



**BADGER**  
 **OILFIELD**  
**PRODUCTS**

# NOTES

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**BHL SWAB CUP**



The Badger BHL rubber cup is specifically designed for deep, heavy load jobs. Designed using a highly abrasion resistant, low friction rubber. The BHL is uniquely designed to fall easily, provide maximum life, and exceed industry standards for overall performance. The BHL is available in 2-3/8" and 2-7/8" with either aluminum or steel bushings. Both are offered in regular or undersize. The BHL is an "all rubber" cup which means it has no wire reinforcement.



**BA SWAB CUP**



The Badger BA rubber cup is specifically designed for medium loads using a variable lip feature. The BA is molded using a slightly softer rubber for greater flexibility under lighter loads. The BA is available in 2-3/8", 2-7/8" and 3-1/2" with either aluminum or steel bushings. Both are offered in regular or undersize. The BA is an "all rubber" cup which means it has no wire reinforcement.



**BV SWAB CUP**



The Badger BV rubber cup is specifically designed to lift fluid containing a high ratio of suspended sand. The flexible lips on the cup allow the cup to automatically dump fluid when overloaded, and easily pass through tight spots in the tubing. Wear is automatically compensated for by the flexible lips, thus adding to the life of the cup. The BV is available in 2-3/8", 2-7/8" and 3-1/2" with either aluminum or steel bushings. The BV is an "all rubber" cup which means it has no wire reinforcement.



**BVR SWAB CUP**



The Badger BVR rubber cup is specifically designed to lift fluid containing a high ratio of suspended sand. The flexible lip on the cup allows the cup to automatically dump fluid when overloaded, and easily pass through tight spots in the tubing. Also, suitable for lifting ordinary light loads with minimum suction across the sand face. The BVR is available in 1-1/2", 2-3/8", 2-7/8" and 3-1/2". Note: Cup quantity can vary depending upon downhole conditions/requirements.

**BW SWAB CUP**



The Badger BW wire cup defines Badger --- RUGGED!! The BW is an all-purpose cup containing strong, flexible spring steel reinforcing wires and a molded in valve ring. The BW is designed to be very durable to lift medium to heavy loads, but also flexible enough for light loads. The BW is available in 2-3/8", 2-7/8" and 3-1/2".



**BGW SWAB CUP**



The Badger BGW is a single lip cup that provides a perfect upstroke seal, even in rough or mixed tubing strings and is ideal for lifting light loads. The BGW has become an industry standard for total fluid removal. Because the lip is flexible the cup runs in smoothly, and because it is oversize, it automatically compensates for wear, assuring lifting of all the fluid beneath it. The BGW is available in 2-3/8", 2-7/8", 3-1/2" and 4".

**ALL TUBING SWAB CUPS CAN BE MOLDED OUT OF NITRILE (BLACK) OR NEOPRENE (RED)**

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**TUBING SWAB CUPS**

TUBING DATA				TYPE 'BHL'			TYPE 'BA'			INSIDE DIAMETER
O.D. NOMINAL	WEIGHT (lb/ft)	INSIDE DIAMETER	DRIFT DIAMETER	PART NUMBER		OUTSIDE DIAMETER	PART NUMBER			
				STEEL BUSHING	ALUM. BUSHING		STEEL BUSHING	ALUM. BUSHING		
2-3/8" (2")	4.60 - 4.70	1.995"	1.901"	BHL-20-ST	BHL-20-AL	1.940"	BA-20-ST	BA-20-AL	1.950"	
				BHL-20-UST*	BHL-20-UAL*	1.920"	BA-20-UST*	BA-20-UAL*	1.930"	
2-7/8" (2-1/2")	6.40 - 6.50	2.441"	2.347"	BHL-25-ST	BHL-25-AL	2.390"	BA-25-ST	BA-25-AL	2.390"	
				BHL-25-UST*	BHL-25-UAL*	2.360"	BA-25-UST*	BA-25-UAL*	2.350"	
	11.54 - 11.65	1.995"	1.935"	BHL-20-ST	BHL-20-AL	1.940"	BA-20-ST	BA-20-AL	1.950"	
3-1/2" (3")	9.20 - 9.30	2.992"	2.867"	--	--	--	BA-35-ST	BA-35-AL	2.890"	

\* FOR A FASTER FALL, PLASTIC LINED, OR INTERNAL UPSET TUBING.

TUBING DATA				TYPE 'BV'			TYPE 'BVR'		INSIDE DIAMETER
O.D. NOMINAL	WEIGHT (lb/ft)	INSIDE DIAMETER	DRIFT DIAMETER	PART NUMBER		OUTSIDE DIAMETER	PART NUMBER	OUTSIDE DIAMETER	
				STEEL BUSHING	ALUM. BUSHING				
1.900" (1-1/2")	2.75 - 2.90	1.610"	1.516"	--	--	--	B87422	1.605"	0.915"
2-3/8" (2")	4.60 - 4.70	1.995"	1.901"	BV-20-ST	BV-20-AL	1.990"	BVR-20	1.990"	1.089"
2-7/8" (2-1/2")	6.40 - 6.50	2.441"	2.347"	BV-25-ST	BV-25-AL	2.430"	BVR-25	2.430"	1.38"
	11.54 - 11.65	1.995"	1.935"	BV-20-ST	BV-20-AL	1.990"	BVR-20	1.990"	1.089"
3-1/2" (3")	9.20 - 9.30	2.992"	2.867"	BV-35-ST	BV-35-AL	2.985"	BVR-35	2.985"	1.365"

