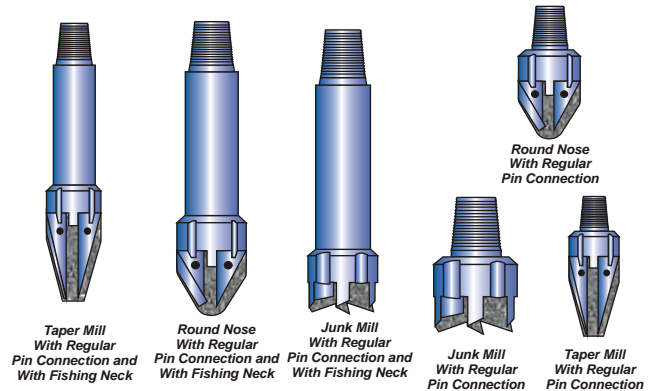




PARVEEN MILLING TOOLS

In order to achieve optimum milling efficiency, PARVEEN mills are machined from low alloy steel. The high quality steel also permits quick redressing of mill in the field. The hard surfacing materials (sintered tungsten carbide particles) is applied to each mill blade. The provision of circulation ports in PARVEEN mills improves cooling and allows fast removal of cuttings. PARVEEN mills are available in standard sizes and in other sizes desired by customer.



SPECIFICATIONS-PARVEEN MILLING TOOLS								
MILL SIZE (O.D.)		3-3/4-4-1/4	4-3/8-4-1/2	4-5/8-4-3/4	4-7/8-5	5-1/8-5-1/4	5-3/8-5-1/2	5-5/8-5-3/4
TOP CONNECTION PIN		2-3/8 REG.	2-7/8 REG.	2-7/8 REG.	2-7/8 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.
JUNK MILL	PART NO.	844080-S	844581-S	844781-S	845081-S	845282-S	845582-S	845782-S
	WEIGHT (lbs)	9	15	16	17	20	21	22
ROUND NOSE MILL (60° INCL. ANGLE)	PART NO.	238040-S	234581-S	234781-S	235081-S	235281-S	235582-S	235782-S
	WEIGHT (lbs)	15	25	25	25	32	33	34
TAPER MILL (30° INCL. ANGLE)	PART NO.	854080-S	854581-S	854781-S	855081-S	855281-S	855582-S	855782-S
	WEIGHT (lbs)	20	33	33	33	42	42	42
JUNK MILL WITH 10" LONG F/N	PART NO.	844080	844581	844781	845081	845281	845582	845782
	WEIGHT (lbs)	26	43	44	45	50	56	57
ROUND NOSE MILL WITH 10" LONG F/N	PART NO.	238040	234581	234781	235081	235281	235582	235782
	WEIGHT (lbs)	32	53	53	53	67	68	69
TAPER MILL WITH 10" LONG F/N	PART NO.	854080	854581	854781	855081	855281	855582	855782
	WEIGHT (lbs)	37	61	61	61	77	77	77

MILL SIZE (O.D.)		5-7/8-6	6-1/8-6-1/4	6-3/8-6-1/2	6-5/8-6-3/4	6-7/8-7	7-1/8-7-1/4	7-3/8-7-1/2
TOP CONNECTION PIN		3-1/2 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.	4-1/2 REG.
JUNK MILL	PART NO.	846082-S	846282-S	846582-S	846782-S	847082-S	847282-S	847583-S
	WEIGHT (lbs)	26	26	27	31	32	33	39
ROUND NOSE MILL (60° INCL. ANGLE)	PART NO.	236082-S	236282-S	236582-S	236782-S	237082-S	237282-S	237582-S
	WEIGHT (lbs)	39	38	39	49	50	51	79
TAPER MILL (30° INCL. ANGLE)	PART NO.	856082-S	856282-S	856582-S	856782-S	857082-S	857282-S	857582-S
	WEIGHT (lbs)	52	52	53	65	50	65	108
JUNK MILL WITH 10" LONG F/N	PART NO.	846082	846282	846582	846782	847082	847282	847582
	WEIGHT (lbs)	60	61	62	66	67	68	101
ROUND NOSE MILL WITH 10" LONG F/N	PART NO.	236082	236282	236582	236782	237082	237282	237582
	WEIGHT (lbs)	74	73	74	84	85	86	141
TAPER MILL WITH 10" LONG F/N	PART NO.	856082	856282	856582	856782	857082	857282	857582
	WEIGHT (lbs)	87	87	88	100	100	100	170

* All dimensions in inches.



PARVEEN MILLING TOOLS

MILL SIZE (O.D.)		7-5/8-7-3/4	7-7/8-8	8-1/8-8-1/4	8-3/8-8-1/2	8-5/8-8-3/4	8-7/8-9	9-1/8-9-1-4
TOP CONNECTION		4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2
PIN		REG.	REG.	REG.	REG.	REG.	REG.	REG.
JUNK MILL	PART NO.	847783-S	848083-S	848283-S	848583-S	848783-S	849083-S	849283-S
	WEIGHT	40	41	54	55	56	68	70
ROUND NOSE MILL	PART NO.	237783-S	238083-S	238283-S	238583-S	238783-S	239083-S	239283-S
(60° INCL. ANGLE)	WEIGHT	80	81	84	85	86	118	120
TAPER MILL	PART NO.	857783-S	858083-S	858283-S	858583-S	858783-S	859083-S	859283-S
(30° INCL. ANGLE)	WEIGHT	110	112	116	118	120	160	168
JUNK MILL WITH	PART NO.	847783	848083	848283	848583	848783	849083	849283
10" LONG F/N	WEIGHT	102	103	116	117	118	130	132
ROUND NOSE MILL	PART NO.	237783	238083	238283	238583	238783	239083	239283
WITH 10" LONG F/N	WEIGHT	142	143	146	147	148	180	182
TAPER MILL	PART NO.	857783	858083	858283	858583	858783	859083	859283
WITH 10" LONG F/N	WEIGHT	172	174	178	180	182	222	230

MILL SIZE (O.D.)		9-3/8-9-1/2	9-5/8-9-3/4	9-7/8-10	10-1/8-10-1/4	10-3/8-10-1/2	10-5/8-10-3/4	10-7/8-11
TOP CONNECTION		4-1/2	6-5/8	6-5/8	6-5/8	6-5/8	6-5/8	6-5/8
PIN		REG.	REG.	REG.	REG.	REG.	REG.	REG.
JUNK MILL	PART NO.	849583-S	849784-S	840084-S	840284-S	840584-S	840784-S	841084-S
	WEIGHT	72	107	115	121	128	134	139
ROUND NOSE MILL	PART NO.	239583-S	239784-S	230084-S	230284-S	230584-S	230784-S	231084-S
(60° INCL. ANGLE)	WEIGHT	122	175	181	187	218	220	226
TAPER MILL	PART NO.	859583-S	859784-S	850084-S	850284-S	850584-S	850784-S	851084-S
(30° INCL. ANGLE)	WEIGHT	174	233	239	245	290	296	302
JUNK MILL WITH	PART NO.	849583	849784	840084	840284	840584	840784	841084
10" LONG F/N	WEIGHT	134	212	220	226	233	239	244
ROUND NOSE MILL	PART NO.	239583	239784	230084	230284	230584	230784	231084
WITH 10" LONG F/N	WEIGHT	184	280	286	292	323	325	331
TAPER MILL	PART NO.	859583	859784	850084	850284	850584	850784	851084
WITH 10" LONG F/N	WEIGHT	236	338	344	350	395	401	407

MILL SIZE (O.D.)		11-1/8-11-1/4	11-3/8-11-1/2	11-5/8-11-3/4	11-7/8-12	12-1/8-12-1/4	12-3/8-12-1/2
TOP CONNECTION		6-5/8	6-5/8	6-5/8	6-5/8	6-5/8	6-5/8
PIN		REG.	REG.	REG.	REG.	REG.	REG.
JUNK MILL	PART NO.	841284-S	841584-S	841784-S	842084-S	842284-S	842484-S
	WEIGHT	143	149	155	162	168	174
ROUND NOSE MILL	PART NO.	231284-S	231584-S	231784-S	232084-S	232284-S	232484-S
(60° INCL. ANGLE)	WEIGHT	229	235	241	280	284	288
TAPER MILL	PART NO.	851284-S	851584-S	851784-S	852084-S	852284-S	852484-S
(30° INCL. ANGLE)	WEIGHT	306	312	318	370	376	382
JUNK MILL WITH	PART NO.	841284	841584	841784	842084	842284	842484
10" LONG F/N	WEIGHT	248	254	260	267	273	279
ROUND NOSE MILL	PART NO.	231284	231584	231784	232084	232284	232484
WITH 10" LONG F/N	WEIGHT	334	340	386	385	389	393
TAPER MILL	PART NO.	851284	851584	851784	852084	852284	852484
WITH 10" LONG F/N	WEIGHT	411	417	423	475	481	487

HOW TO ORDER :

SPECIFY :

- 1) Name and Part Number of Mill.
- 2) O.D. of Mill.
- 3) Top Connection, if other than Standard.



JUNK MILLING

Junk Milling - Description and Usage

The Junk Mill, dressed with Tungsten Carbide chews its way through the toughest drilling materials. It is often said to be the true workhorse of down hole milling operations.

