	1.420"	1.688"	2.000"	2.500"
MADE UP LENGTH	5.000"	5.000"	6.500"	6.500"	5.875"
SHEAR PINS	1/8" X 1 1/8"	1/8" X 1 3/8"	3/16" X 1 5/8"	3/16" X 1 15/16"	3/16" X 2 7/16"

RK-1 RUNNING TOOL

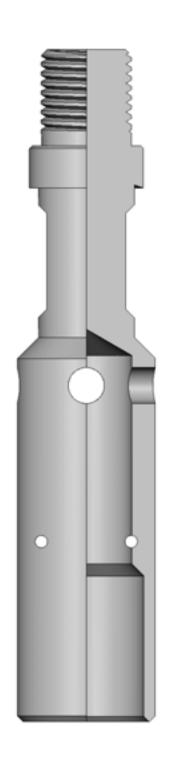


The RK-1 Running Tool is used to run the RK-1 or RKP Latch in the appropriate MMG Series Mandrel.





SPECIFICATIONS			
FISHINGNECK O.D.	1.188"		
PIN CONNECTION	15/16"-10		
MADE UP LENGTH	6.000"		
SHEAR PINS	1/8" X 1 1/4"		
MAX O.D.	1.438"		

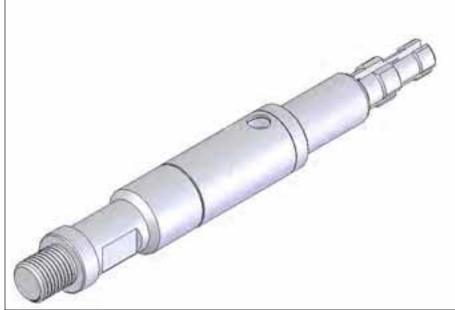


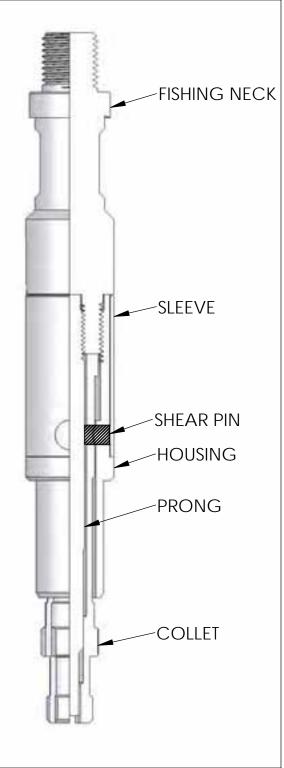
W RUNNING TOOL



The FMS "W" Running Tool is designed to the "B", "C" and "W" Lock Mandrels.







SPECIFICATIONS					
SIZE	1 1/2"	2" & 2 1/2"	3"		
FISHINGNECK O.D.	1.188"	1.375"	1.750"		
PIN CONNECTION	15/16"-10	15/16"-10	1 1/16"-10		
MADE UP LENGTH	9.343"	10.438"	10.000"		
SHEAR PIN (2)	1/4" X 3/8"	5/16" X 3/8"	5/16" X 1/2"		
ENGAGES	0.688"	1.000" & 0.813"	1.500"		
MAX O.D.	1.375"	1.500"	2.750"		

OTHER SIZES AVAILABLE ON REQUEST

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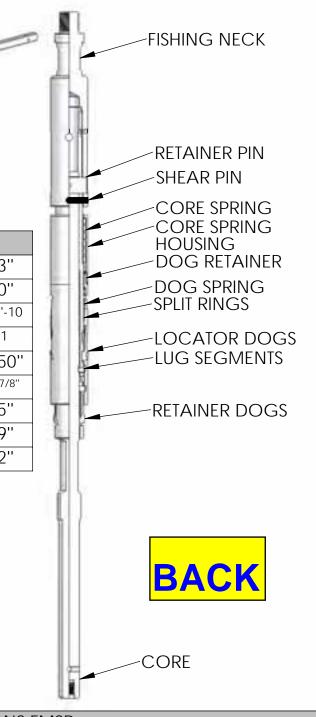
FMSX & FMSR RUNNING TOOL



The FMSX and FMSR Running Tools are used to run, locate, and set Type FMSX, FMSXN, FMSR and FMSRN Locks

and subsurface safety equipment.