TUBING DATA				TYPE 'BW'			TYPE 'BGW'		
O. D. NOMINAL	WEIGHT (lb/ft)	INSIDE DIAMETER	DRIFT DIAMETER	PART NUMBER	OUTSIDE DIAMETER	INSIDE DIAMETER	PART NUMBER	OUTSIDE DIAMETER	INSIDE DIAMETER
2-3/8" (2")	4.60 - 4.70	1.995"	1.901"	BW-20	1.900"	1.078"	BGW-20	1.920"	1.090"
	5.10 - 5.30	1.939"	1.890"				--	--	--
2-7/8" (2-1/2")	6.40 - 6.50	2.441"	2.371"	BW-25	2.310"	1.350"	BGW-25	2.360"	1.350"
	11.54 - 11.65	1.995"	1.935"	BW-20	1.900"	1.078"	BGW-20	1.920"	1.090"
3-1/2" (3")	9.20 - 9.30	2.992"	2.867"	BW-35	3.250"	1.375"	BGW-14960	3.050"	1.340"
	10.20 - 10.30	2.922"	2.797"				--	--	
	12.80 - 13.30	2.764"	2.764"	--	--	BGW-14082	2.850"		
	12.70 - 12.95	2.750"	2.625"	--	--				
4"	9.50-11.00	3.476"	3.351"	--	--	--	BGW-14036	3.620"	1.940"

**ALL TUBING SWAB CUPS CAN BE MOLDED OUT OF NITRILE (BLACK) OR NEOPRENE (RED)**  
**ADD SUFFIX -NBR FOR NITRILE OR -NEO FOR NEOPRENE TO EACH PART NUMBER**

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### **BGW SWAB CUP**

The Badger BGW cup is recommended for lifting light loads. This cup is molded of highly abrasion resistant rubber with a stout flexible lip. This design gives an instantaneous and positive seal even in rough or mixed casing strings. Recommended for total fluid removal of the casing. Available in 4-1/2" through 7-5/8".



### **BJ SWAB CUP**

The Badger BJ cup is a heavy duty cup for lifting maximum loads from any depth, with a flexible lip that provides a perfect upstroke seal and automatically compensates for wear. The most dependable, and durable heavy load cup. Available in 4-1/2" through 5-3/4".



### **BJS SWAB CUP**

The Badger BJS cup is a heavy duty cup for lifting maximum loads from any depth, with a flexible lip that provides a perfect upstroke seal and automatically compensates for wear. The most dependable, and durable heavy load cup. The BJS is similar to the BJ cup but with added flexibility to provide a seal when lifting lighter loads. Available in 4-1/2" through 5-3/4".



### **BVR SWAB CUP**

The Badger BVR rubber cup is specifically designed to lift fluid containing a high ratio of suspended sand. The flexible lip on the cup allows the cup to automatically dump fluid when overloaded. Also, suitable for lifting ordinary light loads with minimum suction across the sand face. Available in 4-1/2" through 7". Note: Cup quantity can vary depending upon downhole conditions/requirements.



## CASING SWAB CUPS

CASING DATA				TYPE 'BGW'			TYPE 'BJ' & TYPE 'BJS'				TYPE 'BVR'		
OUTSIDE DIAMETER	WEIGHT (lb/ft)	INSIDE DIAMETER	CAPACITY (BBLs PER 1000 FT)	PART NUMBER	OUTSIDE DIAMETER	INSIDE DIAMETER	PART NUMBER (BJ)	PART NUMBER (BJS)	OUTSIDE DIAMETER	INSIDE DIAMETER	PART NUMBER	OUTSIDE DIAMETER	INSIDE DIAMETER
4-1/2"	9.50	4.090"	16.2	BGW-19841	4.180"	2.400"	BJ-45	B61495	4.060"	2.435"	BVR-45 BVR-45-HD*	4.062"	2.420"
	11.60	4.000"	15.5										
	12.60	3.958"	15.2										
4-1/2" D. P.	13.75	3.958"	14.2	BGW-19841	4.180"	2.400"	BJ-45	B61495	4.060"	2.435"	BVR-45	4.062"	2.420"
	16.60	3.826"	14.2	BGW-19840	4.020"		--	--	--	--	--	--	--
4-3/4"	16.00	4.082"	16.2	BGW-19841	4.180"	2.400"	BJ-45	B61495	4.060"	2.435"	BVR-45	4.062"	2.420"
5"	13.00	4.494"	19.6	BGW-19843	4.630"	2.410"	--	--	--	--	--	--	--
	15.00	4.408"	18.9										
	18.00	4.276"	17.8	BGW-19842	4.490"								
	21.00	4.154"	16.8										
23.20	4.044"	15.9											
5-1/2"	13.00	5.044"	24.7	BGW-19846	5.140"	2.910"	BJ-55**	B61496	5.010"	2.435"	BVR-55	4.970"	2.420"
	14.00	5.012"	24.4										
	15.00	4.974"	24.0										
	15.50	4.950"	23.8										
	17.00	4.892"	23.2										
	20.00	4.778"	22.2	BGW-19844	5.020"	2.900"	B52384	--	4.838"	--	--	--	2.920"
23.00	4.670"	21.1	--				--	--	--	--	--	--	--
5-3/4"	22.50	4.990"	24.2	BGW-19846	5.140"	2.910"	BJ-55	B61496	5.010"	2.435"	BVR-55	4.970"	2.420"
6"	14.00	5.552"	30.0	BGW-19848	5.670"	2.910"	--	--	--	--	--	--	--
	20.00	5.352"	27.8										
6-5/8"	20.00	6.049"	35.5	BGW-19850	6.240"	3.531"	--	--	--	--	--	--	--
	22.00	5.989"	34.8										
	24.00	5.921"	34.1										
	28.00	5.791"	32.6	BGW-19849	6.030"								
	32.00	5.675"	31.3										
7"	17.00	6.538"	41.5	BGW-19853	6.665"	3.531"	--	--	--	--	BVR-70	6.475"	3.545"
	20.00	6.456"	40.5										
	22.00	6.398"	39.8	BGW-19852	6.550"								
	23.00	6.366"	39.3										
	24.00	6.336"	39.0										
	26.00	6.276"	38.3										
	29.00	6.184"	37.1										
	32.00	6.094"	36.0	BGW-19850	6.240"								
	35.00	6.004"	35.0										
	38.00	5.920"	34.0	BGW-19849	6.030"								
40.00	5.836"	33.0											
7-5/8"	26.40	6.969"	47.2	BGW-19855	7.150"	3.531"	--	--	--	--	--	--	--
	29.70	6.875"	45.9										
	33.70	6.765"	44.5	BGW-19854	6.990"								
	39.00	6.625"	42.6										

