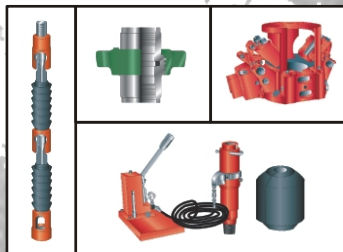




Weatherford®

Guiberson® Well Service Systems



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Tubing Swab Mandrels

Guiberson tubing swabs have set industry performance standards for nearly a half century. Today, Guiberson's wide selection of swabs and cups assures the right combination for every swabbing application, from light load, shallow well service to the heaviest loads and the deepest wells.

Knuckle Joint Swab

The original Guiberson Knuckle Joint Swab allows cups to be changed in just 10 seconds. To disassemble, the mandrel is lifted 90° and the two sections of the joint are separated. The old cup can then be removed rapidly and the new one dropped in place. There are no threads on the swab knuckles, no danger of damage and galling, and no tools needed to change cups.

Made of tough, cast, heat-treated steel, the Knuckle Joint Swab provides a large external bypass for fast falling and uses the cup itself as a valve. As many mandrels and cups as desired may be run with the Knuckle Joint. Upper mandrels are keyed to hold the joint sockets in line, and square shoulders reinforce the joint, preventing spreading under load. The rigidity of the joint absolutely prevents jackknifing and disassembly in the well. The lower mandrel allows a full 360° swivel action. Adapted as necessary, all Guiberson tubing swab cups except the Type 'J' may be run on this swab.

Standard Tubing Swab

A fast falling, threaded, internal bypass swab, the Guiberson Standard Swab uses two cups on its one-piece mandrel. Its large bypass area and full-opening check valve assure rapid running and smooth, trouble-free swabbing. The corrosion-resistant ball and steel seat seal perfectly under long, tough service. A no-go, machined as a part of the bottom retaining nut, prevents sticking in seating nipples and tight spots. This no-go may be machined off when additional clearance is desired. Adapted as necessary, all Guiberson tubing swab cups may be run on the Standard Swab.

Type 'UF' Tubing Swab

The 'UF' is a threaded joint, external bypass swab, similar to the Knuckle Joint, except that it is threaded. A forged, heat-treated steel assembly, the 2-3/8" and larger 'UF' swabs are ideal in applications where internal bypass is not suitable. The 2-1/16" and smaller sizes are ideal for swabbing in small diameter tubing. In sizes smaller than 2-3/8", 'UF', 'MV', and 'TA' cups are available for this application. In the larger tubing sizes, all Guiberson tubing swab cups (adapted as necessary) except the Type 'J' may be used.



**Knuckle Joint
with MV Cups**



**Standard
with J Cups**



**UF with TUF
Cups**



**Macaroni UF
with UF
Cups**

Tubing Swab Mandrels

Table 1: KNUCKLE JOINT TUBING SWAB MANDRELS - ENGINEERING AND PART NUMBERS

STANDARD							METRIC				
TUBING SIZE			PART NUMBER	MAXIMUM O.D. IN.	APPROXIMATE		FIELD THREAD SIZE (in.)	TUBING SIZE	MAXIMUM O.D. (mm)	APPROXIMATE	
O.D. (in.)	WEIGHT (lb/ft)	I.D. (in.)			WEIGHT (lb.)	LENGTH (in.)		I.D. (mm)		WEIGHT (kg)	LENGTH (mm)
2-3/8	4.6-4.7	1.995	33429	1.906	7	20-1/2	3/4 'SR'	50.67	48.41	3.18	520.70
2-7/8	7.9 XLN	2.323						59.00			
2-7/8	10.4 DP	2.151						54.64			
2-7/8	6.4-6.5	2.441	34084	2.360	13	26		62.00	59.94	5.90	660.40
3-1/2	9.3	2.992						76.00			
3-1/2	13.3 DP	2.764						70.21			

Table 2: STANDARD TUBING SWAB MANDREL - ENGINEERING DATA AND PART NUMBERS

STANDARD										METRIC						
TUBING SIZE			PART #	MAXIMUM O.D. (in.)			APPROXIMATE		FIELD THREAD SIZE (in.)	TUBING SIZE	MAXIMUM O.D. mm				APPROXIMATE	
O.D. (in.)	WEIGHT (lb/ft)	I.D. (in.)		WITH NO-GO	LESS NO-GO	THIMBLE	WEIGHT (lb)	LENGTH (in.)		I.D. (mm)	WITH NO-GO	LESS NO-GO	THIMBLE	WEIGHT (kg)	LENGTH (mm)	
2-3/8	4.6-4.7	1.995	43040	1.906	1.750	1.875	8	24	3/4 'SR'	50.67	48.41	44.45	47.63	3.63	609.60	
2-7/8 2-7/8	10.4 dp 8.8	2.151 2.250	43045	1.906	1.750	1.875	11	28		54.64 57.15	48.41	44.45	47.63	4.99	711.20	
2-7/8 3-1/2 3-1/2	6.4-6.5 15.5 DP 13.3 DP	2.441 2.602 2.764	43041 43041 43047	2.375 2.375 2.375	1.875 1.875 1.875	2.250 2.260 2.438	12	29		62.00 66.09 70.21	60.33 60.33 60.33	47.63 47.63 47.63	57.15 57.40 61.93	5.44	736.60	
3-1/2	8.5-10.2	3.018- 2.922	43042	2.375	1.875	2.750	13	29		76.66-76.00	60.33	47.63	69.85	5.90	736.60	
4	9.5-11.6	3.548- 3.428	43043	3.250		3.250	23	37		7/8 'SR'	90.12-87.07	82.55		82.55	10.43	939.80

Table 3: TYPE 'UF' SWAB MANDREL ENGINEERING DATA AND PART NUMBERS

STANDARD								METRIC			
TUBING SIZE			PART NUMBER	MAXIMUM O.D. (in.).	APPROXIMATE		FIELD THREAD SIZE (in.)	TUBING SIZE	MAXIMUM O.D. (mm)	APPROXIMATE	
O.D. (in.)	WEIGHT (lb/ft)	I.D. (in.).			WEIGHT (lb.)	LENGTH (in.)				WEIGHT (kg)	LENGTH (mm)
1.315	1.70-1.80	1.049	41329	.875	1-1/2	17-1/2	3/8" NPT BOX	26.64	22.23	.57	444.50
1.660	2.30-2.40	1.380	42628	1.125	2-1/2	18-1/4		35.05	28.58	1.13	463.55
1.900	2.75-2.90	1.610	43539	1.375	4-1/2	23		40.89	34.93	2.04	584.20
2.000	3.40	1.670					40.89				
2.063	3.40	1.750					44.45				
2-3/8	4.60-4.70	1.995	42856	1.906	8	22	3/4 'SR'	50.67	48.41	3.63	558.80
2-7/8	7.90 XLN	2.323						59.00			
2-7/8	10.40 DP	2.151						54.64			
2-7/8	6.40-6.50	2.441	43007	2.360	10-1/4	27		62.00	59.94	4.65	685.80
3-1/2	9.30	2.992						76.00			
3-1/2	13.30 DP	2.764						70.21			

Table 4: SWAB MANDREL ACCESSORIES

OTHER PRODUCTS	
Knuckle Joint Sub-Adapter (2-3/8 in. KJ Sub to 2-7/8 in. KJ Mandrel)	Part number 85148
Wireline Flags (Package of 12 Bundles)	Part number 85617

Tubing Swab Mandrels

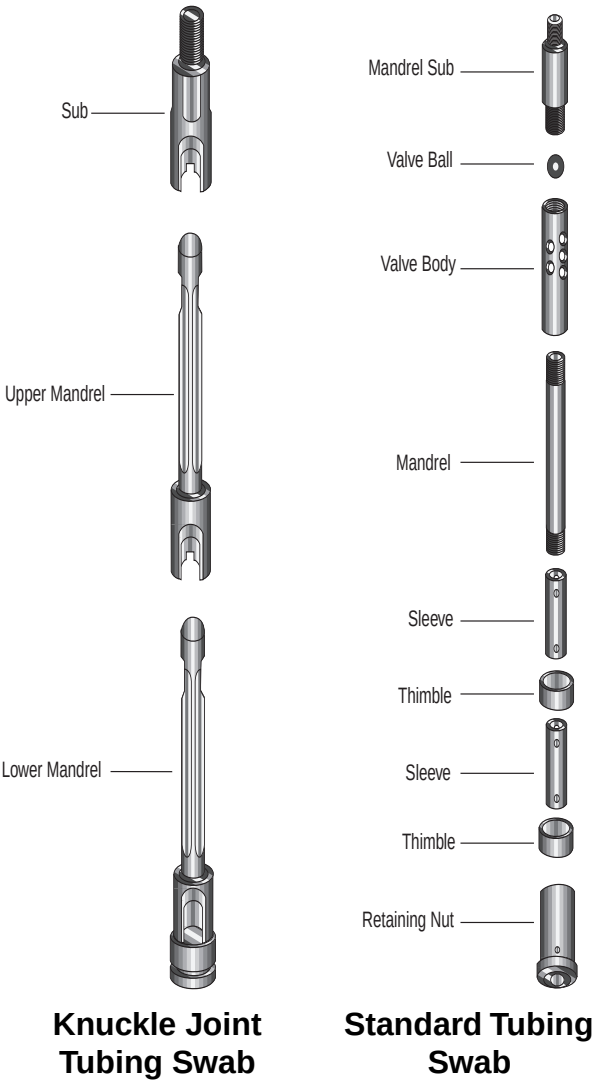


Table 5: KNUCKLE JOINT TUBING SWAB - PARTS LIST

DESCRIPTION	QUANTITY REQUIRED	PART NUMBERS BY SIZE AND TYPE	
		2-3/8"	2-7/8" - 3-1/2"
SWAB LESS CUPS	-	33429	34084
LOWER MANDREL	1	37207	33913
SUB	1	33816	33911
UPPER MANDREL	1	33817	33912

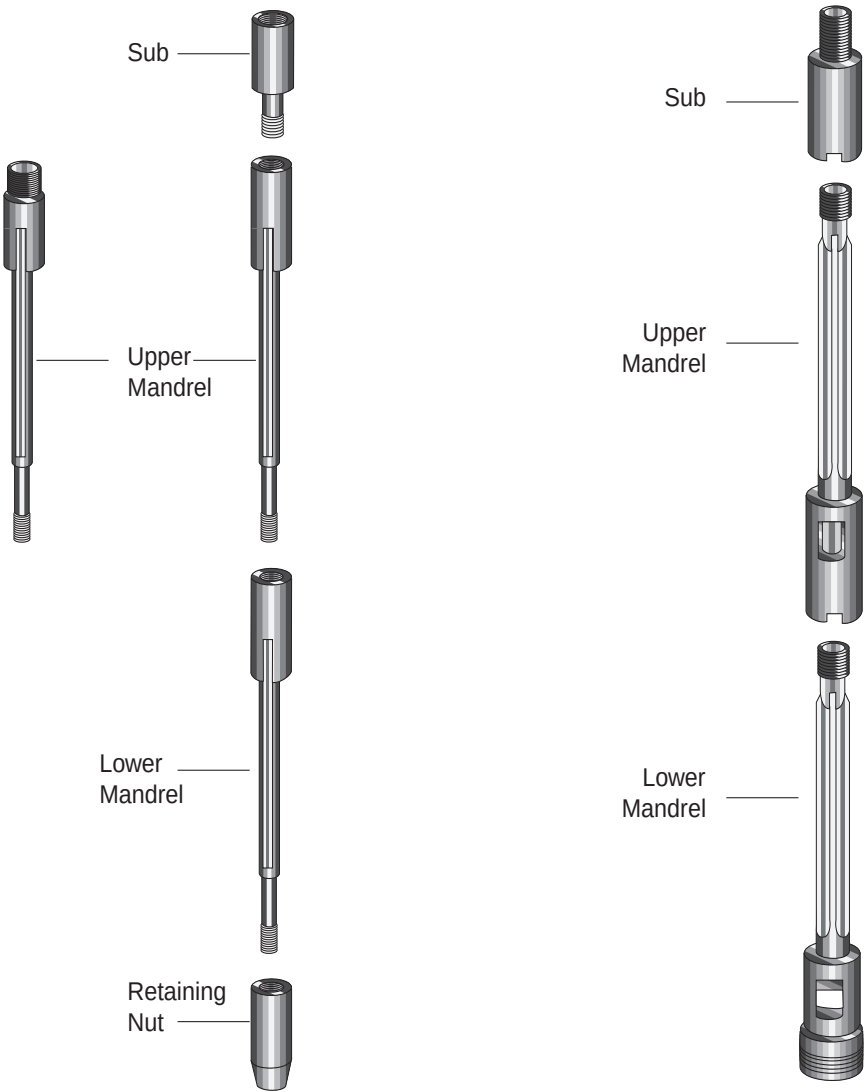
Table 6: STANDARD TUBING SWAB - PARTS LIST

DESCRIPTION	QUANTITY REQUIRED	PART NUMBERS BY SIZE AND TYPE					
		2-3/8 in.	2-7/8 in.	2-7/8 in. 10.4 DP	3-1/2 in.	3-1/2 in. 13.3 DP	4 in.
SWAB LESS CUPS	-	43040	43041	43045	43042	43047	43043
MANDREL	1	15439	9550	17413	9550	9550	9637
RETAINING NUT	1	55004	55003	55004	55003	55003	58021
SLEEVE	2	15440	1506	17414	1506	1506	6692
SUB	1	11224	11224	11224	11224	11224	9634
THIMBLE	2	6435	6436	6435	6437	14085	6696
VALVE BALL	1	14812	14812	14812	14812	14812	14804
VALVE BODY	1	9548	9553	9548	9553	9553	9635

Tubing Swab Mandrels

Table 7: TYPE 'UF' TUBING SWAB - PARTS LIST

DESCRIPTION	QUANTITY REQUIRED	PART NUMBERS BY SIZE AND TYPE				
		1.315 in.	1.660 in.	1.900 in. 2-1/16 in.	2-3/8 in.	2-7/8 in.
SWAB LESS CUPS	-	41329	42628	43539	42856	43007
LOWER MANDREL	1	39289	39286	43541	42375	42506
RETAINING NUT	1	39287	40618	43542	-	-
SUB	1	40745	-	-	42373	43005
UPPER MANDREL	1	39289	39285	43540	42374	42505

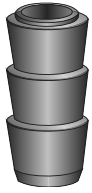


UF Tubing Swab

Guiberson Swab Cups ... The Original and Still the Best!!

Here's Guiberson's complete line of field-proven tubing swab cups. You'll find the type you need for any type of well servicing activity.

Type 'NUF'



The dictionary defines enough as: "sufficient; as much as necessary." That's the 'NUF'; it's sufficient for your swabbing job. The 'NUF' is a high performance, heavy-duty, all-rubber cup. The unique design of the 'NUF' provides long life, maximum lift capacity, even under heavy load and deep swabbing conditions, and a dynamic shape that falls easily. The 'NUF' is made from Guiberson's high strength, abrasion resistant, low friction rubber. The 'NUF' is offered in a steel or aluminum bushing. The 'NUF' is available for both standard and heavy wall tubing and may be run on any Guiberson swab.

Type 'HPR'



The 'HPR' combines three lifting rings for maximum lift capacity with a lip designed for maximum lift power and long life under heavy loads. The 'HPR' is an all-rubber cup, molded onto either a steel bushing for strength and durability or an aluminum bushing for use where neither acid nor strong caustic fluids are swabbed. The 'HPR' is available for standard tubing or with a slightly smaller O.D. for undersize tubing and faster falling.

Type 'TA'



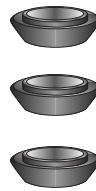
The 'TA' is a medium-duty, all-rubber, variable lip cup. The 'TA' is made from a slightly softer rubber for greater flexibility under lighter loads. The 'TA' can be run on any Guiberson swab and is available with either a steel or an aluminum bushing in all popular sizes.

Type 'MV'



The 'MV' is a light-duty, all-rubber cup. The multiple upturned lips pass easily through tight spots and are especially suited for fluid with a high ratio of suspended sand because the lips will invert to dump an excessive load. The 'MV' is available with either a steel or an aluminum bushing and can be run on any Guiberson swab.

Type 'V'



The 'V' is a ring-type, single-lip, flexible, all-rubber cup molded on a steel bushing. The 'V' is ideal for lifting sand-laden fluids and for light-load swabbing. The flexible 'V' falls quickly and automatically dumps excess loads. The number of 'V' cups may be varied to meet the swabbing conditions and can be run on any Guiberson swab.

Type 'TUF'



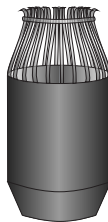
The 'TUF' is a flexible cup using a patented method of attaching the spring steel reinforcing wires along with a molded-in valve ring. The 'TUF' is molded from a synthetic rubber for lifting medium to heavy loads. As the name implies, it's tough!

Type 'UF'



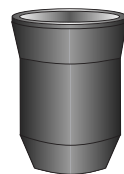
The 'UF' is an all-purpose cup containing strong, flexible spring steel reinforcing wires and a molded-in valve ring. The 'UF' is made from a very flexible rubber for lighter loads. The 'UF' can be run on any Guiberson swab and is available in the popular and special sizes.

Type 'J'



The 'J' is a very durable heavy duty cup with a long flexible lip to provide a perfect up-stroke seal. The strong steel reinforcing wires are secured by a Guiberson patented retaining ring, which keeps the wires from snagging, even in the roughest tubing. The 'J' is available in popular sizes, as well as heavy wall tubing and drill pipe sizes, and must be run on a Guiberson Standard swab.

Type 'GW'



Introduced in 1940, the 'GW' seals so well it has become the industry standard for total fluid removal. The 'GW' is a single lip cup, reinforced by molded-in spring steel wires, in tubing size cups. The 'GW' is ideal for getting the last drop out of the well and may be run on any Guiberson swab.

Tubing Swab Cups

Table 8: ALL RUBBER CUPE - ENGINEERING DATA AND PART NUMBERS

TUBING DATA				TYPE 'NUF'			TYPE 'HPR'			TYPE 'TA'			TYPE 'MV'			TYPE 'V'		SWAB CUP I.D. (in)
O.D. NOMINAL (in)	WEIGHT (lb/ft)	TUBING I.D. (in)	MIN. JT. I.D. ** (in)	PART NUMBER		CUP O.D. (in)	PART NUMBER		CUP O.D. (in)	PART NUMBER		CUP O.D. (in)	PART NUMBER		CUP O.D. (in)	PART NUMBER	CUP O.D. (in)	
1.315 (1)	1.70 - 1.80	1.049	0.970	--	--	--	--	--	--	--	54510	1.000	--	--	--	--	--	0.430
1.660 (1-1/4)	2.30 - 2.40	1.380	1.300	--	--	--	--	--	--	--	54511	1.350	--	--	--	--	--	0.569
1.900 (1-1/2)	2.75 - 2.90	1.160	1.530	--	--	--	--	--	--	--	53689 59890*	1.600 1.560	--	--	--	87422	1.605 (ID=0.915)	0.759
2.000	3.40	1.670	--	--	--	--	--	--	--	--	53690	1.660	--	--	--	--	--	
2.063 (1-3/4)	3.25 - 3.40	1.751	1.700	--	--	--	--	--	--	--	53691 53690*	1.710 1.660	--	57842	1.72	--	--	
	4.50	1.613	1.560	--	--	--	--	--	--	--	53690	1.660	S	--	--	87422	1.605	
2-3/8 (2)	4.60 - 4.70	1.995	1.945	--	91066	1.935	64713 65530*	64174 65531*	1.940 1.923	61024 63612*	53409 54508*	1.990 1.950	87791	57468	1.992	57835	1.992	1.084
	5.10 - 5.30	1.939	1.890	--	91066	1.935	S	S	--	S	S	--	S	S	--	S	--	
	5.80 - 5.95	1.853	1.805	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5.96 - 6.20	1.867	1.795	--	S	1.785	96679S	S	--	S	S	--	S	S	--	S	--	
2-7/8 (2-1/2)	6.40 - 6.50	2.441	2.371	--	91067	2.370	64176 65532*	64175 65533*	2.395 2.355	61025 62930*	53494 54507*	2.431 2.385	87792	57469	2.431	57836	2.431	1.375
	7.70 - 7.90	2.323	2.265	--	S	2.245	96680	S	--	S	S	--	S	S	--	S	--	
	8.60 - 8.70	2.259	2.200	--	S	2.180	96681	S	--	S	S	--	S	S	--	S	--	1.084
	8.90	2.243	2.181	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9.35 - 9.50	2.195	2.089	--	--	--	--	--	--	S	55235	2.111	--	--	--	--	--	
	9.80 - 10.40	2.151	2.130	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3-1/2 (3)	11.54 - 11.65	1.995	--	--	91066	1.935	64173	64174	1.940	61024	53409	1.990	87791	57468	1.992	57835	1.992	1.375
	9.20 - 9.50	2.992	2.920	--	--	--	--	--	--	89689	53692	2.940	89690	57839	2.985	57642	2.985	
	10.20 - 10.30	2.992	2.870	--	--	--	--	--	--	S	S	--	S	S	--	S	--	

S Special order size - contact Guiberson sales representative

* Undersize for easier falling; plastic lines or internal upset tubing

** Bored joint I.D. of common internal upset tubing joint, such as CS Hydril

Table 9: WIRE REINFORCED CUPS - ENGINEERING DATA AND PART NUMBERS

TUBING DATA				TYPE 'TUF'		TUF' CUP I.D. (in)	TYPE 'UF'		UF' CUP I.D. (in)	TYPE 'U'		TYPE 'GW'		J' GW' CUP I.D. (in)
O.D. NOMINAL (in)	WEIGHT (lb/ft)	TUBING I.D. (in)	MIN. JT. I.D. ** (in)	PART NUMBER	CUP O.D. (in)		PART NUMBER	CUP O.D. (in)		PART NUMBER	CUP O.D. (in)	PART NUMBER	CUP O.D. (in)	
1.315 (1)	1.70 - 1.80	1.049	0.970	--	--	--	38831	0.970	0.437	--	--	--	--	--
1.660 (1-1/4)	2.20 - 2.40	1.380	1.300	--	--	--	38869	1.300	0.578	--	--	--	--	--
1.900 (1-1/2)	2.75 - 2.90	1.610	1.530	--	--	--	29641	1.520	0.688	--	--	--	--	--
2.000	3.40	1.670	--	--	--	--	45307	1.650		--	--	--	--	--
2.063 (1-3/4)	3.25 - 3.40	1.751	1.700	--	--	--	31594 45307*	1.694 1.650		--	--	--	--	--
	4.50	1.613	1.550	--	--	--	29641	1.520		--	--	--	--	--
2-3/8 (2)	4.60 - 4.70	1.995	1.945	68333.000	1.910	1.078	--	--	--	14669	1.985	10716	2.000	1.094
	5.10 - 5.30	1.939	1.890	--	--	--	--	--	--	--	--	--	--	--
2-7/8 (2-1/2)	6.40 - 6.50	2.441	2.371	69845 86344***	2.360	1.350	--	--	--	14722	2.420	10047	2.490	1.344
	8.60 - 8.70	2.259	2.200	--	--	--	--	--	--	16711	2.215	--	--	1.094
	8.90	2.243	2.245	--	--	--	--	--	--	--	--	--	--	
	9.35 - 9.50	2.195	2.130	--	--	--	--	--	1.078	17643	2.125	--	--	
	9.80 - 10.40	2.151	2.151	--	--	--	--	--	--	14669	1.985	10716	2.000	1.344
3-1/2 (3)	11.54 - 11.65	1.995	--	68333.000	1.190	1.078	--	--	--	--	--	61943§	2.797	
	8.50 - 10.20§	2.922	2.979	--	--	--	--	--	--	--	--	15684	2.972	
	9.20 - 9.50	2.992	2.920	--	--	--	36353	2.890	--	--	--	--	--	
	10.20 - 10.30	2.992	2.870	--	--	--	--	--	1.35	--	--	--	--	
	12.80 - 13.30	2.764	--	--	--	--	36357	2.720	--	--	--	14082	2.770	
	12.70 - 12.95	2.750	2.687	--	--	--	--	--	--	16781	2.552	--	--	
4.000	14.90 - 15.50	2.602	--	--	--	--	--	--	--	--	--	--	--	1.938
	9.500	3.548	--	--	--	--	--	--	--	--	--	--	--	
	10.80 - 11.95	3.476	3.395	--	--	--	--	--	--	--	--	14036	3.526	--

* Undersize cup - For faster fall and plastic lined or internal upset tubing

** Bored joint I.D. of common internal upset tubing joint, such as CS Hydril

***TUF'- Lite cup for lighter loads: blue color

§ Trico special

KOBE special

Tubing Swab Cups

Table 10: GENERAL FLUID LOADS FOR GUIBERSON TUBING SWAB CUPS

CUP TYPES	ALL RUBBER CUPS				WIRE CUPS			
	*V	MV	NUF or HPR	TA	*TUF	*GW	*J	*UF
FLUID LOAD (ft)								
Light 0-200	X	X		X		X	X	X
Medium 200-1,000	X	X	X	X	X	X	X	X
Heavy 800-2,000			X		X			X
CONDITION								
Sand	X	X						
Scale	X	X			X			
Plastic Lined	X	X	X	X	X		X	X
Undersize	X	X	X	X	X		X	X

* Steel Bushing Only

Note General loads are for 2-3/8 in. cups swabbing salt water. Load limit decreases with 2-7/8 in. and 3-1/2 in. cups.

Tubing Swab Cups

Type 'TUF' Tubing Swab Cup

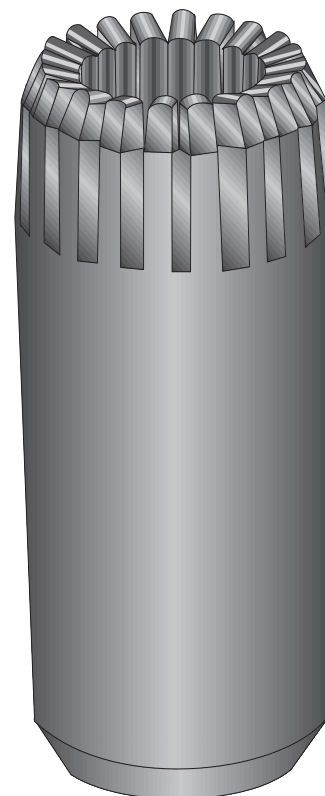
The Type 'TUF' is a flexible rubber cup with spring steel reinforcing wires. The wires are attached to a molded-in valve ring, making the 'TUF' very strong for heavy loads but flexible enough for light loads. The 'TUF' may be used in both regular and undersized tubing. As the name implies, it's tough!

Type 'UF' Tubing Swab Cup

The Type 'UF' is a strong, flexible, synthetic-rubber cup containing a molded-in valve ring and strong, flexible spring steel reinforcing wires. Heavily reinforced for the high speeds and heavy loads common today, the 'UF' also retains great flexibility for handling light loads. Steel reinforcing wires take the wear, assuring long life, and its smooth internal surface lets it travel freely on the swab mandrel to give ample bypass while running in. Undersize 'UF' cups, slightly shorter and smaller in diameter than the standard, are available where greater clearance is desired.



Type 'TUF' Tubing Swab Cup



Type 'UF' Tubing Swab Cup

Table 11: TYPE 'TUF' AND 'UF' TUBING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

STANDARD												METRIC							
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	MIN. JT. I.D. (in.)	DRIFT DIA. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'TUF'			TYPE 'UF'			I.D. (mm)	MIN. JT. I.D. (mm)	DRIFT DIA. (mm)	CAPACITY m3 PER 1000 m	TYPE 'TUF'		TYPE 'UF'	
						PART NO.	O.D. (in.)	I.D. (in.)	PART NO.	O.D. (in.)	I.D. (in.)					O.D. (mm)	I.D. (mm)	O.D. (mm)	I.D. (mm)
1.315	1.800	1.049	.970	.955	1.070	-	-	-	38831	.970	.437	26.64	24.64	25.27	.56	-	-	24.64	11.10
1.660	2.400	1.380	1.300	1.286	1.850	-	-	-	38869	1.300	.578	35.05	33.02	32.66	.96	-	-	33.02	14.68
1.900	2.900	1.610	1.610	1.516	2.520	-	-	-	29641	1.520	.688	40.89	40.89	38.51	1.31	-	-	38.61	17.48
2.000	3.400	1.670	1.670	1.576	2.710	-	-	-	45307*	1.650	.688	42.42	42.42	40.03	1.41	-	-	41.91	17.48
2.063	3.400	1.750	1.700	1.656	2.980	-	-	-	31594	1.694	.688	44.45	43.18	42.06	1.55	-	-	43.03	17.48
2-3/8	4.700	1.995	1.995	1.901	3.860	68333	1.910	1.078	-	-	-	50.67	50.67	48.29	2.01	48.51	27.38	-	-
2-7/8	6.500	2.441	2.441	2.347	5.800	69845	2.360	1.350	-	-	-	62.00	62.00	59.61	3.03	59.04	34.29	-	-
	6.500	2.441	2.441	2.347	5.800	86344**	2.360	1.350	-	-	-	62.00	62.00	59.61	3.03	59.04	34.29	-	-
	10.4 DP	2.151	2.151	1.963	4.500	-	-	-	-	-	-	54.64	54.64	49.86	2.35	-	-	53.09	27.38
3-1/2	8.50-10.20	3.018-2.922	3.018-2.922	2.893-2.797	8.840-8.290	-	-	-	36353	2.890	1.350	76.66-74.22	76.66-74.22	73.48-71.04	4.61-4.32	-	-	74.55	34.29
	13.3 DP	2.764	2.764	2.375	7.420	-	-	-	36357	2.720	1.350	70.21	70.21	60.33	3.87	-	-	69.09	34.29

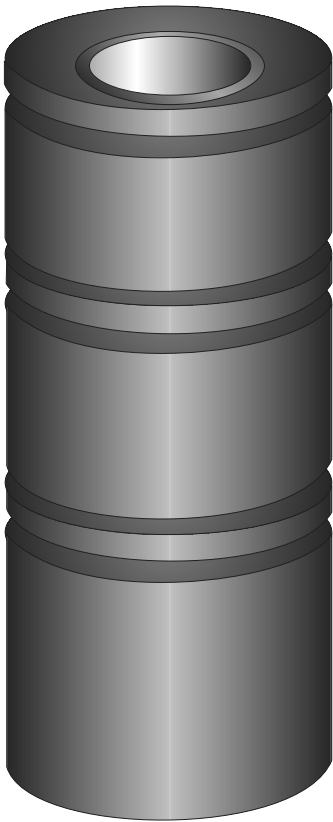
* May be used in internal upset 2.063" tubing, such as CS Hydril

** 'TUF' - Lite cup for lighter loads: blue color

Tubing Swab Cups

Type ‘TA’ Tubing Swab Cup

The Type ‘TA’ is an all-rubber cup bonded to an aluminum bushing. Its construction allows the bushing to be dissolved by acid or a strong caustic solution should sand stick the swab. The ‘TA’ can be run on any Guiberson swab and is available with steel bushings in popular sizes.



Type ‘TA’ Tubing Swab Cup

Table 12: TYPE ‘TA’ TUBING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

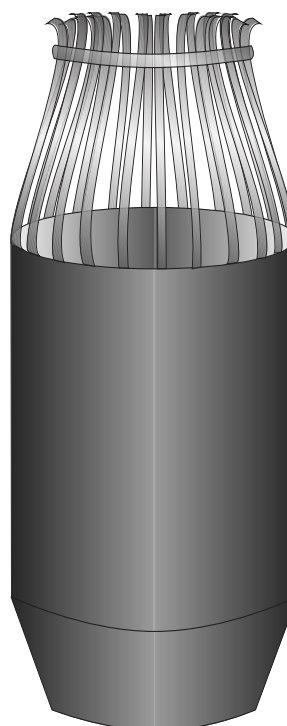
STANDARD												METRIC					
NORMAL CASING SIZE	WEIGHT (lb/ft)	I.D. (in..)	MIN. JT. I.D. (in.)	DRIFT DIA. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'TA'						I.D. (mm)	MIN. JT. I.D. (mm)	DRIFT DIA. (mm)	CAPACITY m3 PER 1000 m	TYPE 'TA'	
						ALUMINUM BUSHING			STEEL BUSHING							O.D. (mm)	I.D. (mm)
						PART NO.	O.D. (in.)	I.D. (in.)	PART NO.	O.D. (in.)	I.D. (in.)						
1.315	1.800	1.049	.970	.955	1.070	54510	1.000	.430	-	-	-	26.64	24.64	25.27	.56	25.40	10.92
1.660	2.400	1.380	1.300	1.286	1.850	54511	1.350	.569	-	-	-	35.05	33.02	32.66	.96	34.29	14.45
1.900	2.900	1.610	1.610	1.516	2.520	59890* 53689	1.600	.759	-	-	-	40.89	40.89	38.51	1.31	40.64	19.28
2.000	3.400	1.670	1.670	1.516	2.710	53690	1.560	.759	-	-	-	42.42	42.42	40.03	1.41	42.16	19.28
2.063	3.400	1.750	1.700	1.656	2.980	53691	1.742	.759	-	-	-	44.45	43.18	42.06	1.55	44.25	19.28
2-3/8	4.700	1.995	1.995	1.901	3.860	53409	1.990	1.084	61024	1.990	1.084	50.67	50.67	48.29	2.01	50.55	27.53
	4.700	1.995	1.945	1.901	3.860	54508	1.950	1.084	63612	1.950	1.084	50.67	49.40	48.29	2.01	49.53	27.53
2-7/8	6.500	2.441	2.441	2.347	5.800	53494	2.431	1.375	61025	2.431	1.375	62.00	62.00	59.61	3.03	61.75	34.93
	6.500	2.441	2.375	2.347	5.800	54507	2.385	1.375	62930	2.385	1.375	62.00	60.33	59.61	3.03	60.58	34.93
	10.4DP	2.151	2.151	1.963	4.500	55235	2.111	1.084	-	-	-	54.64	54.64	49.86	2.35	53.62	27.53
3-1/2	8.50-10.20	3.018-2.922	3.018-2.922	2.893-2.797	8.840-8.290	53692	2.940	1.375	89689	-	-	76.66-74.22	76.66-74.22	73.48-71.04	4.61-4.32	74.68	34.93
	9.300	2.992	2.922	2.867	8.700	53692	2.940	1.375	-	-	-	74.22	74.22	72.82	4.54	74.68	34.93

*Undersize - for plastic lined tubing or internal upset tubing, such as CS Hydriil

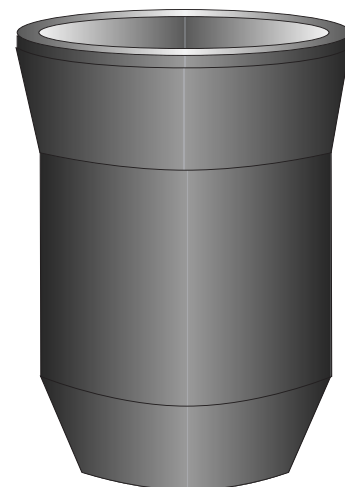
Tubing Swab Cups

Type 'J' Tubing Swab Cup

The Type 'J' is a durable, heavy-duty, wire reinforced cup designed to left heavy loads from any depth. Its long, flexible lip provides perfect upstroke seal and automatically compensates for wear. Strong steel reinforcing wires, secured by the patented Guiberson retaining ring, take the abrasive wear against the tubing. This reinforcement ensures easy swabbing, prevents hanging up, and makes the 'J' the toughest heavy-load cup available. With its special oil, gas, and abrasion resistant rubber compound, the 'J' stands up to the toughest swabbing service.