When drill pipe is cemented inside and out, a Junk Mill is the only tool will do the work. However, if the drill collars or drill pipe are not collapsed and the I.D. is open, a Pilot Mill can sometimes be used to better advantage. Often you can get better results with a Pilot Mill on wash pipe as well.

When casing has been milled with a Pilot Mill to the point where it begins to rotate, it can often be pounded down and milled using a Junk Mill made up on the end of a length of slightly eccentric or bent drill pipe.

Packers, testers, and bridge plugs can usually be milled in a few hours using a Junk Mill.

Use Junk Mills to mill almost anything in the hole, including:

Bailer	Cement	Packers	Subs
Bit Cones	Drill Collars	Reamers (shot length)	Testers
Bits	Drill Pipe	Setting Tools	Washpipe
Calipers	Hangers	Slips	Whipstocks
Casing (collapsed)	Jars	String shots	

General Guidelines For Using a Junk Mill

When milling loose junk, operations can be improved by frequent spudding. This action will pound the junk onto the bottom, positioning it for more effective milling.

Never permit a sliver of junk to lodge next to the mill. Force it down by spudding the mill. A noticeable increase in torque will indicate that junk is alongside the mill.

Picking up the mill and lowering it periodically will decrease the possibility of a deep-wear pattern developing the face of the mill. Instead it forces a new wear pattern to develop, thus evening the wear on the mill face.

When milling cast-iron bridge plugs, the mill O.D. should be approximately 1/8" under the size of the bridge plug - this will prevent "skinning" the casing.

Step by Step Junk Milling Procedures

1. Feel for the bottom, spud the junk, "kick in the pumps"; the same as for normal drilling conditions.
2. Begin rotation at 60-80 RPM.
3. Begin weight at 4,000 lbs.
4. If there is an indication junk may be turning, spud two or three times.
5. After milling one or two feet, pick up the Kelly fifteen to twenty feet off the bottom and reduce pump pressure or shut off pumps (depending on hole conditions). This action will let the loose junk settle to the bottom.
6. Once again feel for the bottom and spud. Begin rotation at 80-100 RPM using normal pump pressure. Begin weight at 4,000-6,000 lbs.
7. Repeat steps 3 and 4 every few feet Procedures from here on will be governed by feel.

NOTE: In hard formation it will take fewer feet of hole to mill up the junk than in softer formation. This difference is due to junk more readily penetrating the softer formation.

Recommendations for Milling Junk

Loose Junk in Open Hole

- Use a junk mill with an O.D. of 1/8" less than hole diameter.
- Use at least 10,000 lbs. of drill collars.
- Run a junk sub directly above the mill. (Please note: junk subs for 4-3/4" and smaller drill collars are not strong enough for repeated spudding.)



JUNK MILLING

- Frequent spudding improves milling efficiency on loose junk. To spud the junk and force it down, proceed as follows:
 - 1) Determine the neutral or zero point. Mark the kelly at the top of the kelly bushing.
 - 2) Pick up the kelly four to six feet (four feet in deeper holes, six feet in shallower holes.)
 - 3) Drop the kelly and catch it (not slow down, but catch it) with the brake about eighteen to twenty inches above the zero mark. (Example: Pick up 10' and drop it 8-1/2'). This action causes the drill string to stretch & spud the junk on bottom with great force while the string is still in a state of tension. This prevents damage to the string which might be expected if the string is in Compression at the moment of impact.
 - 4) Spud the junk three or four times, turning the mill a quarter-turn each time between drops.

Stationary Junk in Open Hole

- Use a Junk mill with a diameter about 1/8" less than the hole diameter.
- Mill with 4,000 to 10,000 lbs. of weight, depending upon the strength of the fish being milled.
- After each three to five feet of junk milled, pick up the mill ten to fifteen feet and ream hole down to the fish.
- After reaming the hole down, always set down on the fish while turning and bring the weight up to milling weight without delay. Never apply weight first and then start rotating.
- Never set down on the fish with a light weight and spin. If you wish to stop milling for any reason, always pick up the mill. Spinning in one spot on the fish can cause the steel to work-harden to such an extent that it will be difficult to restart milling.

Loose and Stationary Junk Inside the Casing

Procedures for running a Junk Mill inside the casing are the same except for the following:

- Run a stabilizer directly above the mill which has the same O.D. as the mill.
- The mill head O.D. should be the same as the drift diameter of the casing.

Wear pads having the same O.D. as the diameter of the mill head are provided on the Junk Mill. These will eliminate possible damage to the casing.

INSTRUCTION FOR APPLYING SINTERED TUNGSTON CARBIDE ROD

APPLICATION:

The bonding temperature of Sintered Tungsten Carbide Rod is 1680 degrees to 1800 degrees Fahrenheit. ***It is important not to overheat.*** Use a full neutral flame during entire application, never allowing the cone of the flame to touch the base metal or the metal being applied. (This is to prevent oxidizing)

Thoroughly clean and brighten base metal. Pre-tin with Special Tinning Alloy, (It is not necessary to pre-tin any of the Mesh Sizes). When pre-tinning is completed, heat the base metal until the applied tinning alloy begins to melt or until the base metal comes to a dull cherry red. Sintered Tungsten Carbide Rod should then be applied, concentrating the carbides as closely as possible to insure the maximum cutting or wearing action, depending upon the size carbides used. It is helpful to apply the flame to the back side or round portion of the Sintered Tungsten Carbide Rod. This keeps the sharp cutting edges from receiving too much heat.

AFTER APPLICATION:

Slow cool material to which Sintered Tungsten Rod Carbide has been applied.

A carbon rod may be used to place the carbides in the desired positions to best utilize their cutting edges.

To re-surface a tool where Sintered Tungsten carbide Rod has been previously applied, it is helpful to use a carbon rod to apply brazing flux to the previously applied metal. This flux cleans out dirt, oil, grease, etc. And gives a better surface for bonding the new Sintered Tungsten Carbide Rod material.



GENERAL GUIDELINES FOR EFFECTIVE MILLING

Good Cutting Return

The following are guidelines for the optimum use of drilling mud to circulate steel cuttings out of the wellbore.

- A minimum annular velocity of 120 feet per minute should be maintained.
- Oil-base mud should be avoided whenever possible.
- Ordinarily, no difficulty is encountered in raising drilling cuttings or the usual cavings (if any) using normal drilling practices. Most difficulties are encountered when a light ring with a small mud pump is used in remedial work. A common remedy in such cases is to add bentonite to the mud so that the effective viscosity becomes sufficient to raise the cuttings or cavings.
- If "bird nesting" occurs around the drill string, pull up the kelly and circulate down until proper cutting return is achieved. During long milling jobs this procedure should be repeated frequently to maintain rate of penetration.
- Always inspect I.D. of subs or auxiliary tools to make sure they are full-bore and have no restrictions. Changes in cross sections can reduce fluid volume and result in poor cutting return.
- Reverse circulation is another way to remove cutting accumulation in the fish. In some cases, junk baskets, bailer, or snatchers are used to remove or catch cuttings.

How to Read Cuttings?

The ideal cuttings is usually 3/32" to 1/4" thick and 2" to 4" long. If cuttings are thin or "hair-like" and penetration rates are low, weight on the tool should be increased.

If fish-scale type cuttings are being returned when pilot milling, the penetration rates should improve by decreasing weight and increasing rotary table speed. This is more common when milling H-40, J-55 and K55 pipe. When milling up N-80 or P-110, finer cutting return can be expected.

Recommendations on Weights and Speeds

Generally the most efficient rates are obtained by running the rotary at 80 to 100 RPM. Milling with washover shoes is an exception; they are usually more efficient when run at 60 to 80 RPM. (As with all milling tools, speed and weight will be dictated by actual conditions.)

Always start rotating about one foot above the fish. Lower onto the fish and vary the weight to improve the penetration. Whenever possible, maintain a constant milling weight. Feed the drum slowly, allowing the drawworks to "creep"; do not drill off.

The wear pattern on the mill is a great indicator of its performance downhole. If the dressed blades show a hook wear pattern, the mill is working efficiently. If a tapered pattern exists, ease off the weight.

Some Factors That Affect Milling Rates

The type and stability of the fish (cemented or not), the weight on the mill, the speed at which it is run, proper carbide dressing of the mill, as well as the weight, stiffness and vibration of the drill collars, are all factors which will affect milling rates. The hardness of the fish or cement will also affect a mill's performance.

When milling cemented casing, penetration rates can be increased by using higher weights and speeds. Unlimited casing should be milled at lower speeds with less weight. When severely corroded casing is encountered, high-speed, light run will prevent tearing or splintering the fish.

Encountering Rubber in the Hole

Rubber always presents problems during milling. When milling rates decrease, cut back or shut off pump pressure. Pull kelly up and spud the mill to help get a bit on the rubber. When necessary, pull the kelly, remove the mill, and clean the fish by running a drill bit in the string.



GENERAL GUIDELINES FOR EFFECTIVE MILLING

Stabilizing the Mill

A mill that moves or wobbles does a poor job. Whenever possible, a stabilizer should be run two collars above the mill. The stabilizer O.D. should not exceed the dressed O.D. of the mill.

What to Do About rough Operation

When bouncing or rough running occurs, decrease speed to 50 RPM or less and weight to 3,000 lbs, or less. After an hour, slowly increase speed and weight. If penetration is good, continue at present speed; if not, increase speed. If rough running recurs, once again decrease and gradually increase.