SPECIFICATIONS FMSX						
SIZE	1.500''	1.625"	1.875"	2.313"		
FISHINGNECK O.D.	1.188"	1.188"	1.375"	1.750"		
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10		
BOTTOM THREAD	3/8"-16	3/8"-16	1/2"-13	5/8"-11		
MADE UP LENGTH	30.063"	30.063"	29.313"	30.250		
SHEAR PIN	3/16"X1 1/8"	3/16"X1 1/8"	1/4"X1 1/2"	1/4"X1 7/8"		
O.D. DOGS RETRACTED	1.410"	1.593"	1.750"	2.175"		
EXPANDED	1.562"	1.672"	1.937"	2.359"		
FN ENGAGES	1.062"	1.062"	1.375"	1.812"		
SIZE	2.750"	2.813"	2.875"			
FISHINGNECK O.D.	2.313"	2.313"	2.313"			
PIN CONNECTION	1 1/16"-10	1 1/16"-10	1 1/16"-10			
BOTTOM THREAD	3/4"-10	3/4"-10	3/4"-10			
MADE UP LENGTH	31.000"	31.000"	31.000"			
SHEAR PIN	1/4"X2 1/2"	1/4"X2 1/2"	1/4"X2 1/2"			
O.D. DOGS RETRACTED	2.718"	2.718"	2.844"			
EXPANDED	2.843''	2.906"	1.938"			
FN ENGAGES	2.313"	2.313"	2.313"			



SPECIFICATIONS FMSR								
SIZE	1.710"	1.781"	1.875"	2"	2.125"	2.188"	2.313"	2.562"
FISHINGNECK O.D.	1.188"	1.375"	1.375"	1.375"	1.375"	1.750"	1.750"	1.750"
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10
BOTTOM THREAD	3/8"-16	1/2"-13	1/2"-13	1/2"-13	1/2"-13	5/8"-11	5/8"-11	5/8"-11
MADE UP LENGTH	30.063"	29.313"	29.313"	29.313"	29.313"	29.313"	29.313"	30.250"
SHEAR PIN	3/16"X1 1/8"	1/4"X1 1/2"	1/4"X1 1/2"	1/4"X1 1/2"	1/4"X1 1/2"	1/4"X1 7/8"	1/4"X1 7/8"	1/4"X1 7/8"
O.D. DOGS RETRACTED	1.640"	1.750"	1.750"	1.938"	2.063"	2.175"	2.175"	2.500"
EXPANDED	1.760"	1.828"	1.937"	2.063"	2.165"	2.297"	2.359"	1.760"
FN ENGAGES	1.062"	1.375"	1.375"	1.375"	1.375"	1.812"	1.812"	1.812"



Section M

Test Tools

Description	Size	
N Test Tool	1.875" to 2.875" Assy.	
S Test Tool	2" to 3" Assembly	
FMSX Selective Test Tool	1.875" to 2.813" Assy.	
T Test Tool	2" to 3" Assembly	

GO BACK HOME

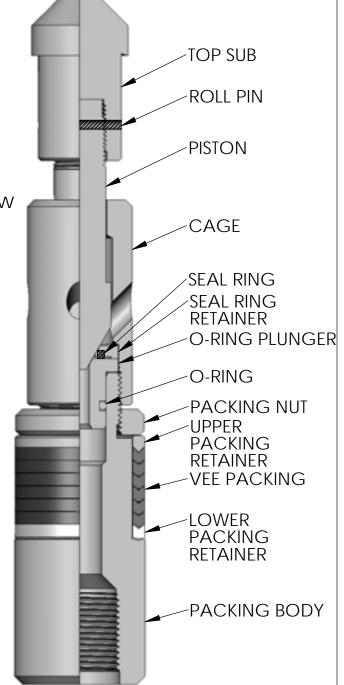
N TEST TOOL

Frederick's Machine

The "N" Test Tool is used to pressure test the tubing above the nipple in which it is set. The tool is designed to hold pressure only from above, allowing a small amount of flow from beneath.