\* HEAVY DUTY ALTERNATE TO BVR-45

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PART NUMBER			DESCRIPTION				
COMPLETE	TOP ONLY	SWIVEL ONLY	RECOMMENDED TUBING SIZE	WIRELINE SIZE	OUTSIDE DIAMETER	FISHING NECK	BOX
<b>B42600</b>	B42665	B42666	1-1/4" (1.660")	9/16"	1-3/16"	1"	5/8" S.R.
<b>B41874</b>	B41868	B41893	1-1/2" (1.900") - 2-1/16" (2.063")	7/16"	1-3/8"	1-3/16"	5/8" S.R.
<b>B41875</b>	B41869			1/2"			
<b>B41876</b>	B41870			9/16"			
<b>B41877</b>	B41871			5/8"			
<b>B20509</b>	B13726	RS-SWVL-20	2-3/8" - 3-1/2"	7/16"	1-3/4"	1-3/8"	3/4" S.R.
<b>RSS-20-1/2</b>	RS-20-1/2			1/2"			
<b>RSS-20-9/16</b>	RS-20-9/16			9/16"			
<b>RSS-20-5/8</b>	RS-20-5/8			5/8"			
<b>B20518</b>	RS-20-9/16			B20600			9/16"





SINKER BAR				
PART NUMBER	DESCRIPTION			
	RECOMMENDED TUBING SIZE	OUTSIDE DIAMETER	LENGTH	BOX & PIN
SBAR-1-1/8X10	1-1/4" (1.660") - 1-1/2" (1.900")	1-1/8"	120" (10')	5/8" S.R.
SBAR-1-3/16X5		1-3/16"	60" (5')	
SBAR-1-3/16X10			120" (10')	
SBAR-1-1/4X5	1-1/2" (1.900") - 2-1/16" (2.063")	1-1/4"	60" (5')	3/4" S.R.
SBAR-1-1/4X10			120" (10')	
SBAR-1-1/2X5		2-3/8" - 3-1/2"	1-1/2"	
SBAR-1-1/2X10	120" (10')			
SBAR-1-3/4X5	1-3/4"		60" (5')	
SBAR-1-3/4X10			120" (10')	



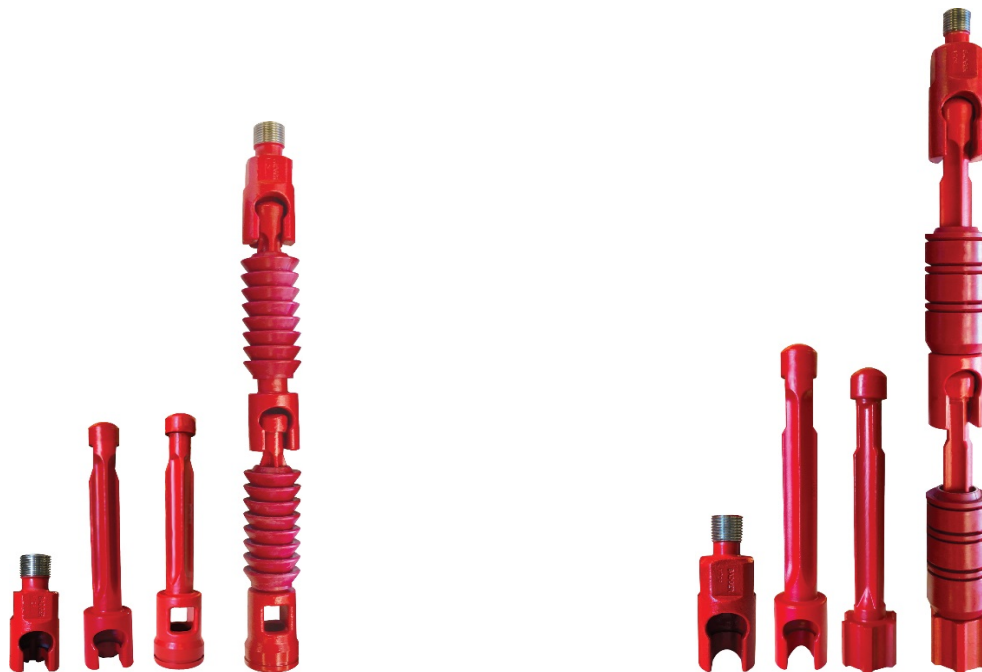
SPANG AND TUBULAR JAR					
PART NUMBER	DESCRIPTION				
	RECOMMENDED TUBING SIZE	TYPE	OUTSIDE DIAMETER	STROKE	BOX & PIN
JARS-S-1-1/4X20	1-1/2" (1.900")	SPANG	1-1/4"	20"	5/8" S.R.
JARS-S-1-1/4X30				30"	
JARS-S-1-1/2X20	2-1/16" (2.063")		1-1/2"	20"	
JARS-S-1-1/2X30				30"	
JARS-S-1-3/4X20	2-3/8" - 3-1/2"		1-3/4"	20"	3/4" S.R.
JARS-S-1-3/4X30				30"	
JARS-S-1-7/8X20			1-7/8"	20"	
JARS-S-1-7/8X30				30"	
JARS-S-2-1/2X30	3-1/2" - 4-1/2"		2-1/2"	30"	1-1/8" S.R.
JARS-T-1-1/8X30	1-1/4" (1.660") - 2-1/16" (2.063")	TUBULAR	1-1/8"	30"	5/8" S.R.
JARS-T-1-3/4X20	2-3/8" - 3-1/2"		1-3/4"	20"	3/4" S.R.
JARS-T-1-3/4x30				30"	