Tips on Liner Hangers, Centralizers and Scratchers

Most liner hangers mill easily, but some old types have many slips and rotating parts. When these are encountered, pick up the kelly and spud the mill frequently to position the parts for effective milling. When milling centralizers and scratches, use a mill with blades that extend completely over them to ensure best results.

PARVEEN'S Operating Recommendations for Milling

The RPM's required for good milling rates are often determined by feel or the operator's experience. When using small mills up to 8-1/2 inch diameter, operators sometimes run up to 150 RPM, but usually stay around 100 to prevent the drill pipe from whipping around. If run at high RPM, the mill can hang up and stick momentarily, and the drill pipe will twist up until the mill lets go. The string will then violently untwist, often breaking tool joints or twisting off pipe. Thus the RPM, when using small mills, is limited by the string and hole conditions.

Above 8-1/2 inch diameter, mill moving at 100 RPM begin to have very high surface speed. High speed can burn or damage the tungsten carbide.

Tungsten carbide cuts steel best at 250 to 340 surface feet per minute, or 3,000 to 4,000 inches per minute surface speed.

GENERAL OPERATING RECOMMENDATIONS FOR MILLING				
TYPES OF MILL	TABLE SPEED, r.p.m.	WEIGHTS, lbs.	MIN. VIS. OF MUD	REMARKS
JUNK MILL	100	4,000 - 10,000	50	Spud Mill from time to time
PILOT MILL	125	6,000 - 10,000	60	Vary weight to attain best cutting speed
TAPER MILL	50 - 80	2,000 - 4,000	50	Begin with light weight and low speed

CASING CUTTING CHARACTERISTICS				
CASING TYPES	AVG. CUTTING RATES WITH PILOT MILL, ft./hr.	TABLE SPEED, RPM	AVERAGE WEIGHT, lbs.	CUTTING APPEARANCE
P-110	6+	125	8,000	Long String, Sharp
N-80	6+	100	6,000	Long String, Sharp
J-55, K-55	4+	100	6,000	Med Length, Fine
H-40	1+	80	2,000	Scaly, Dull

*NOTE:

If casing is old or excessively corroded, this rate may be higher.



PILOT MILLING

Pilot Mills - Description and Usage

Parveen Pilot Mills dressed with Tungsten carbide are recommended for milling washpipe, safety joints, crossover swage and washover shoes. Liner hangers can be milled efficiently, eliminating inside cuts and running spears or jars. The nose, or pilot, can be dressed to mill out junk which may be encountered.

Use Pilot Mills to mill :

Adapters	Casing	Liners
Washpipe	Drill Pipe	Swaged Casing

General Guidelines for Using Pilot Mills

- In selecting a Pilot Mill, the blade O.D. should be about 1/4" larger than the O.D. of the tool joint or coupling of the fish to the milled. The pilot O.D. should be the same as the drift diameter of the fish.
- The best speed and weight to run a pilot Mill must be determined for each job. Also, conditions may change from one pilot-milling job to the next in the same well. This may require different speeds and weights at different times. In the absence of experience, start with a rotary speed between 80 and 100 RPM and tool weight of 2,000 to 6,000 lbs. Experiment to obtain the best results.
- When milling a liner or casing that has been gun perforated, damaged with a spear, or collapsed, use 60 RPM and 2,000 lbs. of weight or less.
- If, when milling swaged casing, you experience a sudden drop-of in milling rate, the trouble may be caused by a loose ring of steel formed at a joint or weld which is turning with the Pilot Mill. Try spudding the Pilot Mill gently. This should break up the ring and help position it for milling.
- If cutting stops altogether when milling washpipe, casing or liner, and there is no noticeable increase in torque, there is a good chance the fish is turning. If this is the case, pull the mill and attempt to retrieve the fish using a spear.

Considerations When Milling Liner, Hangers and Adapters

On most liner milling jobs, a Pilot Mill is used to first mill the liner hanger or adapter and then the liner. In some cases the liner hanger or adapter is milled using Junk Mill. Then the liner is milled with a Pilot Mill. This latter method is preferred if there is hard cement behind the liner or if the hanger has numerous bowsprings, slips, etc. Select a Pilot Mill with blades that will cut just over the pipe couplings. This will result in a minimum of cement being encountered.

A Pilot Mill is Ideal for Wash Pipe

The Pilot Mill is the most efficient tool for milling stuck washpipe. If drill pipe or drill collars are inside washpipe, however, they must first be milled with a Junk Mill or smaller Pilot Mill.

Milling Drill Pipe and Drill Collars

Drill pipe and drill collars are sometimes milled with Pilot Mills, if the I.D. is open. If the drill pipe is cemented inside the casing, particularly in deviated holes, the pipe is probably lying to one side with its center eccentric to the casing. Most often this makes the job extremely difficult for a Pilot Mill. Under these conditions, we recommend a full gauge Junk Mill. A Pilot Mill will do a reasonable job on drill collars, provided the cuttings can be removed as the milling progresses. If cuttings tend to fall into the I.D. and plug it, then a Junk Mill must be used.

Milling Casing

Casing can be milled with a Pilot Mill in the same manner that washpipe is milled.



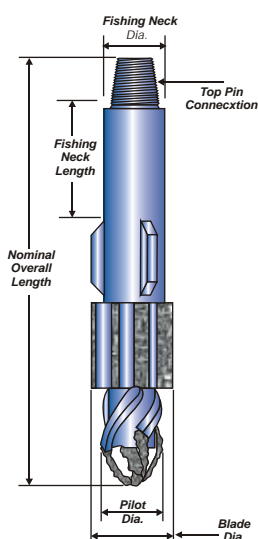
PILOT MILLING

Using the Pilot Mill in Swage Completion

The Pilot Mill is ideally suited to mill out the necked down portion of casing in swaged completion. In this method, necked-down lengths of casing-either J-55, K55 or N-80, corresponding in length to the thickness of the producing zones - are made up with swage to the regular casing collars in the string. The casing is cemented and water shut-off is obtained at all zone intervals. The necked-down portions are then milled on with a Pilot Mill and the resulting sections are opened with an underreamer. This last operation removes cement and wall cake, leaving a clean producing area.

How to Mill a Fish Using a Pilot Mill

1. Lower the mill about five feet above the fish. Set the brake and start rotating. Slowly increase rotation to 125 RPM. Raise and lower the mill three to six feet but do not touch the fish while rotating. This action will tell you the neutral weight of the string and it will permit you to note the normal torque in the string. By the torque in the string when the pilot of the mill enters the fish, you can determine if the pilot has entered properly.
2. Reduce rotation to about 30 RPM and enter the pilot into the fish. Apply 2,000 lbs. of weight. Stop rotating quickly while you note the torque action of the string. A gradual slow-down or spin indicates that the mill has entered the fish with proper alignment.
3. To mill J-55 or K-55 casing, use a weight between 4,000 and 6,000 lbs. and a speed of 125 RPM. N-80 and P-110 casing requires a weight of 8,000 to 10,000 lbs. If the casing is surrounded by hard cement, or if the open hole diameter is the same or less than the blade O.D. of the mill, more weight may be needed to drill cement or the formation, in addition to the fish. When working below the shoe of the casing, ream the hole up and down after every 15 to 20 feet of fish milled to clean out any accumulation of cuttings which may have collected at the shoe. Periodic reaming to ensure cutting removal is also a good practice in holes with drift angles of 45 degrees or higher.
4. Normally, milling should be continued at an even rate without interruption once it has been started. Do not re-weight the string at short intervals or pull the pilot out of the fish.



SPECIFICATIONS - PARVEEN PILOT MILLS						
BLADE DIA.	PIN CONN. API REG.	PILOT DIA.	OVERALL LENGTH	FISHING NECK LENGTH	FISHING NECK DIA.	WEIGHT lbs. (APPROX.)
3-1/4-3-7/8	2-3/8	1-3/4-2-3/4	27	12	3	40
4-4-3/8	2-3/8	1-3/4-2-3/4	27	12	3-1/8	45
4-5-3/8	2-7/8	2- 3-1/4	27	12	3-3/4	120
5-1/2-5-5/8	3-1/2	2-1/2-4-3/4	38	16	4-1/4	240
5-3/4-7-3/8	3-1/2	2-1/2-4-3/4	38	16	4-3/4	255
6-9-7/8	4-1/2	4-3/4-6-3/4	42	18	5-3/4	305
9-7/8-17-1/2	6-5/8	7-3/4-15	45	18	7-3/4	550

NOTE :

Standard API regular Pin. Other Size available on request.



TAPER MILLING

Taper Mills - Description and Usage

Taper mills are generally used to eliminate restrictions or to mill through "pinched", collapsed casing. They are equipped with a tapered or a short blunt nose, which serves as a guide. The type of restriction dictates the type of mill to be used.

PARVEEN Round Nose Taper Mill: Designed for the Toughest Taper Milling Jobs

PARVEEN Round Nose Taper Mill features a blunt-nose design that makes it useful in those taper milling applications where the going is so rough that mills with a longer taper might break. It generates considerably less torque than a conventional taper mill because of its shorter taper section. Because of the low-torque feature, the Mill can be run with more weight, when required, for operations such as milling plate or solid junk in deepening operations.