SPECIFICATIONS					
SIZE	2"	2 1/2"	3"		
NUT O.D. (FISHINGNECK)	1.375"	1.375"	2.313"		
OVERALL LENGTH	10.281"	9.969"	11.000"		
NO GO O.D.	1.865"	2.300"	2.865"		
BOTTOM THREAD	1 1/8"-12	1 11/32"-14	1 7/8"-12		
RUNNING TOOL	2" H	2" H	3" H		
PULLING TOOL	2" RB	2" RB	3" RB		
ROLL PIN	1/8" X 1 3/16"	1/8" X 1 3/16"	1/8" X 2"		

OTHER SIZES AVAILABLE ON REQUEST

FMSX SELECTIVE TEST TOOL

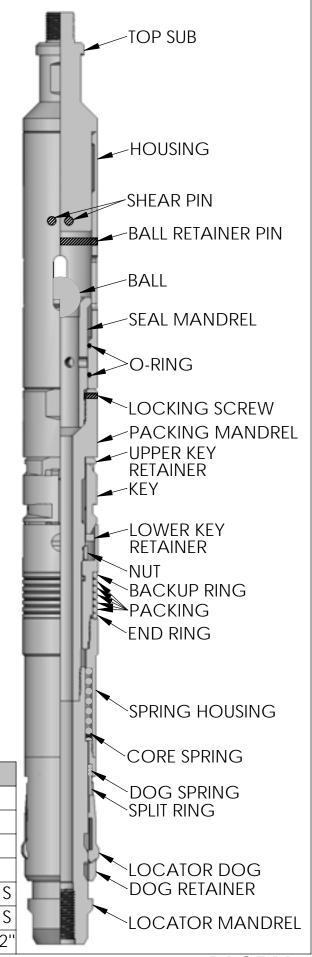


The FMS Selective Test Tool is used to pressure test the tubing above the nipple in which it is set. The locator assembly on this tool allows the operator the flexibility to locate, land, and pressure test the tubing from any desired FMS Style Landing Nipple within the tubing string.





SPECIFICATIONS						
SIZE	1.875"	2.313"	2.750"			
FISHINGNECK O.D.	1.375"	1.375"	1.750"			
KEYS EXPANDED	2.194"	2.620"	3.19"			
O.D.	1.870"	2.305"	2.740"			
RUNNING TOOL	2" S	2" S	2 1/2" S			
PULLING TOOL	2" S	2" S	2 1/2" S			
ROLL PIN	1/8"X1 3/16"	1/8"X1 3/16"	1/8"X 2"			





Section N

Shifting Tools

Description	Size	
"B" Shifting Tools	1.500" to 3.812" Assy.	
"D-2" Shifting Tool	2" to 3" Assembly	
"FMS" Selective Shifting Tool	1.875" to 2.813" Assy.	

GO BACK HOME

B SHIFTING TOOL



The "B" Shifting Tool is designed to selectively locate and shift most sliding side door sleeves. This is accomplished by the "B" Shifting Tool keys engaging the SSD inner sleeve, and depending on the direction the tool is run, up or down, the sleeve is shifted.

SPECIFICATIONS					
SIZE	1.250"	1.500"			
FISHING NECK O.D.	1.000"	1.188"			
PIN CONNECTION	5/8"-11	15/16"-10			
MADE UP LENGTH	9.625"	10.500"			
O.D. KEYS RETRACTED	1.210"	1.406"			
O.D. KEYS EXPANDED	1.453"	1.719"			
SET SCREW	1/4"-20 X 1/4"	1/4"-20 X 1/4"			
SHEAR PIN	3/16" X 15/16"	1/4" X 1 1/8"			

SIZE	1.625"	1.710"
FISHING NECK O.D.	1.188"	1.188"
PIN CONNECTION	15/16"-10	15/16"-10
MADE UP LENGTH	10.938"	10.813"
O.D. KEYS RETRACTED	1.593"	1.688"
O.D. KEYS EXPANDED	1.890"	2.094"
SET SCREW	1/4"-20 X 5/16"	1/4"-20 X 5/16"
SHEAR PIN	1/4" X 1 1/8"	1/4" X 1 1/8"