SWABS



SLIMHOLE SWAB	
PART NUMBER	DESCRIPTION
B42628	1.660" (1-1/4") SWAB ASSEMBLY WITH 5/8" S.R. PIN
B43539	1.900" (1-1/2") - 2.063" (2-1/16") SWAB ASSEMBLY WITH 5/8" S.R. PIN

KNUCKLE JOINT SWAB	
PART NUMBER	DESCRIPTION
<b>SWB-20</b>	<b>2-3/8" KNUCKLE JOINT SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
SWB-20-SUB	TOP SUB FOR 2-3/8" KNUCKLE JOINT SWAB WITH 3/4" S.R. PIN
SWB-20-UPPER	UPPER MANDREL FOR 2-3/8" KNUCKLE JOINT SWAB
SWB-20-LOWER	LOWER MANDREL (NO-GO) FOR 2-3/8" KNUCKLE JOINT SWAB
<b>SWB-25</b>	<b>2-7/8" KNUCKLE JOINT SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
SWB-25-SUB	TOP SUB FOR 2-7/8" KNUCKLE JOINT SWAB WITH 3/4" S.R. PIN
SWB-25-UPPER	UPPER MANDREL FOR 2-7/8" KNUCKLE JOINT SWAB
SWB-25-LOWER	LOWER MANDREL (NO-GO) FOR 2-7/8" KNUCKLE JOINT SWAB
<b>SWB-35</b>	<b>3-1/2" KNUCKLE JOINT SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
SWB-35-SUB	TOP SUB FOR 3-1/2" KNUCKLE JOINT SWAB WITH 3/4" S.R. PIN
SWB-35-UPPER	UPPER MANDREL FOR 3-1/2" KNUCKLE JOINT SWAB
SWB-35-LOWER	LOWER MANDREL (NO-GO) FOR 3-1/2" KNUCKLE JOINT SWAB



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<b>STANDARD SWAB</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>B43040</b>	<b>2-3/8" STANDARD SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
B11224	SUB FOR 2-3/8" STANDARD SWAB
B14812	VALVE BALL FOR 2-3/8" STANDARD SWAB
B9548	VALVE BODY FOR 2-3/8" STANDARD SWAB
B15439	MANDREL FOR 2-3/8" STANDARD SWAB
SLEEVE-20	SLEEVE FOR 2-3/8" STANDARD SWAB (2 REQ)
THIMBLE-20	THIMBLE FOR 2-3/8" STANDARD SWAB (2 REQ)
B55004	RETAINING NUT FOR 2-3/8" STANDARD SWAB
<b>B43041</b>	<b>2-7/8" STANDARD SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
B11224	SUB FOR 2-7/8" STANDARD SWAB
B14812	VALVE BALL FOR 2-7/8" STANDARD SWAB
B9553	VALVE BODY FOR 2-7/8" STANDARD SWAB
B9550	MANDREL FOR 2-7/8" STANDARD SWAB
SLEEVE-25	SLEEVE FOR 2-7/8" STANDARD SWAB (2 REQ)
THIMBLE-25	THIMBLE FOR 2-7/8" STANDARD SWAB (2 REQ)
B55003	RETAINING NUT FOR 2-7/8" STANDARD SWAB
<b>B43042</b>	<b>3-1/2" STANDARD SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
B11224	SUB FOR 3-1/2" STANDARD SWAB
B14812	VALVE BALL FOR 3-1/2" STANDARD SWAB
B9553	VALVE BODY FOR 3-1/2" STANDARD SWAB
B9550	MANDREL FOR 3-1/2" STANDARD SWAB
SLEEVE-25	SLEEVE FOR 3-1/2" STANDARD SWAB (2 REQ)
B6437	THIMBLE FOR 3-1/2" STANDARD SWAB (2 REQ)
B55003	RETAINING NUT FOR 3-1/2" STANDARD SWAB

<b>CASING SWAB</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>SWB-45/55</b>	<b>4-1/2" - 5-1/2" SINGLE KNUCKLE 2 CUP SWAB ASSEMBLY WITH 3/4" S.R. PIN</b>
SWB-45/55-SUB	TOP SUB FOR 4-1/2" - 5-1/2" SWAB WITH 3/4" S.R. PIN
SWB-45/55-RING	RING FOR 4-1/2" - 5-1/2" SWAB
SWB-45/55-MAND	2 CUP MANDREL FOR 4-1/2" - 5-1/2" SWAB

COMPLETE OIL SAVER		
PART NUMBER		DESCRIPTION
TYPE BH*	TYPE BHD*	
OS-G-20-S	OS-G-20-D	OIL SAVER, 2-3/8" EUE 8RD PIN
OS-G-25-S	OS-G-25-D	OIL SAVER, 2-7/8" EUE 8RD PIN
OS-G-35-S	OS-G-35-D	OIL SAVER, 3-1/2" O.D. 8V LP PIN

\* BH USES ONE RUBBER, BHD USES TWO RUBBERS

OIL SAVER RUBBER	
PART NUMBER	DESCRIPTION
OSR-H-5/16	BLANK-5/16" (STANDARD/BLACK)
OSR-H-9/16	3/8" - 5/8" (STANDARD/BLACK)
OSR-S-9/16	3/8" - 5/8" (SOFT/RED)