PARVEEN Taper Mill: Perfect for milling Through Restrictions

PARVEEN Taper Mill was designed for milling through restrictions. The spiral blades and the pointed nose, dressed with Tungsten Carbide make it ideal for reaming out collapsed casing and liners, cleaning up permanent whipstock windows, milling through jagged or split guide shoes and enlarging restrictions through retainers and adapters.

General Guidelines for Using Taper Mills

- Taper milling table speeds are governed by torque encountered. To overcome torque problems, speeds should not exceed 75 RPM
- Never start rotating a taper mill with it resting on the fish. Enter the fish with a rotary speed of 75 RPM or less.
- Use less weight when running a taper mill than a junk mill or pilot mill. After you have entered the fish, increase the tool weight slowly to 1,000 - 2,000 pounds. Watch for any torque increase.

How to Clean Up Whipstock Windows Using a Taper Mill

- 1) Use a Taper Mill of the same diameter as the largest mill used to mill the window (or slightly larger than the bit to be used).
- 2) Run the Taper Mill into the hole to within five feet of the top of the window.
- 3) Start the rotary table and rotate at approximately 40 RPM down the face of the whipstock.
- 4) Keep the weight under 1,000 lbs. Excessive weight May cause the Taper Mill to slip out of the window prematurely.
- 5) Rotate slowly, with light weight, down the full length of the face of the whipstock. Do not attempt to make hole using this tool.
- 6) To clean up all rough edges, repeat the above procedure several times until the mill runs smoothly for the full length of the whipstock.

Procedures for Reaming Out Collapsed Casing

- 1) Determine the approximate diameter using an impression block or bit that will pass through the collapsed interval. Do not use a Taper Mill if the collapsed interval has passed center. (See Paragraph 6 below)
- 2) Use a Taper Mill about 1/4" larger than the minimum I.D. of the collapsed section and mill out the collapsed interval by stages. In other words, if the collapse is great, use several different sizes of mills to bring the I.D. of the pipe to full gauge. This will minimize any tendency to sidetrack.
- 3) A String Taper Mill can be used if there is any danger that sidetracking may occur. The length and diameter of the String Taper Mill will be governed by the casing conditions. If used, the action of this tool is purely reaming.
- 4) Begin milling at a table speed of about 50 RPM.
- 5) The milling weight is governed by the torque encountered. In most cases, milling weights of around 2,000 - 3,000 pounds are used.



TAPER MILLING

- 6) Where the pipe is greatly collapsed, the lower portion of the collapsed interval may act as, a whipstock. The Taper Mill, in this case, may cut through the upper portion of the collapsed interval and be deflected into the formation by the lower section of the damaged casing. Use very light weight with a table speed of about 125 RPM to mill out the collapsed portion and enter the undamaged casing below. Paragraph 3 above suggests another approach if there is an opening large enough to get tubing or "macaroni" lead through.

Use a Taper Mill to Ream Out Guide Shoes

In some cases, the bull plug on the bottom of liners or casing may be jagged or split to such a degree that the string hangs up coming out of the hole. This condition can be remedied, generally, by reaming through the guide shoe with a Taper Mill. Use the procedure recommended for enlarging restrictions through retainers and adapters.

PARVEEN PACKER MILLING TOOL

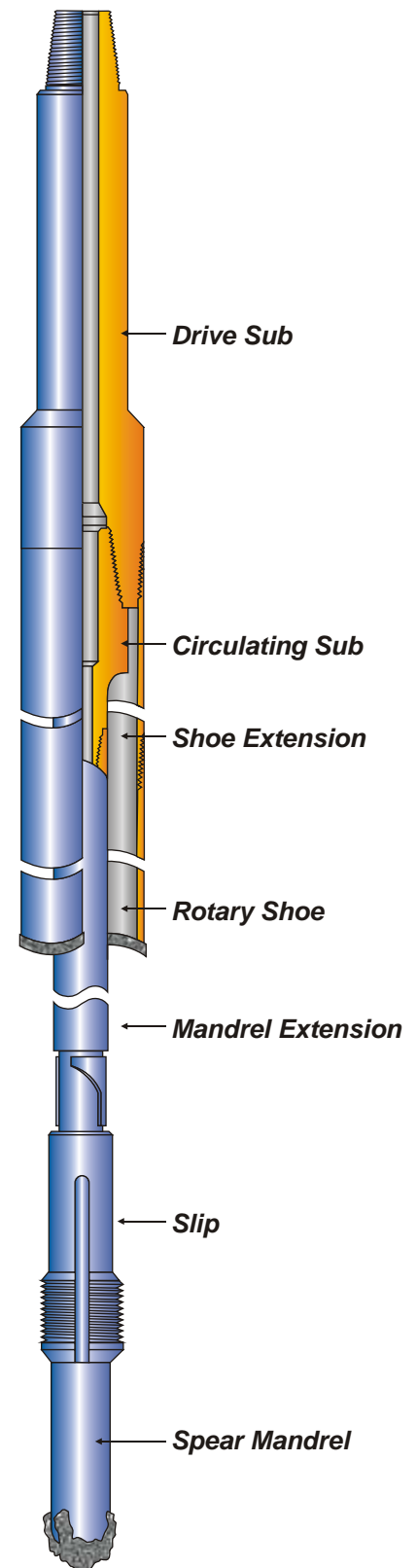
General Description

The PARVEEN PRS Packer Milling Tools (Packer Retriever) is an internally engaging fishing tool designed for the retrieving of production packers. With its accessory components (Stinger, Bushing and Mill Shoe) it passes through the bore of the packer, mills the packer slips loose and pulls the packer after it has been milled over, all in one trip. A Packer Retriever is assembled with the proper size slip to engage the bottom of a specific bore packer, and made up on the lower end of sufficiently long stinger (extension) to permit the Retriever to be lowered completely through the packer during the milling operation. The Bushing is provided with a box connection at its lower end to attach the Stinger, also a pin connection at the lower end for attaching Mill Shoe, and a pin or box connection at its upper end for connection to the run-in or fishing string.

Operation

Make up a complete PARVEEN PRS Packer Milling Tools consisting of Retriever, Stinger, Bushing and Mill Shoe. Make sure that the tool is compatible with Casing and Packer sizes and will permit proper and safe operations of the milling and retrieving operations.

Lower the fishing string until the Mill Shoe contacts the slips of the packer. Milling operations may begin until drill off conditions are established. Generally, light drill loads should be used to start to enable the shoe to cut the thin bevel upper parts of most packers away until full mill shoe face contact is established. Additional weight may be added to establish optimum conditions. Rotary Speeds must be established that are sufficient with a given weight, to burn or abrade the carbide particle matrix away to expose the successive new cutting edges of carbide particles. When this condition is established the Mill Shoe will cut almost any metal with maximum efficiency. Start circulation and right-hand rotation to mill away the slips and seating element of packer. When the packer begins to slide down the hole, stop rotation, raise the fishing string to engage Packer Retriever with packer and then pull the assembly and fish from the hole. The best condition of removal for most makes of full bore production packers is to mill up the upper slips and approx. half of the packing element before retrieval is attempted.





PARVEEN PACKER MILLING TOOL

To Release the Retriever

For any of several reasons, it may be required to release the Retriever from the packer. Release of the Retriever is accomplished by elevating the fishing string until weight is indicated. Lower the fishing string about three to four inches. Rotate the string right hand and slowly elevate the string to withdraw the Retriever from the packer.

Confirm the following:

- 1) That the Retriever is assembled with the correct size slip for the packer to be caught.
- 2) That the Stringer is sufficiently long to permit the Retriever to pass completely through the packer.
- 3) That the Bushing and Mill Shoe are the correct size for the casing specifications.

Make up complete assembly to the fishing string. (Scrapers or drift tools should be run prior to running the Milling Tool to depth. The casing in which the packer is to be removed should be washed clean to the packer top and a fluid and pump equipment must be selected that will clean the mill shoe and remove all cuttings from the hole as the packer is mill-up) Lower the Retriever in to the hole on the fishing string and pass it through the packer. The Retriever must clear the packer bore and be in a free position below the packer before milling or rotating of the string. If there are restrictions below the packer such as perforated nipples, landing subs or tail pipe, extensions must be used to position the packer retriever well below these points so that the rotation of the string will not foul the Packer Retriever.

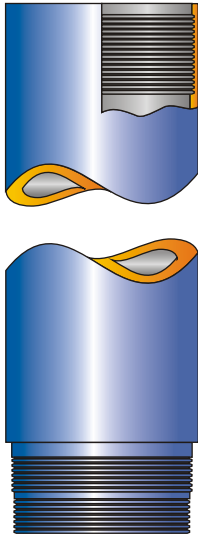
Now, raise the fishing string slowly and carefully until it takes weight. This ensures that the Retriever will engage the packer seat.

Maintenance

To guard against mis-runs and to prolong the life of the PARVEEN PRS Packer Retriever it should be completely disassembled, thoroughly cleaned, lubricated and reassembled before storing. Exterior surfaces may be either painted or lubricated to prevent rust and deterioration.



WASHPIPE



High torque strength flush-joint washpipe develops twice the torque load strength of ordinary joints for continued make and break usage.

2-Step, non-tapered thread profile

- No thread interference to cause galling
- Fast make-up
- Stable, 2-thread flank stabbing

Rugged 90° torque shoulders

- Provided by two square shoulders
- Torque shoulders make-up together and act as a unit
- Develops twice the torque strength of regular connections

Threads designed specifically for washpipe service

- Resistance to handling damage
- Shoulders like a tool joint for the repeated use requirements of washover operations.