Type 'J' Tubing Swab Cup



Type 'GW' Tubing Swab Cup

Type 'GW' Tubing Swab Cup

The Type 'GW' is a single lip, abrasion-resistant cup, reinforced by molded-in spring wires. Its heavy, flexible, oversized lip provides a perfect upstroke seal, even in rough or mixed tubing strings, making it ideal for lifting light loads. The 'GW' cup seals so well, it has become the industry standard for total fluid removal. Because the lip is flexible, the cup runs in smoothly; and because it is oversized, it automatically compensates for wear, ensuring lifting of all the fluid above it.

Table 13: TYPE 'J' AND 'GW' TUBING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

STANDARD												METRIC							
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	MIN. JT. I.D. (in.)	DRIFT DIA. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'J'			TYPE 'GW'			I.D. (mm)	MIN. JT. I.D. (mm)	DRIFT DIA. (mm)	CAPACITY m3 PER 1000 m	TYPE 'J'		TYPE 'GW'	
						PART NO.	O.D. (in.)	I.D. (in.)	PART NO.	O.D. (in.)	I.D. (in.)					O.D. (mm)	I.D. (mm)	O.D. (mm)	I.D. (mm)
2-3/8	4.700	1.995	1.995	1.901	3.860	14669	1.985	1.094	10716	2.000	1.094	50.67	50.67	48.29	2.01	50.42	27.79	50.80	27.79
2-7/8	6.500	2.441	2.441	2.374	5.800	14772	2.420	1.344	10047	2.490	1.344	62.00	62.00	59.61	3.03	61.47	34.14	63.25	34.14
	8.8DP	2.250	2.250	2.156	4.920	1.6711	2.215	1.094				57.15	57.15	54.76	2.57	56.26	27.79	58.04	27.79
	10.4DP	2.151	2.151	1.963	4.500	17643	2.125	1.094	-	-	-	54.64	54.64	49.86	2.35	53.98	27.79	-	-
3-1/2	8.50-10.20	3.018-2.922	3.018-2.922	2.893-2.797	8.840-8.290	-	-	-	14960	3.020	1.344	76.66-74.22	76.66-74.22	73.48-71.04	4.61-4.32	-	-	76.61	34.14
	9.300	2.922	2.922	2.867	8.700	15684	2.972	1.344	-	-	-	74.22	74.22	72.82	4.54	75.49	34.14	-	-
	13.3DP	2.764	2.764	2.375	7.420	16435	2.724	1.344	14082	2.770	1.344	70.21	70.21	60.33	3.87	69.19	34.14	70.36	34.14
	15.5DP	2.602	2.602	2.375	6.590	16781	2.552	1.344	-	-	-	66.09	66.09	60.33	3.44	64.82	34.14	-	-
4	9.500	3.548	3.548	3.423	112.250	-	-	-	14034	3.590	1.938	90.12	90.12	86.94	6.39	-	-	91.19	49.23
	11.0-11.60	3.476-3.428	3.395	3.303	11.40	-	-	-	14036	3.526	1.938	88.29-87.07	86.23	83.90	5.95	-	-	89.56	49.23

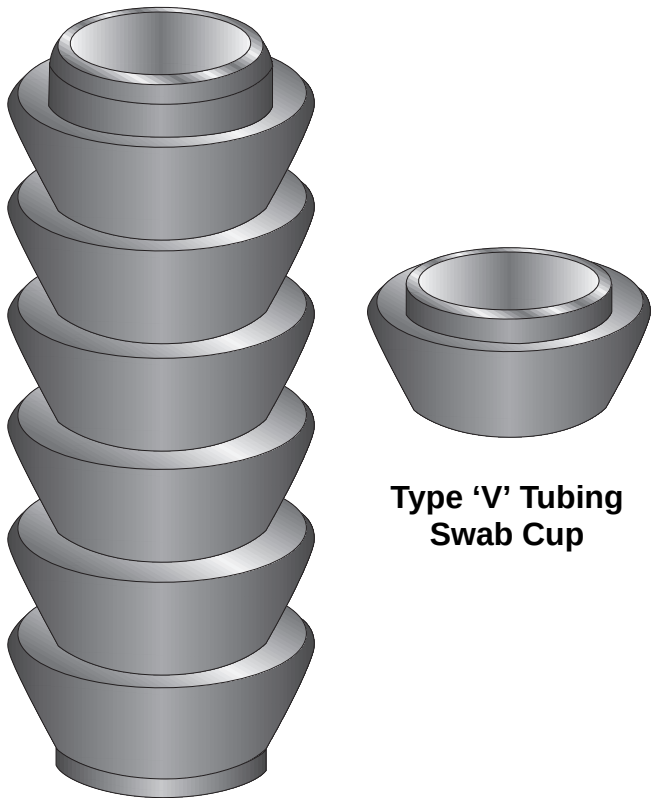
Tubing Swab Cups

Type ‘MV’ Tubing Swab Cup

The Type ‘MV’ is a wireless cup, tightly bonded to an aluminum or steel bushing. Its multiple upturned lips pass easily through tight spots and automatically control the amount of load lifted. The ‘MV’ cup is especially effective in fluid with a high ratio of suspended sand. The flexible lips automatically compensate for wear, allowing longer cup life, and the built-in relief feature assures fast falling for rapid swabbing.

Type ‘V’ Tubing Swab Cup

The Type ‘V’ was specially designed to lift fluid containing a high ratio of suspended sand. It is also suitable for lifting ordinary light loads with minimum suction across the sand face. The number of cups used may be varied by operator to fit conditions.



Type ‘MV’ Tubing Swab Cup

Type ‘V’ Tubing Swab Cup

Table 14: TYPE ‘MV’ AND ‘V’ TUBING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

STANDARD												METRIC							
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	MIN. JT. I.D. (in.)	DRIFT DIA. (in.)	CAPACITY Bbl PER 1000 ft	TYPE ‘MV’			TYPE ‘V’			I.D. (mm)	MIN. JT. I.D. (mm)	DRIFT DIA. (mm)	CAPACITY m3 PER 1000 m	TYPE ‘MV’		TYPE ‘V’	
						PART NO.	O.D. (in.)	I.D. (in.)	PART NO.	O.D. (in.)	I.D. (in.)					O.D. (mm)	I.D. (mm)	O.D. (mm)	I.D. (mm)
2.000	3.400	1.670	1.670	1.576	2.710	57842	1.735	.759	-	-	-	42.42	42.42	40.03	1.41	44.07	19.28	-	-
2.063	3.400	1.750	1.700	1.656	2.980	57842	1.735	.759	-	-	-	44.45	43.18	42.06	1.55	44.07	19.28	-	-
2-3/8	4.700	1.995	1.995	1.901	3.860	57468	1.992	1.084	57835	1.992	1.094	50.67	50.67	48.29	2.01	50.60	-	50.59	27.78
	4.700*	1.995	1.945	1.901	3.860	-	-	-	57835	1.992	1.094	50.67	49.40	48.29	2.01	27.53	-	50.59	27.78
2-7/8	6.500	2.441	2.441	2.347	5.800	57469	2.431	1.375	57836	2.431	1.344	62.00	62.00	59.61	3.03	61.75	34.93	61.81	33.13
	6.500*	2.441	2.375	2.347	5.800	-	-	-	57836	2.431	1.344	62.00	60.33	59.61	3.03	-	-	61.81	33.13
3-1/2	8.50-10.20	8.018-2.922	3.018-2.922	2.893-2.797	8.840-8.290	57839	2.985	1.375	57642	2.985	1.344	76.66-74.22	76.66-74.22	73.48-71.04	4.61-4.32	75.82	34.93	50.40	34.13
	9.300	2.922	2.922	2.867	8.700	-	-	-	57642	2.985	1.344	74.22	74.22	72.82	4.54	-	-	50.40	34.13

* Undersize - for plastic lined tubing or internal upset tubing, such as CS Hydril.

Casing Swab Cups

Table 15: CASING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

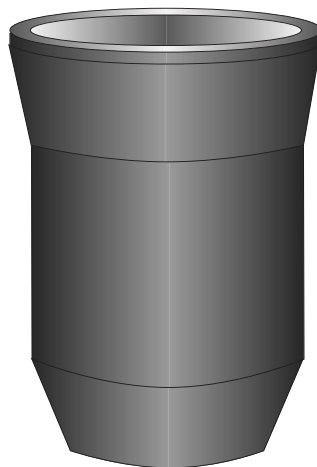
CASING DATA			TYPE 'V'			TYPE 'J'	TYPE 'JS'	'J' & 'JS'		TYPE 'GW'		
O.D. (in.)	WEIGHT (lb/ft)	I.D. (in.)	PART NUMBER	O.D. (in.)	I.D. (in.)	PART NUMBER	PART NUMBER	O.D. (in.)	I.D. (in.)	PART NUMBER	O.D. (in.)	I.D. (in.)
4-1/2	9.50	4.090	57467 93480**	4.062	2.420	45597	61495	4.060	2.435	19841	4.160	2.407
	11.60 12.60	4.000 3.958										
4-1/2 D.P.	13.75	3.958	57467	4.062	2.420	45597	61495	4.060	2.435	19841	4.160	2.407
	16.60	3.826	S	-	-	-	-	-	-	19840	3.910	
4-3/4	16.00	4.082	57467	4.062	2.420	45597	61495	4.060	2.435	19841	4.160	2.407
5	13.00 15.00	4.494 4.408	S	-	-	-	-	-	-	19843	4.510	2.407
	18.00 21.00	4.276 4.154	S	-	-	-	-	-	-	19842	4.300	
5-1/2	13.00 14.00 15.00	5.044 5.012 4.974	88884* 57470	4.970 4.970	2.420 2.920	45829	61496	5.010	2.435	19846	5.120	2.907
	15.50	4.950	88884*	4.970	2.420	45829	61496	5.010		56673	4.990	
	17.00	4.892	S	-	-	52384	-	4.838		56673	4.990	
	20.00	4.778	S	-	-	52384	-	4.838		19844	4.910	
	23.00	4.670	S	-	-	-	-	-		19844	4.910	
5-3/4	14.00 17.00	5.290 5.190	S	-	-	-	-	-	-	19847	5.360	2.907
	22.50	4.990	88884*	4.970	2.420	45829	61496	5.010	2.435	19846	5.120	
6	14.00 20.00	5.552 5.352	S	-	-	-	-	-	-	19848	5.580	2.907
6-5/8	20.00 22.00	6.049 5.989	S	-	-	-	-	-	-	19389	6.125	3.532
	24.00 28.00	5.921 5.791	S	-	-	-	-	-	-	19849	5.950	
7	17.00 20.00	6.538 6.456	57471	6.475	3.545	45831	-	6.520	2.435	19853	6.562	3.532
	22.00 23.00 24.00	6.398 6.366 6.336	57471	6.475		52385	-	6.320		19852	6.480	
	26.00 30.00	6.276 6.154	S	-	-	-	-	-	-	19851	6.328	
	32.00 35.00	6.094 6.004	S	-	-	-	-	-	-	-	-	
	38.00 40.00	5.920 5.836	S	-	-	-	-	-	-	19849	5.950	
7-5/8	26.40	6.969	-	-	-	-	-	-	-	19855	7.050	3.532
	29.70 33.70	6.875 6.765	-	-	-	-	-	-	-	19854	6.900	

S Indicates that this size swab cup is available by special order
 * Part number 88884 is an alternate swab cup which is made to run in 5-1/2 in. casing on a 4-1/2 in. size swab mandrel
 ** 93480 is a heavy duty alternate to 57467

Casing Swab Cups

Type 'GW' Casing Swab Cup

Because type 'GW' is molded from highly abrasion-resistant rubber, with a stout flexible lip, this cup is recommended for lifting light loads. The 'GW' was designed for positive seal in rough or mixed casing strings. Use of the 'GW' is recommended for total removal of all fluid above the cup.



**Type 'GW'
Casing Swab Cup**

Table 16: TYPE 'GW' CASING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

STANDARD							METRIC			
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'GW'			I.D. (mm)	CAPACITY m3 PER 1000 m	TYPE 'GW'	
				PART NO.	O.D. (in.)	I.D. (in.)			O.D. (mm)	I.D. (mm)
4-1/2	9.5	4.090	16.2	19841	4.160	2.407	103.87	8.45	105.66	61.14
	11.6	4.000	15.5	19841	4.160	2.407	101.60	8.08	105.66	61.14
	12.6	3.958	15.2	19841	4.160	2.407	100.53	7.93	105.66	61.14
	-	-	-	19841	4.160	2.407	99.57	7.77	105.66	61.14
4-1/2 D.P.	15.3	3.826	14.2	19840	3.910	2.407	97.18	7.41	99.31	61.14
	16.6	3.826	14.2	19840	3.910	2.407	97.18	7.41	99.31	61.14
	18.1	3.754	13.7	19840	3.910	2.407	95.35	7.15	99.31	61.14
4-3/4	16.0	4.082	16.2	19841	4.160	2.407	103.68	8.45	105.66	61.14
5	13.0	4.494	19.6	19843	4.510	2.407	114.15	10.22	114.55	61.14
	15.0	4.408	18.9	19843	4.510	2.407	111.96	9.86	114.55	61.14
	18.0	4.276	17.8	19842	4.300	2.407	108.61	9.28	109.22	61.14
	21.0	4.154	16.8	19842	4.300	2.407	105.51	8.76	109.22	61.14
5-1/2	13.0	5.044	24.7	19846	5.120	2.907	128.12	12.88	130.05	73.84
	14.0	5.012	24.4	19846	5.120	2.907	127.30	12.73	130.05	73.84
	15.0	4.974	24.0	19846	5.120	2.907	126.34	12.52	130.05	73.84
	15.5	4.950	23.8	56673	4.990	2.907	125.73	12.41	126.75	73.84
	17.0	4.892	23.2	56673	4.990	2.907	124.26	12.10	126.75	73.84
	20.0	4.778	22.2	19844	4.910	2.907	121.36	11.58	124.71	73.84
	23.0	4.670	21.1	19844	4.910	2.907	118.62	11.01	124.71	73.84
5-3/4	14.0	5.290	27.2	19847	5.360	2.907	134.37	14.40	136.14	73.84
	17.0	5.190	26.2	19847	5.360	2.907	131.83	13.67	136.14	73.84
	22.5	4.990	24.2	19846	5.120	2.907	126.75	12.62	130.05	73.84
6	14.0	5.552	30.0	19848	5.580	2.907	141.02	15.65	141.73	73.84
	15.0	5.524	29.6	19848	5.580	2.907	140.31	15.44	141.73	73.84
	16.0	5.500	29.3	19848	5.580	2.907	139.70	15.28	141.73	73.84
	17.0	5.450	28.8	19848	5.580	2.907	138.43	15.02	141.73	73.84
	18.0	5.424	28.5	19848	5.580	2.907	137.77	14.87	141.73	73.84
	20.0	5.352	27.8	19848	5.580	2.907	135.94	14.50	141.73	73.84
6-5/8	20.0	6.049	35.5	19389	6.125	3.532	153.64	18.52	155.58	89.71
	22.0	5.989	34.8	19389	6.125	3.532	152.12	18.15	155.58	89.71
	24.0	5.921	34.1	19849	5.950	3.532	150.39	17.79	151.13	89.71
	26.0	5.855	33.3	19849	5.950	3.532	148.72	17.37	151.13	89.71
	28.0	5.791	32.6	19849	5.950	3.532	147.09	17.00	151.13	89.71
7	17.0	6.538	41.5	19853	6.562	3.532	166.07	21.65	166.67	89.71
	20.0	6.456	40.5	19853	6.562	3.532	163.98	21.12	166.67	89.71
	22.0	6.398	39.8	19852	6.480	3.532	162.51	20.76	164.59	89.71
	23.0	6.366	39.3	19852	6.480	3.532	161.70	20.50	164.59	89.71
	24.0	6.336	39.0	19852	6.480	3.532	160.93	20.34	164.59	89.71
	26.0	6.276	38.3	19851	6.328	3.532	159.41	19.98	160.73	89.71
	28.0	6.214	37.5	19851	6.328	3.532	157.84	19.56	160.73	89.71
	29.0	6.184	37.1	19851	6.328	3.532	157.07	19.35	160.73	89.71
	30.0	6.154	36.8	19851	6.328	3.532	156.31	19.19	160.73	89.71
	32.0	6.094	36.0	19389	6.125	3.532	154.79	18.78	155.58	89.71
	34.0	6.040	35.4	19389	6.125	3.532	153.42	18.46	155.58	89.71
	35.0	6.004	35.0	19389	6.125	3.532	152.50	18.26	155.58	89.71
	38.0	5.920	34.0	19849	5.950	3.532	150.37	17.73	151.13	89.71
7-5/8	26.4	6.969	47.2	19855	7.050	3.532	177.01	24.62	179.07	89.71
	29.7	6.875	45.9	19854	6.900	3.532	174.63	23.94	175.26	89.71
	33.7	6.765	44.5	19854	6.900	3.532	171.83	23.21	175.26	89.71

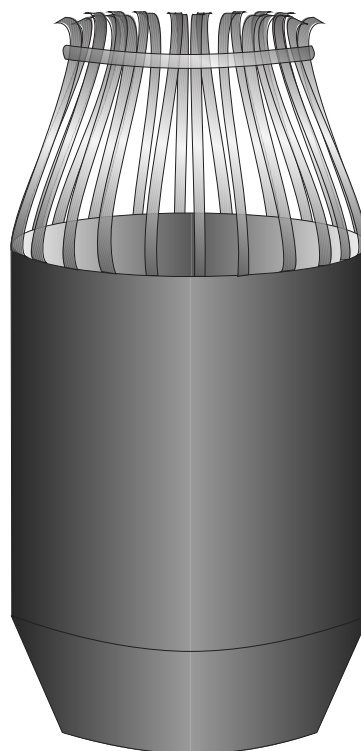
Casing Swab Cups

Type 'J' Casing Swab Cup

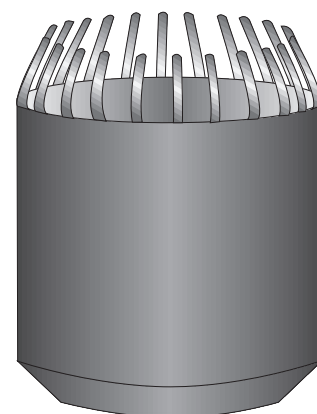
The 'J' Casing Swab Cup is a heavy-duty cup, designed for lifting maximum loads from any depth. Its flexible lip provides a perfect up-stroke seal and automatically compensates for wear. This is the most dependable and durable heavy-load cup available.

Type 'JS' Casing Swab Cup

The 'JS' is a heavy-duty cup similar to the Type 'J' cup but with added flexibility to provide a seal when lifting lighter loads.



Type 'J' Casing Swab Cup



Type 'JS' Casing Swab Cup

Table 17: TYPE 'J' AND 'JS' CASING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

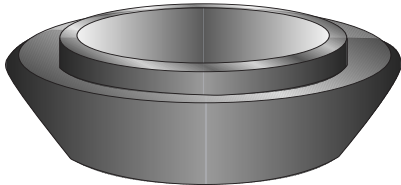
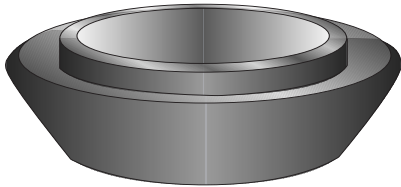
STANDARD										METRIC					
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'J'			TYPE 'JS'			I.D. (mm)	CAPACITY m3 PER 1000 m	TYPE 'J'		TYPE 'JS'	
				PART NO.	O.D. (in.)	I.D. (in.)	PART NO.	O.D. (in.)	I.D. (in.)			O.D. (mm)	I.D. (mm)	O.D. (mm)	I.D. (mm)
4-1/2	9.5	4.090	16.2	45597	4.060	2.435	61495	4.062	2.435	103.89	8.45	103.12	61.85	103.19	61.91
	11.6	4.000	15.5	45597	4.060	2.435	61495	4.062	2.435	101.60	8.08	103.12	61.85	103.19	61.91
	12.6	3.958	15.2	45597	4.060	2.435	61495	4.062	2.435	100.53	7.93	103.12	61.85	103.19	61.91
	13.5	3.920	14.9	-	-	-	-	-	-	99.57	7.77	-	-	-	-
4-3/4	16.0	4.082	16.2	45597	4.060	2.435	-	-	-	103.68	8.45	103.12	61.85	-	-
5-1/2	13.0	5.044	24.7	45829	5.010	2.435	61496	5.010	2.435	128.12	12.88	127.25	61.85	127.25	61.91
	14.0	5.012	24.4	45829	5.010	2.435	61496	5.010	2.435	127.30	12.73	127.25	61.85	127.25	61.91
	15.0	4.974	24.0	45829	5.010	2.435	61496	5.010	2.435	126.34	12.52	127.25	61.85	127.25	61.91
	15.5	4.950	23.8	45829	5.010	2.435	61496	5.010	2.435	125.73	12.41	127.25	61.85	127.25	61.91
	17.0	4.892	23.2	52384	4.838	2.435	-	-	-	124.26	12.10	122.89	61.85	-	-
	20.0	4.778	22.2	52384	4.838	2.435	-	-	-	121.36	11.58	122.89	61.85	-	-
5-3/4	22.5	4.990	24.2	45829	4.950	2.435	-	-	-	126.75	12.62	125.73	61.85	-	-
7	17.0	6.538	41.5	45831	6.520	2.435	-	-	-	166.07	21.65	165.61	61.85	-	-
	20.0	6.456	40.5	45831	6.520	2.435	-	-	-	163.98	21.12	165.61	61.85	-	-

* All sizes of 'J' and 'JS' cups may be run on 4-1/2 in. standard casing swab with adaptation. A sleeve, part number 45662 must be employed with 'J' or 'JS' cups on either Standard or Knuckle joint swabs.

Casing Swab Cups

Type 'V' Casing Swab Cup

The type 'V' was specially designed to lift fluid containing a high ratio of suspended sand. It is also suitable for lifting ordinary light loads with minimum suction across the sand face. The number of cups used may be varied by operator to fit conditions.



Type 'V' Casing Swab Cup

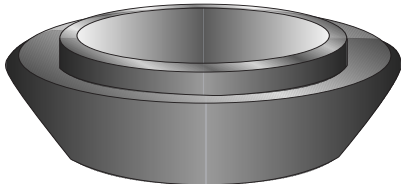


Table 18: TYPE 'V' CASING SWAB CUPS - ENGINEERING DATA AND PART NUMBERS

STANDARD							METRIC			
NORMAL CASING SIZE (in.)	WEIGHT (lb/ft)	I.D. (in.)	CAPACITY Bbl PER 1000 ft	TYPE 'V'			I.D. (mm)	CAPACITY m3 PER 1000 m	TYPE 'V'	
				PART NO.	O.D. (in.)	I.D. (in.)			O.D. (mm)	I.D. (mm)
4-1/2	9.5	4.090	16.2	57467 or *93480	4.062	2.420	103.89	8.45	103.17	61.47
	11.6	4.000	15.5		4.062	2.420	101.60	8.08	103.17	61.47
	12.6	3.958	15.2		4.062	2.420	100.53	7.93	103.17	61.47
	13.5	3.920	14.9		4.062	2.420	99.57	7.77	103.17	61.47
4-3/4	16.0	4.082	16.2	57467	4.062	2.420	103.68	8.45	103.17	61.47
5-1/2	13.0	5.044	24.7	57470	4.970	2.920	128.12	12.88	126.24	74.17
	14.0	5.012	24.4	57470	4.970	2.920	127.30	12.73	126.24	74.17
	15.0	4.974	24.0	57470	4.970	2.920	126.34	12.52	126.24	74.17
	15.5	4.950	23.8	57470	4.970	2.920	125.73	12.41	126.24	74.17
	17.0	4.892	23.2	57470	4.970	2.920	124.26	12.10	126.24	74.17
	20.0	4.778	22.2	57470	4.970	2.920	121.36	11.58	126.24	74.17
	-	-	-	**88884	-	**2.420	-	-	126.24	61.47
5-3/4	22.5	4.990	24.2	-	-	-	126.75	12.62	-	-
7	17.0	6.538	41.5	57471	6.475	3.545	166.07	21.65	164.47	90.09
	20.0	6.456	40.5	57471	6.475	3.545	163.98	21.12	164.47	90.04
	22.0	6.398	39.8	57471	6.475	3.545	162.51	20.76	164.47	90.04
	23.0	6.366	39.3	57471	6.475	3.545	161.70	20.50	164.47	90.04
	24.0	6.336	39.0	57471	6.475	3.545	160.93	20.34	164.47	90.04
	26.0	6.276	38.3	57471	6.475	3.545	159.41	19.98	164.47	90.04

*93480 is a heavy duty alternative to 57467
**88884 is 5-1/2" cup with 2.420" I.D. for running on 4-1/2" "KJ" swab

Casing Swab Mandrels

Knuckle Joint Casing Swab

The Guiberson Knuckle Joint casing swab is of basically the same design as the knuckle joint tubing swab and offers the same advantages of quick change and versatility. The swab is made of high-strength, heat-treated steel and is individually tested to withstand the heaviest swabbing loads. It is designed for use with Types 'J' and 'JS' cups or (10) Type 'V' cups and two mandrels. Cups may be changed in a matter of seconds, with no tools required.

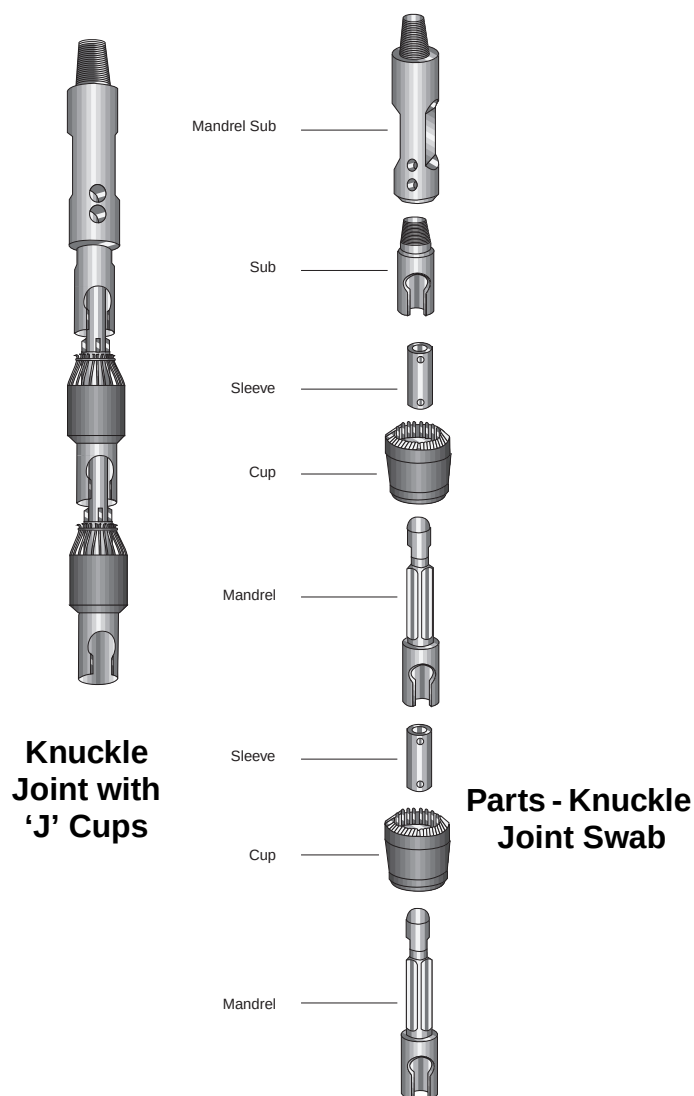


Table 19: KNUCKLE JOINT CASING SWAB MANDREL - ENGINEERING DATA AND PART NUMBERS

STANDARD									METRIC			
CASING O.D. (in.)	CASING I.D. (in.)	WEIGHT RANGE (lb/ft)	PART NUMBER		MAX. METAL O.D. (in.)	APPROXIMATE		FIELD THREAD SIZE (in.)	CASING I.D. (mm)	MAX. METAL O.D. (mm)	APPROXIMATE	
			SWAB ASSM'Y.	SLEEVE **		WT. (lb.)	LENGTH (in.)				WT. (kg)	LENGTH (mm)
4-1/2	4.090-3.920	9.5-13.5	61667	45662	3.500	80	50	1-5/8 X 2-5/8-7	13.89-99.57	88.90	36.29	1270.0
4-3/4	4.082	16.0							103.68			
5-1/2	5.044-4.778	13.0-20.0	61666		4.250	94	51	2 X 3-7	128.12-121.36	107.95	42.64	1295.4
7	6.538-6.276	17.0-26.0							166.07-159.41			

* For swab with 1-1/2 in. x 2-1/4 in.-8 Special Field Connection use part no. 80063.

** Use only with 'J' or 'JS' swab cups.

Table 20: KNUCKLE JOINT CASING SWAB MANDREL - PART LIST

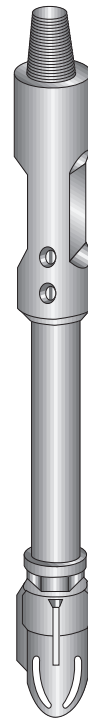
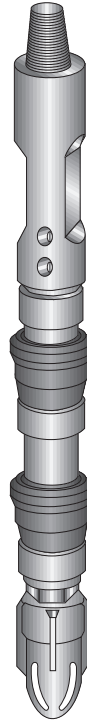
DESCRIPTION	QUANTITY REQUIRED	PART NUMBERS BY CASING SIZE AND WEIGHT (lb/ft)				
		4-1/2 in.	5-1/2 in.		7 in.	
		9.5-12.6	13-15.5	17-20	17-20	23-26
SWAB ASSEMBLY	1	61667	61666	61666	61666	61666
MANDREL	2*	36132	36132	36132	36132	36132
MANDREL SUB	1*	14236	14238	14238	14238	14238
SUB	1*	37516	38619	38619	38619	38619
SLEEVE ('J' & 'JS')	2	45662	45662	45662	45662	45662

* Parts of assembly listed above.

Casing Swab Mandrels

Standard Casing Swab Mandrel

The Guiberson standard casing swab has been field proven over decades of service. An internal bypass, two-cup swab, the standard will accommodate two Type 'J', 'JS', or 'GW' cups; one Type 'UF' cup; or (10) Type 'V' cups. Ample bypass through the valve and around the swab assures fast falling and reliable operation.



Standard Casing Swab

Table 21: STANDARD SWAB MANDRELS - ENGINEERING DATA AND PART NUMBERS

STANDARD													METRIC				
CASING O.D. (in.)	WT. RANGE (lb/ft)	CASING I.D. (in.)	THIMBLE O.D (in.)	PART NUMBERS						APPROXIMATE		MAX. METAL O.D. (in.)	FIELD THREAD SIZE (in.)	CASING I.D. (mm)	APPROXIMATE		MAX. METAL O.D. (mm)
				THIMBLE (C)	SLEEVE (G)	SWAB ASSM'Y. (H)	ADJ. RING. (D)	ADJ. SLEEVE (D)	THD. ADPT. (A)	WT. (lb)	LENGTH (in.)				WT. (kg)	LENGTH (mm)	
4-1/2*	9.5-13.5 15.3-18.1	4.090-3.920 3.826-3.754	3.687 3.500	6452 16297	1483 (B)	61668 (E)	15489	15488	-	60	41	2.375	1-5/8 X 2-5/8-7	103.89-99.57 97.18-95.35	27.22	1041.4	60.33
4-3/4*	16.0	4.082	3.500	6452	1485									114.15-111.96 108.61-105.51			
5*	13.0-15.0 18.0-21.0	4.494-4.408 4.276-4.154	4.125 4.000	6448 6754	1483												
5-1/2	13.0-20.0 23.0	5.044-4.778 4.670	4.625 4.500	10254 23230	1414 (B) 1414	61669	15716	15715	53698	73	49	2.875	2 X 3-7	128.12-121.36 118.62	33.11	1244.6	73.03
5-3/4	14.0-17.0	5.290-5.190	4.812	12497	1414					82				134.37-131.83	37.19		
6	14.0-18.0	5.552-5.424	5.125	8160	1414					88				141.02-137.77	39.92		
6-5/8	20.0-28.0	6.049-5.791	5.625	18322	1413	61670	15718	15717	-	150	53	3.500	2-3/4 X 3-3/4-7	153.64-147.09	68.04	1346.2	88.90
7	17.0-26.0 28.0-30.0	6.538-6.276 6.214-6.154	6.000 5.875	10258 10255	1413 (B)					125				166.07-159.41 157.84-156.31	56.70		
7-5/8	26.4-33.7	6.969-6.875	6.375	6366	1413					160				177.01-174.63	72.57		
8-5/8	28.0-49.0	8.017-7.511	7.375	10257	1413	61671	19749	19750	-	190	58	4.500		203.63-190.78	86.18	1473.2	114.30
9	40.0-45.0	8.150-8.032	7.375	10257	1448					190				207.01-204.01	86.18		
9-5/8	36.0-43.5	8.921-8.755	8.250	6039	1448					210				226.59-222.38	95.25		

(A) Use only with Type 'J' or 'JS' swab cups, (2 required)). (B) Use sleeve no. 45662 with Type 'J' or 'JS' swab cups, (2 required). (C) Use only with Type 'GW' swab cups (2 required). (D) Use only with type 'GW' swab cups (1 required). (E) Use only with Types 'GW', 'J' and 'JS' swab cups. (F) Use only with Types 'GW', 'J', 'JS', and 'UF' swab cups. (G) Use only with type 'GW' swab cups (1 required). (H) Less cups, sleeves, thimbles, rings and adapters. Sleeves, thimbles, rings and adapters should be ordered separately to permit using the desired swab cup.

* For swab with 1-1/2 in. x 2-1/4 in. 8 Special Field Connection use part no. 80113.

NOTE: To use 5-1/2 in. 'J' cup on P/N 61669 use P/N 6472 and (2) each 53698 - delete 6364.