SHEAR PIN	1/4" X 1 1/8"	1/4" X 1 1/8"	BAC	K		11	
				-			
SIZE	1.781"	1.875"	2.125"	2.313"	2.562"	2.750"	2.813''
FISHING NECK O.D.	1.375"	1.375"	1.375"	1.750"	1.750"	2.313"	2.313''
PIN CONNECTION	15/16"-10	15/16"-10	15/16"-10	15/16"-10	15/16"-10	1 1/16"-10	1 1/16"-10
MADE UP LENGTH	11.313"	11.313"	13.000"	11.813"	11.938"	12.188"	9.625"
O.D. KEYS RETRACTED	1.750"	1.840"	1.965"	2.156"	2.530"	2.718"	1.210"
O.D. KEYS EXPANDED	1.120"	2.156"	2.438"	2.656"	2.968"	3.031"	1.453"
SET SCREW	3/8"-16 X 1/4"	3/8"-16 X 1/4"	3/8"-16 X 1/4"	3/8"-16 X 1/4"	3/8"-16 X 5/16"	3/8"-16 X 1/4"	1/4"-20 X 1/4"
SHEAR PIN	1/4" X 1 3/8"	1/4" X 1 5/8"	5/16" X 2 1/4"	3/16" X 15/16"			

TOP SUB

PIN

KFYS

SET SCREW

UPPER KEY

KEY SPRING

LOWER KEY RETAINER

COLLET

BODY

RETAINER

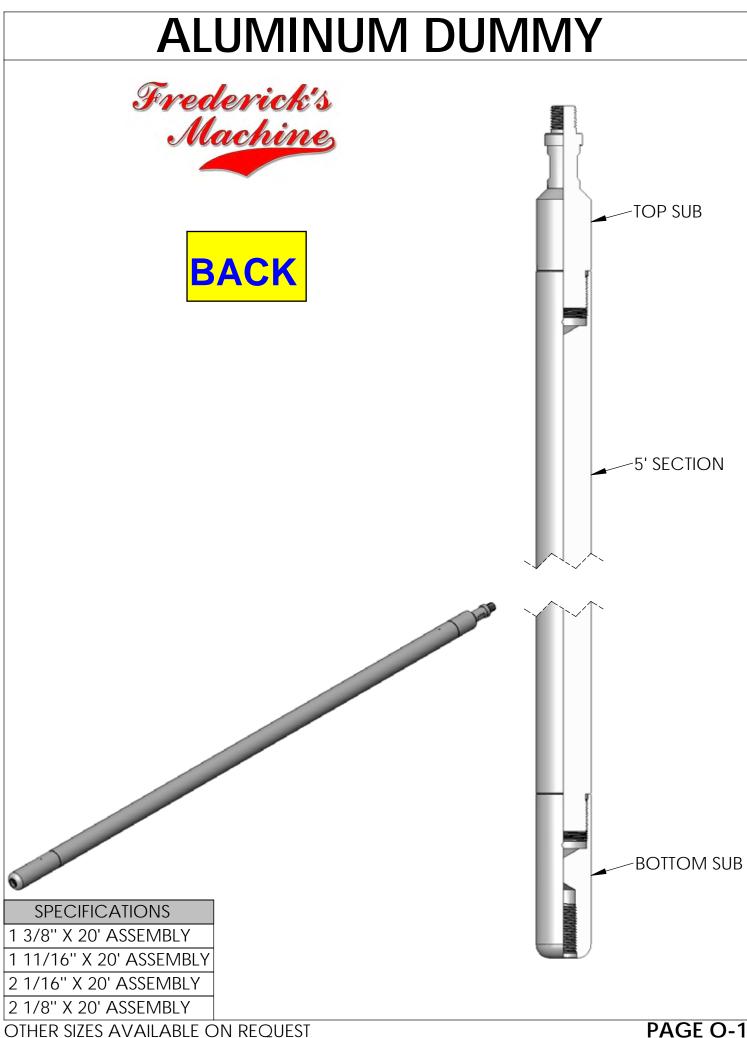


Section O

Miscellaneous

Description	Size	
DK Ball Valve Tester / Saddle	Assembly	
Packing		
Pinning Tool	1 1/2" to 4" + RS & RB	
Quick Lock	1 1/4" to 1 7/8" Assy	
Releasing Tool	2" to 4"	
Shock Absorber	1 1/4" to 1 1/2" Assy	
Star Drill	1 1/2" to 3" Assy	
Sucker Rod Thread Chaser	5/8" & 3/4" + 4 Way Combo	
Swab Mandrel	2" & 2 1/2" Assy.	
Swab Cup	2" to 3"	
Shear Stock (Alum, Brass & Steel)	1/16" X 3' to 3/8"X 3'	
Aluminum Dummy		
FMS Anti-Blow Up Tool		
Crossover Sub		
Swivel		