REPLACEMENT PARTS		
PART NUMBER		DESCRIPTION
TYPE BH*	TYPE BHD*	
OS-G-GATE		GATE
OS-G-YOKE/PIN		YOKE & PIN
OS-G-BUSHING-5/16 (2 REQ)	(4 REQ)	BRASS BUSHING, BLANK - 5/16"
OS-G-BUSHING-9/16 (2 REQ)	(4 REQ)	
OS-G-CLIP (2 REQ)	(4 REQ)	CLIP FOR BRASS BUSHING
--	OS-G-SPACER	BUSHING SPACER
OS-G-BODY-S	OS-G-BODY-D	BRASS BODY
OS-G-RAM		RAM
OS-G-SPRING		SPRING
OS-G-HOUSING		HOUSING
OS-G-PLUG		PLUG, 3/8" XH
OS-G-90		ELBOW, 3/8" MNPT X 3/8" MNPT
B40629		NOSE COUPLER
OS-G-BASE-20		BASE, 2-3/8" EUE 8RD PIN
OS-G-BASE-25		BASE, 2-7/8" EUE 8RD PIN
OS-G-BASE-35		BASE, 3-1/2" O.D. 8V LP PIN

\* BH USES ONE RUBBER, BHD USES TWO RUBBERS

ACCESSORIES	
PART NUMBER	DESCRIPTION
OS-G-KIT	REPAIR KIT FOR OIL SAVER
OS-G-TOOL	REPAIR TOOL FOR OIL SAVER
OS-G-HOSE-50*	50' HOSE WITH CONNECTIONS

\* SPECIAL LENGTHS AVAILABLE UPON REQUEST



FLAGGING MATERIAL	
PART NUMBER	DESCRIPTION
B85617-OB	ORANGE, TAPPED IN BAG
B85617-WB	WHITE, TAPPED IN BAG
B85617-YB	YELLOW, TAPPED IN BAG
B85617-WJL	WHITE, LOOSE IN JAR
B85617-YJL	YELLOW, LOOSE IN JAR
B85617-YJT	YELLOW, TAPPED IN JAR

PART NUMBER	QTY REQ	DESCRIPTION
OS-PUMP	--	OIL SAVER PUMP ASSEMBLY, STAR
OS-PUMP-LP	--	PUMP ASSEMBLY LESS PLUMBING
OS-PUMP-BUSHING	1	3/4" X 1/8" BUSHING (FILL PLUG)
OS-PUMP-RELIEF	1	PRESSURE RELIEF FITTING FOR FILL PLUG
OS-PUMP-HANDLE	1	HANDLE
OS-PUMP-SOCKET	1	SOCKET, HANDLE
OS-PUMP-LINK	1	LINK, SOCKET
OS-PUMP-PIN	3	PIN, LINK
OS-PUMP-RETAINER	6	LINK PIN RETAINER (C-CLIP)
OS-PUMP-PISTON	1	PISTON
OS-PUMP-BARREL	1	BARREL
OS-PUMP-VALVE	1	PRESSURE RELEASE VALVE
OS-PUMP-NIPPLE	2	NIPPLE, 1/4" X 1-1/2" XH
OS-PUMP-TEE	1	TEE, 1/4" XH
OS-G-ELL	1	STEET ELL, 1/4" XH
OS-PUMP-GAUGE	1	GAUGE, 3000# 1/4" LM
B40629	1	NOSE COUPLER
OS-PUMP-KIT*	1	REPAIR KIT FOR STAR PUMP

\* REPAIR PARTS FOR PINE PUMP AVAILABLE UPON REQUEST



RELEASING ATTACHMENT



PART NUMBER	DESCRIPTION
B45272	3-1/2" O.D. 8V LP BOX (TOP) X 3-1/2" O.D. 8V LP PIN (BOTTOM) COMPLETE
B33276	2-7/8" EUE 8RD BOX (TOP) X 3-1/2" O.D. 8V LP PIN (BOTTOM) COMPLETE
B62402	UPPER COUPLING, 2-7/8" EUE 8RD BOX
B62400	UPPER COUPLING, 3-1/2" O.D. 8V LP BOX
B33283*	SNAP RING
B33280	SHOULDER SLEEVE
B14800*	BALL (3 REQ)
B49650*	SPRING
B62409	LOCKING DOG
B33284*	SEAL RING
B33282	LOWER COUPLING
B54687	REPAIR KIT

\* INCLUDED IN REPAIR KIT



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TYPE OF SWAB CUP	ALL RUBBER <sup>1</sup>			WIRE REINFORCED <sup>2</sup>	
	BA	BHL	BV & BVR	BGW	BW
<b>FLUID LOAD (ft)<sup>3</sup></b>					
LIGHT LOAD 0-300 (ft)	OK	NR	OK	OK	NR
MEDIUM LOAD 200-1000 (ft)	OK	NR	NR	OK	OK
HEAVY LOAD 800-1500 (ft)	NR	OK	NR	NR	OK
<b>TUBING CONDITION</b>					
SAND <sup>4</sup>	NR	NR	OK	NR	NR
SCALE <sup>4</sup>	NR	NR	OK	NR	NR
PARAFFIN <sup>5</sup>	OK	OK	OK	OK	OK
ROUGH	OK	OK	NR	NR	OK
LINED OR UNDERSIZED <sup>5</sup>	OK	OK	OK	OK	OK

OK - RECOMMENDED

NR - NOT RECOMMENDED

1 ALL RUBBER refers to cup construction. All cups have a metal (aluminum or steel) insert, but there is no metal (wires) in the rubber itself (only a tube shaped insert on the I.D. of the cup).