NOTE: Also available

900103-3/4 in. sucker rod pin-up x 1-5/8 in. x 2-5/8 in. 7TPI box-down

900104-3/4 in. sucker rod pin-up x 2 in. x 3 in. 7TPI box-down

Casing Swab Mandrels

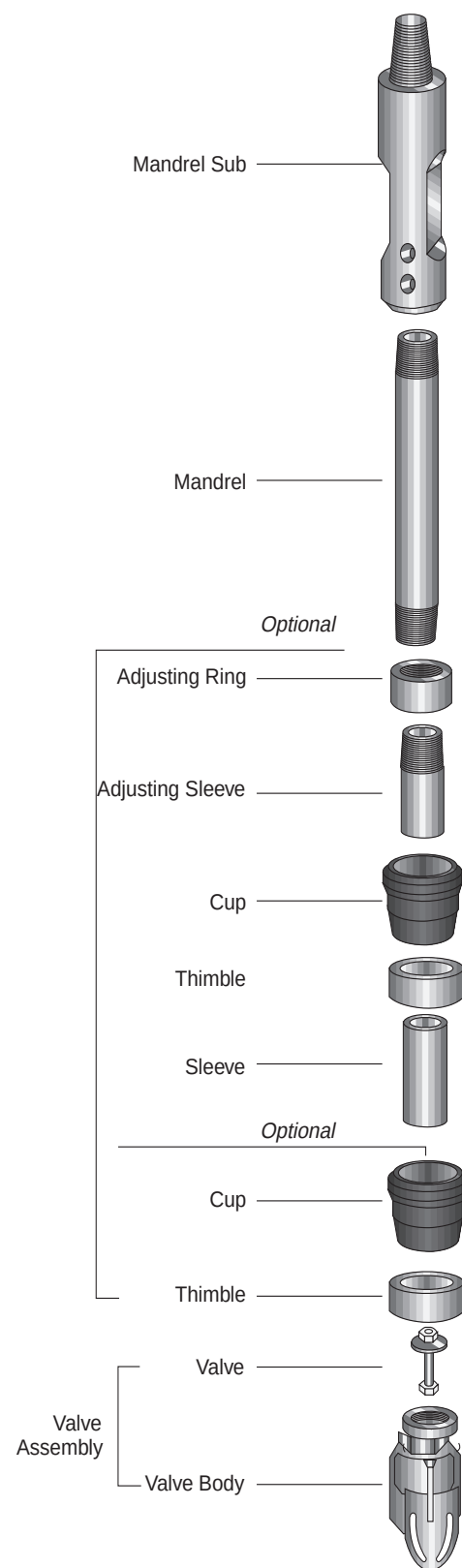
Table 22: STANDARD CASING SWAB PARTS LIST

DESCRIPTION	QTY. REQ'D	PART NUMBER BY CASING SIZE AND WEIGHT (LB/FT)							
		4-1/2 in.		5 in.		5-1/2 in.			
		9.5-12.6	15.3-18.1	13-15	18.21	13-15	15.5-17	17-20	23
SWAB ASSEMBLY MANDREL	1 1*	61668 6472	61668 6472	61668 6472	61668 6472	62669 6364	61669 6364	61669 6364	61669 6364
MANDREL SUB VALVE SUB ASSEMBLY	1* 1*	14236 14807	14236 14807	14236 14807	14236 14807	14238 14844	14238 14844	14238 14844	14238 14844
VALVE BODY VALVE	1** 1**	6553 6539	6553 6539	6553 6539	6553 6539	6584 6587	6584 6587	6584 6587	6584 6587
SLEEVE THIMBLE	1 2	1483 6452	1483 16297	1483 6448	1483 6754	1414 10254	1414 10254	1414 10254	1414 23230
ADJUSTING RING ADJUSTING SLEEVE	1 1	15489 15488	15489 15488	15489 15488	15489 15488	15716 15715	15716 15715	15716 15715	15716 15715
		5-3/4 in.	6 in.	6-5/8 in.		7 in.			
		14-17	14-18	20-22	24-28	17-20	22-24	26-30	
SWAB ASSEMBLY MANDREL	1 1*	61669 6364	61669 6364	61670 6469	61670 6469	61670 6469	61670 6469	61670 6469	
MANDREL SUB VALVE SUB ASSEMBLY	1* 1*	14238 14844	14238 14844	14243 14844	14243 14844	14243 14844	14243 14844	14243 14844	
VALVE BODY VALVE	1** 1**	6584 6587	6584 6587	6584 6587	6584 6587	6584 6587	6584 6587	6584 6587	
SLEEVE THIMBLE	1 1	1414 12497	1414 8160	1413 18322	1413 18322	1413 10258	1413 10258	1413 10255	
ADJUSTING RING ADJUSTING SLEEVE	1 1	15716 15715	15716 15715	15718 15717	15718 15717	15718 15717	15718 15717	15718 15717	
		7-5/8 in.		8-5/8 in.			9 in.	9-5/8 in.	
		26.4-29.7	29.7-33.7	28-36	36-40	40-49	40-45	36-43.5	
SWAB ASSEMBLY MANDREL	1 1*	61670 6469	61670 6469	61671 6361	61671 6161	61671 6361	61671 6361	61671 6361	
MANDREL SUB VALVE SUB ASSEMBLY	1* 1*	14243 14844	14243 14844	14244 14846	14244 14846	14244 14846	14244 14846	14244 14846	
VALVE BODY VALVE	1** 1**	6584 6587	6584 6587	15196 6720	15196 6720	15196 6720	15196 6720	15196 6720	
SLEEVE THIMBLE	1 1	1413 6366	1413 6366	1448 10257	1448 10257	1448 10257	1448 10257	1448 6039	
ADJUSTING RING ADJUSTING SLEEVE	1 1	15718 15717	15718 15717	19749 19750	19749 19750	19749 19750	19749 19750	19749 19750	

* Parts of assembly listed above

** Parts of subassembly listed above

Special Sub Adapter P/N 95938, 3-1/2 in. x 2-7/8 in. API SHARP 11-1/2, 6-5/8 in.--7-5/8 in. standard swzb.



Standard Casing Swab

Rope Sockets

Rope Sockets

Guiberson steel rope sockets provide a strong, simple connection between the end of the wireline and the sinker bar. Available in plain or swivel types, the top half of the socket has fish neck grooves. Top halves of plain and swivel sockets are interchangeable. Rope sockets for line sizes other than those listed are available on special order.

OTHER PRODUCTS	Wireline Flags (Package of 12 bundles)	Part no. 85617
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Rope Socket Assembly



Swivel Rope Socket Assembly

Table 23: ROPE SOCKETS - ENGINEERING DATA AND PART NUMBERS

STANDARD												METRIC			
PART NAME	TUBING SIZE (in.)	MAXIMUM O.D. (in.)	APPROXIMATE		PART NUMER BY LINE SIZE								MAXIMUM O.D (mm)	APPROXIMATE	
			WEIGHT (lb)	LENGTH (in.)	1/8 in.	1/4 in.	3/8 in.	7/16 in.	1/2 in.	9/16 in.	5/8 in.	3/4 in.		WEIGHT (kg)	LENGTH (mm)
ROPE SOCKET ASSEMBLY: 3/8" NPT BOX* 5/8" S.R. BOX* 3/4" S.R. BOX* 3/4" S.R. BOX ROPE SOCKET BODY SUB-3/4" S.R. BOX	1.315	7/8	1.00	7.00	-	-	-	-	-	24362	-	-	22.23	.23	177.80
	1.660-2.063	1-1/8	2.00	11.25	42660	-	-	42663	42664	42665	-	-	28.58	.79	285.75
	1.900-3-1/2	1-3/8	3.00	9.25	-	-	41867	41868	41869	41870	41871	-	34.93	1.25	234.95
	2-3/8-3-1/2	1-3/4	5.00	11.25	-	-	-	-	-	20490	20491	-	44.45	2.04	285.75
	2-3/8-3-1/2		3.00	9.00	-	-	13725	-	13727	13728	13729	13730	44.45	1.36	228.60
	2-3/8-3-1/2		2.00	4.00	-	-	11254	11254	11254	11254	11254	11254	44.45	.68	98.43
SWIVEL ROPE SOCKET ASSY: 3/8" NPT BOX 5/8" S.R. BOX 5/8" S.R. BOX 3/4" S.R. BOX 5/8" S.R. BOX 3/4" S.R. BOX 7/8" S.R. BOX	1.315		7/8	2.00	13.00	-	-	-	-	43724	43725	-	-	22.23	.91
	1.660-2.063	1-1/8	3.00	16.00	-	-	-	-	42659	42600	-	-	28.58	1.36	403.23
	1.900-3-1/2	1-3/8	6.00	14.38	-	-	-	-	41875	41876	41877	-	34.93	2.49	365.13
	1.900-3-1/2		6.00	14.38	-	-	-	41880	41881	41882	41883	-	34.93	2.49	365.13
	23/8-3-1/2		7.00	14.00	-	-	-	-	20504	20505	20506	44.45	2.95	355.60	
	2-3/8-3-1/2	1-3/4	7.00	14.00	-	-	20508	-	20510	20511	20512	20513	44.45	2.95	355.60
	2-3/8-3-1/2		7.00	14.00	-	-	-	-	20518	20519	20520	44.45	2.95	355.60	
	2-3/8-3-1/2		7.00	14.00	-	-	-	-	-	-	-	-	-	-	-
ROPE SOCKET BODY:	1.315	7/8	1.25	9.00	-	-	-	43711	43710	43708	-	-	22.23	.57	228.60
	1.660-2.063	1-1/8	2.00	11.25	42660	-	-	42663	42664	42665	-	-	28.58	.79	285.75
	1.900-3-1/2	1-3/8	3.00	9.25	-	-	41867	41868	41869	41870	41871	-	34.93	1.25	234.95
	2-3/8-3-1/2	1-3/4	3.00	9.00	-	-	13725	-	13727	13728	13729	13730	44.45	1.36	228.60
SWIVEL SUB: 3/8" NPT BOX 5/8" S.R. BOX 5/8" S.R. BOX 3/4" S.R. BOX 5/8" S.R. BOX 3/4" S.R. BOX 7/8" S.R. BOX	1.315	7/8	1.00	5.38	43719	-	43719	43719	43719	43719	-	-	22.23	.34	130.18
	1.660-2.063	1-1/8	1.25	6.00	42666	-	42666	42666	42666	42666	-	-	28.58	.57	142.88
	1.900 - 3-1/2	1-3/8	3.00	7.00	-	-	41893	41893	41893	41893	41893	-	34.93	1.25	177.80
	1.900 - 3-1/2		3.00	7.00	-	-	41894	41894	41894	41894	41894	-	34.93	1.25	177.80
	2-3/8 - 3-1/2		4.00	7.00	-	-	20598	20598	20598	20598	20598	20598	44.45	1.59	177.80
	2-3/8 - 3-1/2	1-3/4	4.00	7.00	-	-	20599	20599	20599	20599	20599	20599	44.45	1.59	177.80
	2-3/8 - 3-1/2		4.00	7.00	-	-	20600	20600	20600	20600	20600	20600	44.45	1.59	177.80
	2-3/8 - 3-1/2		4.00	7.00	-	-	20600	20600	20600	20600	20600	20600	44.45	1.59	177.80

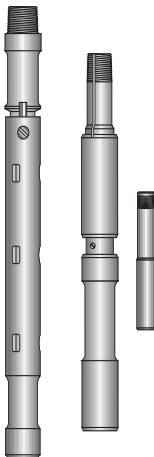
* Unitized construction

Table 24: ROPE SOCKET ASSEMBLY

PART NAME	PART NUMBER	TUBING SIZE (in.)	MAXIMUM O.D. (in.)	APPROXIMATE LENGTH (in.)
ROPE SOCKET ASSEMBLY	84434	4-1/2	3-11/16	25-3/4
TOP SUB	83954	-	-	-
BOTTOM SUB	83953	-	-	-
COUPLING	34310	-	-	-
9/16" ROPE SOCKET BODY	13728	-	-	-

Table 25: TUBULAR JAR ASSEMBLY

DESCRIPTION	PART NUMBER	SWAB SIZE	MAXIMUM O.D. (in.)	APPROXIMATE LENGTH (in.)	STROKE (in.)
4-1/2" TUBULAR JAR ASSEMBLY	84435	4-1/2	3-5/8	51-5/8	18



4-1/2 in. Rope Socket Assembly

Sinker Bars

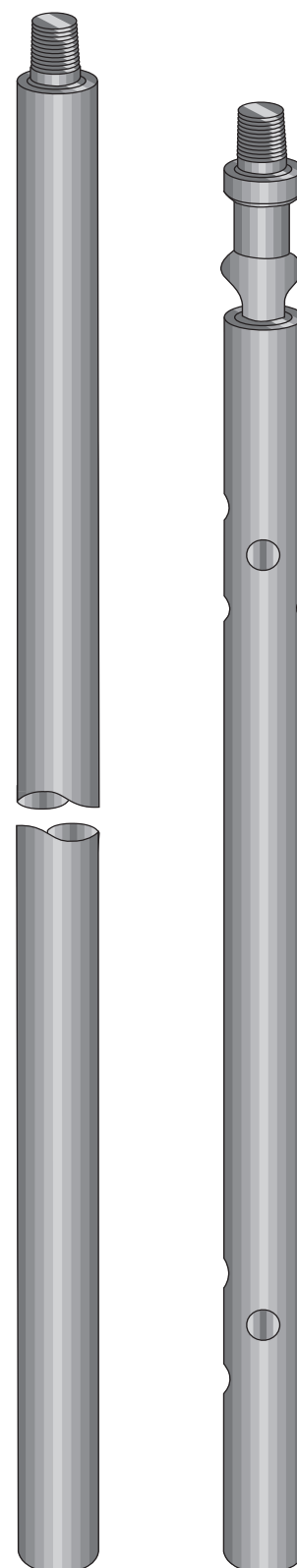
Guiberson steel sinker bars are available in 7/8 in., 1-1/8 in., 1-1/2 in., and 1-3/4 in. diameters and are stocked in lengths of five, ten and twenty feet. Other lengths are available on special order. High strength, heat-treated sinker bars of cold finished alloy steel are also available in 1-1/8 in. and 1-1/2 in. diameters on special order. Heat-treated sinker bars are stenciled with the letter 'H' for identification.

Tubular Jars

Guiberson tubular jars make swabbing safer by allowing a full 20 in. or 30 in. stroke to jar loose accidentally stuck swabs. These steel jars provide heavy hammer surface that will not kink or lock up due to twist. Their piston construction allows both swivel and knuckle action, ensuring trouble free operation and longer swab cup life. Large ports allow free circulation and eliminate sanding up.

Table 26: SINKER BARS AND TUBULAR JARS - ENGINEERING DATA AND PART NUMBERS

STANDARD									METRIC		
DESCRIPTION	SWAB SIZE (in.)	MAX O.D. (in.)	APPROXIMATE		PART NO. BY CONNECTION				MAX. O.D. (mm).	APPROXIMATE	
			WEIGHT (lb)	LENGTH (in.)	PIPE THREAD	SUCKER ROD THREAD				WEIGHT (kg)	LENGTH (mm)
					3/8-18 in.	5/8 in.	3/4 in.	7/8 in.			
SINKER BAR: 7/8" in. O.D. X 5 ft	1.315	7/8	10	60	17739	-	-	-	22.23	4.54	1524.00
1-1/8 in. O.D. X 5 ft	1.660-2-1/16	1-1/8	16-1/2	60	-	43537	-	-	28.58	7.48	1524.00
1-1/8 in. O.D. X 10 ft	1.660-2-1/16	1-1/8	33	120	-	42631	-	-	28.58	14.97	3048.00
1-1/2 in. O.D. X 5 ft	1.900-3-1/2	1-1/2	30	60	-	11747	11714	11751	38.10	13.61	1524.00
1-1/2 in. O.D. X 10 ft	1.900-3-1/2	1-1/2	60	120	-	20542	20543	20544	38.10	27.22	3048.00
1-1/2 in. O.D. X 20 ft	1.900-3-1/2	1-1/2	120	240	-	-	20546	20547	38.10	54.43	6096.00
1-3/4 in. O.D. X 5 ft	2-3/8-3-1/2	1-3/4	41-1/4	60	-	-	11898	11746	44.45	18.71	1524.00
1-3/4 in. O.D. X 10 ft	2-3/8-3-1/2	1-3/4	82-1/2	120	-	20548	20549	20550	44.45	37.42	2048.00
1-3/4 in. O.D. X 20 ft	2-3/8-3-1/2	1-3/4	165	240	-	20551	20552	20553	44.45	74.84	6096.00
SINKER BAR, HEAT TREATED: 1-1/8 in. O.D. X 5 ft	1.660-2-1/16	1-1/8	16-1/2	60	-	57703	-	-	28.58	7.48	1524.00
1-1/8 in. O.D. X 10 ft	1.660-2-1/16	1-1/8	33	120	-	57707	-	-	28.58	14.97	3048.00
1-1/2 in. O.D. X 5 ft	1.900-3-1/2	1-1/2	30	60	-	-	57705	-	38.10	13.61	1524.00
1-1/2 in. O.D. X 10 ft	1.900-3-1/2	1-1/2	60	120	-	-	57704	-	38.10	27.22	3048.00
1-1/2 in. O.D. X 20 ft	1.900-3-1/2	1-1/2	120	240	-	-	57706	-	38.10	54.43	6096.00
TUBULAR JAR: 30 in. STROKE	1.660-2-1/16	1-1/8	8-1/4	(collapsed) 43	-	43240	-	-	28.58	3.74	1092.20
20 in. STROKE	2-3/8-3-1/2	1-3/4	16	34-5/8	-	-	21832	-	44.45	7.26	879.48
30 in. STROKE	2-3/8-3-1/2	1-3/4	21-1/2	44-5/8	-	-	21833	-	44.45	9.75	1133.48
SINKER BAR: 1-3/8 in. O.D. X 10 ft	1.900-3-1/2	1-3/8	47	120	-	91276	-	-	PART NO. 84435 (1-5/8 X 2-5/8 7 TPI THDS.)		
TUBULAR JAR: 30 in. STROKE	1.900-3-1/2	1-3/8	19	45	-	91277	-	-			
18 in. STROKE	4-1/2-7	3-5/8	107	51-5/8							



Sinker Bar

Tubular Jars

Safety Tools

Type ‘C’ Releasing Attachment

The Type ‘C’ releasing attachment provides a safe, simple automatic release for Guiberson Wireline Oil Savers. The Type ‘C’ locks the saver securely to the tubing, lubricator, or rotating circulation head while tools are in the hole and needs no adjustment in operation. It releases automatically when the rope socket contacts the locking dog.

The Type ‘C’ will not trip under pressure, nor will it leak while pulling swabs, core barrels, or surveying instruments

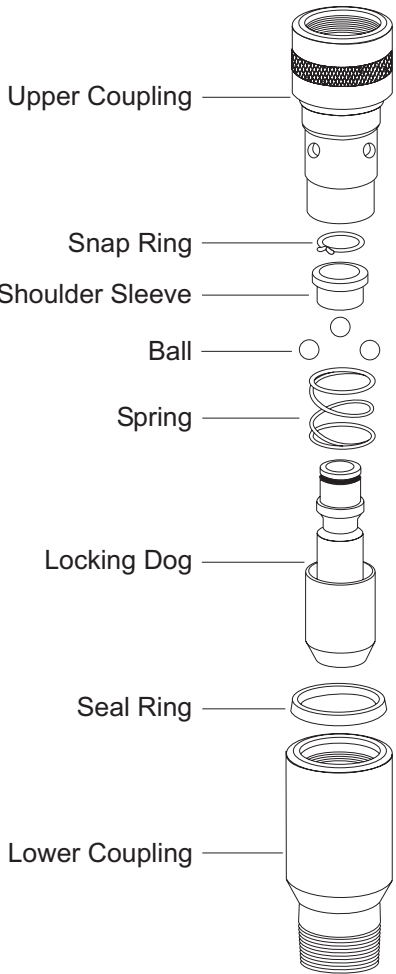
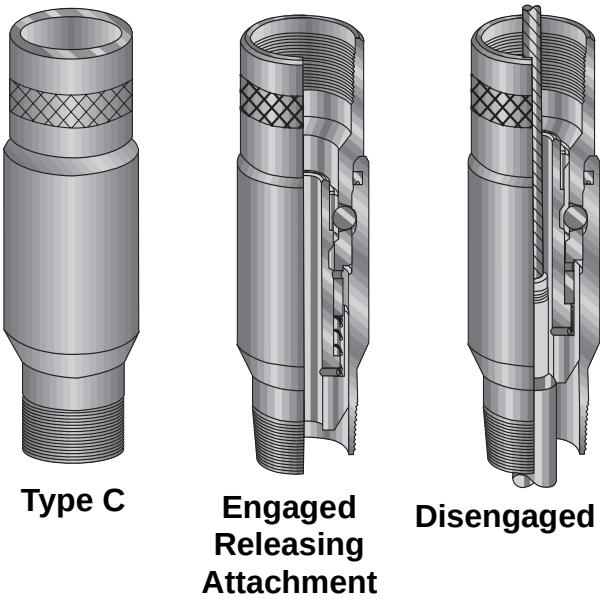
Table 27: TYPE ‘C’ RELEASING ATTACHMENT ENGINEERING DATA

PART NUMBERS	55834	59218	33276	45272
TUBING TOP CONNECTION - BOX THREAD TOP CONNECTION	2-3/8 in. O.D. 8RD EUE	2-7/8 in. O.D. 8RD EUE	2-7/8 in. O.D. 8RD EUE	3-1/2 in. O.D. 8V
BOTTOM CONNECTION - PIN THREAD BOTTOM CONNECTION LINE SIZE	2-3/8 in. O.D. 8RD EUE 1/4 in. - 1 in.	4-1/2 in. O.D. 8V 1/4 in. - 1 in.	3-1/2 in. O.D. 8V 1/4 in. - in.	3-1/2 in. O.D. 8V 1/4 in. - 1 in.

Table 28: TYPE ‘C’ RELEASING ATTACHMENTS

Field Connection	Top	2-3/8 in. EUE 8 Rd.	2-7/8 in. EUE 8 Rd.	2-7/8 in. EUE 8 Rd.	3-1/2 in. 8V
	Bottom	2-3/8 in. EUE 8 Rd.	4-1/2 in. 8V	3-1/2 in. 8V	3-1/2 in. 8V
Part Name	Qty. Req.	Part No.	Part No.	Part No.	Part No.
Assembly Complete	1	55834	59218	33276	45272
Ball	(6)		14800		
*Ball	(3)	14800		14800	14800
Locking Dog	(1)	62409	62410	62409	62409
Lower Coupling	(1)	57828	59222	33282	33282
*Seal Ring	(1)	33284	59223	33284	33284
Shoulder Sleeve	(1)	33280	59224	33280	33280
*Snap Ring	(1)	33283	33283	33283	33283
*Spring	(1)	49650	49650	49650	49650
Upper Coupling	()	62401	62405	62402	62400
Top Adapter	(1)		59226		
Repair Kit		54687	54687	54687	54687

*Repair Kit No. 54687 contains: 3 Balls, 1 each of the other expendable parts indicated.

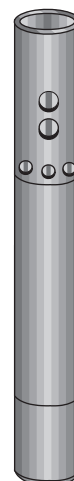


Casing and Tubing Overload Relief Valves (For Use On Standard Swabs Only)

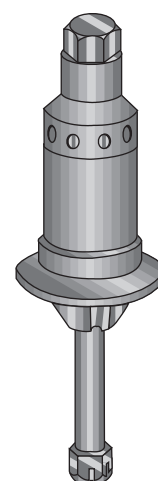
For use in heavy-load swabbing, these valves act as bypass valves for maximum efficiency going in the hole. They also release excess fluid head, preventing overloading of swabs and cups when lifting heavy loads. Excess fluid relief takes place through an internal, spring-loaded, shim adjusted relief valve.

Settings may be adjusted by use of shims beneath the valve spring (see tables). These valves resist corrosion and abrasion to assure long, trouble-free valve service.

The relief valve should be set to support a slightly greater fluid column than is normally pulled. The valve then serves as a regular bypass system and the relief feature is not used. Should the fluid column exceed the valve setting, the relief valve opens as the swab starts out of the hole, relieving the excess load. When desired fluid head has been attained, the relief valve closes and swabbing proceeds. The valve responds only to fluid pressure, not to line load. To keep line loads the same, relief valves on larger swabs must be adjusted to support a shorter fluid column than those on smaller swabs.



Type 'SR'



Type 'CR'

Table 29: CASING SWAB OVERLOAD RELIEF VALVE TYPE 'CR' AND 'CR'
LARGE VOLUME - PART NUMBERS

CASING, O.D. (in.)	4-1/2 - 5 *	5-1/2 - 6	6-5/8 - 7-5/8
VALVE COMPLETE	61738	22529-001	24323
ADJUSTING SHIM, 1/32 in. (.76 mm)	61772	22532	22532
ADJUSTING SHIM, 1/16 in. (1.52 mm)	28757	22531	22531

* Only available in Type CR Large Volume

Table 30: VOLUME CHANGE PER SHIM ADDED

STANDARD					METRIC		
CASING O.D. (in.)	VALVE	STANDARD SETTING	CHANGE BY 1/32 in. SHIM	CHANGE BY 1/16 in. SHIM	STANDARD SETTING	CHANGE BY .76 mm	CHANGE BY 1.52 mm
4-1/2	61738	10 bbl	0.5 bbl	1.0 bbl	1.59 m³	.08 m³	.16 m³
6-5/8	24323	10.5 bbl	1.5 bbl	3.0 bbl	1.67 m³	.24 m³	.48 m³
7		12 bbl	1.7 bbl	3.4 bbl	1.91 m³	.27 m³	.54 m³
7-5/8		14 bbl	2.0 bbl	4.0 bbl	2.23 m³	.32 m³	.64 m³

Repair Kit 54687 except 4-1/2 in. use 59218

NOTE: Values shown above are for salt water at 400 PPB. More oil than salt water, for example, will be delivered with the same valve setting; however, the line load will remain the same for any fluid with a given setting. Relief valve should be set to support a column of fluid a little greater than the operator normally pulls. The valve serves only as a regular swab bypass and inner valve remains seated throughout operations.

Table 31: TUBING SWAB OVERLOAD RELIEF VALVE
HEAVY-DUTY TYPE 'SR' AND 'SR' VALVE - PART NUMBERS

TUBING O.D. (in.)	2-3/8	2-7/8	3-1/2
VALVE COMPLETE	21709	21710	22367
ADAPTER			
ADJUSTING SHIM, 1/32 in. (.76 mm)	21384	21385	21385
ADJUSTING SHIM, 1/16 in. (1.52 mm)	21106	21106	21106
	21105	21105	21105

Table 32: TUBING SWAB OVERLOAD RELIEF VALVE
HEAVY-DUTY TYPE 'SR' AND 'SR' VALVE - PART NUMBERS

TUBING O.D. (in.)	2-3/8	2-7/8	3-1/2
VALVE COMPLETE	21709	21710	22367
ADAPTER			
ADJUSTING SHIM, 1/32 in. (.76 mm)	21384	21385	21385
ADJUSTING SHIM, 1/16 in. (1.52 mm)	21106	21106	21106
	21105	21105	21105

Safety Tools

Table 33: TYPE 'SR' TUBING SWAB OVERLOAD RELIEF VALVES - PART NUMBERS

DESCRIPTION	QUANTITY REQUIRED	PARTS BY SIZE AND NUMBER		
		2-3/8 in.	2-7/8 in.	3-1/2 in.
VALVE COMPLETE ADAPTER	- 1	21709 21384	21710 21385	22367 21385
ADJUSTING SHIM, 1/16 in. ADJUSTING SHIM, 1/16 in.	3 4	- -	- 21105	21105 -
ADJUSTING SHIM, 1/16 in. ADJUSTING SHIM 1/32 in.	6 1	21105 21106	- 21106	- 21106
BALL INNER VALVE	1 1	21101 21706	21101 21706	21101 21706
LOWER HOUSING SPRING	1 1	21382 21102	21382 21102	21382 21102
UPPER HOUSING	1	21707	21707	21707

Type 'SR'

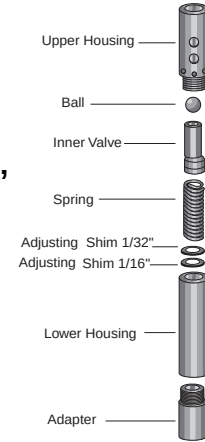


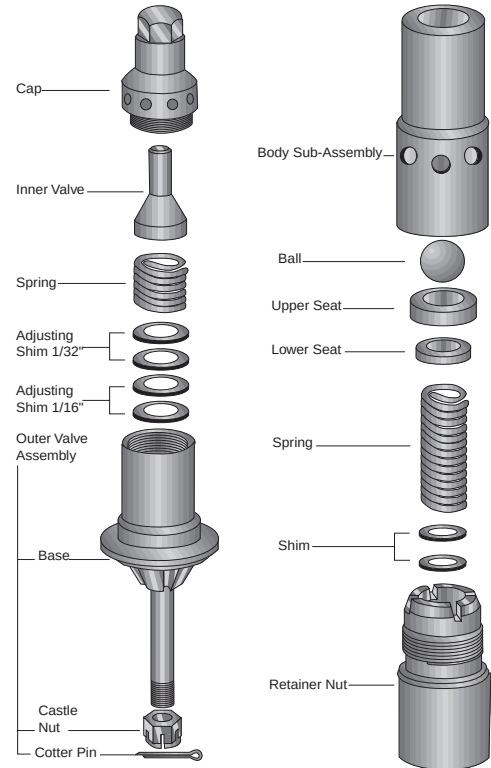
Table 34: TYPE 'CR' CASING SWAB OVERLOAD RELIEF VALVES PART NUMBERS

DESCRIPTION	QUANTITY REQUIRED	PARTS BY SIZE AND NUMBER
		6-5/8 in.- 7-5/8 in.
VALVE COMPLETE ADJUSTING SHIM, 1/16 in.	- 2	24323 22531
ADJUSTING SHIM, 1/32 in. CAP	2 1	22532 22343
INNER VALVE OUTER VALVE ASSEMBLY	1 1	22342 28927
BASE COTTER PIN	1* 1*	28928 13576
NUT BOLT	1* 1*	28930 28929
SPRING	1	16246

* Part of Assembly Above

Table 35: TYPE 'CR' LARGE VOLUME CASING SWAB OVERLOAD RELIEF VALVES - PART NUMBERS

DESCRIPTION	QUANTITY REQUIRED	PARTS BY SIZE AND NUMBER
		4-1/2 in. - 5 in.
VALVE COMPLETE BODY	- 1	61738 28752
RETAINING NUT UPPER SEAT	1 1	28759 61770
LOWER SEAT BALL	1 1	61771 28753
SPRING SHIM 1/16"	1 4	28756 28757
SHIM 1/32 in.	1	61772



Type 'CR'

Type 'CR' Large Volume

Hydraulic Wireline Oil Savers

Guiberson hydraulic oil savers strip fluids from the wireline, cut costs by saving valuable oil, and promote safety by minimizing danger of explosion or fire at the well site. Hydraulic Oil Savers are available in several types to meet every stripping requirement. Guiberson hydraulic oil savers use a special oil, gas, and abrasion resistant, one piece rubber for efficient, low-cost oil removal.

Series 'H' savers are operated by the field-proven piston principle; there are no troublesome bladders or complicated mechanisms. All savers have an extra-large rubber and generous bushings for smooth, constant seal and maximum utilization of each rubber.

Series 'H' savers offer a 2-1/2 in. ram stroke with spring actuated return. All provide non-sparking alloy bushings, which are interchangeable between top and bottom assemblies and spring clipped together for easy installation and removal. Rubbers in Guiberson hydraulic savers can be changed quickly, with no lost motion. A simple yoke allows access to the rubber through the top of the housing. There are no threaded connections. A full fifty foot extension hose, provided with each unit (twenty-five foot hose available on special order), makes true remote control of Guiberson hydraulic savers possible. Remote operation keeps personnel away from the line, lowering the risk of a dangerous accident.

Series 'H' savers are available with 2-3/8 in. EUE, 2-7/8 in. EUE, or 3-1/2 in. O.D. LP 8V field connections, and all savers may be adapted from one connection to another simply by changing the base. Each complete saver includes a hydraulic-fluid-filled hose with quick change connections and a check valve at each end. A large capacity pump is also included. The accurate pressure gauge of this pump is carefully calibrated. The pump is also filled with fluid at the factory, making the entire oil saver assembly ready to operate as soon as it is installed.

Type 'H' Oil Saver

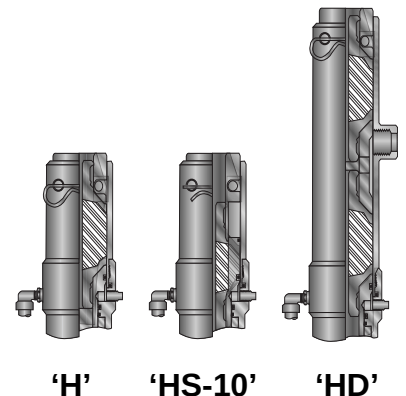
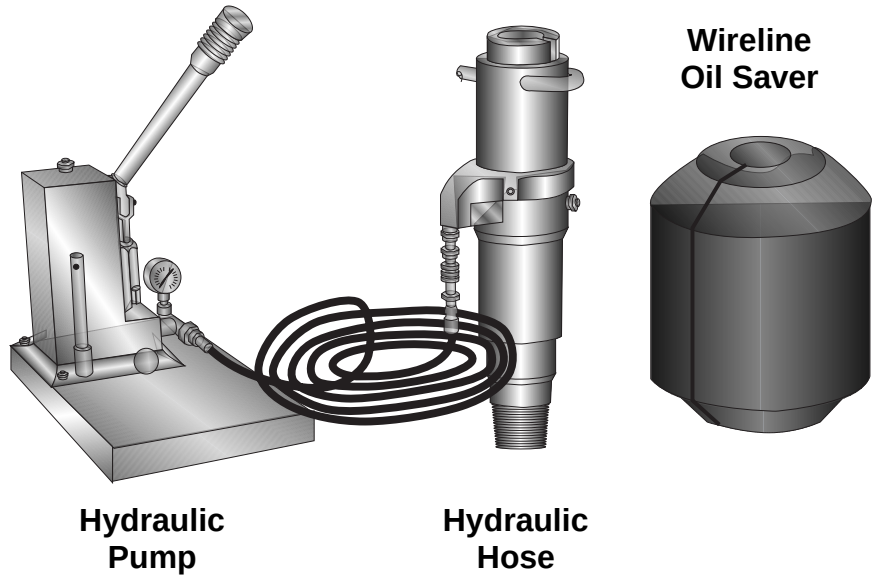
The Type 'H' is a 1,500 psi working version of Guiberson's single stripper hydraulic oil saver and has proven reliable in thousands of installations throughout the well servicing industry. Fabricated of machined steel components, with anti-spark bushings, the Type 'H' saver combines all the important advantages listed above. The Type 'H' saver is available for 2-3/8 in. and 2-7/8 in. O.D. tubing and 3-1/2 in. O.D. line pipe. An optional guard, to protect the hydraulic fitting on the saver, is available. The Type 'H' oil saver rubber is specially compounded of oil-resistant rubber and is designed to give a positive seal with long-wearing qualities.

Type 'HS5' and 'HS10' Oil Savers

These hydraulic oil savers are designed for the higher pressures now commonly found in wireline operations. The Type 'HS5' is rated at 2,500 psi working pressure, and the Type 'HS10' at 5,000 psi. With constructions similar to the Type 'H' saver, both units are fabricated of high-strength components to meet the added demands of these higher pressures. Both combine all the advantages of other Guiberson hydraulic savers.

Type 'HD' Oil Saver

The Type 'HD' saver offers the added safety and convenience of double line stripping. Similar in design to the Type 'H', the longer body of the Type 'HD' accommodates two complete sets of stripper rubbers and bushings and provides a 1 in. NPT drain connection between the rubbers. Rated at 1,500 psi working pressure, the 'HD' combines its outstanding double stripping action with all the other important advantages of Guiberson hydraulic savers.