GO BACK HOME



FMS ANTI-BLOW UP TOOL



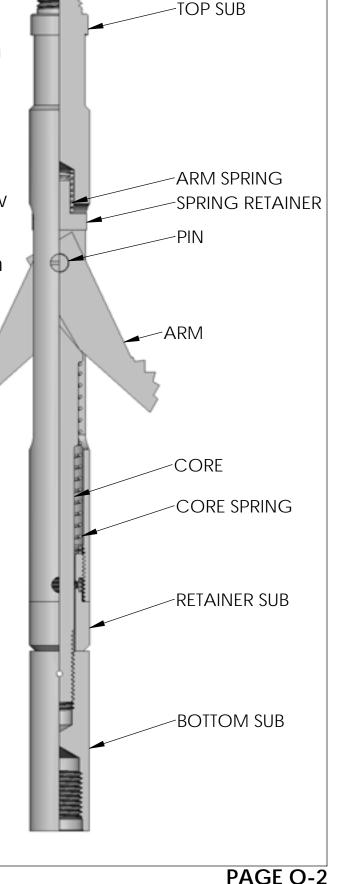
The FMS Anti-Blow Up Tool is installed in the tool string above the Bottom Hole Pressure equipment. The weight of the BHP equipment will keep the arm grabs on the Anti-Blow Tool retracted. A sudden surge of pressure from below forces the weight of the BHP equipment upward upon the Anti-Blow Tool. The spring loaded dog grabs expand to grab the inner wall of the tubing and prevent the tool string from being blown up the tubing.





SPECIFICATIONS				
FISHINGNECK O.D.	1.188"			
MAX O.D	1.250"			
PIN & BOX CONNECTIONS	15/16" - 10UN			
DOG GRABS (EXPANDED)	1 1/4" - 3" TUBING			
STEEL LOCK PIN	1/8" X 7/8"			

OTHER SIZES AVAILABLE ON REQUEST

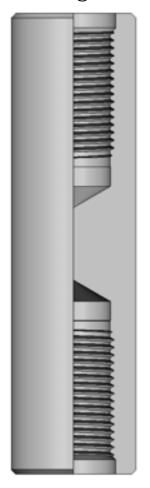


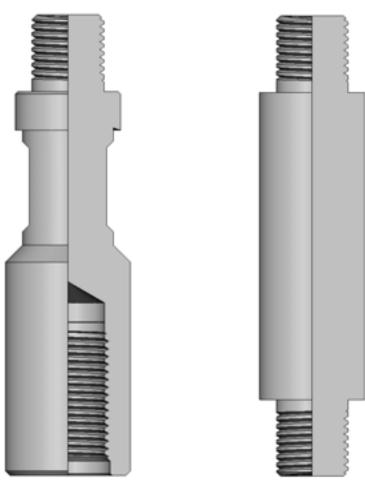
CROSSOVER SUB





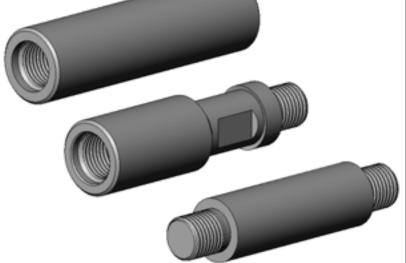
The Crossover Sub is designed to connect components of the tool string that have different size thread connections.





31 LCII ICATIONS
5/8" SR PIN X 3/4" SR BOX
3/4" SR PIN X 5/8" SR BOX
AMERADA PIN (3/4"-16) X 5/8" SR BOX
AMERADA BOX (3/4"-16) X 5/8" SR PIN
5/8" SR BOX X 5/8" SR BOX
5/8" SR PIN X 5/8" SR PIN
3/4" SR BOX X 3/4" SR BOX
3/4" SR PIN X 3/4" SR PIN