2 WIRE REINFORCED refers to cups that have steel wires imbedded in the rubber to give extra strength to the cup.

3 FLUID LOAD refers to the column of salt water, with no gas help, that can be safely lifted (based on experience).

4 SAND, SCALE, OR ANY SOLIDS in the swabbing column should only be lifted using cups that will invert the lips of the cup when overloaded. When the lips are inverted, the fluid load is dumped.

5 PARAFFIN, LINED, OR UNDERSIZE tubing must be swabbed using very flexible cups or undersized cups. Undersize cups will also swab standard I.D. tubing, and they will fall faster than regular size cups.

This chart is designed for use with 2-3/8" tubing only. When swabbing smaller size tubing, this chart provides a good guideline. But, when swabbing larger tubing or casing, a lighter load must be picked up.

**For example:**

Fluid loads in 2-7/8" tubing should be multiplied by .667	Light load	0-200 (ft)
	Medium load	133-667 (ft)
	Heavy load	533-1000 (ft)
Fluid loads in 3-1/2" tubing should be multiplied by .444	Light load	0-133 (ft)
	Medium load	89-444 (ft)
	Heavy load	355-666 (ft)
Fluid loads in 4-1/2" casing should be multiplied by .125	Light load	0-38 (ft)
	Medium load	25-125 (ft)
	Heavy load	100-188 (ft)

TEMPERATURE RANGE: Since swab cups do not have a close fitting solid back-up behind the rubber, the usable temperature limit is lower than if the same polymer is used in other applications. Most swab cups can swab effectively up to 200°F. This is due to the tremendous softening of the rubber at elevated temperatures. Wire reinforced cups can withstand higher temperature than all rubber cups; up to about 225°F.

CHEMICAL COMPATIBILITY: Swab cups withstand the same chemicals as any standard oilfield elastomer. Most swab cups are made with Neoprene or NBR; a few use natural rubber. However, like all standard elastomers, solvents such as Toluene, Xylene, Benzene, ect. will dissolve the rubber and usage in these is never recommended.

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PART NUMBER	DESCRIPTION
SLIP-G60-25	GUIBERSON® STYLE 60 TON AIR SLIP ASSEMBLY, COMPLETE WITH 2-7/8" SLIP BODY AND SHORT GATE
SLIPBOWL-G60	BOWL, G60 (INCLUDES GATE PINS)
SLIPGATE-G60	GATE, G60
SLIPGATEPIN-G60	GATE PIN, G60
SLIPBODY-G60-25	SLIP BODY, 2-7/8" G60
SLIPLINK-G60	CONTROL LINK, G60
SLIPLINKPIN-G60	LINK PIN, G60
CYL-G*	AIR CYLINDER
B27862*	NIPPLE, 1/4" X 2" STD (2 REQ)
B27864*	ELL, 1/4" STD (2 REQ)
CP21*	AIR COUPLER, 1/4" MALE (2 REQ)
SLIPHOUSING-G60	HOUSING, G60 WITH STRAP AND HARDWARE
SLIPBODY-G60-KIT	REPAIR KIT, G60 SLIP BODY
CYL-G-KIT*	REPAIR KIT, AIR CYLINDER
SLIPHOUSING-G-KIT*	REPAIR KIT, HOUSING BOLT
SLIPBODY-G40-KIT	REPAIR KIT, G40 SLIP BODY
SLIPLINKPIN-G40	LINK PIN, G40
CON-BUSHING*	BUSHING, 3/4" X 1/2"
HANDLEKIT-G40	REPAIR KIT, MANUAL G40 HANDLE

\* FITS 40 TON AND 60 TON SLIPS



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TUBING SIZE	G40 (12 PIECE)	G60 (18 PIECE)
	PART NUMBER	PART NUMBER
1" (1.315")	INSERT-G40-1.315	INSERT-G60-1.315
1-1/4" (1.660")	INSERT-G40-1.660	INSERT-G60-1.660
1-1/2" (1.900")	INSERT-G40-1.900	INSERT-G60-1.900
2-1/16" (2.063")	INSERT-G40-2.063	INSERT-G60-2.063
2-3/8"	INSERT-G40-20	INSERT-G60-20
2-7/8"	INSERT-G40-25	INSERT-G60-25
3-1/2"	INSERT-G40-35	INSERT-G60-35



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ROD TRANSFER BOTTLE



PART NUMBER	DESCRIPTION
RTB-5/8	ROD TRANSFER BOTTLE, 5/8"
RTB-3/4-7/8	ROD TRANSFER BOTTLE, 3/4" - 7/8"
RTB-1	ROD TRANSFER BOTTLE, 1"
RTB-BEARINGKIT	BEARING & EYEBOLT KIT
RTB-RINGKIT	RING KIT



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<b>BACK UP CYLINDER FOR FOSTER® STYLE TONGS</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>CYL-F</b>	<b>BACK UP CYLINDER FOR FOSTER® STYLE TONGS</b>
CYL-F-CLEVISKIT	ROD CLEVIS WITH PIN & COTTER
CYL-F-NUT	JAM NUT FOR ROD CLEVIS
CYL-F-TOP	ROD GUIDE
CYL-F-ROD	CYLINDER ROD
CYL-F-PISTON	PISTON
CYL-F-BASE	CYLINDER BASE
CYL-F-CAN	CYLINDER CAN
CYL-F-KIT	REPAIR KIT FOR CYL-F