CASING CONNECTION FOR WASHPIPE

SIZE O.D. INCHES	WEIGHT lbs/ft.	WALL INCHES	CONNECTION			SIZE O.D. INCHES	WEIGHT lbs/ft.	WALL INCHES	CONNECTION		
			YIELD TOQUE (N-80) ft.-lbs	I.D. NOMINAL INCHES	DRIFT (API) INCHES				YIELD TOQUE (N-80) ft.-lbs	I.D. NOMINAL INCHES	DRIFT (API) INCHES
3-1/2	9.2	.254	3,000	2.992	2.867	7-5/8	26.4	.328	20,000	6.969	6.844
3-3/4	9.5	.250	3,000	3.250	3.125	7-5/8	29.7	.375	23,000	6.875	6.750
4	11	.262	3,500	3.476	3.351	7-5/8	33.7	.430	27,000	6.765	6.640
4	11.6	.286	4,000	3.428	3.303	7-5/8	39	.500	32,000	6.625	6.500
4	14	.330	5,000	3.340	3.215	7-5/8	45.3	.595	39,000	6.435	6.310
4	15.7	.380	6,000	3.240	3.115	8	31	.375	24,000	7.250	7.125
4-1/2	13.5	.290	5,000	3.920	3.795	8-1/8	32	.370	24,000	7.385	7.260
4-1/2	15.1	.337	7,000	3.826	3.701	8-1/8	32.5	.375	25,000	7.375	7.250
4-3/4	16	.334	7,000	4.082	3.957	8-1/8	35.5	.420	30,000	7.285	7.160
5	15	.296	7,000	4.408	4.283	8-1/8	39.5	.470	35,000	7.185	7.060
5	18	.362	9,000	4.276	4.151	8-7/16	35.5	.406	30,000	7.625	7.501
5-3/8	19.5	.353	10,000	4.669	4.544	8-5/8	36	.400	30,000	7.825	7.700
5-1/2	17	.304	9,000	4.892	4.767	8-5/8	40	.450	35,000	7.725	7.600
5-1/2	20	.361	11,000	4.778	4.652	8-5/8	44	.500	40,000	7.625	7.500
5-1/2	23	.415	13,000	4.670	4.545	8-5/8	49	.557	55,000	7.511	7.386
5-1/2	26	.476	16,000	4.548	4.423	9	40	.425	35,000	8.348	8.223
5-3/4	18	.312	11,000	5.126	5.001	9-3/16	31	.326	26,000	8.532	8.407
6	20	.324	12,000	5.352	5.227	9-5/16	38	.389	35,000	8.535	8.410
6	23	.380	14,000	5.240	5.115	9-1/2	47	.483	48,000	8.537	8.412
6-1/4	20	.312	12,000	5.626	5.501	9-5/8	40	.395	40,000	8.835	8.679
6-3/8	24	.375	16,000	5.625	5.500	9-5/8	43.5	.435	45,000	8.655	8.599
6-3/8	28	.438	20,000	5.499	5.374	9-5/8	47	.472	50,000	8.681	8.525
6-5/8	24	.352	16,000	5.921	5.796	9-5/8	53.5	.545	60,000	8.535	8.379
6-5/8	28	.417	20,000	5.791	5.666	10-3/4	45.5	.400	50,000	9.950	9.794
6-3/4	35	.520	25,000	5.710	5.585	10-3/4	51	.450	60,000	9.850	9.694
7	26	.362	18,000	6.276	6.151	10-3/4	55.5	.495	65,000	9.760	9.604
7	29	.408	21,000	6.184	6.059	11-3/4	54	.435	65,000	10.880	10.724
7	32	.453	23,000	6.094	5.969	11-3/4	60	.489	80,000	10.772	10.616
7-3/8	29	.375	20,000	6.625	6.500	13-3/8	72	.514	110,000	12.347	12.191
						16	109	.656	188,000	14.688	14.532

NOTE : Connections are interchangeable with FJWP threads.

1. Recommended make-up torque are 25% of the connection yield torque.



WASHING OVER SHOES

Washover Shoes - Description and Usage

Washover shoes mill away formation or tool obstructions such as stabilizer blades, reamer cutters, expanded packers and bit bodies which may be holding the drill string in the hole. By using joints of wash pipe, the Wash over shoe can be slipped over the drill string and lowered to the stuck fish. Designs are available for heavy wall and for thin wall shoes, for working in open hole, or for working inside the casing.

Use Washover Shoes to Free or Washover :

Back Off Tolls	Drill Collars	Keyseat Cutters	Rock Bits	Stabilizers
Drill Pipe	Jars	Packers	Reamers	Subs

Technique for Washing Over

Generally when milling Washover Shoes, light weight and low speeds will reduce the possibility of splitting or flaring the shoe. Start at 50 to 100 RPM and gradually increase to 125 to 150 RPM. Slowly increase weight from 2,000 lbs. to 6,000 lbs. If torque is encountered, reduce speed and weight.

Break off the string 30' to 60' above the pipe. This will allow you to run a minimum number of wash-pipe joints, which is especially important in unstable formation.

Cutting Removal When Washing Over

When running Wash over Shoes, the rate of penetration can be high. This can cause problems with cutting removal. Pay attention to proper mud conditioning. Be sure cuttings are being removed as milled. If you encounter problems getting optimum cutting return, decrease weight on tool and rotary table speed.

Selection of The Right Washover Shoes

Toothed: The toothed type is best suited for cutting formation and cement when a minimum of metal obstructions will be encountered during the washover interval. This tool is highly effective for washing over stuck collars or drill pipe, as well as tubing that might be sanded in place.

V-Notch, Wavy Bottom And Flat Bottom (Perforated) : The perforated shoe is generally manufactured with a flat bottom, V -notch or wavy bottom cutting pattern. This perforation design allows the wall of the shoe to be filled with Tungsten carbide. This results in a self-sharpening action on the ID., O.D.,

and across the entire face. The perforated dress design eliminates the common problem of the carbide bottom dress wearing off, exposing a ring of steel where the carbide is most needed.

Ordering Washover Shoes

Parveen Washover Shoes give long wear and maximum performance. They are dressed with specially selected Tungsten carbide hard facing, which provides continuous sharp cutting edges for long washover intervals. PARVEEN will apply dressing anywhere on the shoes - bottom, inside, outside; any combination necessary. Depending on the job requirements, wear pads can be provided on the aD. to protect the casing. When ordering Washover Shoes, be sure to specify Washover Shoe O.D. and I.D. dimensions, wall thickness and connections.

- Due to the high temperature required for proper Tungsten carbide application, it is best to maintain a 3 / 8 " minimum wall thickness in the dressed area of the shoe. This will eliminate the possibility of tearing the steel. The wall thickness is also critical due to the area needed for effective carbide coverage.
- To allow proper circulation and to reduce torque, adequate clearance is necessary on both the I.D. and O.D. of the shoe. It is recommended that the I.D. of the dressed head be at least 1/16" less than wash pipe I.D. The O.D. should be dressed 1/16" larger than the wash pipe O.D. This permits the use of inner and outer gauge cutters on the head of the shoe. This will firm the fish so it will pass into the wash pipe without interference. The outer gauge cutters provide a circulation annulus for cutting removal. Where conditions allow, these clearances should be enlarged, provided the 3/8" minimum wall thickness of the shoe is maintained.

WASHING OVER SHOES

STYLES OF SHOES:

Style - A: Hard facing on I.D. and bottom. It is applied to cut metal of object without any damage to casing. No hard facing on O.D.

Style - B: Hard facing on O.D. and bottom. It is used for washing over a fish & cutting formation within openhole. No hard facing on I.D.

Style - C: Hard facing on O.D., I.D. and bottom applied for washing over & metal cutting.

Style - D: Hard facing on I.D. and bottom its cuts metal on the fish without cutting the casing, where clearance is restricted.

Style - E: Hard facing on O.D. & bottom. It is applied for washing over fish/cutting metal! formation, etc. in openhole where clearance is restricted.

Style - F: Hard facing on- I.D. having taper & on bottom. It is applied for dressing & sizing the upper portion of object within casing.