Hydraulic Wireline Oil Savers

Table 36: HYDRAULIC WIRELINE OIL SAVERS - ENGINEERING DATA

STANDARD					METRIC			
DESCRIPTION	TYPE AND SIZE				TYPE AND SIZE			
	'H'	'HD'	'HS5'	'HS10'	'H'	'HD'	'HS5'	'HS10'
	20 in.	29 in.	20 in.	20 in.	508 mm	736.6 mm	508 mm	508 mm
APPROXIMATE WEIGHT:								
SAVER COMPLETE	92 LB	117 LB	92 LB	96 LB	41.73 kg	53.07 kg	41.73 kg	43.54 kg
SAVER ONLY	48 LB	73 LB	48 LB	52 LB	21.77 kg	33.11 kg	21.77 kg	23.59 kg
PUMP AND HOSE	44 LB	44 LB	44 LB	44 LB	19.96 kg	19.96 kg	19.66 kg	19.96 kg
I.D. LESS RUBBER AND BUSHINGS								
FLUID CAPACITY	1-3/16 in. 6 PINTS	1-13/16 in. 6 PINTS	1-13/16 in. 6 PINTS	1-7/16 in. 6 PINTS	46.04 mm 2.84 L	46.04 mm 2.84 L	46.04 mm 2.84 L	36.51 mm 2.84L
RUBBER CROSS-SECTIONAL AREA:								
BLANK - 5/16 in. LINE SIZE	9.35 SQ. IN.	9.35 SQ. IN.	9.35 SQ. IN.	2.98 SQ. IN.	6032.3 mm ²	6032.3 mm ²	6032.3 mm ²	1922.6 mm ²
3/8 in.-5/8 in. LINE SIZE	-	-	-	2.90 SQ. IN.	-	-	-	-
3/4 in.- 1 in. LINE SIZE	9.14 SQ. IN.	9.14 SQ. IN.	9.14 SQ. IN.	-	5896.8 mm ²	5896.8 mm ²	5896.8 mm ²	1871.0 mm ²
	8.63 SQ. IN.	8.63 SQ. IN.	8.63 SQ. IN.	-	5567.7 mm ²	5567.7 mm ²	5567.7 mm ²	-
PIN THREAD CONNECTION:								
2-3/8 in. O.D.	8RD EUE	8RD EUE	8RD EUE	8RD EUE	-	-	-	-
2-7/8 in. O.D.	8RD EUE	8RD EUE	8RD EUE	8RD EUE	-	-	-	-
3-1/2 in. O.D.	L.P. 8V	L.P. 8V	L.P. 8V	L.P. 8V	-	-	-	-
PUMP WORKING PRESSURE	1500 psi	1500 psi	1500 psi	1500 psi	10,350 kPa	10,350 kPa	10,350 kPa	10,350 kPa
HOSE LENGTH	50 ft	50 ft.	50 ft	50 ft	15.24 m	15.24 m	15.24 m	15.24 m
TEST PRESSURE	1500 psi	1500 psi	2500 psi	5000 psi	10,350 kPa	10,350 kPa	17,250 kPa	34,850 kPa

Table 37: HYDRAULIC WIRELINE OIL SAVERS - PART NUMBERS

DESCRIPTION	PARTS BY TYPE AND NUMBER			
	TYPE 'H'	TYPE 'HD'	'HS5'	'HS10'
OIL SAVER WITH PUMP AND 50 ft HOSE:				
2-3/8 in. O.D. EUE 8RD PIN, BLANK - 5/16 in. LINE	42887	54715	-	-
2-7/8 in. O.D. EUE 8RD PIN, BLANK - 5/16 in. LINE	42888	54718	44320	-
3-1/2 in. O.D. L.P. 8V PIN, BLANK - 5/16 in. LINE	42889	54720	44321	**
2-3/8 in. EUE 8RD PIN, 3/8 in. - 7/16 in. LINE	-	-	-	44633
2-7/8 in. EUE 8RD PIN, 3/8 in. - 7/16 in. LINE	-	-	-	44739
3-1/2 in. O.D. L.P. 8V PIN, 3/8 in. - 7/16 in. LINE	-	-	-	-
2-3/8 in. O.D. EUE 8RD PIN, 3/8 in. - 5/8 in. LINE	41427	54716	44623	-
2-7/8 in. O.D. EUE 8RD PIN, 3/8 in. - 5/8 in. LINE	41428	44371	44625	-
3-1/2 in. O.D. L.P. 8V PIN, 3/8 in. - 5/8 in. LINE	41429	54721	44626	-
2-3/8 in. O.D. EUE 8RD PIN, 3/4 in. LINE	41570	-	-	-
2-7/8 in. O.D. EUE 8RD PIN, 3/4 in. LINE	41569	-	44628	-
3-1/2 in. O.D. L.P. 8V PIN, 3/4 in. LINER	41568	-	44629	-
OIL SAVER ONLY:				
2-3/8 in. O.D. EUE 8RD PIN, BLANK - 5/16 in. LINE	42884	-	-	-
2-7/8 in. O.D. EUE 8RD PIN, BLANK - 5/16 in. LINE	42885	54726	44320	44310
3-1/2 in. O.D. L.P. 8V PIN, BLANK - 5/16 in. LINE	42886	54728	44251	**
2-3/8 in. EUE 8RD PIN, 3/8 in. - 7/16 in. LINE	-	-	-	-
2-7/8 in. EUE 8RD PIN, 3/8 in. - 7/16 in. LINE	-	-	-	44736
3-1/2 in. O.D. L.P. 8V PIN, 3/8 in. - 7/16 in. LINE	-	-	-	44737
2-3/8 in. O.D. EUE 8RD PIN, 3/8 in. - 5/8 in. LINE	40643	54724	44617	-
2-7/8 in. O.D. EUE 8RD PIN, 3/8 in. - 5/8 in. LINE	41064	44247	44618	-
3-1/2 in. O.D. L.P. 8V PIN, 3/8 in. - 5/8 in. LINE	41065	54729	44619	-
2-3/8 in. O.D. EUE 8RD PIN, 3/4 in. LINE	41067	54725	-	-
2-7/8 in. O.D. EUE 8RD PIN, 3/4 in. LINE	41566	54727	-	-
3-1/2 in. O.D. L.P. 8V PIN, 3/4 in. LINE	900436	-	-	-
PUMP ONLY (Star)	68883	68883	68883	68883**
PUMP REPAIR KIT, STAR	68829	68829	68829	68829
SAVER REPAIR KIT	53728	53728	53728	53728
RUBBER:				
BLANK - 5/16 in.	42883	42883	44272	44270
3/8 in. - 7/16 in.	-	-	-	44734
3/8 in. - 5/8 in.	39675	39675	44615	-
LIGHT DUTY: BLUE	89659	89659	89659	89659
3/4 in.	41572	41572	44616	-
ACCESSORIES, OPTIONAL				
1/2 in. - 5/8 in. RUBBER TYPE 'R'	16207	16207	16207	**
FITTING GUARD	43738	43738	43738	**
HOSE ASSEMBLY, 25 ft	43516	43516	43516	**
HOSE ASSEMBLY, 50 ft	40631	40631	40631	-
HOSE CAP, TWO REQUIRED*	45268	45268	45268	**
HOSE PLUG, TWO REQUIRED*	45269	45269	45269	**
BUSHING WITH CLIPS				
CLIP ONLY				
BLANK - 5/16 in.	44811	44811	44811	44811
3/8 in. - 5/8 in.	42878	42878	42878	44241
7/16 in.	46176	46176	39671	-
3/4 in. - 1 in.	-	-	-	44733
	41571	41571	41571	-

* Protect Disconnected Hose from Dust and Contamination
** Available on Request

Hydraulic Wireline Oil Savers

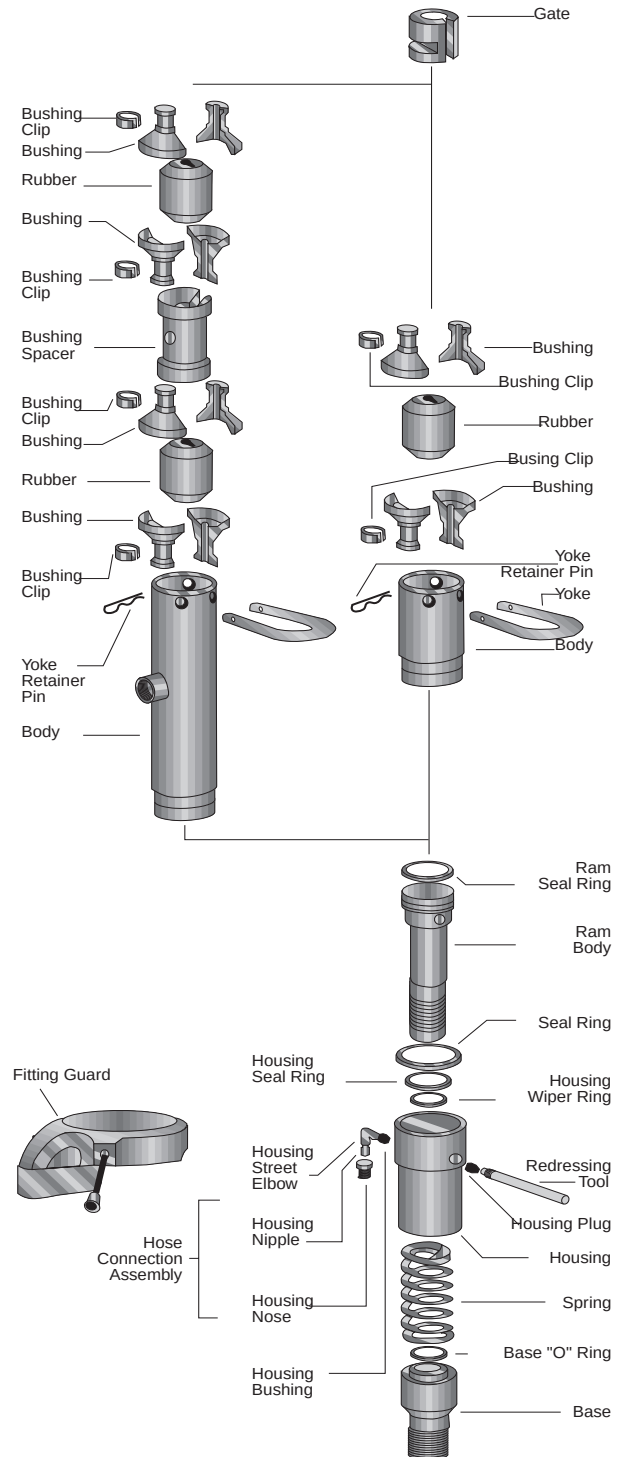
Table 38: TYPE 'H' AND 'HD' WIRELINE OIL SAVERS PART NUMBERS

DESCRIPTION	QUANTITY REQUIRED	PART BY TYPE AND NUMBER	
		'H'	'HD'
BASE	1	-	-
2-3/8 in. 8RD EUE PIN	-	40624	40624
2-7/8 in. 8RD EUE PIN	-	40623	40623
3" in.L.P. 8V PIN	-	40726	40726
BODY	1	39670	40274
*BUSHING WITH CLIPS	2 SETS	-	-
BLANK - 5/16 in.	-	42878	42878
3/8 in. - 5/8 in.	-	46176	46176
3/4" - 1"	-	41571	41571
GATE	1	39672	39672
BUSHING SPACER	1	...	40275
HOUSING	1	40617	40617
HOUSING BUSHING	1	31742	31742
HOUSING NIPPLE	1	59064	59064
HOUSING NOSE	1	40629	40629
HOUSING PLUG	1	13550	13550
HOUSING STREET ELBOW	1	40639	40639
RAM	1	40622	40622
REDRESSING TOOL	1	40642	40642
**RUBBER	1	-	-
BLANK - 5/16 in.	-	42883	42883
3/8 in. - 5/8 in.	-	39675	39675
3/4 in.	-	41572	41572
SPRING	1	39676	39676
YOKE	1	27484	27484
YOKE RETAINER PIN	1	54509	54509
HOSE ASSEMBLY - 50 ft MEA	1	40631	40631
COUPLER	(2)	40630	40630
REPAIR KIT - MEA	1	53728	53728
BASE O-RING	(1)	16589	16589
BODY O-RING	(1)	25790	25790
HOUSING O-RING	(1)	17468	17468
RAM O-RING	(1)	88614	88614
HOUSING WIPER RING	(1)	39679	39679
BRUNING COUPLING	(2)	40630	40630
50 FT. HOSE	(1)	61209	61209
TYPE 'R' OIL SAVER RUBBER	(1 SET/ 2 HALVES)	16207	16207
1/2 in. - 5/8 in. WIRELINE			

* (2 sets) for 'H' (4 sets) for 'HD'

** (1) for 'H' (2) for 'HD'

() Parenthesis on number required indicate parts of assembly listed above.

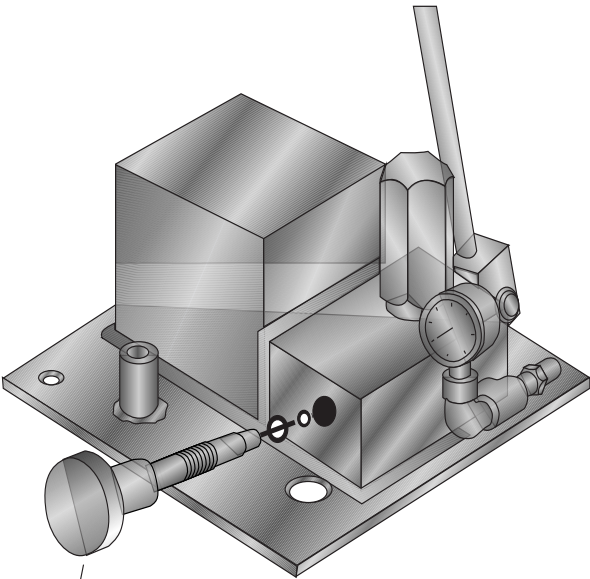


Hydraulic Wireline Oil Savers

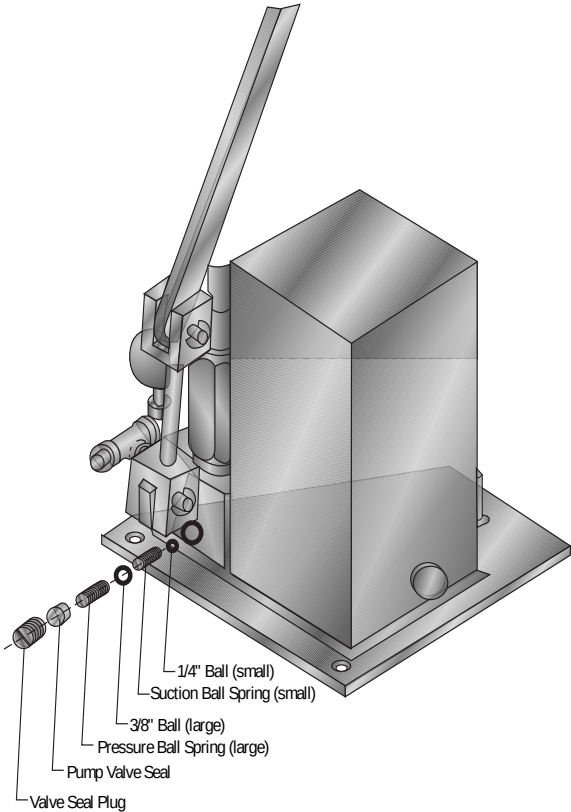
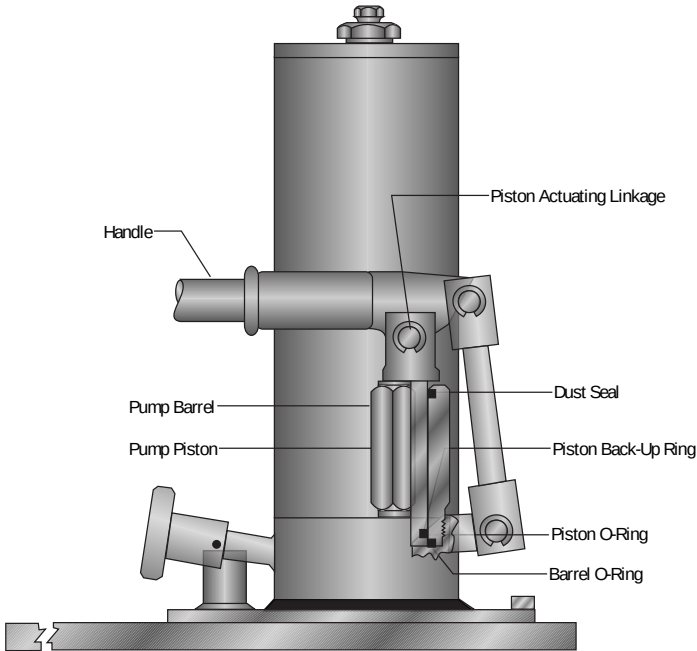
Table 39: STAR PUMP - PART NUMBERS

ITEM NUMBER	DESCRIPTION	QUANTITY REQUIRED	PART NUMBER
1	PUMP ASSEMBLY PLUG, FILL	1	68883
2*		1	68860
3*	FITTING, RELIEF SOCKET	1	68863
4*		1	68854
5*	HANDLE, LEVER PIN	1	68857
6*		3	68861
7*	LINK PISTON	1	68858
8*		1	68862
9*	BARREL RING RETAINER	1	68856
10*		6	68855
11*	PRESSURE RELIEF VALVE S/A PLUG, PIPE	1	82589
12*		1	68869
13*	FILTER ASSEMBLY TOOL	1	82588
14		1	40642
15	NUT BOLT	4	40655
16		4	40652
17	LOCK WASHER PUMP BASE	4	12758
18		1	40662
19	GAGE NOSE	1	40654
20		1	40629
21	SHORT NIPPLE LONG NIPPLE	1	59064
22		1	27863
23	TEE WASHER	1	40640
24		4	40653
25	ELBOW REPAIR KIT	1	40639
26		1	68829

* Quantity required indicate part of assembly listed above.



Pressure
Release Valve
Subassembly

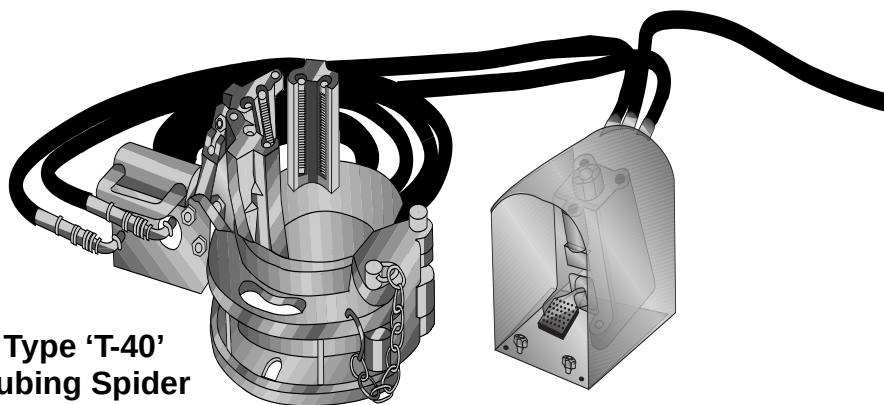


Tubing Spiders

Type 'T-40' (Formerly 'H-U')

- Rated at 40 tons
- Easily handles 17,000 feet of 2-3/8" O.D. tubing
- Fast, safe, dependable one-man operation
- Converts quickly from manual to air
- Accommodates all sizes of pipe from 1.315" to 4-1/2"
- Positive rotation grip provides automatic alignment, even load distribution, maximum holding power, and instant release
- Guard gate protects slips and linkage
- Plain gate minimizes any clearance problems

**Type 'T-40'
Tubing Spider**



Foot Valve

Table 40: TYPE 'T-40' TUBING SPIDER - ENGINEERING DATA

STANDARD		METRIC
DESCRIPTION	TYPE 'T-40'	TYPE 'T-40'
TUBING LOAD RATING	40 TONS	36,290 kg
DIAMETER OF BOTTOM FLANGE	15"	381 mm
FLANGE SLOTS FIT BOLT CIRCLE DIAMETERS	10-5/8 in. - 13-1/2 in.	269.88 - 342.90 mm
GATE OPENING	4 in.	101.60 mm
MINIMUM OPENING THROUGH BOWL	5-7/8 in.	149.23 mm
SPIDER HEIGHT WITH GUARD GATE	14-1/2 in.	368.30 mm
SPIDER HEIGHT WITH PLAIN-PARALLEL GATE	6-1/4 in.	158.75 mm
APPROXIMATE WEIGHT SPIDER COMPLETE		
AIR WITH GUARD GATE	200 lb	91 kg
AIR WITH PLAIN-PARALLEL GATE	185 lb	84 kg
MANUAL WITH GUARD GATE	150 lb	68 kg
MANUAL WITH PLAIN-PARALLEL GATE	135 lb	61 kg
APPROXIMATE WEIGHT OF SLIP ASSEMBLY	28 lb	13 kg
RECOMMENDED AIR PRESSURE RANGE	50 -80 psi	350 - 550

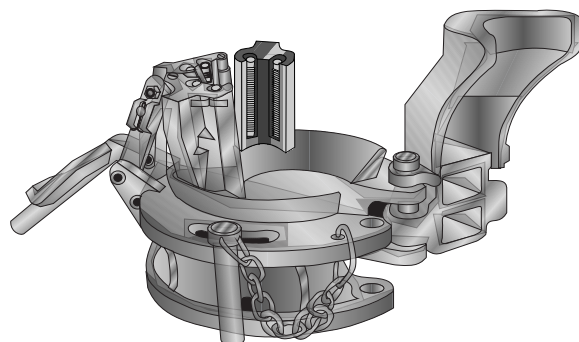


Table 41: TYPE 'T-40' ACCESSORY - PART NUMBERS

DESCRIPTION	PART NUMBER
AIR FOOT VALVE ASSEMBLY	50687
CENTRALIZER ASSEMBLY ONLY 1.315 in. - 1.660 in. X 1.900 in. - 2.063 in. 2-3/8 in. X 2-7/8 in.	56872
CENTRALIZER RUBBER 1.315 in. - 1.660 in. - 1.900 in. - 2.063 in. 2-3/8 in. - 2-7/8 in.	56925 56871
GUARD GATE	27752
PLAIN-PARALLEL GATE	43751
FILTER - LUBRICATOR	28705

Table 42: TYPE 'T-40' TUBING SPIDER - PART NUMBERS

DESCRIPTION	SPIDER WITH SLIP BODY - LESS INSERTS (BY TUBING O.D.)										SPIDER LESS SLIPS
	1.050	1.315	1.660	1.900	2.000	2.063	2-3/8 in.	2-7/8 in.	3-1/2 in.	4-1/2 in.	PART NUMBER
SLIP BODY SIZE	2-7/8 in.								3-1/2 in.	4-1/2 in.	
AIR SPIDER:											
WITH GUARD GATE	62463								62467	83103	53300
LESS AIR VALVE AND HOSE	67578								-	83104	
WITH PLAIN GATE	62464								62468	83105	53301
LESS AIR VALVE AND HOSE	67579								-	83106	
MANUAL SPIDER:											
WITH GUARD GATE	62465								62469	83107	28918 34092
WITH PLAIN GATE	62466								62470	83108	
INSERT KIT PART NUMBER	62479	62480	62481	62482	62483	62484	42597	42598	42599	INTEGRAL	
SLIP BODY - LESS INSERTS	62471								62472	58039	

Slip Repair Kit: Part Number 56809 for 1" to 3-1/2" only

Tubing Spiders

Table 43: TYPE 'T-40' AIR ACTUATING ASSEMBLY
PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	-	51454
AIR CYLINDER ASSEMBLY	1	54569
AIR CYLINDER	1	50644
CYLINDER END SCREW	3*	92735
CYLINDER O-RING	1*	18496
CYLINDER ROD	1*	26894
PACKING	1*	27860
PACKING O-RING	1*	27861
ROD COTTER PIN	1*	27859
ROD GUIDE	1*	50648
ROD NUT	1*	27858
ROD O-RING	2*	19337
PIVOT WASHER	1*	24223
PIVOT BOLT	1	26353
CONTROL LINK	1	51087
ELBOW	2	27864
HOUSING	1	37811
HOUSING BOLT	2	26359
LOCK NUT	4	24647
NIPPLE, LONG	1	80549
NIPPLE, SHORT	1	27863
LINK BOLT	1	24212
AIR CYLINDER NIPPLE	2	66172
PIVOT WASHER	4	24223
LINK WASHER	2	24235
PISTON ROD PIN	1	52814
PLUG, ORIFICE	1	80550
REPAIR KIT FOR AIR ACTUATING ASSEMBLY	1	84052

* Parts of Assembly Listed Above

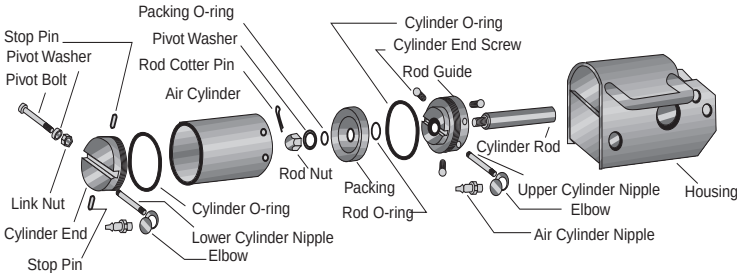


Table 45: TYPE 'T-40' AIR ATTACHMENT KIT - PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	1	51453
AIR ACTUATING ASSEMBLY	1*	51454
AIR VALVE WITH HOSES	1*	50681
VALVE COUPLER	1*	-

Table 46: REPAIR KIT FOR AIR CYLINDER

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	-	92734
CYLINDER END SCREW	3	92735
CYLINDER O-RING	1	18496
PACKING	1	27860
PACKING O-RING	1	27861
ROD NUT	1	27858
ROD O-RING	2	19337
ROD CUTTER PIN	1	27859
PIVOT WASHER	1	24223

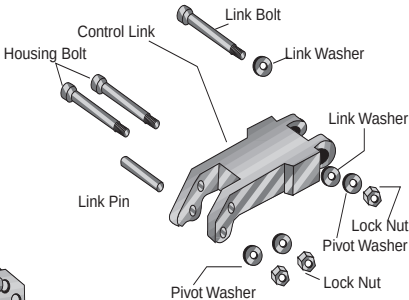
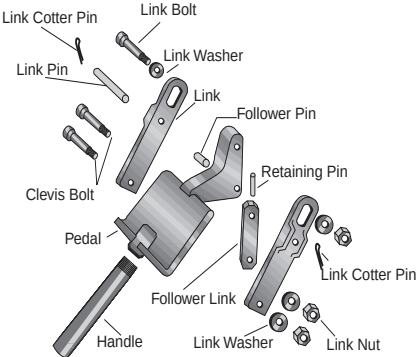


Table 44: TYPE 'T-40' HANDLE ASSEMBLY - MANUAL ONLY
PART NUMBERS

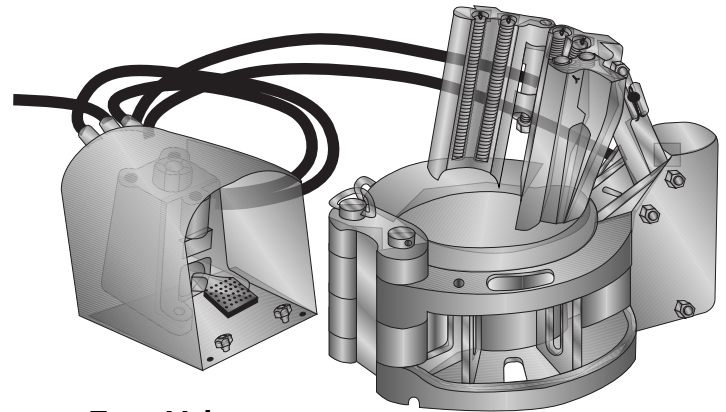
DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	-	28922
CLEVIS BOLT	2	26073
COTTER PIN	2	28410
FOLLOWER LINK	1	28254
FOLLOWER PIN	1	21786
HANDLE	1	28255
LINK	2	28253
LINK BOLT	1	24212
LOCK NUT	3	24647
LINK WASHER	2	24235
PIVOT WASHER	2	24223
LINK PIN	1	21784
PEDAL SUB ASSEMBLY	1	28240
RETAINING PIN	1	28445
REPAIR KIT	1	56810



Tubing Spiders

Type 'T-60' (Formerly 'FI-U')

- Rated at 60 tons
- Easily handles 25,000 feet of 2-3/8 in. O.D. tubing
- Fast, safe, dependable, one-man operation
- Converts quickly from manual to air
- Accommodates all sizes of pipe from 1.315 in. to 4-1/2 in.
- Positive rotation grip provides automatic alignment, even load distribution, maximum holding power, and instant release
- Guard gate protects slips and linkage
- Plain gate minimizes any clearance problems



Foot Valve

Type 'T-60'
Tubing Spider

Table 47: TYPE 'T-60' TUBING SPIDER - ENGINEERING DATA

STANDARD		METRIC
DESCRIPTION	TYPE 'T-60'	TYPE 'T-60'
TUBING LOAD RATING	60 TONS	54,430 kg
DIAMETER OF BOTTOM FLANGE	15 in.	381 mm
FLANGE SLOTS FIT BOLT CIRCLE DIAMETERS	10-5/8 in. - 13-1/2 in.	269.88-342.90 mm
GATE OPENING	4-3/4 in.	120.65 mm
MINIMUM OPENING THROUGH BOWL	5-7/8 in.	149.23 mm
SPIDER HEIGHT WITH GUARD GATE	16-1/2 in.	419.10 mm
SPIDER HEIGHT WITH PLAIN-PARALLEL GATE	9-3/8 in.	283.13 mm
APPROXIMATE WEIGHT SPIDER COMPLETE		
AIR WITH GUARD GATE	290 lb	132 kg
AIR WITH PLAIN-PARALLEL GATE	275 lb	125 kg
MANUAL WITH GUARD GATE	175 lb	79 kg
MANUAL WITH PLAIN PARALLEL GATE	160 lb	73 kg
APPROXIMATE WEIGHT OF SLIP ASSEMBLY	45 lb	20 kg
RECOMMENDED AIR PRESSURE RANGE	40-80 psi	280 - 550

Table 48: TYPE 'T-60' ACCESSORY - PART NUMBERS

DESCRIPTION	PART NUMBERS
AIR FOOT VALVE ASSEMBLY	50687
CENTRALIZER ASSEMBLY ONLY 1.315 in. - 1.660 in. X 1.900 in. - 2.000 in. - 2.063 in. 2-3/8 in. X 2-7/8 in.	56872
CENTRALIZER RUBBER 1.315 in. - 1.660 in. - 1.900 in. - 2.000 in. - 2.063 in. 2-3/8 in. - 2-7/8 in.	56925 56871
GUARD GATE	42435
PLAIN PARALLEL GATE	42440
FILTER - LUBRICATOR	28705

Table 49: TYPE 'T-60' TUBING SPIDER - PART NUMBERS

DESCRIPTION	SPIDER WITH SLIP BODY - LESS INSERTS (BY TUBING O.D.)											SPIDER LESS SLIPS
	1.050 in.	1.315 in.	1.660 in.	1.900 in.	2.000 in.	2.063 in.	2-3/8 in.	2-7/8 in.	3-1/2 in.	4 in.	4-1/2 in.	PART NUMBER
SLIP BODY SIZE	2-7/8 in.								3-1/2 in.	4-1/2 in.		
AIR SPIDER: WITH GUARD GATE LESS AIR VALVE AND HOSE	62453 67581								62457	83091 83092	83097 83098	50683 -
WITH PLAIN GATE LESS AIR VALVE AND HOSE	62454 67580								62458	83093 83094	83099 83100	50684 -
MANUAL SPIDER: WITH GUARD GATE WITH PLAIN GATE	62455 62456								62459 62460	83095 83096	83101 83102	41657 41658
INSERT KIT PART NUMBER	62473	62474	62475	62476	62477	62478	42586	42587	42588	INTEGRAL	INTEGRAL	-
SLIP BODY - LESS INSERTS	62461								62462	49933	34989	-

Slip Repair Kit: Part Number 56812 for 1 in. to 3-1/2 in. only; Slip Repair Kit: Part Number 59891 for 4-1/2 in. only

Tubing Spiders

Table 50: TYPE 'T-60' AIR ACTUATING ASSEMBLY PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE AIR CYLINDER ASSEMBLY	--	50686
	1	54569
AIR CYLINDER ASSEMBLY	1*	50644
CYLINDER END SCREW	3*	92735
CYLINDER O-RING	1*	18496
ROD	1*	26894
PACKING	1*	27860
PACKING O-RING	1*	27861
ROD CUTTER PIN	1*	27859
ROD GUIDE	1*	50648
ROD NUT	1*	27858
ROD O-RING	2*	19337
PIVOT WASHER	1*	24223
PIVOT BOLT	1	26353
CONTROL LINK	1	46024
ELBOW	2	27864
HOUSING	1	43733
HOUSING BOLT	2	26359
LINK PIN	1	21784
LINK ROLL PIN	2	28445
LOCK NUT	4	24647
NIPPLE, LONG	1	27862
NIPPLE, SHORT	1	27863
LINK BOLT	1	24121
AIR CYLINDER NIPPLE	2	66172
LINK WASHER	6	24235
PIVOT WASHER	4	24223
REPAIR KIT FOR AIR ACTUATING ASSEMBLY	1	84052

*Parts of Assembly Listed Above

Table 50a: REPAIR KIT FOR AIR ACTUATING ASSEMBLY #84052

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
PIVOT BOLT	1	26353
HOUSING BOLT	2	26359
LOCK NUT	4	24647
LINK BOLT	1	24212
LINK WASHER	6	24235
PIVOT WASHER	4	24223

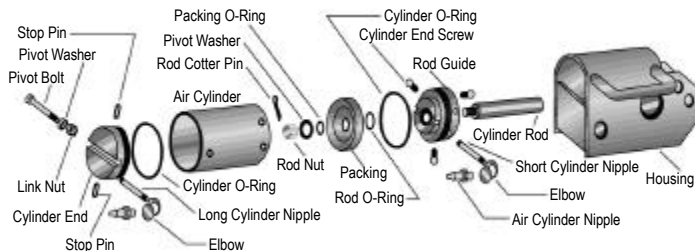


Table 51: TYPE 'T-60' HANDLE ASSEMBLY - MANUAL ONLY PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	--	27934
CLEVIS BOLT	2	26073
COTTER PIN	2	28410
FOLLOWER LINK	1	21787
FOLLOWER PIN	1	21786
HANDLE	1	28255
LINK	2	21792
LINK BOLT	1	24212
LOCK NUT	3	24647
LINK WASHER	2	24235
PIVOT WASHER	2	24223
LINK PIN	1	21784
PEDAL SUB ASSEMBLY	1	29440
RETAINING PIN	1	28445
REPAIR KIT	1	56811

Table 52: TYPE 'T-60' AIR ATTACHMENT KIT - PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE AIR ACTUATING ASSEMBLY	1	50685
	1*	50686
AIR VALVE WITH HOSES	1*	50687
VALVE COUPLER	1*	66895
AIR VALVE LESS HOSE	1	52976

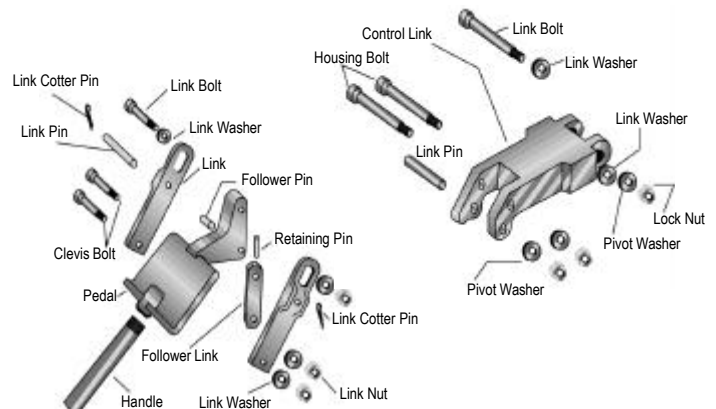
*Parts of Assembly Listed Above

Table 53: CENTRALIZER

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
CENTRALIZER	1	56872

Table 54: REPAIR KIT FOR AIR CYLINDER

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	--	92734
CYLINDER END SCREW	3	92735
CYLINDER O-RING	1	18496
PACKING	1	27860
PACKING O-RING	1	27861
ROD NUT	1	27858
ROD O-RING	2	19337
ROD CUTTER PIN	1	27859
PIVOT WASHER	1	24223
SUBZERO REPAIR KIT	1	63099



Tubing Spiders

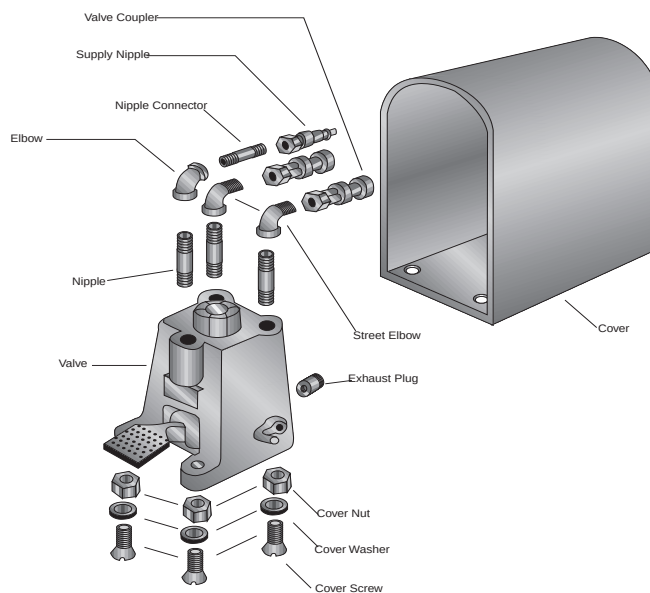
**Table 55: AIR VALVE ASSEMBLY FOOT CONTROLLED
PART NUMBERS**

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE: LESS HOSES	-	50687 52976
WITH HOSE 1/4" HOSE AIR VALVE	- 1	50687 26418
CUP FOLLOWER UPPER CUP PACKING	1* 2*	41819 31127
CUP SPACER WASHER CUP SPACER SPRING	2* 1*	41820 41821
COTTER PIN FRICTION WASHER	1* 1*	41843 41841
LATCH DOG LATCH DOG HANDLE	1* 1*	41826 41839
LATCH DOG PIN LATCH DOG SET SCREW	1* 1*	41830 41827
PEDAL PEDAL MOUNTING BASE	1* 1*	41836 41833
PEDAL BASE SCREW PEDAL FULCRUM PIN	4* 1*	41837 41834
PEDAL RETURN SPRING PISTON LATCH	1* 1*	41835 41832
PISTON LATCH PIN PISTON LATCH LOCK	1* 1*	41831 41840
PISTON RETRUN SPRING PISTON ROD	1* 1*	41817 41824
PISTON STOP (UPPER) PISTON STOP (LOWER)	1* 1*	41818 41825
PISTON STOP SCREW PLUNGER LATCH DOG	2* 1*	55567 41829
PLUNGER SPRING PLUNGER SPRING PIN	1* 1*	41828 41815
VALVE BODY VALVE SET SCREW	1* 1*	41814 41816
SNAP RING THRUST WASHER	1* 1*	41838 41842
VALVE LINER VALVE GUARD	1* 1	41822 62724
COVER NUT COVER SCREW	3 3	13090 26423
COVER WASHER ELBOW	3 3	26424 50688
EXHAUST PLUG HOSE 10'	1 1	26602 62611
BUSHING HOSE 20'	1* 1	31742 62613
COUPLING NIPPLE	1* 3	13469 26425
QUICK-CHANGE COUPLING NIPPLE	2 1	66171 66172

* Parts of assembly above.