<b>CYLINDER FOR GUIBERSON® STYLE SLIPS</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>CYL-G</b>	<b>CYLINDER FOR GUIBERSON® STYLE SLIPS</b>
CYL-G-BRASS	CYLINDER FOR GUIBERSON® WITH BRASS CAN
CYL-G-TOP	ROD GUIDE
CYL-G-ROD	CYLINDER ROD
CYL-G-PISTON	PISTON
CYL-G-CAN	CYLINDER CAN, STEEL (SOLID BASE)
CYL-G-CAN-BRASS*	CYLINDER CAN, BRASS (TWO PIECE)
CYL-G-BASE*	CYLINDER BASE
CYL-G-KIT	REPAIR KIT FOR CYL-G

\* ONLY FITS CYL-G-BRASS

<b>CYLINDER FOR CAVINS® STYLE SLIPS</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>CYL-C</b>	<b>CYLINDER FOR CAVINS® STYLE SLIPS</b>
CYL-C-CLEVIS	ROD CLEVIS
CYL-C-NUT	JAM NUT FOR ROD CLEVIS
CYL-C-TOP	ROD GUIDE
CYL-C-ROD	CYLINDER ROD
CYL-C-PISTON	PISTON
CYL-C-BASE	CYLINDER BASE
CYL-C-CAN	CYLINDER CAN
CYL-C-KIT	REPAIR KIT FOR CYL-C



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COMPLETE JU STYLE STRIPPER	
7-1/16" X 3,000 PSI	
PART NUMBER	TUBING SIZE
B12696	1.900" (1-1/2")- 2-3/8"
B12697	2-7/8"
B17965	3-1/2"

REPLACEMENT PARTS		
PART NUMBER	QTY REQ	DESCRIPTION
B12668	1	GLAND
B12598	6	STUD LESS NUT
B12710	12	NUT FOR STUD
--	1	<b>TOP RUBBER SUPPORT</b>
TOPSUPPORT-JU-2.063	--	1.315" (1") - 2.063" (2-1/6")
TOPSUPPORT-JU-25	--	2-3/8" - 2-7/8"
TOPSUPPORT-JU-35	--	3-1/2"
B12455	1	BOTTOM RUBBER SUPPORT
B12875	1	HOUSING
R-45	1	RING GASKET, R-45

ENGINEERING DATA	
OPENING	6-1/8"
APPROXIMATE WEIGHT	280 LBS.
OVERALL HEIGHT	17-1/8"
WORKING PRESSURE	1500 PSI
TEST PRESSURE	3000 PSI
MAXIMUM LOAD	40 TONS
API FLANGE SIZE	7-1/16" 3000
FLANGE O.D.	15"
FLANGE THICKNESS	2-1/2"
BOLT SIZE (12 REQ)	1-1/8"
BOLT CIRCLE DIAMETER	12-1/2"
RING JOINT GASKET	R-45



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TUBING SIZE	BIW	HALL/ SUPREME	JU	LSR
1.050" (3/4")	--	--	JU-1.050	--
1.315" (1")	--	--	JU-1.315	--
1.660" (1-1/4")	--	--	JU-1.660	--
1.900" (1-1/2")	BIW-1.900	--	JU-1.820	--
2.063" (2-1/16")	BIW-2.063	--		--
2-3/8"	BIW-20	HALL-20	JU-20	LSR-20
2-7/8"	BIW-25	HALL-25	JU-25	LSR-25
3-1/2"	BIW-35	HALL-35	JU-35	LSR-30
4-1/2"	BIW-45	--	--	--



**BIW**



**HALL/SUPREME**



**JU**



**LSR**

**ROD STRIPPER**  
EE-RSR



**BCP CASING PACKER CUP**

The Badger casing packer cup is a one-piece unit designed for use between casing strings. The cup was constructed to be used as a means of sealing the inner string, or as a liner as well as for protection in low-pressure productive formations during cementing and acidizing process or similar operations.



CASING DATA		DESCRIPTION						
OUTSIDE DIAMETER	WEIGHT (lb/ft)	TUBING O.D.	PART NUMBER	SEAL O.D.	INSERT O.D.	INSIDE DIAMETER	LENGTH	ORING SIZE
5-1/2"	14.00 - 17.00	3-1/2"	<b>B20601</b>	5.13"	4.58"	3.52"	6"	341
7"	20.00 - 23.00	4-1/2"	<b>B17788</b>	6.56"	5.80"	5.05"	7"	353
	23.00 - 26.00		<b>B17786</b>	6.47"		4.55"	6"	349
	29.00 - 32.00		<b>B81754</b>	6.31"		7"		

**BAKER® MODEL R**

Badger offers replacement elements for the Baker® model R packer. The elements are offered in various sizes and durometers ranging from 60 - 90, and are available in HSN and Viton compounds.



CASING DATA		PART NUMBER	
OUTSIDE DIAMETER	WEIGHT (lb/ft)	END RUBBER	CENTER RUBBER
4-1/2"	9.50 - 13.50	B450-E	B450-C
5"	15.00 - 18.00	B500-E	B500-C
5-1/2"	13.00 - 15.50	B552-E	B552-C
5-1/2"	14.00 - 17.00	B551-E	B551-C
5-1/2"	15.50 - 23.00	B550-E	B550-C

**EE PACKER**

The Badger EE tubing packer is a simplistic way to achieve a positive seal for packing off the hole at your specified zone. The EE packer consist of one mandrel, two cups, and one or two couplings depending on your connection requirements.