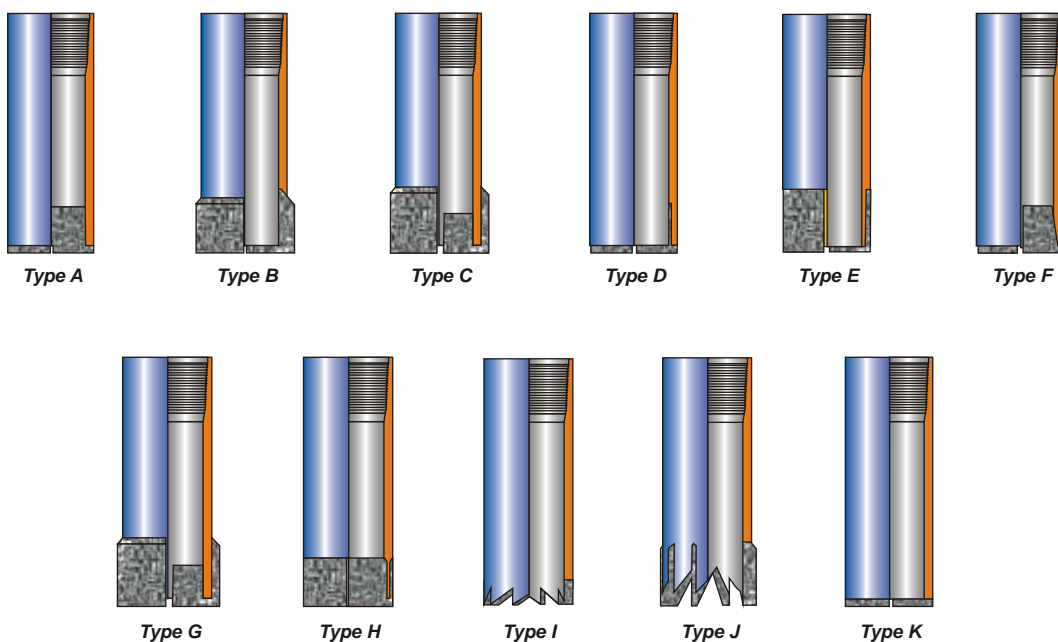
Style - G: Hard facing on I.D., O.D. and bottom. It is applied for washing over fish/ cutting metal/formation etc. in open where clearance is restricted.

Style - H: Hard facing on I.D. & O.D. only. It is applied for washing over & metal cutting in openhole where clearance is restricted.

Style - I: Hard facing on the bottom only. It is applied for washing over & formation cutting. Its milling teeth allow optimum circulation.

Style - J: Hard facing on bottom & O.D. It is applied for washing over and formation cutting. Its milling teeth having side wings allow optimum circulation.

Style - K: Hard facing on bottom face only. It is applied for washing over and bottom face cutting





WASHING OVER SHOES

SPECIFICATION					
NO. OF TEETH	CONNECTIONS	STANDARD O.D. OF BODY	MINIMUM I.D. OF BODY	LENGTH	WEIGHT lbs.
6	4 F.J.	4	3-1/4	16	18
	4-1/2 F.J.	4-1/2	3-3/4	16	20
	4-1/2 E.U. Or E.L.	4-7/8	3-3/4	16	32
	4-3/4 F.J.	4-3/4	4-1/16	16	28
	4-3/4 E.U. Or E.L.	5-1/8	4-1/16	16	34
	5 F.J.	5	4-3/16	16	23
	5E.U. Or E.L.	5-3/8	4-3/16	16	39
	5-1/2 F.J.	5-1/2	4-5/8	16	30
	5-1/2 E.U. Or E.L.	5-7/8	4-9/16	16	47
	5-3/4 F.J.	5-3/4	5	16	26
	5-3/4 E.U. Or E.L.	6-1/8	5	16	30
	6 F.J.	6	5-3/16	16	28
	6 E.U. OR E.L.	6-3/8	5-3/16	16	48
	6-5/8 F.J.	6-5/8	5-11/16	16	41
	6-5/8 E.U. Or E.L.	7-	5-5/8	16	65
7 F.J.	7-	5-13/16	16	47	
7 E.U. Or E.L.	7-1/2	5-13/16	16	72	
8	7-5/8 F.J.	7-5/8	6-5/8	16	47
	7-5/8 E.U. Or E.L.	8-1/16	6-9/16	16	76
	8-1/8 F.J.	8-1/8	7-1/8	16	50
	8-5/8 F.J.	8-5/8	7-1/2	16	60
8-5/8 E.U. Or E.L.	9-1/8	7-7/16	16	97	
10	9 F.J.	9	7-13/16	16	56
	9 E.U. Or E.L.	9-1/2	7-3/4	16	78
	9-5/8 F.J.	9-5/8	8-1/2	16	68
	9-5/8 E.U. Or E.L.	10-1/8	8-7/16	16	118
	10-3/4 F.J.	10-3/4	9-3/4	16	68
	11-3/4 F.J.	11-3/4	10-3/4	16	160
	16 API	17	15-1/4	16	190
20 API	21	19-1/8	25	-	



PARVEEN CASING SCRAPER

FEATURES

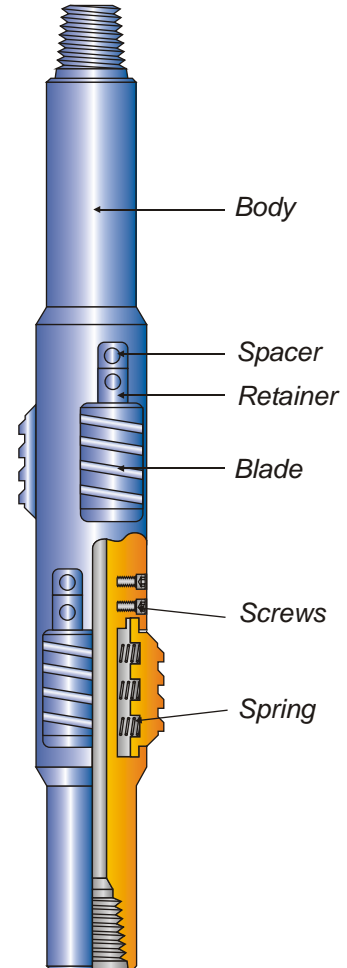
- *Made from high quality steel*
- *Fully heat treated to give max. strength and hardness.*
- *Can withstand rough use and is rugged to give long life. Scraping edge is designed to be effective in full circumference clean out without rotation.*
- *Precision machined blades to fit casing profile.*
- *Available with API Monogram.*
- *Blades are properly tapered to the tool body to minimize the possibility of the scraper hanging up inside the casing.*

FUNCTIONAL PURPOSE

The Casing Scraper is used for removing the stuck mud cement embedded bullets, perforation burrs, rust, mill scale, paraffin and similar unwanted material from the inside wall of the Casing.

OPERATIONAL HIGHLIGHTS

For removal of the Cement Sheath the Scraper should be installed between the Drill Bit and the Drill Collar so that both the drilling out and the sheath removal can be accomplished at the same time. It is a good practice to maintain circulation while these operations are being conducted. For removal of perforation burrs and bullets, the scraper is installed pin up on the first joint of the drill pipe with an old three cone rock bit installed in the box end of the scraper.



SPECIFICATIONS					
CASING		SCRAPER ASSY. PART NUMBER	STD. CONN. A.P.I. REG.	TOOL BASIC O.D.	TOOL I.D.
O.D.	WT.(T&C)				
4-1/2	9.5-18.8	4045080	2-3/8	3.250	3/4
5	11.5-18	4050080		3.936	
5-1/2	13-23	4055081	2-7/8	4.410	1
7	17-38	4070082		5.375	1-1/2
7-5/8	17-39	4075882	3-1/2	5.500	
9-5/8	32-53	4095883	4-1/2	7.250	2
10-3/4	32.7-55.5	4010784	6-5/8	9.510	2-1/4
13-3/8	48-72	4013384			

NOTE: Other sizes/ end connections are available upon request.

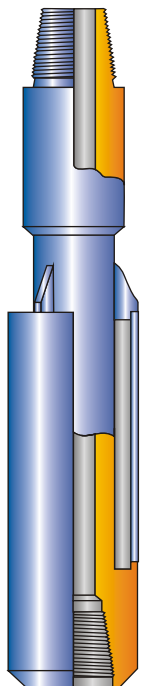


PARVEEN JUNK SUBS

Junk Subs - Description and Usage

PARVEEN Junk Subs capture and trap junk that is too heavy to circulate. They are designed to be used in the drill collar string just above the rock bit or milling tool. The tool consists of a steel mandrel with an oversized sleeve or "skirt" attached over the mandrel. The "skirt" will trap the large cutting and junk which are too heavy to be circulated out of the hole. The "skirt" is manufactured with bleed holes to allow the mud to drain once it is brought out of the hole. It is recommended that two Junk Subs be run in tandem to decrease the possibility of junk bypassing a single Junk Sub. The Junk Subs do not have welding on its body.

PARVEEN Junk Subs are used directly above the Mill or drilling bit for easy removal of cuttings. In hard milling jobs, two or three junk subs are run one after the other. This increases capacity to remove cuttings & provides additional stabilization to mill. PARVEEN's Junk subs can be run in both open hole & cased hole.