Table 56: REPAIR KIT FOR AIR VALVE - PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
ASSEMBLY COMPLETE	-	62643
CUP PACKING FRICTION WASHER	2 1	31127 41841
PEDAL RETURN SPRING	1	41835
LATCH RETURN SPRING	1	41817
PLUNGER SPRING SNAP RING THRUST WASHER	1 1 1	41828 41838 41842



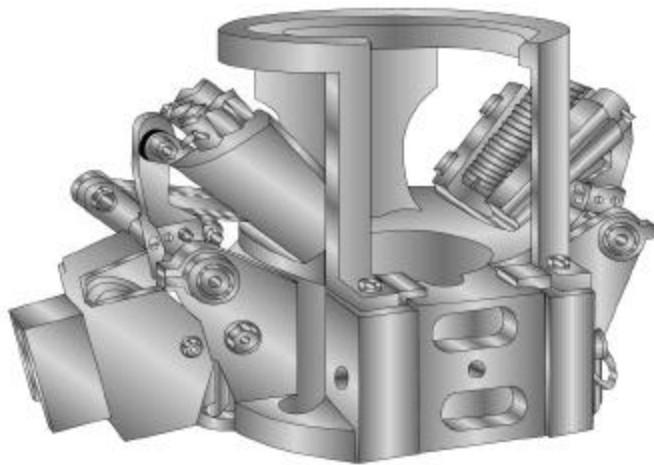
**Table 57: OPTIONAL HAND VALVE - PART NUMBERS FOR TYPE
'T-40', 'T-60', 'T-110' AIR SPIDERS**

DESCRIPTION	QTY. REQUIRED	PART NUMBERS
HAND VALVE ASSEMBLY (LESS HOSE)	1	55297
HAND VALVE ASSEMBLY (WITH HOSE)	1	52296

Tubing Spiders

Type 'T-110' - (Discontinued Item - for reference only)

- Rated at 110 tons
- Easily handles 45,000 feet of 2-3/8" in. O.D. Tubing
- Fast, safe dependable, one-man operation
- Computer designed using "Finite Element Analysis"
- Provides exact weight distribution of the heavy load
- Strengthened construction at predetermined stress and load points
- Four-bolt construction for easy removal of top bends
- Wear bushings, grease zerts, and Nedox coating facilitate longer life and easier operation



Type 'T-110'
Tubing Spider

Table 58: TYPE 'T-110' SPECIFICATIONS - ENGINEERING DATA

STANDARD		METRIC
DESCRIPTION	TYPE 'T-110'	TYPE 'T-110'
TUBING LOAD RATING	110 TONS	100,000 kg
SIZE OF BOTTOM FLANGE	17-1/2 in.	44.5 cm
FLANGE SLOTS FIT BOLT CIRCLE DIAMETERS	12-1/2 in. - 14-1/2 in.	31.8 cm - 36.8 cm
MINIMUM GATE OPENING	5-5/8 in.	14.3 cm
MINIMUM OPENING THROUGH BOWL	6-1/2 in.	16.5 cm
SPIDER HEIGHT	16-1/4 in.	41.7 cm
APPROX. WEIGHT SPIDER COMPLETE W/ AIR	340 LB	154 kg
APPROXIMATE WEIGHT SPIDER MANUAL	335 LB	152 kg
APPROXIMATE WEIGHT OF SLIP ASSEMBLY	48 LB	22 kg
RECOMMENDED AIR PRESSURE RANGE	80 - 150 psi	552 kPa - 1,034 kPa

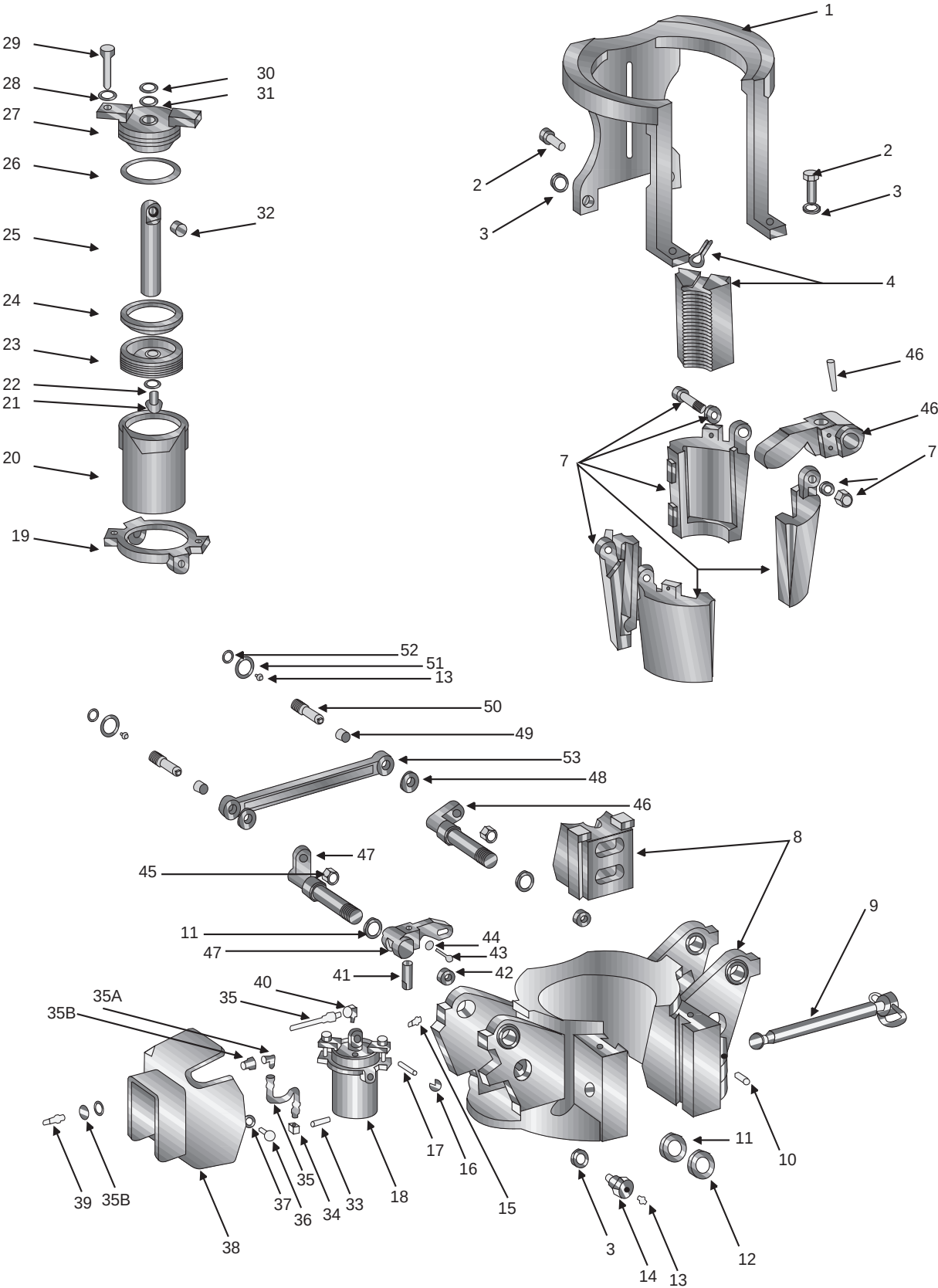
Table 59: TYPE 'T-110' TUBING SPIDER - PART NUMBERS

DESCRIPTION	SPIDER WITH SLIP BODY - LESS INSERTS (BY TUBING O.D.)											AIR CYLINDER REPAIR KIT
	1.315 in.	1.660 in.	1.900 in.	2-1/16 in.	2-3/8 in.	2-7/8 in.	3-1/2 in.	4 in.	4-1/2 in.	5 in.	5-1/2 in.	PART NUMBER
SLIP BODY SIZE	2-1/16 in.				3-1/2 in.			4-1/2 in.		5 in.	5-1/2 in.	82577
AIR SPIDER (COMPLETE)	82554				82555			82556		82648	82686	
LESS AIR VALVE AND HOSE	80875				80876			80877		82641	82685	
CONVERSION KIT TO MANUAL	82855											
MANUAL SPIDER COMPLETE	82850				82851			82852		82853	82854	
CONVERSION KIT TO AIR	82856											
INSERT KIT PART NUMBER	80832	80833	80834	80835	80840	80841	80842	80847	80848	INTEGRAL	INTEGRAL	
SLIP BODY - LESS INSERTS	80825				80826			80827		82642	82643	

Table 60: TYPE 'T-110' ACCESSORIES - PART NUMBERS

DESCRIPTION	PART NUMBERS
AIR FOOT VALVE ASSEMBLY	50687
FILTER - LUBRICATOR	28705
BOWL GUARD	80869

Tubing Spiders



Tubing Spiders

Table 61: TYPE 'T-110' TUBING SPIDER - PART NUMBERS

ITEM NUMBER	DESCRIPTION	QTY. REQUIRED	PART NUMBERS
1	GUARD CAP SCREW	1	80869
2		4	80846
3	LOCK WASHER SLIP INSERT KIT	6	13518
4		1	‡
7	SLIP BODY SUB-ASSEMBLY BOWL AND GATE SUB ASSEMBLY	1	**
8		1	80828
9	PIN SUB ASSEMBLY DETENT	1	80874
10		1	80831
11	SHIM RING	4	80868
12		2	90037
13	GREASE FITTING BOLT	4	69275
14		2	80860
15	LUBE FITTING RETAINING RING	4	14796
16		2	13762
17	LINK PIN ACTUATOR SUB ASSEMBLY	1	26259
18		1	80852
19*	TOP RETAINING PLATE CYLINDER SUB ASSEMBLY	1	80859
20*		1	80853
21*	CAP SCREW O-RING	1	84528
22*		1	27861
23*	PISTON T'-SEAL	1	80856
24*		1	80879
25*	PISTON ROD O-RING	1	80857
26*		1	17452
27*	CYLINDER TOP LOCK WASHER	1	80858
28*		2	80845
29*	CAP SCREW ROD WIPER	2	83478
30*		1	80878
31*	QUAD RING BUSHING	1	84661
32*		1	80782
33	NIPPLE ELBOW	1	82750
34		1	81963
35	HOSE ELBOW	2	83041
35A		2	83042
35B	BULKHEAD UNION CAP SCREW	2	83043
36		3	22087
37	LOCK WASHER ACTUATOR PROTECTOR	3	84660
38		1	80824
39	NIPPLE ELBOW	2	66172
40		1	81176
41	ROD LINK BUSHING	1	80867
42		4	80778
43	CAP SCREW LOCK WASHER	2	80882
44		2	80845
45	JAM LOCK NUT YOKE-ARM SHAFT SUB-ASSEMBLY (PLAIN)	2	81172
46		1	84032
47	YOKE-ARM SHAFT SUB ASSEMBLY (W/ STOP) SHIM	1	84031
48		2	80881
49	BUSHING PIN	2	80839
50		2	80866
51	SHIM RING	2	80777
52		2	90036
53	LINK	1	80864

‡ See chart 1

** See chart 2

* These parts make up the Actuator Sub-Assembly No. 80852 (Item 18)

Table 62: CHART 1 - SLIP INSERT KITS **

SIZE (in.)	PART NUMBER	SLIP BODY REQUIRED
1.315	80832	80825
1.660	80833	
1.900	80834	
2-1/16	80835	
2-3/8	80840	80826
2-7/8	80841	
3-1/2	80842	
4	80847	80827
4-1/2	80848	

* These parts make up the Actuator Sub-Assembly No. 80852 (Item 18)

** Kit contains 4 inserts and 4 cotter pins

Table 63: CHART 2 - SLIP BODY SUB ASSEMBLIES

SIZE (in.)	PART NUMBER
1.315 - 2-1/16	80825
2-1/8 - 3-1/2	80826
4 - 4-1/2	80827
*5	82642
*5-1/2	82643

* These parts make up the Actuator Sub-Assembly No. 80852 (Item 18)

‡ Slip teeth are cast as part of the slip body and slip inserts are not required

Strippers

Type 'JU' and 'JU-H' High Pressure Tubing Stripper

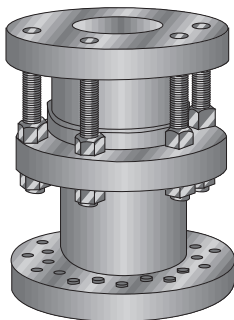
This rugged stripper cleans oil and other materials from tubing as it is being pulled and prevents escape of oil or gas while running or pulling tubing under pressure. The stripper employs a heavy duty rubber that can be changed without removing the stripper from the wellhead. The unique, accordion-style design of this rubber allows easy passage of tubing couplings without leakage. The flexible, tight-gripping rubber works equally well on round, square, or hexagonal shapes. The major components are fabricated of tough cast steel for long, trouble-free service.

The housing of the Type 'JU' stripper is a single casting, with a flanged bottom connection for easy attachment of API flanges. Six 1-1/8 in. stud bolts transmit tubing load from the packing gland to the housing. These bolts also provide the means for adjusting the packing rubber,

allowing three inches of travel for adjustment and take-up of wear. The rubber may also be adjusted easily by backing off the stud nuts and setting tubing weight on top of the stripper. The flat top provides a suitable base for any Guiberson tubing spider. The Type 'JU-H' features a hydraulic actuator which allows the stripper rubber to be compressed quickly and safely without stopping operations or going near the well-head.

Also available is the Type 'H' actuator kit for installation on any Type 'JU' stripper for full hydraulic operation.

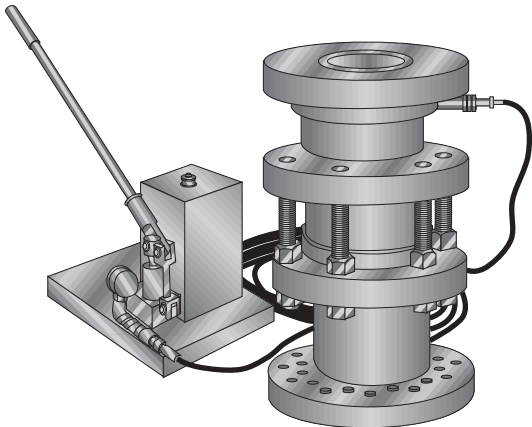
Type 'JU' Stripper



Rubber



Type 'JU-H' Stripper



Hydraulic Pump

Table 64: TYPE 'JU' AND 'JU-H' - ENGINEERING DATA

API NOMINAL FLANGE SIZE AND SERIES	STANDARD			METRIC		
	TYPE 'JU'		TYPE 'JU-H'	TYPE 'JU'		TYPE 'JU-H'
	6 in. 2000 psi	6 in. 3000 psi	6 in. 3000 psi	152.4 13,800 kPa	152.4 20,000 kPa	152.4 20,000 kPa
CASING SIZE	5 - 7 in.	5" - 7 in.	5 - 7 in.	127 - 178 mm	127 - 178 mm	127 - 178 mm
APPROXIMATE WEIGHT	280 lb	280 lb	415 lb	127 kg	127 kg	188 kg
OVERALL HEIGHT	17-1/8 in.	17-1/8 in.	23-1/4 in.	435 mm	435 mm	590 mm
FLANGE O.D.	14 in.	15 in.	15 in.	355.6 mm	381 mm	381 mm
FLANGE THICKNESS	1-7/8 in.	1-7/8 in.	1-7/8 in.	47.6 mm	47.6 mm	47.6 mm
BOLT CIRCLE DIAMETER	11-1/2 in.	12-1/2 in.	12-1/2 in.	292.1 mm	317.5 mm	317.5 mm
BOLT SIZE (TWELVE REQUIRED)	1 in.	1-1/8 in.	1-1/8 in.	25.4 mm	28.6 mm	28.6 mm
WORKING PRESSURE	1500 psi	1500 psi	1500 psi	10300 kPa	10300 kPa	10300 kPa
TEST PRESSURE	3000 psi	3000 psi	3000 psi	20700 kPa	20700 kPa	20700 kPa
MAXIMUM LOAD CAPACITY	40 tons	40 tons	40 tons	36290 kg	36290 kg	36290 kg
OPENING THROUGH STRIPPER	6-1/8 in.	6-1/8 in.	4-3/4 in.	155.58 mm	155.58 mm	120.7 mm
OPENING THROUGH HOUSING (WITHOUT HYDRAULIC ACTUATOR, BOTTOM SUPPORT PLATE, RUBBER, OR TOP SUPPORT PLATE IN PLACE)	-	-	6-1/8 in.	-	-	155.58 mm
RING JOINT GASKET API NUMBER	R-45	R-45	R-45	-	-	-
RING JOINT GASKET PITCH DIAMETER	8-5/16 in.	8-5/16 in.	8-5/16 in.	211.14 mm	211.14 mm	211.14 mm

Table 65: TYPE 'H' HYDRAULIC ACTUATOR - ENGINEERING DATA

STANDARD		METRIC
TYPE 'H' HYDRAULIC ACTUATOR FOR 'JU' STRIPPER		
O.D. OF HYDRAULIC ACTUATOR	14 in.	355.6 mm
HEIGHT (WITHOUT STUD BOLTS MOUNTED ON IT)*	13 in.	330.2 mm
HEIGHT (WITH STUD BOLTS MOUNTED ON IT)	16 in.	406.4 mm
APPROXIMATE WEIGHT (WITH- OUT STUD BOLTS OR NUTS)	230 lb	104.3 kg
APPROXIMATE WEIGHT (WITH STUD BOLTS AND NUTS)	257 lb	116.6 kg
HYDRAULIC AREA	30.7 SQ. IN.	196 cm ²
HYDRAULIC TRAVEL (USABLE)	3-1/2 in.	88.9 mm
I.D. THROUGH HYDRAULIC ACTU- ATOR	4-3/4 in.	120.7 mm
HYDRAULIC CONNECTION SIZE	1/4" in.NPT	-
PUMP RESERVOIR SIZE	250 CU. IN./	4098 cc/4.1 L
RECOMMENDED	8-3/4 PTS/1.1 GAL	
MAXIMUM PUMP PRESSURE RECOMMENDED ON ACTUATOR	3000 psi	20700 kPa

* Stud bolts and nuts are not included in Type'H' Hydraulic Actuator assembly. They are furnished on a Type 'JH' Tubing Stripper as follows: 6 - Stripper Stud number 12598, Stripper Nut number 12710

Table 66: TYPE 'JU' AND 'JU-H' STRIPPER - ENGINEERING DATA

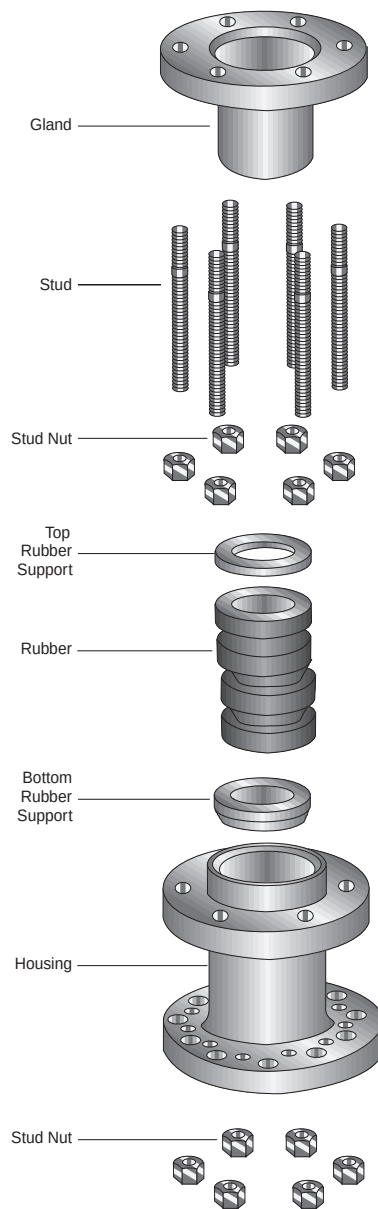
STRIPPER TYPE AND FLANGE SIZE	ASSEMBLY NUMBER BY PIPE SIZE (in.)				
	1.900	2.063	2-3/8	2-7/8	3-1/2
'JU', 6 in. 600-900-2000-3000 psi	12693	12693	12693	12697	17965
'JU-H' 6 in. 600-900-2000-3000-psi - complete with pump and hose	80557	80557	80557	80558	80559
'JU-H' 6 in. 600-900-2000-3000 psi - less pump and hose	69516	69516	69516	69517	69518

Type 'H' actuator kit only, less pump and hose, part number 69057; with pump and hose, part number 80576
 Repair kits for Type 'JU-H' Tubing Stripper:
 69524 Repair Kit for Hydraulic Actuator
 68829 Repair Kit For Hydraulic Pump

Table 67: TYPE 'JU' STRIPPER - PART NUMBERS

DESCRIPTION	QTY. REQUIRED	PART NUMBER
GLAND LESS STUDS	1	12668
STUD	6	12598
STUD NUT	12	12710
TOP RUBBER SUPPORT	1	
1.050 in. - 2-3/8 in.	-	9568
2-7/8 in.	-	9567
3 in.	-	12037
RUBBER	1	*
1.050 in. - 1.660 in. TUBING (RBR. I.D. = 1.660 in.)	-	24077
1.900 in. - 2-3/8 in. TUBING (RBR. I.D. = 2-1/4 in.)	-	9444
2-7/8 in. TUBING (RBR. I.D. = 2-3/4 in.)	-	9447
2-7/8 in. DRILL PIPE (RBR. I.D. = 3 in.)	-	15154
3-1/2 in. TUBING (RBR. I.D. = 3-3/4 in.)	-	16562
BOTTOM RUBBER SUPPORT	1	12455
HOUSING		
'JU' 6-960-2000 PSI	-	12873
'JU'. 6-2000-3000 PSI	-	12875
RING JOINT GASKET (R-45)	1	19683

* Rubber and top rubber support must correspond in size



Parts - Type 'JU'

Strippers

Table 68: DIMENSION DATA & RECOMMENDED PIPE SIZES TO SEAL
OR PASS THROUGH TYPE JU AND JU-H STRIPPERS

SIZE DESIGNATION	PART NUMBER		NOMINAL I.D. (in.)		API PIPE RECOMMENDED*		MAXIMUM O.D. mm to Pass
Pipe O.D. (in.)	Rubber	Top Support	Rubber	Top Support	Pipe Size O.D. (in.) and Designation	Pipe Joint O.D. (in.)	
1.050-1.660	24077	9568	1.660	3.500	1.050-1.660 NUE 1.050-1.660 EUE 1.315-1.660	1.313-2.054 1.660-2.220 1.550-1.880	2.500
1.900- 2 3/8	9.444	9568	2.250	3.500	1.900-2 3/8 NUE 1.900-2 3/8 EUE 1.900-2.063 IJ 2 3/8 EU D.P.	2.00-2.875 2.500-3.063 2.110-2.325 2.656	3.375
2 7/8	9447	9567	2.750	4.125	2 7/8 NUE 2 7/8 EUE 2 7/8 IU D.P. 2 7/8 EU D.P.	3.500 3.460-3.668 2.875 3.219-3.250	3.750
3	15154	12037	3.000	4.750	2 7/8 NUE 2 7/8 EUE 2 7/8 EU D.P.	3.500 3.460-3.660 3.219-3.250	4.125
3 1/2	16562	12037	3.750	4.750	3 1/2 NUE 3 1/2 EUE 3 1/2 IU D.P. 3 1/2 EU D.P. 3 1/2 IEU D.P.	1.250 4.180-4.500 3.500 3.824-4.000 3.781	4.625

*Tubulars other than the API Tbg. and D.P. listed may be used if the pipe and joint O.D. fall within the dimensions shown in this chart.

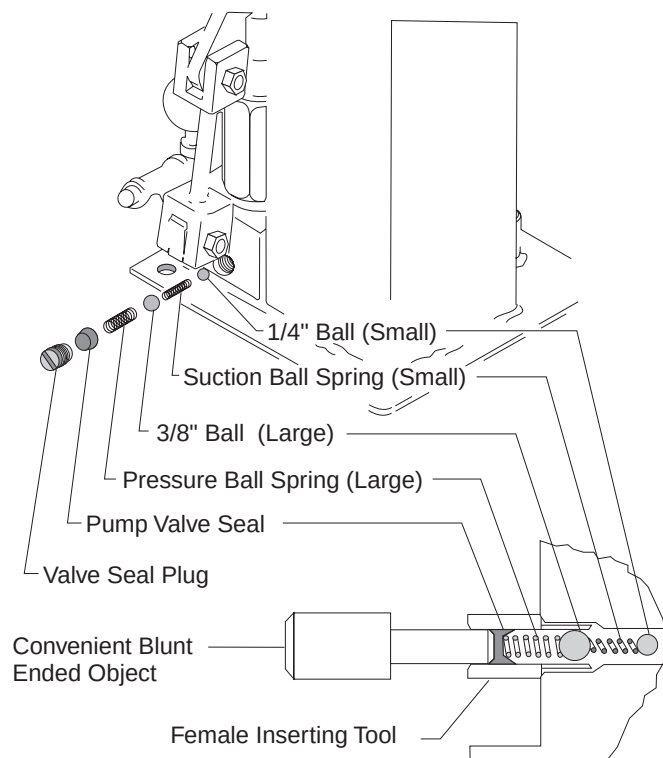
Table 69: REPAIR KIT FOR STAR HYDRAULIC PUMP FOR
GUILBERSON TYPE JU-H TUBING STRIPPER (PART
NUMBER 68829)

DESCRIPTION	QTY. REQUIRED
Release Valve (non-revised) Parts*	
Release Valve Seal	1
9/32 in. Release Valve Ball (medium)	1
Pump Valve Parts	
Pump Valve Seal	1
Pressure Ball Spring (Large)	1
Suction Ball Spring (Small)	1
1/4-in. Ball (Small)	1
3/8-in. Ball (Large)	1
Female Inserting Tool	1
Release Valve (REV.C) Parts*	
Inner O-ring (Parker 2-106.)	1
Outer O-Ring (Parker 2-109)	1
Pump Piston Parts	
Piston O-ring	1
Piston Back-Up Ring	1
Dust Seal (1 1/4-in. O.D. x 3/4-in. O.D.)	1
Barrel O-ring	1

* When repairing the release valve, look on the top of the pump oil reservoir tank. If "REV. C" is NOT stenciled on the tank, use the "non-revised" repair parts. If "REV.C" IS stenciled on the tank, use the REV.C repair parts. In either case there will be two extra parts in the kit to be discarded.

Pump Valve Repair Procedure

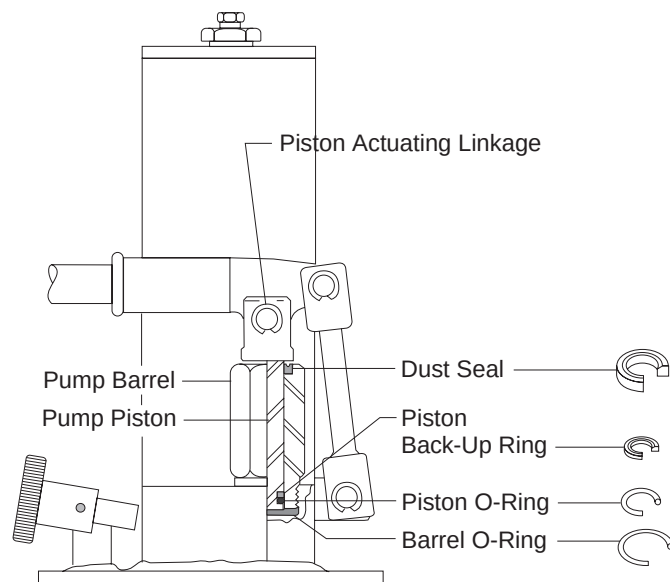
1. Stand pump upright then remove valve plug and valve seal.
2. Tilt pump to remove valve springs and balls. Allow oil to drain through these valve holes to wash debris from the valve chamber.
3. Lay pump on its side to inspect and clean valve chamber. Be careful not to scratch or nick ball seats.
4. Insert new balls and springs into valve chamber in the proper order (see illustration).
5. Insert pump valve seal, lip first into female inserting tool.
6. Place female inserting tool into valve chamber in the proper order (see illustration). Use a blunt ended object to push the pump valve seal all the way through the inserting tool. (Be sure the inserting tool remains shouldered firmly in the hole.)
7. Remove the inserting tool and screw in the valve seal plug.



Pump Piston Repair Procedure

Leakage of oil around the pump piston indicated worn or damaged packing.

1. Remove piston actuating linkage, piston, and barrel.
2. Remove and discard old packings and O-rings.
3. Clean all parts and dry with compressed air. Dip all parts in clean hydraulic oil (including repair parts).
4. Install new Barrel O-ring, Piston O-ring, Piston Back-Up Ring and Dust Seal. Be sure Piston Back-Up Ring and Dust Seal are oriented properly (see illustration).
5. Insert and tighten redressed barrel.
6. Open the release valve (to allow air to bleed out from the piston barrel) and insert the redressed piston.
7. Replace piston linkage and bleed air from pump (see procedure).

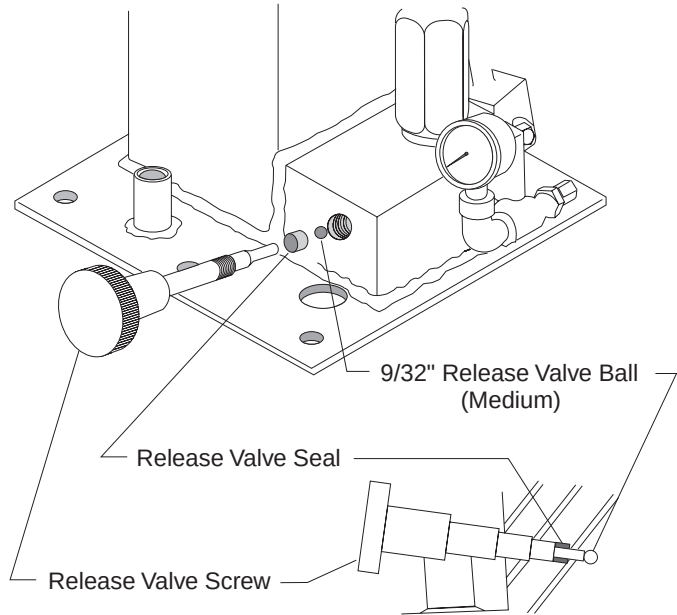


Strippers

Release Valve (non-revised) Repair Procedure

Use these instructions IF the pump oil reservoir tank DOES NOT have “REV.C” stenciled on the top.