SPECIFIC ATIONS

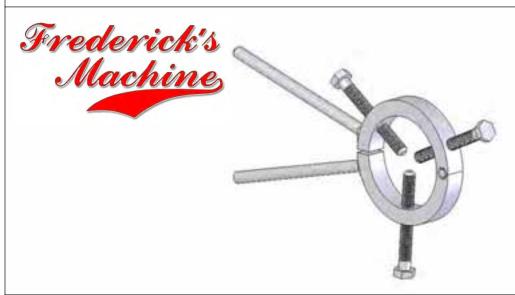


3/4" SR PIN X 7/8" SR BOX 7/8" SR PIN X 3/4" SR BOX 5/8" SR PIN X 5/8" SR BOX

STAR DRILL

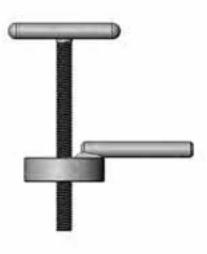


RELEASING TOOL



PINNING TOOL





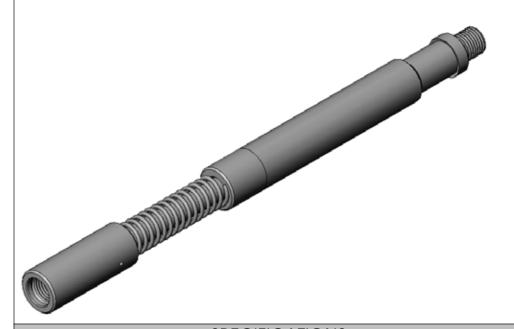


SHOCK ABSORBER

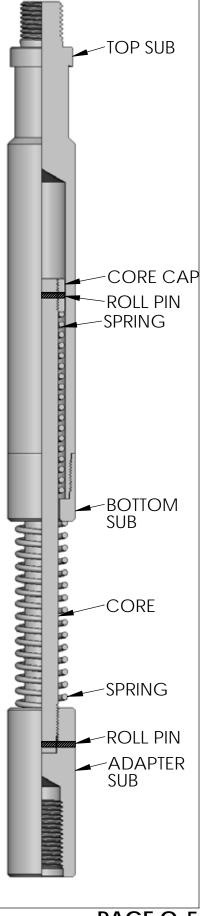


The Shock Absorber is used to protect pressure and temperature recording equipment from the jarring action resulting from setting and retrieving the accompanying locking mandrel. The Shock Absorber has two separate springs which receive both upward and downward jarring shock.





SPECIFICATIONS							
SIZE	1 1/4"	1 1/2"	1 3/4"				
FISHINGNECK O.D.	1.188"	1.375"	1.750"				
MAX O.D.	1.250"	1.500"	1.750"				
PIN CONNECTION	15/16" - 10UN	15/16" - 10UN	1 1/16" - 10UN				
BOX CONNECTION	15/16" - 10UN	15/16" - 10UN	1 1/16" - 10UN				
ROLL PIN	1/8" X 1 1/2"	1/8" X 1 1/2"	1/8" X 1 3/4"				
NOLL I IIV	1/8" X 29/32"	1/8" X 1 1/32"	1/8" X 1 5/32"				