Standard Type Junk Sub

SPECIFICATIONS-PARVEEN JUNK SUBS						
MILL SIZE		4-1/4-4-5/8	4-5/8-4-7/8	5-1/8-5-7/8	6-6-3/8	6-1/2-7-1/2
O.D. OF CUP (IN)		3-11/16	4	4-1/2	5	5-1/2
TOP CONNECTION		2-3/8	2-7/8	3-1/2	3-1/2	3-1/2
PIN		REG.	REG.	REG.	REG.	REG.
10 INCH LONG CUP	PART NO.	8036800	8040810	8045820	8050820	8055820
	WEIGHT	55	63	80	83	97
20 INCH LONG CUP	PART NO.	8136800	8140810	8145820	8150820	8155820
	WEIGHT	65	87	105	120	136
30 INCH LONG CUP	PART NO.	8236800	8240810	8245820	8250820	8355820
	WEIGHT.	80	108	128	156	183

MILL SIZE		7-1/2-8-1/2	8-5/8-9-5/8	9-5/8-11-3/8	11-1/2-13
O.D. OF CUP (IN)		6-5/8	7	8-5/8	9-5/8
TOP CONNECTION		6-5/8	4-1/2	6-5/8	6-5/8
PIN		REG.	REG.	REG.	REG.
10 INCH LONG CUP	PART NO.	8066830	8070830	8086840	8096840
	WEIGHT	160	168	255	285
20 INCH LONG CUP	PART NO.	8166830	8170830	8186840	8186840
	WEIGHT	239	246	342	420
30 INCH LONG CUP	PART NO.	8266830	8270830	8286840	8286840
	WEIGHT.	289	302	430	530

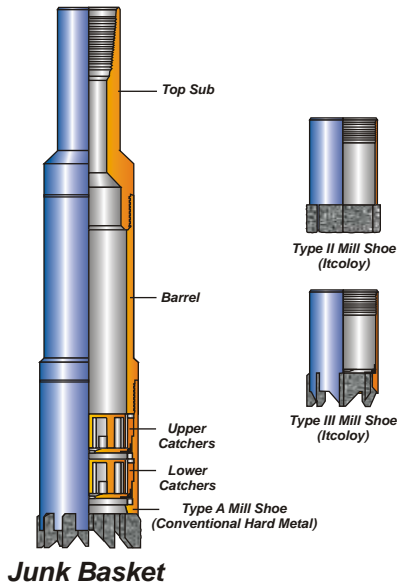
HOW TO ORDER :

SPECIFY :

- 1) Name and Number of Assembly.
- 2) Connection size and Type, if other than Standard.



PARVEEN JUNK BASKETS



PARVEEN Junk Baskets are a junk fishing tool designed to give trouble free operation in rough oil field conditions.

This robust, field dressable tool is used to mill down over odd shaped fish into the formation, making a core and allowing the fish to enter the barrel.

When the Junk Basket is retracted the fingers break the core and bring with it the fish to the surface.

To remove the fish from the tool, simply break out the shoe and if fingers are damaged, redress with new catcher. Your tool is then ready for re-use.

SPECIFICATIONS-PARVEEN JUNK BASKETS

HOLE SIZE		3-3/4-4-1/8	4-1/4-4-1/2	4-5/8-5	5-1/8-5-1/2	5-5/8-6	6-1/8-6-1/2	6-5/8-7
O.D. BARREL (TOP END)		3-5/8	3-3/4	3-7/8	4-1/4	4-3/4	5-1/4	5-3/4
O.D. SHOE (TOP END)		3-5/8	4-1/16	4-1/2	4-7/8	5-3/8	5-7/8	6-1/4
MAX. DIAMETER OF FISH		2-23/32	2-31/32	3-3/8	3-23/32	4-1/16	4-1/2	4-13/16
COMPLETE ASSEMBLY	PART NO.	135-362XX	135-375XX	135-387XX	135-425XX	135-475XX	135-525XX	135-575XX
	WEIGHT	55	60	65	80	100	110	125

HOLE SIZE		7-1/4-8	8-1/4-9	9-1/4-10-1/8	10-1/4-11-5/8	11-3/4-12-1/2	12-5/8-15	15-20
O.D. BARREL (TOP END)		6-1/2	7-1/2	8-1/2	9-3/8	10-3/8	11-3/8	13-3/4
O.D. SHOE (TOP END)		7-1/8	8-1/8	9-1/8	10-1/8	11-1/4	12-1/4	14-1/4
MAX. DIAMETER OF FISH		5-7/16	6-3/16	7-3/16	8-1/16	9-1/16	10-1/16	12-1/16
COMPLETE ASSEMBLY	PART NO.	135-650XX	135-750XX	135-850XX	135-938XX	135-103XX	135-113XX	135-137XX
	WEIGHT	160	205	255	290	360	450	655

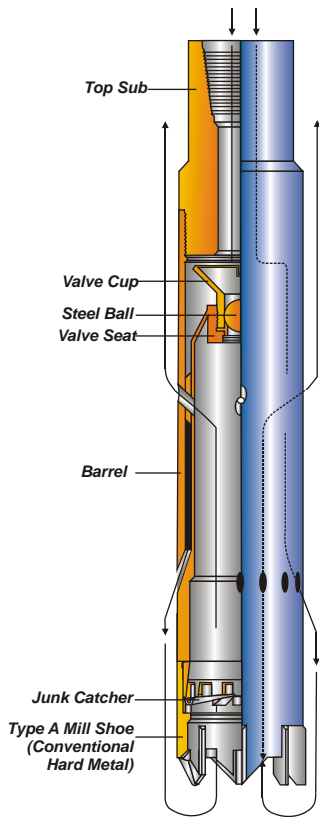
REPLACEMENT PARTS

PART	PART NO.	135-362-01	135-325-01	135-387-01	135-425-01	135-475-01	135-525-01	135-575-01
UPPER CATCHER	PART NO.	135-362-01	135-325-01	135-387-01	135-425-01	135-475-01	135-525-01	135-575-01
LOWER CATCHER	PART NO.	135-362-02	135-325-02	135-387-02	135-425-02	135-475-02	135-525-02	135-575-02
CONVENTIONAL SHOE	PART NO.	135-362-03	135-325-03	135-387-03	135-425-03	135-475-03	135-525-03	135-575-03
TOP SUB	PART NO.	135-362-04	135-325-04	135-387-04	135-425-04	135-475-04	135-525-04	135-575-04
BARREL	PART NO.	135-362-05	135-325-05	135-387-05	135-425-05	135-475-05	135-525-05	135-575-05
TYPE II MILL SHOE	PART NO.	135-362-06	135-325-06	135-387-06	135-425-06	135-475-06	135-525-06	135-575-06
TYPE III MILL SHOE	PART NO.	135-362-07	135-325-07	135-387-07	135-425-07	135-475-07	135-525-07	135-575-07

PART	PART NO.	135-650-01	135-750-01	135-850-01	135-938-01	135-103-01	135-113-01	135-137-01
UPPER CATCHER	PART NO.	135-650-01	135-750-01	135-850-01	135-938-01	135-103-01	135-113-01	135-137-01
LOWER CATCHER	PART NO.	135-650-02	135-750-02	135-850-02	135-938-02	135-103-02	135-113-02	135-137-02
CONVENTIONAL SHOE	PART NO.	135-650-03	135-750-03	135-850-03	135-938-03	135-103-03	135-113-03	135-137-03
TOP SUB	PART NO.	135-650-04	135-750-04	135-850-04	135-938-04	135-103-04	135-113-04	135-137-04
BARREL	PART NO.	135-650-05	135-750-05	135-850-05	135-938-05	135-103-05	135-113-05	135-137-05
TYPE II MILL SHOE	PART NO.	135-650-06	135-750-06	135-850-06	135-938-06	135-103-06	135-113-06	135-137-06
TYPE III MILL SHOE	PART NO.	135-650-07	135-750-07	135-850-07	135-938-07	135-103-07	135-113-07	135-137-07



PARVEEN REVERSE CIRCULATING JUNK BASKETS



PARVEEN's Reverse Circulating Junk Baskets are designed to catch effectively small Junk objects, by utilizing the principal of Reverse Circulation principle. These Junk objects are successfully deflected into the Junk Basket and returned which would otherwise cannot be fished out by other Junk Baskets. This is used to retrieve all types of Junk accumulated at the bottom of the well. The reverse circulation feature ensures complete recovery of Junk. PARVEEN's design ensures drain thru the tool which eliminates the possibilities of pulling a wet string even though inner barrel is plugged by the core.

CONSTRUCTION: This consists of a barrel, a top sub, valve cup, steel ball and a ball seat, junk catcher and Milling Shoe. For ease of handling a Junk Basket, a lifting sub is provided.

Barrel is a two bowl assembly, with the steel ball in place, the circulation fluid goes around the ball thru the inner passage of the barrel, is jetted out and downward thru the lower parts of the barrel, flows in a continuous stream into the barrel, up thru the barrel then goes out of the return part at the upper end of the barrel. With this reverse circulation all the Junk which is collected from the bottom, falls in the Junk Catcher.

USAGE: PARVEEN's Reverse Circulating Junk Basket retrieves all type of Junk such as bearing, broken slips, various hand tools, slivers, bit sizes of wirelines, rock bit cones, debris from twisted off drill strings, milling cuttings and so on.

SPECIFICATIONS-PARVEEN JUNK BASKETS

HOLE SIZE		3-3/4-4	4-1/8-4-1/2	4-5/8-5	5-1/8-5-1/2	5-5/8-6	6-1/8-6-1/2	6-5/8-7-3/8
O.D. (IN)		3-5/8	4	4-1/2	4-7/8	5-1/8	5-3/4	6-1/4
MAX. DIA. OF FISH (IN)		2-11/32	2-17/32	3-1/16	3-9/16	3-3/4	4-13/32	4-3/4
NO. OF TEETH ON MILL		6	6	8	8	8	8	8
COMPLETE ASSEMBLY	PART NO.	8636801	8640801	8645811	8648811	8637821	867821	8647821
	WEIGHT	85	98	108	128	142	185	238

HOLE SIZE		7-1/2-8-1/4	8-3/8-9-1/2	9-5/8-10-5/8	10-3/4-11-5/8	11-3/4-12-1/2	12-5/8-13-5/8	13-3/4-16
O.D. (IN)		7	7-7/8	9-1/8	10-1/8	11	11-7/8	13
MAX. DIA. OF FISH (IN)		5-3/16	6-1/16	7-1/16	7-11/16	8-5/16	8-11/16	9-7/8
NO. OF TEETH ON MILL		8	8	10	10	12	12	14
COMPLETE ASSEMBLY	PART NO.	8670831	8678831	8691841	8601841	8610841	8618841	8630841
	WEIGHT	293	374	441	576	665	797	932

HOW TO ORDER :

SPECIFY :

- 1) Name and Number of Assembly.
- 2) O.D. And type of shoe.
- 3) Top Connection and Type, if other than Standard.