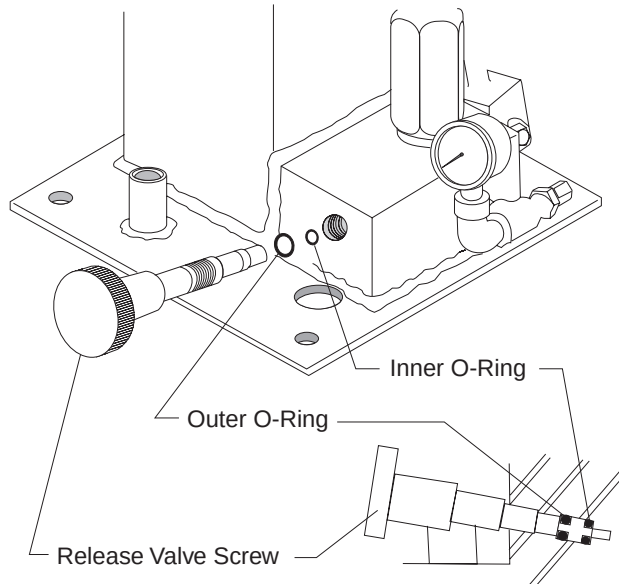
1. Remove the release valve screw, release valve seal, and release valve ball.
2. Clean and inspect the valve ball seat and release screw for excessive deformation. If the release screw has been severely damaged, it should be replaced.
3. Insert a new 9/32 in. release valve ball. This is the medium size ball in the repair kit. (See illustration.)
4. Insert a new release valve seal.
5. Re-install the release valve screw.



Release Valve (Revision C) Repair Procedure

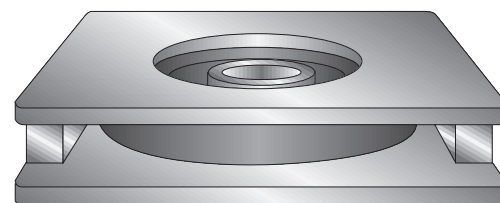
Use these instruction IF the pump oil reservoir tank DOES have “REVC.” stenciled on the top.

1. Remove the release valve screw.
2. Remove the inner and outer o-rings from the release valve screw.
3. Clean and inspect the release valve chamber and screw.
4. Install a new outer o-ring and inner o-ring on the release valve screw (see illustration).
5. Re-install the release valve screw.

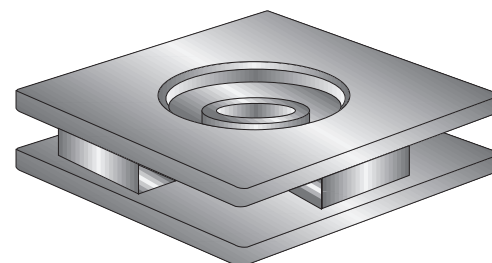


Pipe Wiper

The Guiberson pipe wiper removes mud and debris from the pipe while it is being pulled or run. Its nine-inch rubber encircles the pipe tightly and covers the annulus to prevent foreign objects from falling into the well. The wiper is contained within a fabricated steel frame which mounts beneath the spider or rotary table. The assembly is conveniently sized, inexpensive, and available in 60 or 100 ton load capacities, making it ideal for workover operations.



60 Ton Pipe Wiper



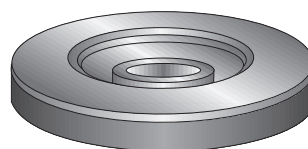
100 Ton Pipe Wiper

Table 70: PIPE WIPERS AND FRAMES - PART NUMBERS

DESCRIPTION		PART NUMBER BY SIZE AND LOAD LIMIT	
PIPE WIPERS COMPLETE		60 TON	100 TON
1.900 in. O.D.		58610	-
2-3/8 in. O.D.		58608	-
2-7/8 in. O.D.		58609	-
RUBBER	LOW PROFILE RUBBER		
1.900 in. O.D.	89600		69680
2-3/8 in. O.D.	89601		69681
2-7/8 in. O.D.	89602		69682
3-1/2 in. O.D.	89602-001		
PIPE WIPER FRAME ONLY			81750

Table 71: PIPE WIPERS - OTHER PRODUCTS

ROD WIPER RUBBER ROD SIZE	5/8 in. 3/4 in. 7/8 in.	(FITS BJ WIPER) PART NUMBER 90098 90099 91000
ROD STRIPPER RUBBER RUBBER I.D.	5/8 in.	(FITS EE STRIPPER) PART NUMBER 91001



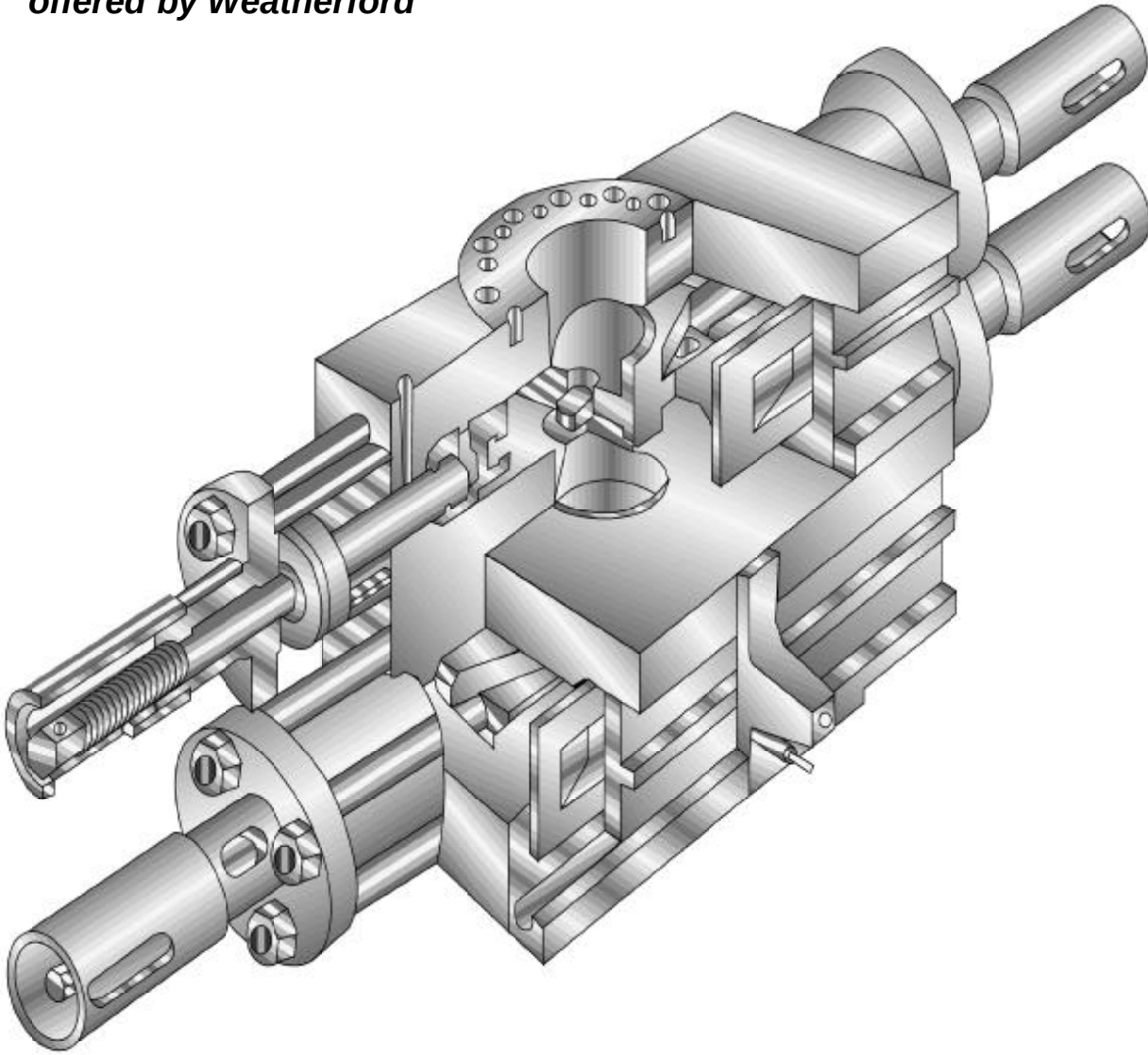
Pipe Wiper Rubber

Table 72: WIPER FRAMES - ENGINEERING DATA

STANDARD				METRIC	
DESCRIPTION		LOAD LIMIT		LOAD LIMIT	
		60 TON	100 TON	60 TON	100 TON
FRAME (in.) (mm)	I.D.	6	6	152.4	152.4
	LENGTH	12	12	304.8	304.8
	WIDTH	12	12	304.8	304.8
	HEIGHT	2-7/8	2-3/4	73.03	69.85
RUBBER (in.) (mm)	I.D. BY SIZE	1.900	1.800	45.72	45.72
		2-3/8	2-1/4	57.15	57.15
		2-7/8	2-3/4	69.85	69.85
	O.D.	9	9	228.60	228.60
APPROXIMATE WEIGHT (COMPLETE W. PER) (lb) (Kg)		45	43	20	19
FRAME LOAD LIMITS TONS (METRIC TONS)		60	100	59.053	98.421

Blowout Preventers

NOTE: *Type T and G are the only BOPs currently offered by Weatherford*



The Guardian Series Hydraulic Blowout Preventer has been specifically designed for workover rigs. It can be used with 6" 600, 6" 900 and 6" 1500 series equipment and well heads. (Rated for working pressures of 2,000 psi, 3,000 psi, and 5,000 psi, respectively). In addition to testing and inspection, the high-quality, cast preventer body is structurally analyzed using the finite element method. The Guardian BOP meets all NACE and API requirements for internal sour gas service.

This is an overall rugged, compact blowout preventer featuring a unique sliding door which provides quick and easy ram change without the use of bolts. Rams are accessed by simply pulling a lock pin and cranking a rack and pinion. All hydraulic passages are internal in the preventer body and cylinder end plate. Connecting tubes between end plates and body are rugged and well protected.

The piston rods are colmonoy coated to provide dependable and corrosion resistant service.

Blowout Preventers

Table 73: GUARDIAN™ SERIES HYDRAULIC BLOWOUT PREVENTERS - INSTALLATION SPECIFICATIONS

DESCRIPTION	SPECIFICATIONS		
NOMINAL FLANGE SIZE	7-1/16 in. (6 in.) 179 mm	7-1/16 in. (6 in.) 179 mm	7-1/16 in. (6 in.) 179 mm
FLANGE WORKING PRESSURE (SERIES)	5,000 PSI [1500] 34,475 kPa	*3,000 PSI [900] 20,685 kPa	*2,000 PSI [600] 13,790 kPa
STUD CIRCLE DIAMETER	12-1/2 in. 315.5 mm	12-1/2 in. 315.5 mm	11-1/2 in. 292.1 mm
STUD DIAMETER	1-3/8 in. 34.9 mm	*1-3/8 in. TO 1-1/8 in. 34.9 mm TO 28.6 mm	*1 in. 25.4 mm
RING JOINT GASKET API NUMBER	R-46	*R-45/R-46	*R-45/R-46
RING JOINT GASKET PITCH DIAMETER	8-5/16 in. 211.1 mm	8-5/16 in. 211.1 mm	8-5/16 in. 211.1 mm

*1 Uses transition kit
() "old" API nominal flange designation
[] ASA or ANSI flanges series designation

Table 74: GUARDIAN BOP - ENGINEERING DATA

DESCRIPTION	STANDARD	METRIC
CASING SIZE	5" - 7 in.	127 mm - 178 mm
APPROXIMATE WEIGHT	5,700 LBS	2,586 kg
OVERALL LENGTH LESS HANDWHEELS	82 in.	2,083 mm
OVERALL HEIGHT LESS STUDS AND HANDWHEELS	26-3/4 in.	679 mm
OVERALL WIDTH LESS HANDWHEELS	35 in.	889 mm
HANDWHEEL DIAMETER	32 in.	813 mm
CENTER OF 7-1/16" BORE TO FRONT OF CENTERING PLATE	21-3/4 in.	552 mm
CENTER OF 7-1/16" BORE TO BACK OF OUTLET FLANGE STUDS	13-1/4 in.	337 mm
OPENING THROUGH PREVENTER	7-1/16 in.	179 mm
PREVENTER WORKING PRESSURE	5,000 PSI	34,475 kPa
PREVENTER TEST PRESSURE	10,000 PSI	68,950 kPa

Table 75: GUARDIAN BOP HYDRAULIC - ENGINEERING DATA

DESCRIPTION	OPERATING SPECIFICATIONS	
	TO OPEN	TO CLOSE
NORMAL OPERATING PRESSURE	1,500 PSI 10,340 kPa	1,500 PSI 10,340 kPa
MAXIMUM OPERATING PRESSURE	2,000 PSI 13,800 kPa	2,000 PSI 13,800 kPa
RATIO	1.1-1	5.5-1
VOLUME OF FLUID	0.56 GAL. 2.12 l	0.60 GAL. 2.27 l
FLUID VOLUME - PER INCH OF STROKE PER mm OF STROKE	27.8 CU. IN. 18.6 ml	29.6 CU. IN. 19.1 ml
PISTON STROKE	4.7 IN. 119.4 mm	4.7 IN. 119.4 mm

Table 76:)GUARDIAN BOP - PART NUMBERS
(For reference only; assembly no longer available)

DESCRIPTION	PART NUMBER
DOUBLE HYDRAULIC PREVENTER LESS RAMS	83548
TRANSITION KIT: 5,000 PSI (1500 SERIES) TO 3,000 PSI (900 SERIES)	85076
TRANSITION KIT: 5,000 PSI (1500 SERIES) TO 2,000 PSI (600 SERIES)	85079
UNIVERSAL JOINT AND SOCKET DRIVE	83572

Note: Complete assemblies are no longer available. For reference only.

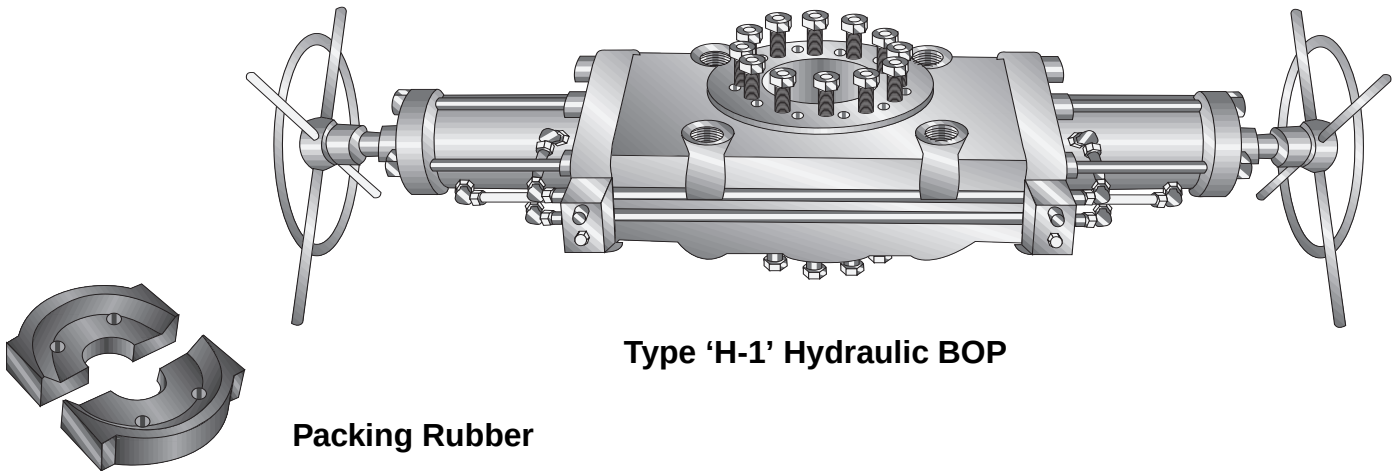
Table 77: GUARDIAN BOP RAM ASSEMBLY - PART NUMBERS

SIZE O.D. in. (mm)	CONCENTRIC	OFFSET	
		LEFT HAND	RIGHT HAND
BLANK	84474	-	-
1.315 (33)	84475	85005	85006
1.660 (42)	84996	85007	85008
1.900 (48)	84997	85009	85010
2.000 (51)	84998	85011	85012
2-1/16 (52)	84999	85013	85014
2-3/8 (60)	84476	85015	85016
2-7/8 (73)	84477	-	-
3-1/2 (89)	85000	-	-
4 (102)	85001	-	-
4-1/2 (114)	85002	-	-
5 (127)	85003	-	-
5-1/2 (140)	85004	-	-

Blowout Preventers

Guiberson’s compact blowout preventers are specifically designed for well servicing, workover, and light drilling. They seal tight against well pressure up to 3,000 psi and close and open easily and positively with either manual or hydraulic control. The ram assemblies in Guiberson preventers assure a positive, complete seal. The rams are designed to position the pipe at the

center of the unit. The non-rising ram feed screws in Guiberson preventers are hollow for full pressure equalization. This important feature assures that preventers operate easily and positively, even under peak pressure. The heavy Acme threads on these screws feed smoothly and will not foul with residues or junk.
CAUTION: Do not open BOP under pressure!



Quick Change Packing Rubber

Guiberson preventer rams can be changed quickly and easily, even while the pipe is in the hole. Only six nuts are unscrewed to remove either end plate. With end plates removed, both ram assemblies are accessible. The new packing rubber then slips easily into the ram assembly. No tools are required to install the new rubber. The packing rubber is strengthened by a molded-in plate.

Guiberson preventers are fabricated for high burst resistance of tough, heat-treated cast steel and are compact and easy to handle. Because the flange bosses are cast integrally with the preventer body, the extra space and weight of separate flange necks is eliminated. With this compact design, each Guiberson preventer stands only 11-1/2” high. Four cast-in lifting hooks on the body make lifting and moving easy.

Flexible, Economical Duals

Only Guiberson preventers provide the added safety of a double unit without the extra cost of integral double units or the waste of space caused by inter-connecting spools. The patented tie bolt system in these preventers allows them to be stacked directly, either parallel or at right angles to each other. This design gives the operator maximum flexibility in positioning the units for most convenient operation and most efficient use of space. Only four tie bolts are needed to stack the preventers. These tie bolts fit flush with the top and bottom of the housing, eliminating interference with wing valves and other equipment. Stacked Guiberson preventers provide the ultimate in compactness. Two units stacked and ready for service are less than 24 inches high.

Hydraulic Preventer

Guiberson’s hydraulically operated blowout preventer combines all the features of the mechanical with virtually instantaneous hydraulic operation. With 2,000 psi hydraulic pressure, it closes in less than 2 seconds. Available with dual controls for both rig floor or remote operation, it can be operated from the rigs hydraulic system or, using a separate pump-accumulator system, from separate pneumatic, electric, gas, or diesel powered equipment. Hydraulic preventers are supplied with supplementary manual controls which allow the rams to be locked positively, once closed, and provide an alternate closing mechanism for added safety.

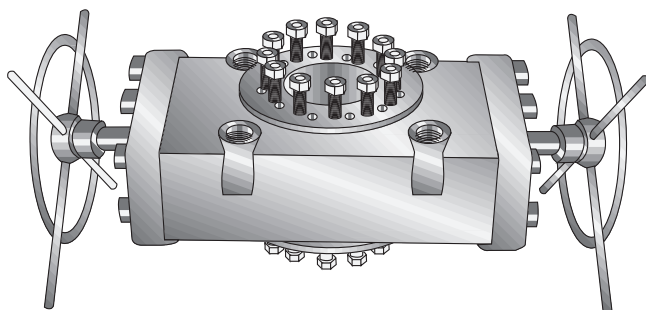
Hydraulic Conversion Units

By simply removing nuts at each end to exchange the end plates, any Guiberson preventer may be converted to hydraulic operation. Ram assemblies are not changed when converting from manual to hydraulic operation.

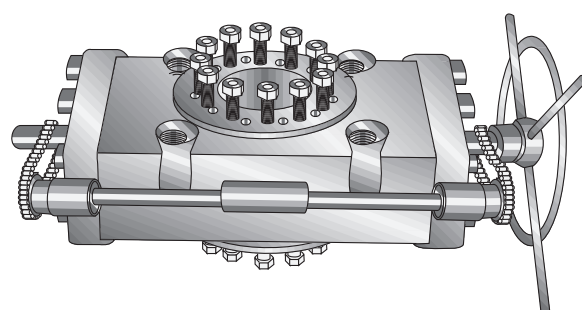
Table 78: HYDRAULIC UNIT - SPECIFICATIONS

SPECIFICATION	TO OPEN	TO CLOSE
MAXIMUM OPERATION PRESSURE, PSI	2,000	2,000
RATIO	1-1	6.5-1
VOLUME OF FLUID, U.S. GALLONS	.94	1.1
FLUID VOLUME PER INCH OF STROKE, CUBIC IN.	16.5	19.6
PISTON STROKE, INCHES	7.0	7.0
MAXIMUM OPERATING PRESSURE, kPa	13800	13800
RATIO	1-1	6.5-1
VOLUME OF FLUID, LITERS	3.56	4.16
FLUID VOLUME PER INCH OF STROKE, mm ³	10645	12645
PISTON STROKE, mm	177.8	177.8

Blowout Preventers



Type 'A-1' Manual BOP



Type 'A-1' Chain Drive

This is a mechanically operated version of the compact Guiberson preventer. The unit may be supplied with separate operating hand wheels or with a single chain drive handwheel that allows one man to close or open the unit quickly and positively.

Table 79: TYPES 'A-1', 'B-1' AND 'H-1', BLOWOUT PREVENTERS

STANDARD								
NOMINAL FLANGE SIZE	TYPE 'A-1' MANUAL DRIVE	TYPE 'A-1' CHAIN DRIVE	TYPE 'H-1' DUAL HYDRAULIC	TYPE 'H-1' HYDRAULIC	TYPE 'B-1' CHAIN DRIVE	TYPE 'B-1' HYDRAULIC	TYPE 'B-1' DUAL HYDRAULIC	TYPE 'B-1' CHAIN DRIVE DUAL
	6 in.	6 in.	6 in.	6 in.	8 in.	8 in.	8 in.	8 in.
FLANGE SERIES	400-600 600-900	400-600 600-900	400-600 600-900	400-600 600-900	400-600	400-600	400-600	400-600
CASING SIZE	5 - 7 in.	5 - 7 in.	5 - 7 in.	5 - 7 in.	7-5/8 - 8-5/8 in.	7-5/8 - 8-5/8 in.	7-5/8 - 8-5/8 in.	7-5/8 - 8-5/8 in.
APPROXIMATE WEIGHT	1500 LBS	1630 LBS	3400 LBS	1650 LBS	1600 LBS	1700 LBS	3500 LBS	3300 LBS
OVERALL LENGTH, RAMS CLOSED	48 in.	48 in.	80-1/4 in.	80-1/4 in.	51 in.	84 in.	84 in.	51 in.
OVERALL HEIGHT LESS STUDS AND HANDWHEEL	11-1/2 in.	11-1/2 in.	24 in.	11-1/2 in.	11-1/2 in.	11-1/2 in.	24 in.	24 in.
OVERALL WIDTH LESS HANDWHEEL	24-1/2 in.	27 in.	24-1/2 in.	24-1/2 in.	27 in.	24-1/2 in.	24-1/2 in.	27 in.
OPENING THROUGH PREVENTER	7-3/8 in.	7-3/8 in.	7-3/8 in.	7-3/8 in.	9-1/16 in.	9-1/16 in.	9-1/16 in.	9-1/16 in.
WORKING PRESSURE*	3000 PSI	3000 PSI	2000 PSI	3000 PSI	3000 PSI	2000 PSI	2000 PSI	2000 PSI
TEST PRESSURE	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4000 PSI	4000 PSI	4000 PSI	4000 PSI
HANDWHEEL DIAMETER	32 in.	32 in.	32 in.	32 in.	32 in.	32 in.	32 in.	32 in.
STUD CIRCLE DIAMETER								
400 SERIES	10-5/8 in.	10-5/8 in.	10-5/8 in.	10-5/8 in.	13 in.	13 in.	13 in.	13 in.
600 SERIES	11-1/2 in.	11-1/2 in.	11-1/2 in.	11-1/2 in.	13-3/4 in.	13-3/4 in.	13-3/4 in.	13-3/4 in.
900 SERIES	12-1/2 in.	12-1/2 in.	12-1/2 in.	12-1/2 in.				
STUD DIAMETER								
400 SERIES	7/8 in.	7/8 in.	7/8 in.	7/8 in.	1 in.	1 in.	1 in.	1 in.
600 SERIES	1 in.	1 in.	1 in.	1 in.	1-1/8 in.	1-1/8 in.	1-1/8 in.	1-1/8 in.
900 SERIES	1-1/8 in.	1-1/8 in.	1-1/8 in.	1-1/8 in.				
RING JOINT GASKET API NUMBER	R-45	R-45	R-45	R-45	R-49	R-49	R-49	R-49
RING JOINT GASKET PITCH DIAMETER	8-5/16 in.	8-5/16 in.	8-5/16 in.	8-5/16 in.	10-5/8 in.	10-5/8 in.	10-5/8 in.	10-5/8 in.

METRIC								
NOMINAL FLANGE SIZE	TYPE 'A-1' MANUAL DRIVE	TYPE 'A-1' CHAIN DRIVE	TYPE 'H-1' DUAL HYDRAULIC	TYPE 'H-1' HYDRAULIC	TYPE 'B-1' CHAIN DRIVE	TYPE 'B-1' HYDRAULIC	TYPE 'B-1' DUAL HYDRAULIC	TYPE 'B-1' CHAIN DRIVE DUAL
	6 in.	6 in.	6 in.	6 in.	8 in.	8 in.	8 in.	8 in.
FLANGE SERIES	400 - 600 600 - 900	400 - 600 600 - 900	400 - 600 600 - 900	400 - 600 600 - 900	400 - 600	400 - 600	400 - 600	400 - 600
CASING SIZE								
APPROXIMATE WEIGHT	680 kg	740 kg	1540 kg	750 kg	730 kg	770 kg	1590 kg	1500 kg
OVERALL LENGTH, RAMS CLOSED	1219.20 mm	1219.20 mm	2038.35 mm	2038.35 mm	1295.40 mm	2133.60 mm	2133.60 mm	1295.40 mm
OVERALL HEIGHT LESS STUDS AND HANDWHEEL	292.10 mm	292.10 mm	609.60 mm	292.10 mm	292.10 mm	292.10 mm	609.60 mm	609.60 mm
OVERALL WIDTH LESS HANDWHEEL	622.30 mm	685.80 mm	622.30 mm	622.30 mm	685.80 mm	622.30 mm	622.30 mm	685.80 mm
OPENING THROUGH PREVENTER	187.33 mm	187.33 mm	187.33 mm	187.33 mm	230.19 mm	230.19 mm	230.19 mm	230.19 mm
WORKING PRESSURE*	20700 kPa	20700 kPa	20700 kPa	20700 kPa	13800 kPa	13800 kPa	13800 kPa	13800 kPa
TEST PRESSURE	41400 kPa	41400 kPa	41400 kPa	41400 kPa	27600 kPa	27600 kPa	27600 kPa	27600 kPa
HANDWHEEL DIAMETER	7212.8 mm	7212.8 mm	7212.8 mm	7212.8 mm	7212.8 mm	7212.8 mm	7212.8 mm	7212.8 mm
STUD CIRCLE DIAMETER								
400 SERIES	269.88 mm	269.88 mm	269.88 mm	269.88 mm	330.20 mm	330.20 mm	330.20 mm	330.20 mm
600 SERIES	292.10 mm	292.10 mm	292.10 mm	292.10 mm	349.25 mm	349.25 mm	349.25 mm	349.25 mm
900 SERIES	317.50 mm	317.50 mm	317.50 mm	317.50 mm				
STUD DIAMETER								
400 SERIES	22.23 mm	22.23 mm	22.23 mm	22.23 mm	25.40 mm	25.40 mm	25.40 mm	25.40 mm
600 SERIES	25.40 mm	25.40 mm	25.40 mm	25.40 mm	28.58 mm	28.58 mm	28.58 mm	28.58 mm
900 SERIES	28.58 mm	28.58 mm	28.58 mm	28.58 mm				
RING JOINT GASKET API NUMBER								
RING JOINT GASKET PITCH DIAMETER	211.14 mm	211.14 mm	211.14 mm	211.14 mm	269.88 mm	269.88 mm	269.88 mm	269.88 mm

* For blowout preventers furnished with 400 - 600 series flanges, the maximum working pressure is 2000 psi. Note: All blowout preventers are designed to hold pressure from below only.

Blowout Preventers

Special Note: Tables for reference only. Assemblies are no longer available.

Table 80: TYPES ‘A-1’, ‘B-1’, ‘H-1’ PREVENTERS - PART NUMBERS

PREVENTER TYPE AND FLANGE SIZE	SINGLE ASSEMBLY NUMBER	DUAL ASSEMBLY NUMBER
*‘A-1’ MANUAL, 6 in. 400 - 6 in. 600	62868	-
*‘A-1’ MANUAL, 6 in. 600 - 6 in. 900	62871	67506
*‘A-1’ CHAIN, 6 in. 400 - 6 in. 600	62874	-
*‘A-1’ CHAIN, 6 in. 600 - 6 in. 900	62877	67505
**‘B-1’ CHAIN, 8 in. 400 - 8 in. 600	69963	80361
*‘H-1’ HYDRAULIC, 6 in. 400 - 6 in. 600	64322	-
*‘H-1’ HYDRAULIC, 6 in. 600 - 6 in. 900	64324	67507
**‘B-1’ HYDRAULIC, 8 in. 400 - 8 in. 600	69962	80265

NOTE: Standard studding for 6 in. 400 - 6 in. 600 blowout preventer assemblies is 6 in. 600 studs both top and bottom. Standard studding for 6 in. 600 - 6 in. 900 blowout preventer assemblies is 6 in. 900 studs both top and bottom. Specify different studding if desired. One handwheel furnished with chain single and dual preventers; two with manual single and dual preventers. Dual preventers are assembled parallel unless crisscross mounting is specified. (Size of rubbers and rubber retainers to be specified.)

Assemblies no longer available. For reference only.

- * Less rubbers and retainers.
- ** Less rubbers, retainers and slides.

Table 81: BLOWOUT PREVENTER ACCESSORIES - PART NUMBERS

DESCRIPTION	PART NUMBER
FLANGE STUD AND NUT ASSEMBLY 6 in. 600-8 in. 400 (2 SETS REQUIRED) 6 in. 900-8 in. 600 (2 SETS REQUIRED)	** 53295 53296
TIE BOLT AND RING GASKET ASSEMBLY 6 in. 600-6 in. 900 (1 SET REQUIRED) RING GASKET R-45 API	*** 59373 19683
HYDRAULIC CONVERSION UNIT	64326
UNIVERSAL JOINT LESS TUBE*	19806
LONG BODY TUBE FOR HYDRAULIC CONVERSION UNIT	64296

- When ordering conversion kit, specify for long body, Type ‘A’, or short body, Type ‘A-1’.
- * Drive tube not included. User must furnish 2-3/8" 8RD, EUE ‘J-55’ oilfield tubing of appropriate length. THESE HANDWHEEL EXTENSION ARE REQUIRED FOR EVERY INSTALLATION!
 - ** Two sets of twelve each furnished with each preventer.
 - *** One set of 4 tie bolt assemblies, 4 top nuts and 1 ring gasket required with each dual preventers.

Table 82: RAM ASSEMBLIES - PART NUMBERS

SIZE O.D.(in.).	CONCENTRIC						OFFSET					
	RUBBER ONLY EA	RUBBER RETAINER Set (2 halves)	BOTTOM SLIDE		RAM ASSEMBLY*		RUBBER ONLY	RUBBER RETAINER	BOTTOM SLIDE		RAM ASSEMBLY	
			TYPE A-B-B1-H	TYPE A-1 & H-1	TYPE A-B-H	TYPE A-1 & H-1			TYPE A-B-B1-H	TYPE A-1 & H-1	TYPE A-B-H	TYPE A-1 & H-1
BLANK	18368	18488	21711	62859	53272	62865	-	-	-	-	-	-
1.315	80899	80898	21711	62859	-	62885	37990	38656	34841	62896	-	-
1.660	28325	28324	21711	62859	53276	62886	34889	34890	34841	62896	-	-
1.900	32740	32741	21711	62859	53277	62887	32644	32644	34841	62896	-	-
2.000	37514	37515	21711	62859	53278	62888	54767	54767	-	62896	-	62883
2.063	34803	34804	21711	62859	53279	62889	34813	34813	34841	62896	53291	62893
2-3/8	61744	18484	21711	62859	61747	62866	29760	29761	29762	62895	53292	62894
2-7/8	61745	18485	21711	62859	61748	62867	-	-	-	-	-	-
3-1/2	61746	18486	21711	62859	61749	62880	-	-	-	-	-	-
4	24075	24276	21711	62859	53283	62890	-	-	-	-	-	-
4-1/2	18367	18487	21711	62895	53284	62891	-	-	-	-	-	-
5	22220**	25010**	25011**	62860	53285	62892	-	-	-	-	-	-
5-1/2	69951**	20984**	-	-	53286**	-	-	-	-	-	-	-
7	69950**	69953**	69952**	-	53287**	-	-	-	-	-	-	-

- * Set of matched halves consisting of rubber, rubber retainers and bottom side.
- ** Type B and ‘B-1’ only.
- Note: Assemblies no longer available. For reference only.