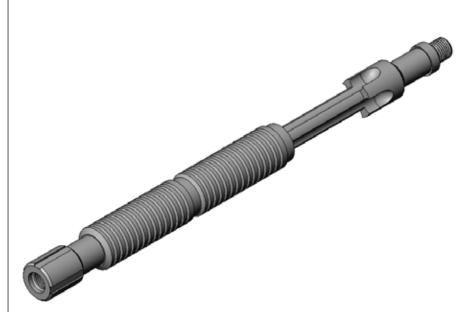


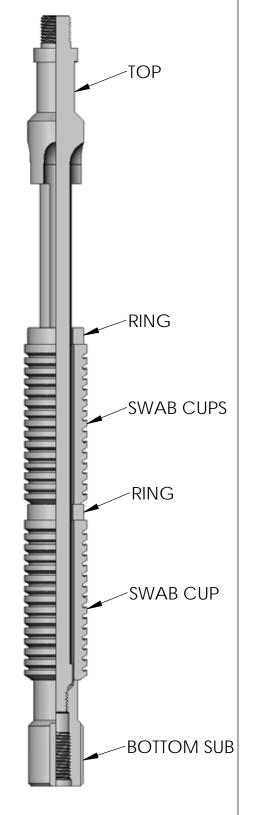
SWAB MANDREL



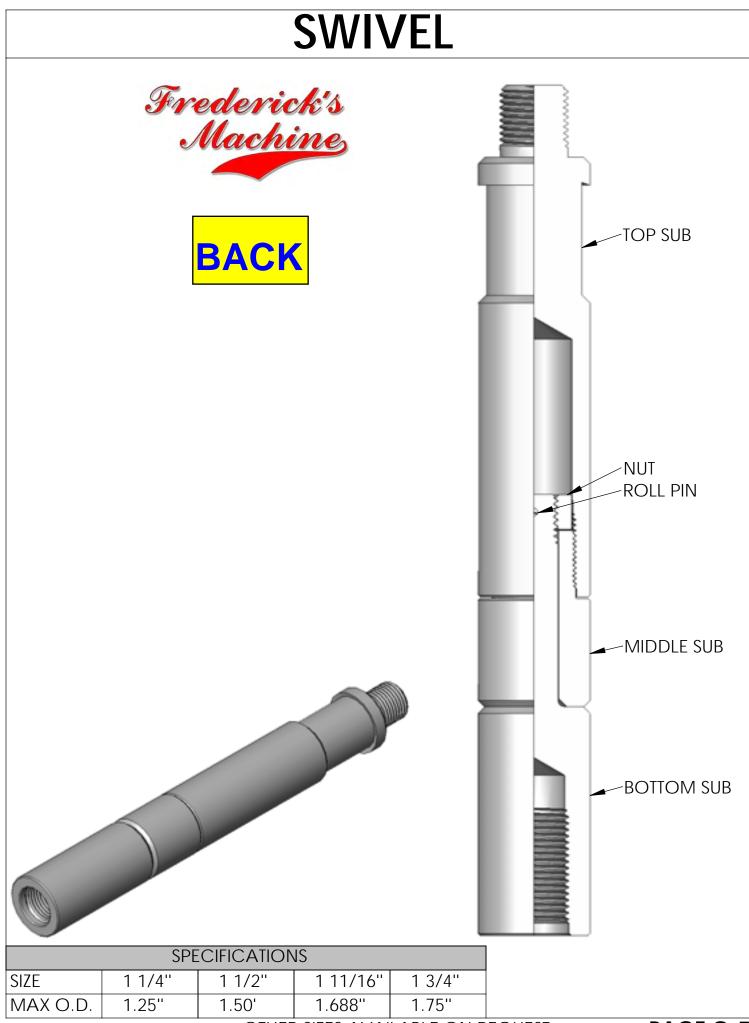
The Swab Mandrel is used to manipulate the well fluid within the tubing in an effort to create an upward flow.







SPECIFICATIONS - SWAB MANDREL			SPECIFICATIONS - SWAB CUPS			
SIZE	2"	2 1/2",3"	SIZE	2''	2 1/2"	3"
FISHINGNECK O.D.	1.375"	1.375"	CUP O.D.	1.960"	2.390"	2.957"
THREAD CONNECTION	15/16"-10	15/16"-10	STANDARD			
OVERALL LENGTH	22.250"	22.250"				



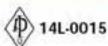


Frederick's Machine and Tool Shop, Inc. (FMS), located in New Iberia, Louisiana, specializes in the machining and manufacturing of wireline service tools and equipment. All wireline tools manufactured by FMS are equivalent to and completely interchangeable with major service company tools. This offers our customers an alternative means of providing quality service with quality equipment at an affordable cost. Once the manufacturing process of a tool or components of a tool assembly is completed, it is carefully inspected to assure its reliability. The parts are then placed in our computerized inventory system, ensuring that our customers are able to receive the equipment they want, when they want it.

At FMS, Quality Control is an issue we do not take lightly. It is of the utmost importance to us that we supply our customers with the best products possible. Our commitment to quality starts with the verification of incoming materials, and continues through all phases of production, up to the final release of the product. A strict, detailed step-by-step procedure ensures that all services and manufacturing processes we perform are of the highest quality possible. As testimony to our true commitment to quality, we are licensed under API specification 14L, as well as API's ISO 9001:2000 registrar.

We at FMS realize the needs for reliable and specialized wireline tools and equipment. As these needs increase so does the need for qualified manufacturers. With the combination of many valuable years of experience in the machine shop and wireline service fields, and our highly skilled work force, we are capable of ensuring our customers of meeting these needs. You will find a complete and diversified line of wireline tools and equipment in our Product Catalog. However, if we can be of assistance to your specialized machine tool needs, please feel free to contact us at any time.







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