AVAILABLE ACCESSORIES : Finger Shoes, Magnet Inserts.



PARVEEN FISHING MAGNETS

Introduction

This special purpose fishing tool have been developed for retrieving non -drillable magnetic objects dropped into a well bore and which cannot be retrieved by other fishing methods. Magnet fishing technique, possibly the simplest of fishing method, is indispensable accessory for drilling/ workover operations. The magnetic pull can be varied within a limited range in the same size of fishing magnet if the requirement is clearly specified.

Circulation Ports

The minimum circulation hole through any magnet is minimum 100% of the circulation area through the drill string of the same size as the end connection.

Operation

Depending on the service requirement the fishing magnets may be used on drill pipe, tubing or wireline. The adaptors used for running magnet with wireline are sucker rod adaptors and rope socket which are available from PARVEEN.

After magnet is assembled with proper guide, run it in the hole. While using with" wireline, circulation cannot be made. While running on drill pipe, lower the magnet approximately within one foot of the fish. Start circulation. If the tool loose weight while lowering, circulation to be continued (slow reciprocation and circulation is necessary to ensure that the magnet is free from obstruction). Engage rotary, apply couple of turns using 5 to 10 times the weight of the tool (not exceeding 10,000 lbs without rotation and 5,000 lbs with rotation).

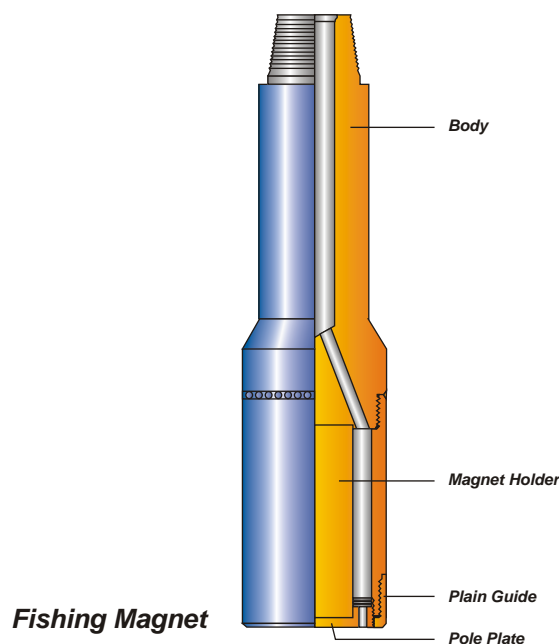
Discontinue circulation and rotation. Lift the tool about 10 feet from bottom. Check the depth and weight. Slowly lower back to bottom. Check depth and weight. If the weight and depths are showing no anomaly turn the rotary 3 to 4 rounds.

Proper use of weight and circulation is the most critical factor in a successful fishing job. An absolute fool proof procedure is still a driller's dream. But experience and judgment is probably the last word in fishing jobs.

1.Flush Guide: As the name signifies, the guide end is flushed with Pole Plate and is used to fish large flat objects.

2.Mill Guide: This type of guide is preferred for fishing small, non-geometrical objects or cleaning the hole from unidentified objects.

3.Lipped Guide: It is special purpose guide to enable the fishing of three or more bit cones lost into the hole. For long objects which are lodged in one part of the hole, this guide is used.





PARVEEN FISHING MAGNETS

HOLE SIZE		4-1/4-4-1/2	4-1/2-5	5-1/8-6-1/2	5-5/8-6	6-1/8-6-1/2	6-1/8-6-1/2	6-5/8-7-1/2
SIZE O.D. (IN)		3-1/2	4	4-1/2	5	5-1/2	5-3/4	6
TOP CONNECTION PIN		2-3/8 REG.	2-3/8 REG.	2-7/8 REG.	2-7/8 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.
APPROX. PULL IN LBS		150-250	250-350	350-450	450-500	500-600	500-600	600-700
COMPLETE ASSEMBLY	PART NO. WEIGHT	FM 3580-00 28	FM 4080-00 45	FM 4581-00 70	FM 5081-00 80	FM 5582-00 100	FM 5782-00 108	FM 6082-00 120

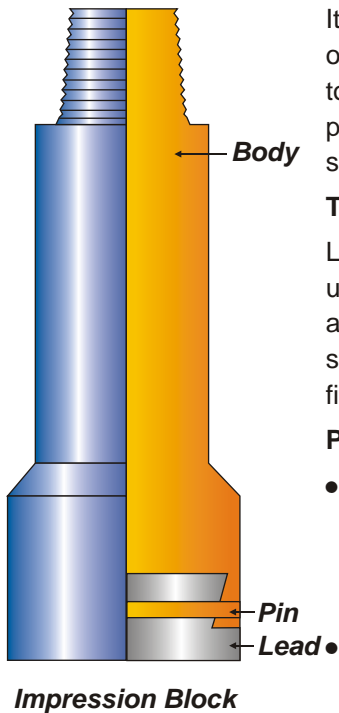
HOLE SIZE		7-5/8-8-1/2	8-5/8-9-3/4	9-7/8-11-7/8	10-1/2-11-7/8	11-3/4-13	12-1/4-14
SIZE O.D. (IN)		7	8	9	10	10-1/2	11-1/2
TOP CONNECTION PIN		4-1/2 REG.	4-1/2 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.
APPROX. PULL IN LBS		800-900	1000-1200	1200-1400	1400-1600	1600-1800	1800-2200
COMPLETE ASSEMBLY	PART NO. WEIGHT	FM 7083-00 170	FM 8083-00 210	FM 9084-00 340	FM 0084-00 400	FM 0184-00 440	FM 0284-00 550

HOW TO ORDER :

SPECIFY :

- 1) Name and Number of Assembly.
- 2) SIZE - O.D.
- 3) Top Connection, if other than Standard.

PARVEEN IMPRESSION BLOCKS



It consists of soft lead insert in the lower end of a steel housing, are used in fishing operations. They are designed to enable the operator to determine the configuration of the top of the fish and to locate its position in the well bore. Its use enables the operator to more precisely assess the fishing conditions and select the proper tool or tools needed to successfully complete the fishing operation.

To use PARVEEN Impression Blocks

Lower tool in the well on the lower end of a fishing string of pipe. After the block contacts the upper end of the fish, the weight of the string is further lowered straight down (never rotate) against the fish which indents into the soft lead lower end of the block. When the fishing string is withdrawn from the well, the impression in the lead will reveal the condition of the fish.

Parveen Impression Blocks are available in two styles:

- **Solid Impression Blocks**

Simple design; solid steel body with pin thread on top and cavity on the bottom to retain the lead; mild steel except for tools with sucker rod threads which will be heat treated.

- **Watercourse Impression Blocks**

Watercourse (circulating hole) through tool and to face of lead impression (available to wash off top of fish to get good impression); heat treated material used on most sizes regardless of thread.

O.D. RANGE (UP TO AND INCLUDING) (IN)		3-7/8-4-1/8	4-1/8-4-1/2	4-1/2-4-3/4	4-3/4-5-1/2	5-1/2-5-3/4	5-3/4-6	6-6-1/2	6-1/2-7
TOP CONNECTION PIN		2-3/8 REG.	2-7/8 REG.	3-1/2 REG.	3-1/2 REG.	3-1/2 REG.	4-1/2 REG.	4-1/2 REG.	4-1/2 REG.
CIRCULATING HOLE SIZE		1/2	1/2	3/4	3/4	3/4	3/4	3/4	3/4
COMPLETE ASSEMBLY	PART NO WEIGHT	624180 26	624581 28	624782 57	625582 81	625782 83	626083 93	626583 102	627083 120

O.D. RANGE (UP TO AND INCLUDING) (IN)		7-8	8-8-1/2	8-1/2-9-1/4	9-1/4-10	10-11	11-11-1/2	11-1/2-11-3/4	11-3/4-12
TOP CONNECTION PIN		4-1/2 REG.	4-1/2 REG.	4-1/2 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.
CIRCULATING HOLE SIZE		3/4	3/4	3/4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
COMPLETE ASSEMBLY	PART NO WEIGHT	628083 135	628583 144	629283 160	620184 190	620184 250	621584 332	621784 348	622084 350

O.D. RANGE (UP TO AND INCLUDING) (IN)		12-13	13-14	14-15	15-16	16-17
TOP CONNECTION PIN		6-5/8 REG.	6-5/8 REG.	6-5/8 REG.	6-5/8 REG.	7-5/8 REG.
CIRCULATING HOLE SIZE		1-1/2	1-1/2	1-1/2	2	2
COMPLETE ASSEMBLY	PART NO WEIGHT	628084 362	62X484 385	62X584 430	62X684 476	62X792 610

HOW TO ORDER :

SPECIFY :

- 1) O.D. of Tool.
- 2) Top Connection, if other than Standard.