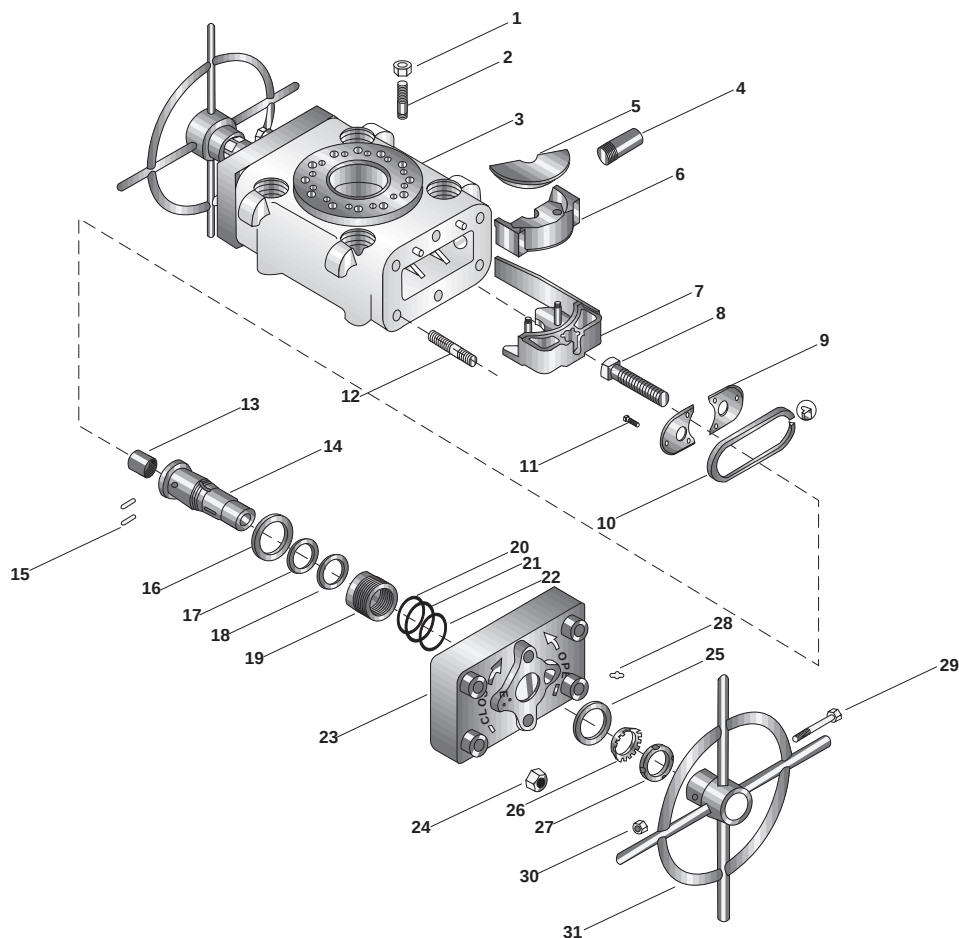


Table 83: TYPE 'A-1' MANUAL BLOWOUT PREVENTER - PART NUMBERS

ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER	ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER
1	NUT	24	23594	18	Z-SEAL PACKING	2	86590
2	STUD	24	23593	19	SEAL BODY	2	69400
3	BODY	1	N/A	-	DRIVE LOK PIN	2	69399
4	BULL PLUG	2	19451	20	O-RING	2	18223
5	TOP RUBBER RETAINER	1	-	21	O-RING	2	26161
6	PLATE RUBBER	2	-	22	O-RING	2	17452
7	BOTTOM SLIDE	1	-	23	END PLATE	2	N/A
8	FEED SCREW	2	19477	24	NUT	12	16747
9	RETAINER PLATE	4	17728	25	OUTSIDE THRUST WASHER	2	16748
10	SEAL RING	2	17601	26	LOCK WASHER	2	20840
11	HEX HEAD SCREW	12	85958	27	LOCK NUT	2	20839
12	BODY STUD	12	16746	28	HYDRAULIC FITTING	2	69275
13	THREADED BUSHING	2	19475	29	BOLT	2	17336
14	FEED SCREW NUT BODY	2	62558	30	NUT	2	13090
15	DOWEL PIN	4	17359	31	HAND WHEEL	2	N/A
16	INSIDE THRUST WASHER	2	62553		(HAND WHEEL EXTENSION KIT)	(2-Needed)	(19806)
17	NOTCHED SPACER	2	86589				

Blowout Preventers

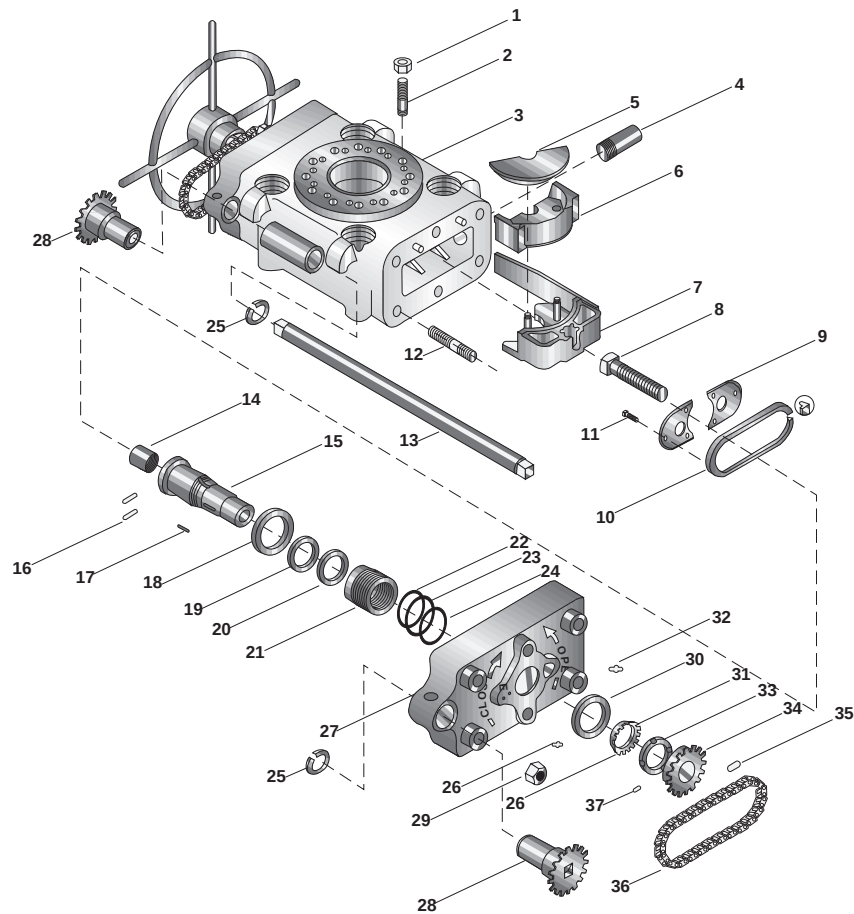


Table 84: TYPE 'A-1' CHAIN DRIVE BLOWOUT PREVENTER - PART NUMBERS

ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER	ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER
1	NUT	24	23594	19	NOTCHED SPACER	2	86589
2	STUD	24	23953	20	Z-SEAL PACKING	2	86590
3	BODY	1	N/A	21	SEAL BODY	2	69400
4	BULL PLUG	2	19451	-	DRIVE LOK PIN	2	69399
5	TOP RUBBER RETAINER PLATE	1	-	22	O-RING	2	18223
6	RUBBER	2	-	23	O-RING	2	26161
7	BOTTOM SLIDE	1	-	24	O-RING	2	17452
8	R.H. FEED SCREW	1	19476	25	SPROCKET RETAINER RING	2	21508
-	L.H. FEED SCREW (OTHER END)	1	19477	26	GREASE FITTING	2	14796
9	RETAINER PLATE	4	17728	27	END PLATE	2	N/A
10	SEAL RING	2	17601	28	SPROCKET SUB ASSEMBLY	2	20891
11	HEX HEAD SCREW	12	85958	29	NUT	12	16747
12	BODY STUD	12	16746	30	OUTSIDE THRUST WASHER	2	16748
13	COUNTER SHAFT	1	62856	31	LOCK WASHER	2	20840
14	R.H. THREADED BUSHING	1	19474	32	HYDRAULIC FITTING	2	69275
-	L.H. THREADED BUSHING	1	19475	33	LOCK NUT	2	20839
15	R.H. FEED SCREW NUT BODY	1	62562	34	RAM SPROCKET	2	20892
-	L.H. FEED SCREW NUT BODY	1	62558	35	CHAIN CONNECTOR	2	20930
16	DOWEL PIN	4	17359	36	CHAIN	2	20899
17	RAM SPROCKET KEY	2	9626	37	SET SCREW	2	12772
18	INSIDE THRUST WASHER	2	62553	-	HAND WHEEL	1	N/A
+	+(HANDWHEEL EXTENSION KIT - NEEDED)	(1)	(19806)	-	BOLT (FOR HAND WHEEL)	1	N/A
				-	NUT (FOR HAND WHEEL)	1	N/A

+ Drive Tube not included. User must furnish 2-3/8" 8RD EUE 'J-55' oilfield tubing of appropriate length. THESE HAND WHEEL EXTENSIONS ARE REQUIRED FOR EVERY INSTALLATION

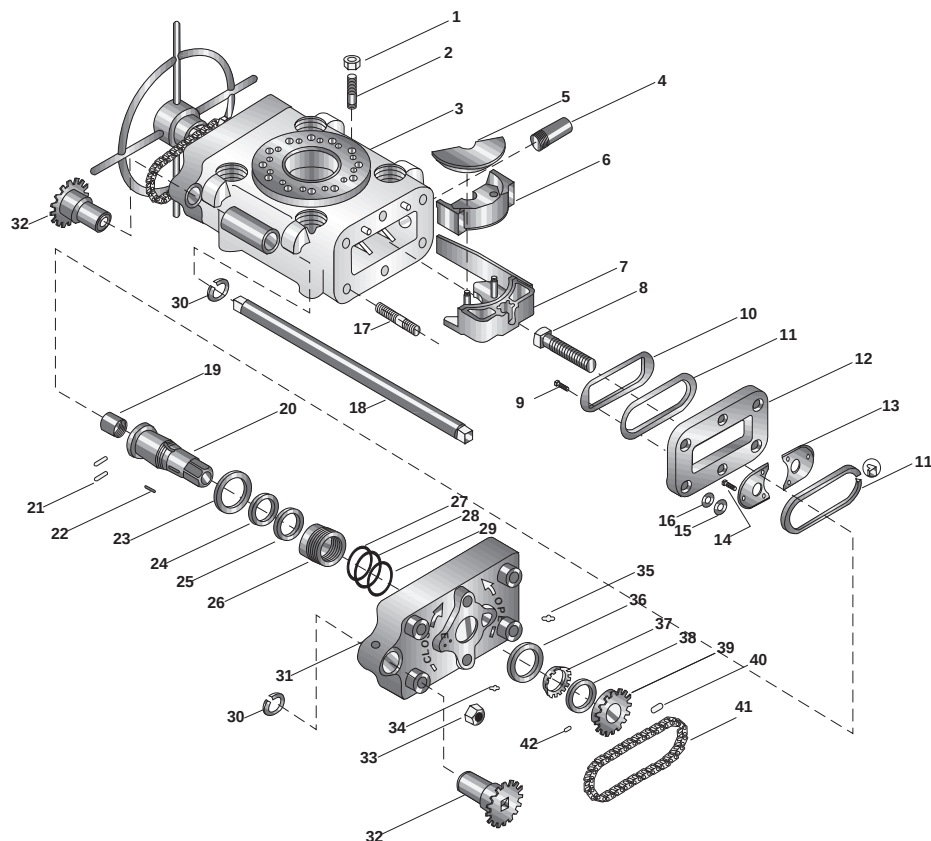


Table 85: TYPE 'B-1' CHAIN DRIVE BLOWOUT PREVENTER - PART NUMBERS

ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER	ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER
1	NUT	24	23594	21	DOWEL PIN	4	17359
2	STUD	24	23593	22	RAM SPROCKET KEY	2	9626
3	BODY	1	N/A	23	INSIDE THRUST WASHER	2	62553
4	BULL PLUG	2	19451	24	NOTCHED SPACER	2	86589
5	TOP RUBBER RETAINER PLATE	1	-	25	Z-SEAL PACKING	2	86590
6	RUBBER	2	-	26	SEAL BODY	2	69400
7	BOTTOM SLIDE	1	-	-	DRIVE LOK PIN	2	69399
8	R.H. FEED SCREW	1	19476	27	O-RING	2	18223
-	L.H. FEED SCREW (OTHER END)	1	19477	28	O-RING	2	26161
9	HEX HEAD SCREW	4	85958	29	O-RING	2	17452
10	GASKET RETAINER	2	69831	30	SPROCKET RETAINER	2	21508
11	SEAL RING	4	17601	31	RING END PLATE	2	N/A
12	SPACER	2	69830	32	SPROCKET SUB ASSEMBLY	2	20891
13	RETAINER PLATE	4	17728	33	NUT	12	16747
14	HEX HEAD SCREW	12	85958	34	GREASE FITTING	2	14796
15	SPACER RETAINER	8	69826	35	HYDRAULIC FITTING	2	69275
16	SPACER RUBBER	8	69827	36	OUTSIDE THRUST WASHER	2	16748
17	BODY STUD	12	69829	37	LOCK WASHER	2	20840
18	COUNTER SHAFT	1	21450	38	LOCK NUT	2	20839
19	R.H. THREADED BUSHING	1	19474	39	RAM SPROCKET	2	20892
-	L.H. THREADED BUSHING	1	19475	40	CHAIN CONNECTOR	2	20930
20	R.H. FEED SCREW NUT BODY	1	62562	41	CHAIN	2	20899
	L.H. FEED SCREW NUT BODY	1	62558	42	SET SCREW	2	12772
				-	HAND WHEEL	1	N/A
+	+(HANDWHEEL EXTENSION KIT - NEEDED)	(1)	(19806)	-	BOLT (FOR HAND WHEEL)	1	N/A
				-	NUT (FOR HAND WHEEL)	1	N/A

+ Drive tube not included. User must furnish 2-3/8", 8RD EUE 'J-55' oilfield tubing of appropriate length. THESE HANDWHEEL EXTENSIONS ARE REQUIRED FOR EVERY INSTALLATION

Blowout Preventers

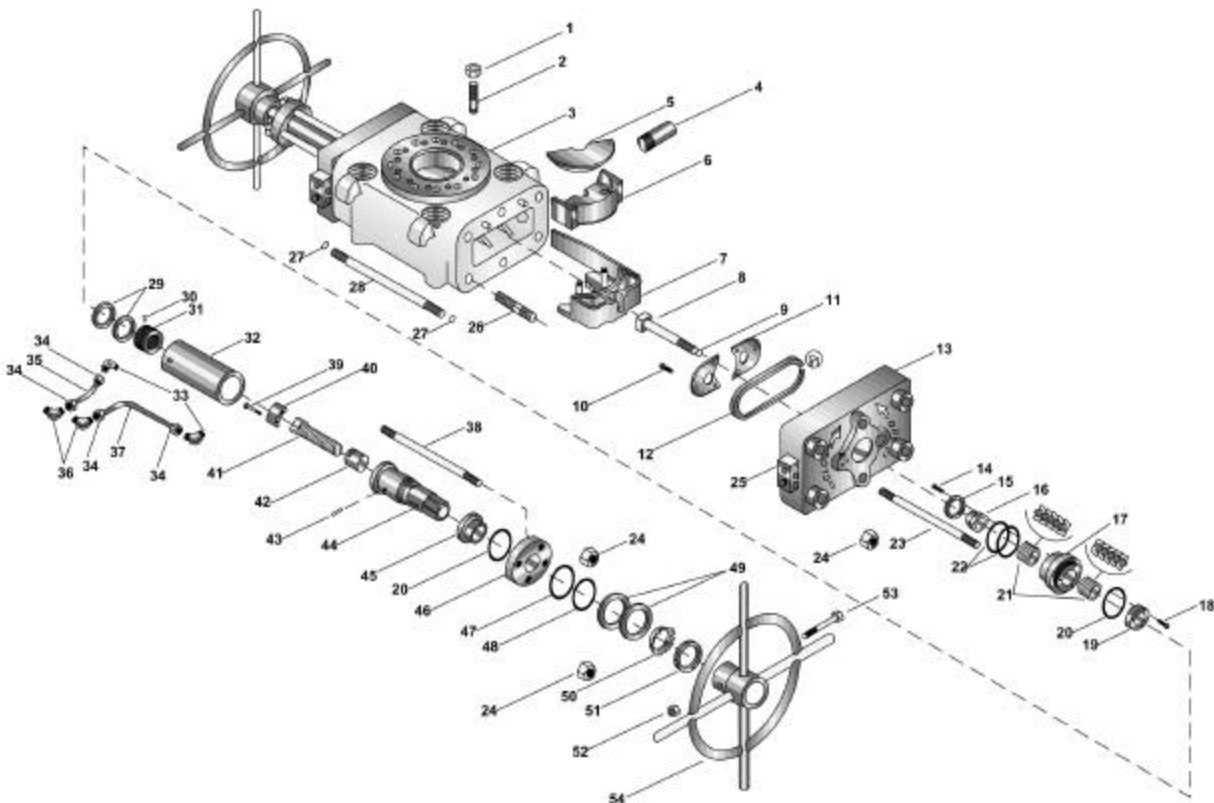


Table 86: TYPE 'H-1' HYDRAULIC BLOWOUT PREVENTER - PART NUMBERS

ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER	ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER
1	NUT	24	23594	30	SET SCREW	4	31213
2	STUD	24	23593	31	PISTON	2	64274
3	BODY	1	N/A	32	CYLINDER	2	64266
4	BULL PLUG	2	19451	33	ELBOW BODY	4	65223
5	TOP RUBBER RETAINER PLATE	1	--	34	NUT	8	59341
6	RUBBER	2	--	--	SLEEVE	8	69342
7	BOTTOM SLIDE	1	--	35	SHORT END TUBE	2	64301
8	PISTON ROD	2	80518	36	ELBOW BODY	4	64317
9	O-RING	2	18129	37	LONG END TUBE	2	64300
10	HEX HEAD SCREW	12	85958	38	LONG TIE ROD	4	64269
11	RETAINER PLATE	4	17728	39	CAP SCREW	4	43706
12	SEAL RING	2	17601	40	LOCKING KEY	2	64419
13	END PLATE SUB ASSEMBLY (L.H.)	1	N/A	41	FEED SCREW	2	64290
--	END PLATE SUB ASSEMBLY (R.H.)	1	N/A	42	THREADED BUSHING	2	19475
14	CAP SCREW	6	64327	43	DOWEL PIN	4	17395
15	BOTTOM RETAINER PLATE	2	64272	44	FEED SCREW NUT BODY	2	62558
16	RAM GUIDE	2	64275	45	INSIDE THRUST WASHER	2	68543
17	PACKING HOLDER	2	64271	46	CYLINDER END PLATE	2	64268
18	CAP SCREW	6	28898	47	O-RING	2	17468
19	TOP RETAINER PLATE	2	64273	48	BACK-UP RING	2	68542
20	O-RING	4	233470	49	THRUST WASHER	4	62553
21	PACKING SET	4	64318	50	LOCK WASHER	2	20840
22	O-RING	4	26161	51	LOK NUT	2	20839
23	SHORT TIE ROD	4	64270	52	NUT	2	13090
24	NUT PIPE PLUG	16	16747	53	BOLT	2	17336
25		4	14692	54	HANDWHEEL	2	N/A
26	BODY STUD	8	16746	55	PIPE PLUG (NIT SHOWN, LOCATED IN CYLINDER)	2	24222
27	O-RING	4	19337				
28	BODY TUBING	2	65260				
29	PACKING	4	64280	+	+(HANDWHEEL EXTENSION KIT - NEEDED)	(2)	N/A

+ Drive tube not included. User must furnish 2-3/8" 8RD EUE 'J-55' oilfield tubing of appropriate length.
THESE HANDWHEEL EXTENSIONS ARE REQUIRED FOR EVERY INSTALLATION

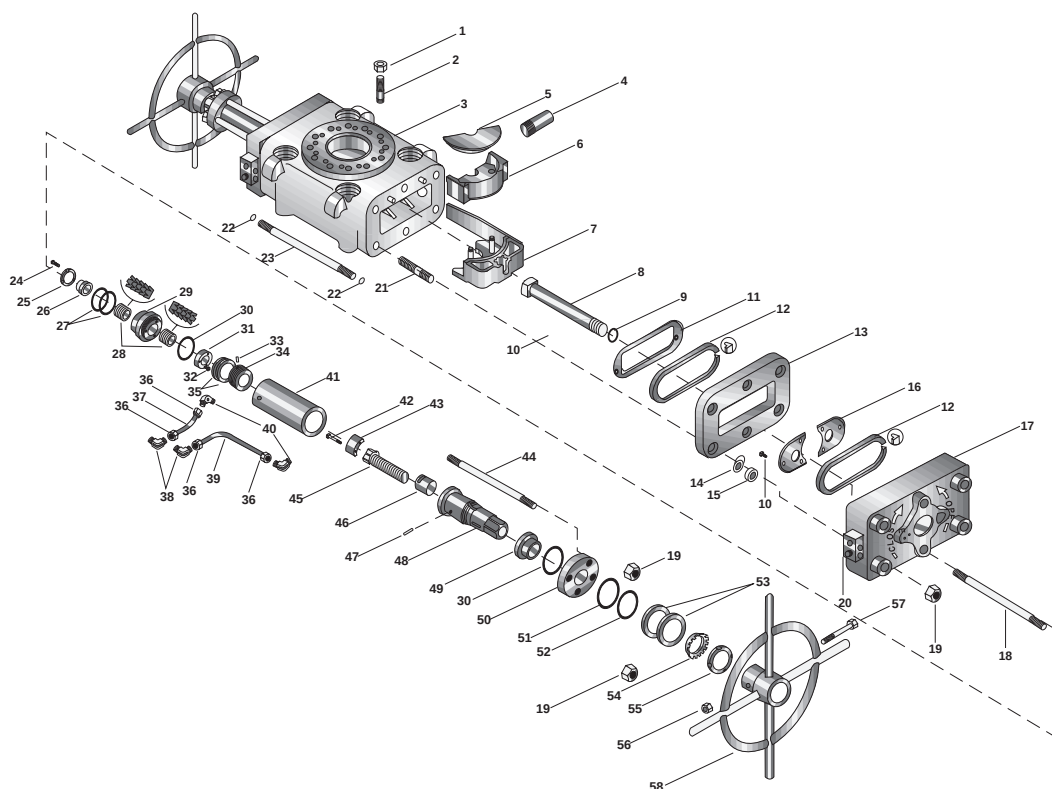
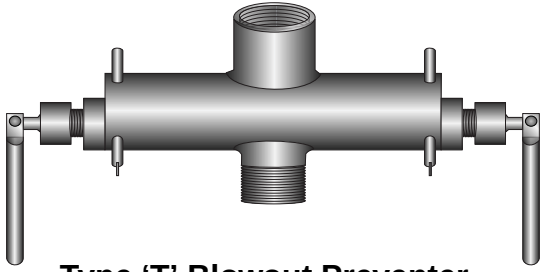


Table 87: TYPE 'B-1' HYDRAULIC BLOWOUT PREVENTER - PART NUMBERS

ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER	ITEM	DESCRIPTION	QTY. REQ'D.	PART NUMBER
1	NUT	24	23594	31	TOP RETAINER PLATE	2	64273
2	STUD	24	23593	32	CAP SCREW	6	28898
3	BODY	1	N/A	33	SET SCREW	4	31213
4	BULL PLUG	2	19451	34	PISTON	2	64274
5	TOP RUBBER RETAINER PLATE	1	-	35	PACKING	4	64280
6	RUBBER	2	-	36	NUT	8	69341
7	BOTTOM SLIDE	1	-	-	SLEEVE	8	69342
8	PISTON ROD	2	80518	37	SHORT END TUBE	2	64301
9	O-RING	2	18129	38	ELBOW BODY	4	64317
10	HEX HEAD SCREW	16	85958	39	LONG END TUBE	2	64300
11	GASKET RETAINER	2	69831	40	ELBOW BODY	4	65223
12	SEAL RING	4	17601	41	CYLINDER	2	64266
13	SPACER	2	69830	42	CAP SCREW	4	43706
14	RUBBER SPACER	8	69827	43	LOCKING KEY	2	64419
15	SPACER RETAINER	8	69826	44	LONG TIE ROD	4	69828
16	RETAINER PLATE	4	17728	45	FEED SCREW	2	64290
17	END PLATE SUB ASSEMBLY (L.H.)	1	N/A	46	THREADED BUSHING, L."V"V.H.	2	19475
-	END PLATE SUB ASSEMBLY (R.H.)	1	N/A	47	DOWEL PIN	4	17359
18	SHORT TIE ROD	4	64270	48	FEED SCREW NUT BODY	2	62558
19	NUT	16	16747	49	INSIDE THRUST WASHER	2	68543
20	PIPE PLUG	4	14692	50	CYLINDER END PLATE	2	64268
21	BODY STUD	8	69829	51	O-RING	2	17468
22	O-RING	4	19337	52	BACK-UP RING	2	68542
23	BODY TUBING	2	64296	53	THRUST WASHER	4	62553
24	CAP SCREW	6	64327	54	LOCK WASHER	2	20840
25	BOTTOM RETAINER PLATE	2	64272	55	LOCK NUT	2	20839
26	RAM GUIDE	2	64275	56	NUT	2	13090
27	O-RING	4	26161	57	BOLT	2	17336
28	PACKING SET	4	64318	58	HANDWHEEL	2	N/A
29	PACKING HOLDER	2	64271	59	PIPE PLUG (NOT SHOWN, LOCATED IN CYLINDER)	2	24222
30	O-RING	4	23470	+	+(HANDWHEEL EXTENSION KIT - NEEDED)	(2)	N/A

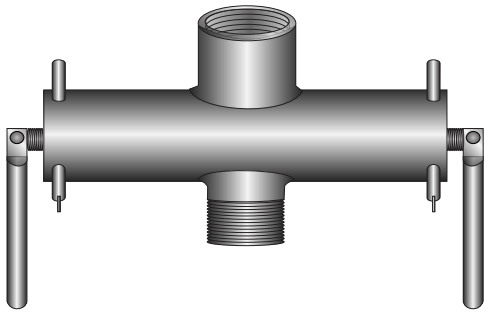
+ Drive tube not included. User must furnish 2-3/8", 8RD EUE 'J-55' oilfield tubing of appropriate length. THESE HANDWHEEL EXTENSIONS ARE REQUIRED FOR EVERY INSTALLATION

Blowout Preventers



Type 'T' Blowout Preventer

The type 'T' blowout preventer is the industry's first high-temperature blowout control unit. Rated at 550°F and 1,500 psi working pressure, the type 'T' was developed specifically for use on steam injection, downhole heater, and high-temperature production installations. Designed for 3-1/2" tubing, the preventer is available with blank rams or to pack off all sizes of polished rods, macaroni pipe, or wirelines. All metal backed rams are used with a newly developed sealing element for additional safety in handling high-temperature fluids. Pressure around the rams is equalized for easy operation under high pressure. The Type 'T' series rams can also be replaced with low cost Type 'G' tubing blowout preventer rams for running or pulling sucker rods and macaroni tubing when the well is chilled



Type 'G' Blowout Preventer

Table 88: TYPE 'G' BOP - ENGINEERING DATA

TUBING O.D.	2-3/8 in.	2-7/8 in.	3-1/2 in.	2-3/8 in.	2-7/8 in.	3-1/2 in.
WORKING PRESSURE	1500 PSI	1500 PSI	1500 PSI	10300 kPa	10300 kPa	10300 kPa
TEST PRESSURE	3000 PSI	3000 PSI	3000 PSI	20700 kPa	20700 kPa	20700 kPa
APPROXIMATE WEIGHT	30 LB	40 LB	50 LB	14 kg	18 kg	23 kg
OVERALL HEIGHT	9-1/4 in.	9-3/4 in.	10-1/16 in.	234.95 mm	247.65 mm	260.35 mm
OVERALL WIDTH	3-1/4 in.	3-3/4 in.	4-1/4 in.	82.55 mm	95.25 mm	107.95 mm
OVERALL LENGTH, RAMS CLOSED	18-1/2 in.	18-1/2 in.	20 in.	469.90 mm	469.90 mm	508 mm
TUBING THREAD SIZE	EUE 8RD	EUE 8RD	LP 8V			

Table 91: TYPE 'G' TUBING BLOWOUT PREVENTER COMPLETE - PART NUMBERS

PREVENTER I.D. (in.)	PREVENTER I.D. (mm)	TUBING O.D. (in.)	FIELD THREAD SIZE	FIELD CONNECTIONS			ASSEMBLY NUMBER BY RUBBER I.D.				BODY LESS RAMS
				TOP	BOTTOM	BLANK	1-1/8 in.	1-1/4 in.	1-1/2 in.	1-3/4 in.	
2	50.80	2-3/8	8RD EUE	BOX	PIN	26278	26281	26284	-	-	83913
2-1/2	63.50	2-7/8	8RD EUE	BOX	PIN	26617	26639	26640	26641	-	83914
3	76.20	3-1/2	LP8V	BOX	PIN	26728	-	26730	26731	26166	83915

Table 89: TYPE 'T' BOP - ENGINEERING DATA

SIZE, I.D. (in.)	3	3
WORKING PRESSURE	1500 PSI	10300 kPa
TEST PRESSURE	3000 PSI	20700 kPa
APPROXIMATE WEIGHT	74 LB	34 kg
OVERALL HEIGHT	10-1/4 in.	260.35 mm
OVERALL WIDTH	4-1/4 in.	107.95 mm
OVERALL LENGTH, RAMS CLOSED	30 in.	762.00 mm
FIELD CONNECTIONS, BOX/PIN	3-1/2 in. O.D.	3-1/2 in. O.D.
TUBING THREAD SIZE	LP8V	LP8V
THERMAL RATING	650°F	340°C

Table 90: TYPE 'T' BOP - ENGINEERING DATA

PART NAME	PART NUMBER	
	BLANK	W/ 1-1/4 in. RAMS
PREVENTER COMPLETE	-	61955
RAM ASSEMBLY	55792	58073
SEALING ELEMENT	55780	58072
TOP RETAINER	55783	58070
BOTTOM RETAINER	55768	58071

Guiberson Tubing Blowout Preventers are designed to contain well pressure when swabbing or handling sucker rods or small diameter tubing. In swabbing applications the preventer can supplement the lubricator, allowing removal of the oil saver. A single unit may be employed above the master valve, or two preventers may be stacked and the lower one fitted with blind rams in place of the master valve.

The Tubing Blowout Preventer uses a special rubber packing element, molded integrally to a steel slide for maximum safety and freedom from leakage. The chamfered tops of the rubber elements allow them to deform under pressure without fouling the housing, ensuring easy retractability. The drive screws of the preventer are located at the center of the sealing surface of the rubber, off-center of the rams, for maximum positive seal against the sinker bar, tubing, or rod. An O-ring seal around the rams prevents pressure bypass in any position.

Blowout Preventers

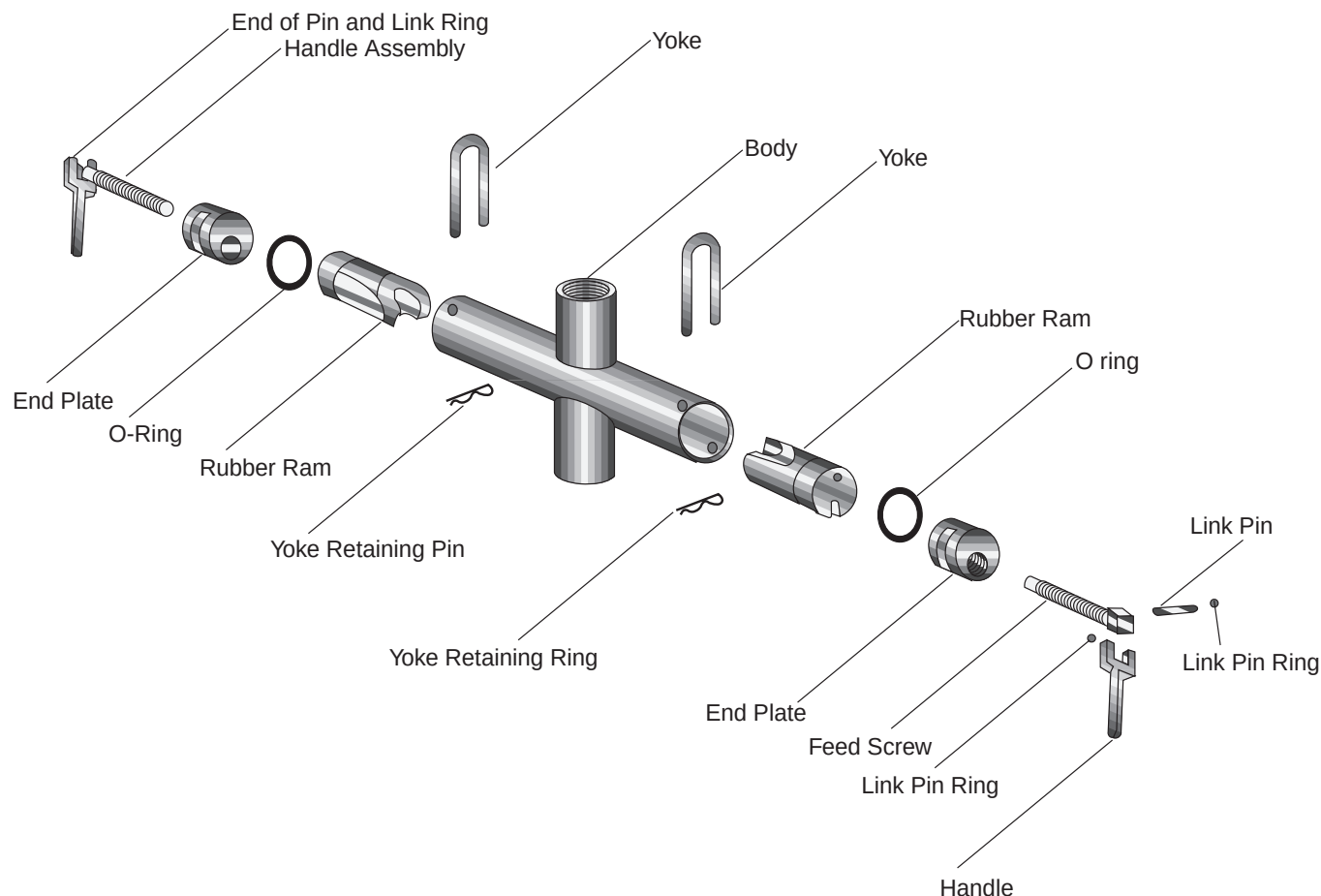


Table 92: TYPE 'G' TUBING BLOWOUT PREVENTERS PART NUMBERS

I.D. (in.)		2	2-1/2	3
O.D. (in.)		2-3/8	2-7/8	3-1/2
DESCRIPTION	QTY. REQ'D.	PART NUMBER	PART NUMBER	PART NUMBER
BODY - MALE	1	26246	26619	26733
RUBBER RAM (2 PCS)	(1 SET)	*	*	*
LINK PIN	2	27010	26146	26146
LINK PIN RING	4	13762	13762	13762
HANDLE	2	26972	26144	26144
END PLATE	2	26977	26635	27486
FEED SCREW	2	26971	26976	26976
YOKE	2	24571	26634	27484
YOKE RETAINING RING	2	54509	54509	54509

* See preventer rams table for assembly numbers.

Table 93: TYPE 'G' BOP RUBBER RAM - PART NUMBERS

RAM I.D. (in.)	PREVENTER I.D.		
	2-3/8	2-7/8	3-1/2
BLANK	28262	28263	28264
9/16	-	45019	59388
5/8	-	44969	59393
3/4	-	66458	59410
7/8	-	54571	59389
1	-	59386	-
1.050	-	41424	45056
1-1/8	28354	28336	28365
1-1/4	28355	28331	28366
1.315	45055	44109	44057
1-3/8	-	59387	-
1-1/2	28356	28337	28367
1-5/8	-	-	-
1.660	-	43629	44963
1-3/4	28357	28346	28368
1.900	-	43630	45609
2.063	-	-	59394

RAMS sold individually (2 per set)

Blowout Preventers

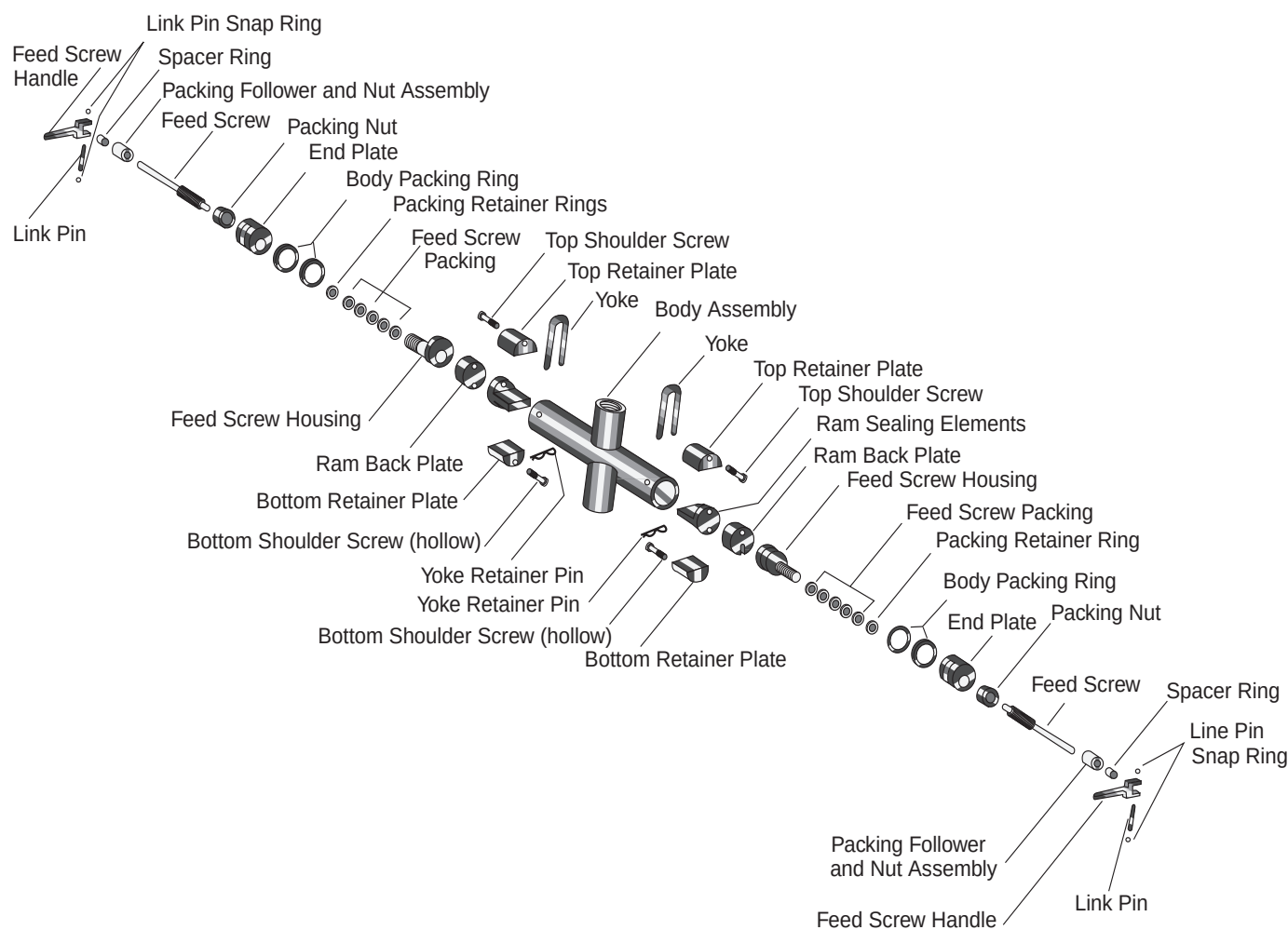
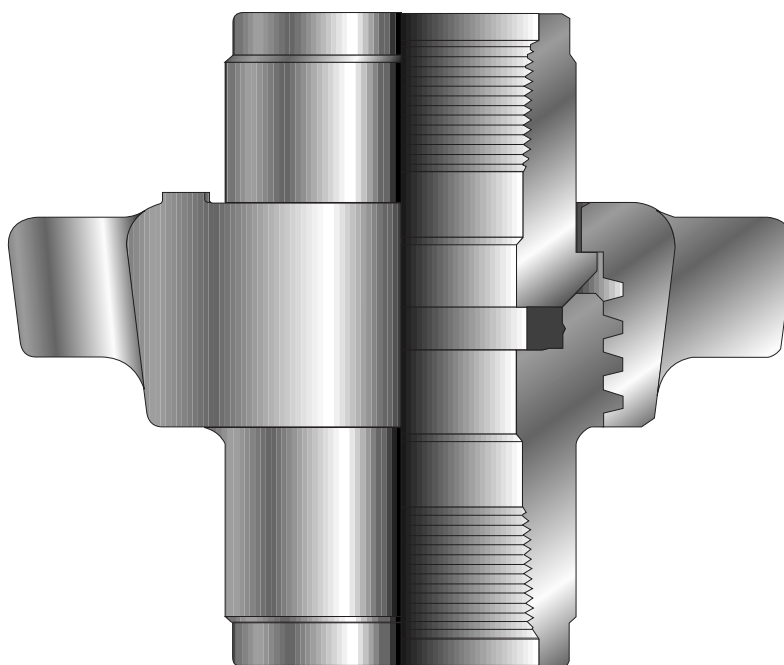


Table 94: TYPE 'T' HI-TEMPERATURE BLOWOUT PREVENTER

DESCRIPTION	QTY. REQ'D.	PART NUMBER
ASSEMBLY COMPLETE		
1-1/4 in.	-	61955
BODY ASSEMBLY	1	55765
BODY PACKAGE RING	4	55221
END PLATE	2	55770
FEED SCREW	2	55771
FEED SCREW HOUSING	2	55772
FEED SCREW PACKAGE	2 SETS	55778
FEED SCREW HANDLE	2	26144
LINK PIN	2	26146
LINK PIN RING	4	13762
PACKAGE FOLLOWER	2	55773
PACKING NUT	2	55776
PACKING RETAINER RING	4	55777
RUBER RAM ASSEMBLY	2	*
SPACER RING	2	55782
YOKE	2	44253
YOKE RETAINER PIN	2	54509

Table 95: TYPE 'T' BOP RUBBER RAM ASSEMBLY

RUBBER SIZE (in.)		BLANK	1-1/4	1-1/2
PART NAME	QTY. REQ'D.	PART NUMBER	PART NUMBER	PART NUMBER
ASSEMBLY COMPLETE	2	-	58073	58076
BOTTOM RETAINER PLATE	2	55768	58071	58068
BOTTOM SHOULDER SCREW	2	55769	55769	55769
RAM BACK PLATE	2	55781	55781	55781
RAM SEAL ELEMENT	2	55780	58072	80464
TOP RETAINER PLATE	2	55783	58070	58066
TOP SHOULDER SCREW	2	55784	55784	55784



Seal-O-Matic Union

Unions

Guiberson offers a complete line of unions, designed and built to provide the fastest, most convenient, and safest coupling available.

Available in a wide range of sizes, with tubing or line pipe threads, Guiberson unions are made of extra-strength alloy steel with durable rubber components developed in the Guiberson rubber laboratories. Guiberson wing nut unions have three lugs instead of the usual two, allowing faster, more convenient hammering up regardless of nut position or space restrictions. Maximum strength and ease in making and breaking connections is assured by use of heavy-duty Acme threads at the seal connection. Full thread profile is maintained throughout the connection to ensure easy starting and eliminate thread damage that occurs when the crest of the first thread diminishes.

Mating sealing surfaces are conical to provide a tight seal even when the two parts are not perfectly aligned. This important feature allows standard Guiberson unions to be used in many applications where special misalignment type unions would otherwise have to be employed. Tight sealing blanking plugs are available for all Guiberson unions. These plugs can be furnished in plain versions, or with 1/2 in. pipe connections for gauges, etc.

Seal-O-Matic Unions

Guiberson Seal-O-Matic unions are available in 10,000 psi CWP. Seal-O-Matic unions use a special rubber seal ring for positive sealing with minimum torque. This ring snap-fits into a detent within the hub to prevent its loss.

Seal-O-Matic unions are available in 1 in. to 4 in. line pipe sizes.

Unions

Table 96: TYPE ‘V’ SEAL-O-MATIC UNIONS - PART NUMBERS

COLD WORKING PRESSURE	4000 CWP PSI 27,580 kPa	6,666 CWP PSI 45,962 kPa	10,000 CWP PSI 68,920 kPa
COLOR CODE	YELLOW AND SILVER	RED AND SILVER	GREEN AND SILVER
PART NAME AND SIZE:	PART NUMBER	PART NUMBER	PART NUMBER
1 in. 11-1/2 in. ‘V’ UNION: WITH WING NUT WITH HEX NUT	N/A	N/A	20707
1-1/4 in. 11-1/2 in. ‘V’ UNION: WITH WING NUT	N/A	N/A	20713
1-1/2 in. 11-1/2 in. ‘V’ UNION: WITH WING NUT WITH HEX NUT	N/A	N/A	20719
2 in. 11-1/2 in. ‘V’ UNION: WITH WING NUT	N/A	12357	20725
2-1/2 in. 8V UNION: WITH WING NUT	17099	12332	N/A
3 in. 8V UNION: WITH WING NUT	17100	12333	N/A
4 in. 8V UNION: WITH WING NUT	17101	12385	N/A
COLOR CODE 2-3/8 in. EUE 8RD UNION COMPLETE WITH WING NUT 2-7/8 in. EUE 8RD UNION COMPLETE WITH WING NUT	N/A	RED AND BLUE 56701 56704	N/A

NOTE: When ordering specify part number, size, and type. Other threads available on special order at additional charge.

Table 97: BLANKING PLUGS FOR SEAL-O-MATIC UNIONS - PART NUMBERS

PART NAME	1 in. PART NUMBER	1-1/2 in. PART NUMBER	2 in. PART NUMBER	4 in. PART NUMBER
SOLID BLANKING PLUG	17191	17193	17194	N/A
BLANKING PLUG WITH 1/2 in. NPT TAP	N/A	17200	10362	13294

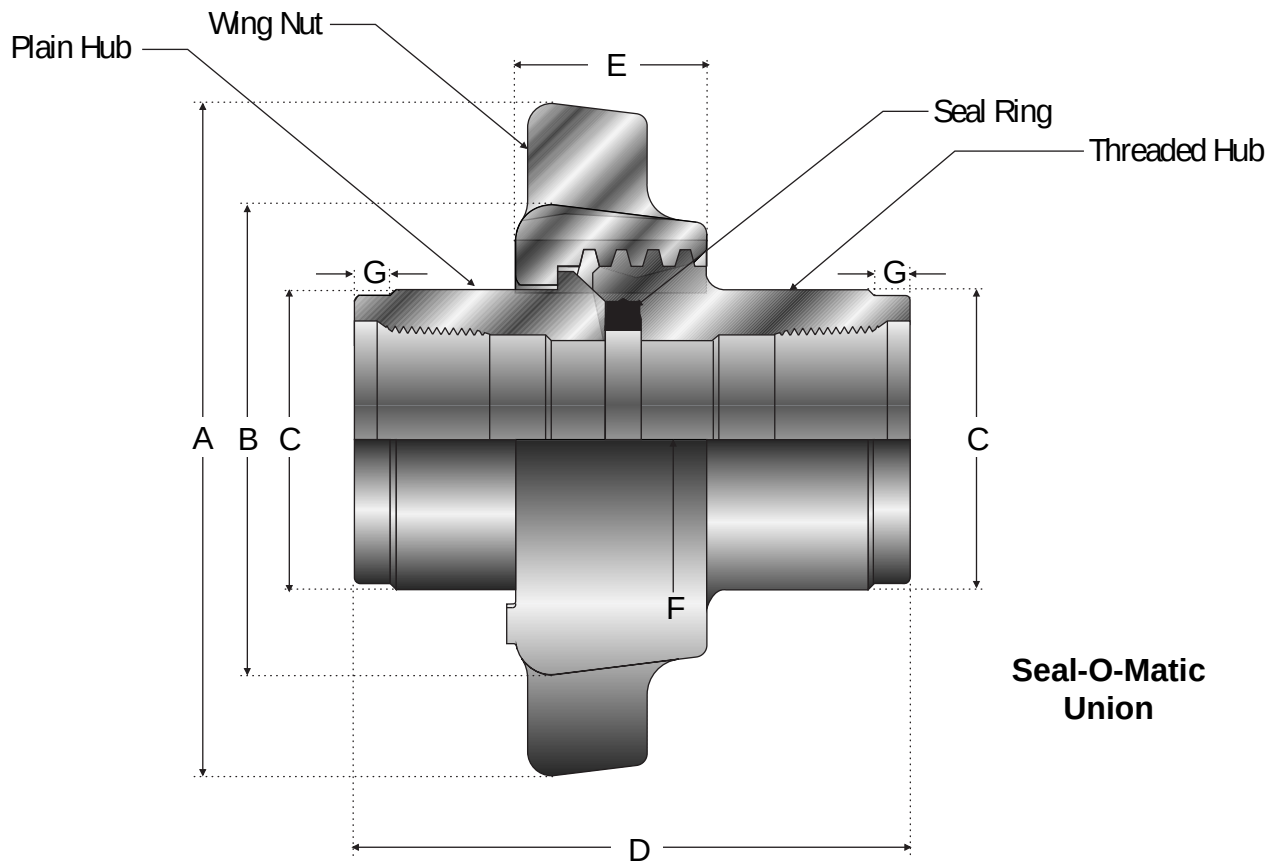
Table 98: SEAL RINGS FOR SEAL-O-MATIC UNIONS - PART NUMBERS

SIZE (in.)	PART NUMBER	4000 PSI CWP UNION	6,666 PSI CWP UNION	10,000 PSI CWP UNION
1	93533* 13172	N/A	N/A	*
1-1/4	13143	N/A	N/A	*
1-1/2	13180	N/A	N/A	*
2	93539** 10233	N/A	*	*
2-1/2	93538** 10175	*	*	N/A
3	10176	*	*	N/A
4	10178	*	*	N/A

* Viton Seal Ring - temperature range -15°F (-26C) to 400°F (204C). Not recommended for steam or high temperature acids. Other sizes available upon request.
** Artic Seal Rings - temperature range -55°F (-48C) to 225°F (107C). Remains flexible at low temperature above 100°F (37C). Ring will exhibit more swelling than other standard rings - other sizes available upon request.

Table 99: SEAL-O-MATIC UNION - DIMENSIONS DATA

UNION SIZE API LINE PIPE (in.)	THREADS PER IN. API LINE PIPE	DIMENSIONS (in.)									
		WING NUT							HEXAGON NUT		WEIGHT LB UNION COMPLETE
		CLEARANCE DIAMETER A	B	C	D	E	F	G	ACROSS CORNERS	ACROSS FLATS	
1	11-1/2	5.00	3.00	2.00	4.00	2.00	1.09	.25	3.19	3.00	4
1-1/4	11-1/2	5.00	4.00	2.25	4.00	2.00	1.44	.25	4.06	4.00	5
1-1/2	11-1/2	6.00	4.09	3.00	4.13	1.63	2.00	.25	4.31	4.00	7
2	11-1/2	7.00	5.00	3.13	6.00	2.00	2.06	.23	-	-	12-1/2
2-1/2	8	8.00	6.00	4.00	7.00	2.06	3.00	.48	-	-	18
3	8	9.00	7.00	4.38	8.00	2.31	3.13	.47	-	-	26-1/2
4	8	11.00	8.13	6.00	9.00	2.38	4.09	.48	-	-	40
DIMENSIONS, mm											
1	11-1/2	114.30	76.20	47.63	101.60	39.69	27.69	6.35	80.96	69.85	2.0 kg
1-1/4	11-1/2	127.00	88.90	57.15	101.60	39.69	36.51	6.35	103.19	88.90	2.3 kg
1-1/2	11-1/2	146.05	103.89	66.68	104.78	41.28	42.86	6.35	109.54	95.25	3.2 kg
2	11-1/2	177.80	123.83	79.38	147.64	50.80	52.39	5.84	-	-	5.7 kg
2-1/2	8	203.20	147.64	92.08	177.80	52.39	63.50	12.19	-	-	8.2 kg
3	8	228.60	169.86	111.13	198.44	58.74	79.38	11.94	-	-	12.0 kg
4	8	273.05	206.38	139.70	217.49	60.33	103.89	12.19	-	-	18.1kg



GW Cup-Type Packers and Cups



Type 'GW' Two-Cup Packer

Tubing and Casing Cup-Type

The GW packer is available in a full range of tubing or casing sizes, in two-cup or four-cup models, with either standard or special cups. In its simplest form, the two-cup GW has a one-piece seamless steel mandrel with top and bottom box connections. It has no latch or locking mechanism to be fouled by sand, shale, or mud. It has no slips, does not require tubing weight to be set, and packs-off equally well at any point in the hole.

The GW packer is offered in two types: Standard and Special. Simplicity of design, rugged construction, and unusually low cost make the GW attractive to the operator for a wide variety of applications.

Standard GW Packer

The Standard GW packer has a seamless steel mandrel with an extra large opening. Standard GW, Standard Heavy-Duty GW and GWD Heavy-Duty cups fit this packer. The Standard GW packer is suitable for all applications involving normal pressures.

Special GW Packer

The Special GW Packer has a full-opening, thick wall, seamless steel mandrel, making it an excellent choice for rugged-duty, high-pressure applications. The Special GW and Special Heavy-Duty GW cups fit this packer.

A Universal Packing Element Adaptable to a Variety of Tools

- Well Testing Tools
- Cementing Tools
- Sand Pump Pistons
- Perforation Cleaners
- Production Packers
- Liner Packers
- Junk Pushers
- Casing Testers
- Blowout Preventer Testers



Type 'GW' Packer Cup And Thimble

Powerful Type GW Packer Cups

The GW cups, used as a packing element on this packer, hold so well that the operator is cautioned to be sure means of bypassing fluid is provided when using the GW packer. Where fluid circulation above the cups is required, a Guiberson circulation slide valve may be used. For anchoring the packer, a Guiberson mechanical tubing anchor or a Guiberson hydraulic anchor is recommended.

Choose From Five Varieties in a Wide Range of Sizes

There are five variations of GW packer cups; the Standard, the Standard Heavy-Duty, the GWD Heavy-Duty, the Special and the Special Heavy-Duty. Each is available in a wide range of sizes. These cups, plus the two type of GW packers, give the operator virtually unlimited possible combinations from which to choose for the well service purpose. New applications for GW packers and cups are constantly being discovered and reported from the field. Consult your Guiberson representative if you have a particular problem that the GW might solve.

Typical GW Packer Applications

Figure One

The packer off liner -- the GW is run in below a wing or baffle coupling. The coupling serves to center the packer and supports the tubing on the liner. Tubing may also be spaced in liner with anchor-pipe below the packer. Circulation from casing to tubing may be established, if desired, by circulating down the casing past the cup lips and up the tubing. In this installation, cup lips are pointing down with ample fluid passage around the packer before entering liner.

Figure Two

To pack off mud or fluid in casing above packer, the GW is run in above an anchor pipe with a Type S or SJ slide valve above the packer. Valve is open while running in to allow fluid to bypass packer on which cups are assembled with lips pointing up. With anchor pipe resting on bottom and valve closed, the GW will pack off mud or fluid in casing above the packer. Well may then be swabbed in through the tubing leaving the casing loaded with fluid.

Figure Three

To pack off casing and produce through casing on pumping well without tubing leaks, the GW is run in with a standing valve, working barrel, and perforated mandrel above the packer in the order named and an anchor pipe below the packer on which the cup lips are pointing up. A double stuffing box is used at the wellhead. Tubing may be filled with fresh oil and the well

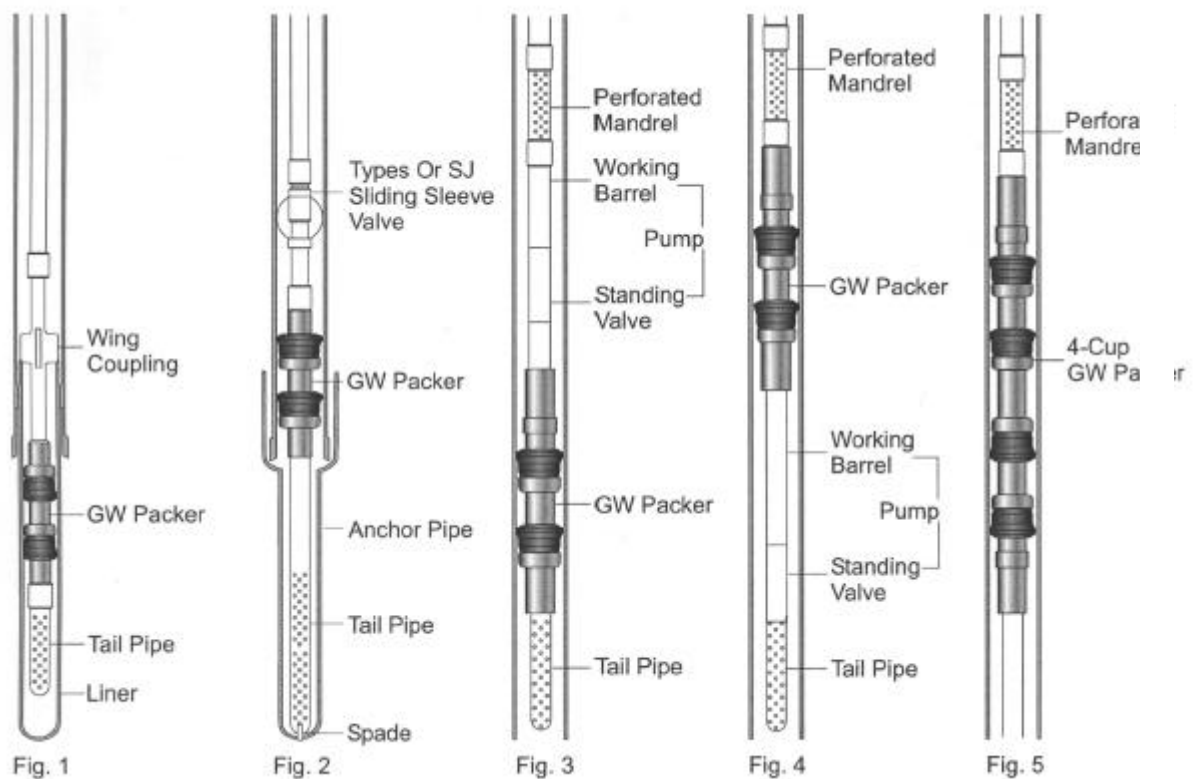
pumped to produce through the casing. Fresh oil will stay in the tubing and keep the rods lubricated. If tubing should later leak, well could be produced through either casing or tubing without disturbing the installation.

Figure Four

To pack off casing in a pumping well with tubing leaks, the GW is run in with a working barrel, standing valve, and anchor pipe below the packer in the order named and a perforated mandrel above the packer on which the cup lips are pointing up. A double stuffing box is used at the wellhead. Tubing and casing may then be filled with oil or water and the well pumped to produce through either casing or tubing. If it is not possible to fill casing from the surface, the well may still be pumped and tubing and casing filled with well fluid, after which, the well will produce through either casing or tubing as desired.

Figure Five

To pack off in both directions, the GW four-cup packer is run in the well with two cups pointing up and two cups pointing down. Two or more packers may be run in series to isolate specific zones and for spotting operations when used in conjunction with perforated mandrels. The above applications are only a few of many for which this versatile packer may be used. Other possible uses to fit specific well requirements will suggest themselves to the production man, service man, engineer, or drilling superintendent.



GW Cup-Type Packers and Cups

Type GW Packer Cups

Standard GW

Type GW Standard packer cup is a directional packing element that automatically seals, packing off and holding pressure on the side toward which the lip is pointed. The lip readily passes fluid in the opposite direction, acting as a casing check valve. Developed after many years of research experience and specialization in the manufacturing of flexible-lip, basket-type cups, this pressure seal packer cup is molded of a special oil and gas resistant compound. It has a strong, flexible-lip of oversize diameter, so that an immediate compression of the cup against the casing is obtained for instantaneous and positive sealing. The cup is reinforced with molded-in spring steel wires, interlocked in a metal bushing to seal and hold high pressures. The greater the differential across a GWcup, the tighter the cup seal. The Standard cup is used on the Standard GWpacker.

Special GW

The Special Type GWcup has an extra thick wall for extremely rugged well service, such as high pressure cementing and formation fracture processes. It fits the Special GWpacker.

Standard Heavy-Duty GW and Special Heavy-Duty GW

Heavy-duty cups are available in both the Standard and Special types. These cups have thicker lips, are more heavily reinforced, and are molded from compounds specifically formulated for heavy-duty applications. These cups work on the Standard and Special GW packers, respectively.

Heavy Duty GWD

The GWD is a heavy-duty packer cup that incorporates two rows of interlocking steel springs as molded-in reinforcement. This unique design makes the cup especially effective in high pressure, rugged applications such as testing and fracturing. This cup fits the Standard GW packer.

Table 99: SPECIAL GW PACKERS AND CUPS -- ENGINEERING DATA

STANDARD										METRIC								
CASING OR TUBING		TUBING O.D.	(THIMBLE) MAXIMUM METAL O.D.	CUP		MANDREL I.D.	APPROXIMATE LENGTH		FIELD THREAD CONNECTIONS	CASING OR TUBING SIZE		TUBING O.D.	(THIMBLE) MAXIMUM METAL O.D.	CUP		MANDREL I.D.		
O.D.	WEIGHT			O.D.	I.D.		2 CUP	4 CUP		O.D.	WEIGHT			O.D.	I.D.			
(in.)	(lb./ft.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)		(mm)	(kg/m)	(mm)	(mm)	(mm)	(mm)	(mm)		
3	--	1.900	2.875	3.031	1.938	1.610	22	--	11 1/2V Pipe Thread	76.2	--	48.26	73.03	76.99	49.23	40.89		
3 1/8			2.875	3.125						79.4			73.03	79.38				
3 1/2			3.250	3.370						84.9			85.60	85.60				
5 1/2	13.0 - 15.0	2 3/8	4.625	5.120	2.406	2.000	24	46	8 Rd EUE	140.0	19.34 - 22.32	60.33	117.48	130.05	61.11	50.80		
5 1/2	15.5 - 17.0		4.625	4.990						140.0	23.06 - 25.30		117.48	126.75				
5 1/2	17.0 - 20.0		4.625	4.910						140.0	25.30 - 29.76		117.48	124.71				
5 1/2	23.0		4.500	4.910						140.0	34.22		114.30	124.71				
6	14.0 - 18.0		5.125	5.580						152.0	20.83 - 26.78		130.18	141.73				
6 5/8	24.0 - 28.0	2 7/8	5.625	5.950	2.906	2.500	26	50		168.0	35.71 - 41.66	73.03	142.88	151.13	73.81	63.50		
7	38.0									178.0	56.54							
6 5/8	32.0									168.0	47.62		136.53	146.18				
7	17.0 - 20.0									178.0	25.32 - 29.76		152.40	166.67				
7	22.0 - 24.0									178.0	32.74 - 35.71		152.40	164.59				
7	26.0 - 30.0									178.0	38.69 - 44.64		149.23	159.77				
6 5/8	24.0 - 28.0	2 7/8	5.625	5.950	2.906	2.500	26	50		168.0	35.71 - 41.66		142.88	151.13				
7	38.0									178.0	56.54							
6 5/8	32.0									168.0	47.62		136.53	146.18				
7	17.0 - 20.0									178.0	25.32 - 29.76		152.40	166.67				
7	22.0 - 24.0									178.0	32.74 - 35.71		152.40	164.59				
7	26.0 - 30.0									178.0	38.69 - 44.64		149.23	159.77				
8	26.0	2 7/8	7.250	7.454	3.531	3.000	30	58		203.0	38.69	73.03	184.15	189.33	89.69	76.20		
8 5/8	28.0 - 36.0		7.375	8.062						219.0	41.66 - 53.57		187.33	204.77				
8 5/8	36.0 - 40.0		7.375	7.880						219.0	53.57 - 59.52		187.33	200.15				
8 5/8	40.0 - 49.0		7.375	7.760						219.0	59.52 - 72.91		187.33	197.10				
9	40.0 - 45.0		7.375	8.174						229.0	59.52 - 66.96		187.33	207.62				
9 5/8	36.0 - 43.5		8.250	8.950						244.0	53.57 - 64.73		209.55	227.33				

GW Cup-Type Packers and Cups

Table 100: STANDARD GW PACKERS AND CUPS -- ENGINEERING DATA

STANDARD									METRIC							
CASING OR TUBING		TUBING SIZE	(THIMBLE) MAXIMUM METAL O.D.	CUP		MANDREL I.D.	APPROXIMATE LENGTH		FIELD THREAD CONNECTIONS	CASING OR TUBING SIZE	TUBING O.D.	(THIMBLE) MAXIMUM METAL O.D.	CUP		MANDREL I.D.	
O.D.	WEIGHT			O.D.	I.D.		2 CUP	4 CUP		O.D.			O.D.	I.D.		
(in.)	(lb./ft.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	
2 3/8	4.6	1.050	1.875	2.000	1.094	0.750	20	--		6.84	26.67	47.63	50.80	27.79	19.05	
2 7/8	8.8		1.875	2.285				--		13.09		47.63	58.04			
2 7/8	6.4	1.315	2.250	2.490	1.440	0.870	22	--	11 1/2V Pipe Thread	9.52	33.4	57.15	63.25	34.14	22.10	
3 1/2	8.5 - 10.2		2.750	3.020				--		12.65 - 15.18		57.15	76.71			
3 1/2 D.P.	13.3		2.438	2.770				--		19.79		61.93	70.36			
4	9.5	1.900	3.250	3.590	1.938	1.610	22	--	10 RD NUE	14.14	48.26	82.55	91.19	49.23	40.89	
4	11.0 - 11.6		3.250	3.526				--		16.37 - 17.26		82.55	89.56			
4 1/2	9.5 - 12.6	2 3/8	3.688	4.160	2.406	2.000	24	46	8 RD EUE	14.4 - 18.75	60.33	93.68	105.66	61.11	50.80	
4 3/4	16.0									23.81						
4 1/2 D.P.	15.3 - 18.1		3.500	3.910						22.77 - 26.93		88.90	99.31			
5	13.0 - 15.0		4.125	4.510						19.34 - 22.32		104.78	114.55			
5	18.0 - 21.0		4.000	4.336	2.906	2.500	26	50		26.78 - 31.25		101.60	110.13	73.81	63.50	
5 1/2	13.0 - 15.0		4.625	5.120						19.34 - 22.32		117.48	130.05			
5 1/2	15.5 - 17.0		4.625	4.990						23.06 - 25.30		117.48	126.75			
5 1/2	17.0 - 20.0		4.625	4.910						25.30 - 29.76		117.48	124.71			
5 1/2	23.0		4.500	4.910						34.22		114.30	124.71			
5 3/4	14.0 - 17.0		4.183	5.360						20.83 - 25.30		122.25	136.14			
6	20.0									29.76						
6	14.0 - 18.0		5.125	5.580						20.83 - 26.78		130.18	141.73			
6 5/8	20.0 - 22.0		5.625	5.950	3.531	3.000	30	58		29.76 - 32.74		142.88	154.69	89.69	76.20	
7	32.0 - 35.3									47.62 - 52.53						
6 5/8	24.0 - 28.0		5.625	5.950						35.71 - 41.66		142.88	151.13			
7	38.0	2 7/8			2.906	2.500	26	50		56.54	73.03			89.69	76.20	
7	17.0 - 20.0		6.000	6.562						25.30 - 29.76		152.40	166.67			
7	22.0 - 24.0		6.000	6.480						32.74 - 35.71		152.40	164.59			
7	26.0 - 30.0		5.875	6.290						38.69 - 44.64		149.23	159.77			
5 1/2	13.0 - 15.0		4.625	5.120	2.906	2.500	26	50		19.34 - 22.32		117.48	130.05	73.81	63.50	
5 1/2	15.5 - 17.0		4.625	4.990						23.06 - 25.30		117.48	126.75			
5 1/2	17.0 - 20.0		4.625	4.910						25.30 - 29.76		117.48	124.71			
5 1/2	23.0		4.500	4.910						34.22		114.30	124.71			
5 3/4	14.0 - 17.0		4.813	5.360	3.531	3.000	30	58		20.83 - 25.30		122.25	136.14	89.69	76.20	
6	20.0									29.76						
6	14.0 - 17.0		4.813	5.360						20.83 - 26.78		130.18	141.73			
6 5/8	20.0 - 22.0		5.625	6.090						35.71 - 41.66		142.88	151.13			
7	32.0 - 35.3	2 7/8			3.531	3.000	30	58	8 RD EUE	56.54				89.69	76.20	
7	17.0 - 20.0		6.000	6.562						25.30 - 29.76		152.40	166.67			
7	22.0 - 24.0		6.000	6.480						32.74 - 35.71		152.40	164.59			
7	26.0 - 30.0		5.875	6.290						38.69 - 44.64		149.23	159.77			
7 5/8	26.1 - 29.7		6.375	7.020	4.531	4.000	37	72		38.84 - 44.19		161.93	178.31	115.09	101.60	
7 5/8	29.7 - 33.7		6.375	6.900						44.19 - 50.15		161.93	175.26			
7 5/8	39.0		6.375	6.688						58.03		161.93	169.88			
8 5/8	28.00 - 36.0		7.375	8.062						41.66 - 53.57		187.33	204.77			
8 5/8	36.00 - 40.0		7.375	7.885	4.531	4.000	37	72		53.57 - 59.52		187.33	200.28	115.09	101.60	
8 5/8	40.00 - 49.0		7.375	7.760						59.52 - 72.91		187.33	197.10			
9	40.00 - 45.0		7.375	8.174						59.52 - 66.96		187.33	207.62			
9 5/8	36.00 - 43.5		8.250	8.950						53.57 - 64.73		209.55	227.33			
9 5/8	47.00 - 53.5	13 3/8	8.250	8.781	11.875	12.739				69.94 - 79.61		209.55	223.04			
10 3/4	32.75 - 55.5		9.500	10.210						48.73 - 82.58		241.30	259.33			
11 3/4	38.00 - 60.0		10.375	11.170						56.54 - 89.28		263.53	283.72			
13 3/8	48.00 - 72.0		11.875	12.739						71.42 - 107.14		301.63	323.57			

GW Cup-Type Packers and Cups

Table 101: GW PACKER CUP

TBG / CASING		OBSOLETE* (Std. DW)	GW-SS (Std. Service)	GWD-HD (Hvy. Duty)	GWD-ST (Steam)	OBSOLETE* (Spcl-GW)	GW-SP (Seal Pos.)	GWD-HD HNBR
OD (in.)	WEIGHT (lb)							
2 3/8	4.60		10716					
2 7/8	6.40 8.80	12993	10047		10047 - 001 --			
3 1/8	--						16370	
3 1/2	8.50 - 10.20 12.80 - 13.20		14960 14082		14960 - 001 --		16146 --	
4	9.50 10.80 - 11.90	14034	14036 14036					
4 1/2	9.50 - 12.60 13.50 - 18.10	13486	30509 10430	54864 --	54864 - 001 10430 - 001			
5	13.0 - 15.0 18.0 - 21.0	13764 13489	25389 17831	54865 54866				
5 1/2	13.0 - 15.0 15.5 - 17.0 17.00	13241 15237 13402	22624 22626 19710	93989 54752 54760	87318 87317 87316	13654 15277 13657	30848 30847 30846	
5 3/4	14.0 - 17.0		14714					
6	14.0 - 18.0 20.00		14721 14714			16178		
6 5/8	20.0 - 22.0 24.0 - 28.0 32.00	14723 14144	19389 19277	54872 54870 --	87319 54870 - 001 --	-- 14962 15490	-- 30851 30850	19389 - 001 -- --
7	17.0 - 20.0 22.0 - 24.0 26.0 - 30.0	13427 14232 13385	17819 17461 17356	-- 54796 54810	87322 87323 87321	14648 14650 14649	30854 30853 30852	-- 17461 - 002 17356 - 001
7 5/8	26.4 - 29.7 29.7 - 33.7 39.00	14178 16410	19391 21293 23051	-- 54825 --				
8	26.00						93421	
8 5/8	28.0 - 36.0 36.0 - 40.0 40.0 - 49.0		16111 16113 16115		87326 87325 87327		16110 16112 16114	
9	40.0 - 45.0		15941				15942	
9 5/8	36.0 - 43.5 47.0 - 53.5		10354 33850	54032 33850-003	90100 --		14970 --	
10 3/4	32.5 - 55.5		13197	54034	13197 - 001			
11 3/4	38.0 - 60.0		14246					
13 3/8	48.0 - 72.0		16298	54036				



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