EE PACKER ASSY. AND REPLACEMENT PARTS	
PART NUMBER	DESCRIPTION
EE-PKR-45	4-1/2" X 2-3/8" COMPLETE ASSY.
EE-PKR-55	5-1/2" X 2-3/8" COMPLETE ASSY.
EE-PKR-MANDREL-20	2-3/8" MANDREL
EE-PACKER-COUPLING-20	2-3/8" COUPLING



EE PACKER CUPS					
CASING DATA		DESCRIPTION			
OUTSIDE DIAMETER	WEIGHT (lb/ft)	PART NUMBER	OUTSIDE DIAMETER	INSIDE DIAMETER	BUSHING I.D.
4-1/2"	11.60	EE-PKR-CUP-45	3.97"	3.20"	2.61"
5-1/2"	14.00 - 17.00	EE-PKR-CUP-55	4.83"	3.84"	2.61"



CASING DATA		PART NUMBER					
OUTSIDE DIAMETER	WEIGHT (lb/ft)	CONNECTION TOP & BOTTOM	COMPLETE ASSY.	MANDREL	CUP ONLY	O-RING	SUB
4-1/2"	ALL	2-3/8" IF	<b>B30594-01</b>	B30589	B30591	B6227-25	B30590
5"	ALL	2-3/8" IF	<b>B30594-02</b>	B30589	B30592	B6227-25	B30590
5-1/2"	ALL	2-3/8" IF	<b>B30594-03</b>	B30589	B30593	B6227-25	B30590
6-5/8"	ALL	3-1/2" IF (NC-38)	<b>B30605-01</b>	B30595	B30597	B6227-37	B30596
7"	17.00 - 26.00	3-1/2" IF (NC-38)	<b>B30605-02</b>	B30595	B30598-02	B6227-37	B30596
7"	29.00 - 38.00	3-1/2" IF (NC-38)	<b>B30605-03</b>	B30595	B30598-01	B6227-37	B30596
7-5/8"	24.00 - 26.40	3-1/2" IF (NC-38)	<b>B30605-04</b>	B30595	B30599-01	B6227-37	B30596
7-5/8"	29.70 - 39.00	3-1/2" IF (NC-38)	<b>B30605-05</b>	B30595	B30599-02	B6227-37	B30596
8-5/8"	24.00 - 36.00	4-1/2" IF (NC-50)	<b>B30600-03</b>	B30603	B30606-02	B6227-47	B30604
8-5/8"	40.00 - 49.00	4-1/2" IF (NC-50)	<b>B30600-04</b>	B30603	B30606-01	B6227-47	B30604
9-5/8"	32.30 - 40.00	4-1/2" IF (NC-50)	<b>B30600-01</b>	B30603	B30601-01	B6227-47	B30604
9-5/8"	43.50 - 53.50	4-1/2" IF (NC-50)	<b>B30600-02</b>	B30603	B30601-02	B6227-47	B30604
10-3/4"	32.75 - 51.00	4-1/2" IF (NC-50)	<b>B30600-05</b>	B30603	B30607-01	B6227-47	B30604
10-3/4"	55.50 - 65.70	4-1/2" IF (NC-50)	<b>B30600-06</b>	B30603	B30607-02	B6227-47	B30604
13-3/8"	48.00 - 61.00	4-1/2" IF (NC-50)	<b>B30600-07</b>	B30603	B30579-02	B6227-47	B30604
13-3/8"	68.00 - 72.00	4-1/2" IF (NC-50)	<b>B30600-08</b>	B30603	B30579-01	B6227-47	B30604
16"	ALL	4-1/2" IF (NC-50)	<b>B30600-09</b>	B30603	B30584	B6227-47	B30604
18-5/8"	ALL	4-1/2" IF (NC-50)	<b>B30600-12</b>	B30603	B674819	B6227-47	B30604
20"	78.60 - 133.00	4-1/2" IF (NC-50)	<b>B30600-10</b>	B30603	B33543	B6227-47	B30604



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**DOWNHOLE ENVIRONMENT COMPATABILITY**



This chart offers a general guideline for use of various elastomers in downhole oilfield applications.	NITRILE (60 – 85 DURO) STADARD SERVICE <sup>1</sup>	NITRILE (85+ DURO) HEAVY DUTY	HNBR PEROXIDE CURED <sup>2</sup> X-HEAVY DUTY (-001)	EPDM PEROXIDE CURED HIGH TEMP STEAM (-002)	VITON / FLUOREL <sup>3</sup> HIGH-FLUORINE FLUOREL (-003)	HYDRIN (-006)	HNBR SULFUR CURED <sup>2*</sup>	NEOPRENE*	NATURAL RUBBER*
<b>STANDARD OILFIELD SERVICE<sup>1</sup></b>	OK	OK	OK	NR	OK	OK	OK	OK	OK-?
<b>SOUR SERVICE<sup>2</sup> (H2S)</b>	NR	NR	OK <sup>(2)</sup>	OK	OK	NR	OK <sup>(2)</sup>	?	NR
<b>EXPLOSIVE DECOMPRESION<sup>4</sup></b>	NR	OK	?	NR	?	OK	?	NR	NR
<b>HIGH PH FLUIDS<sup>5</sup> (ALKALINE)</b>	?	?	?	OK	NR	?	?	?	?
<b>AROMATIC SOLVENTS<sup>6</sup></b>	NR	NR	NR	NR	OK	NR	NR	NR	NR
<b>HALOGENATED SOLVENTS<sup>7</sup></b>	NR	NR	NR	NR	OK	NR	NR	NR	NR
<b>CARBON DIOXIDE (CO2)</b>	?	OK	?	OK	OK	OK	?	?	NR
<b>METHANE OR NATURAL GAS</b>	?	?	?	?	OK	OK	?	?	?
<b>STRONG ACID: COLD (&lt;200° F)</b>	?	?	?	OK	OK	?	?	?	NR
<b>STRONG ACID: HOT (&gt;200°F)</b>	NR	NR	NR	NR	OK	NR	NR	NR	NR
<b>WATER BASED AMINE INHIBITORS</b>	OK	OK	OK	OK	NR	NR	OK	OK	NR
<b>OIL BASED AMINE INHIBITORS</b>	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>STEAM (&gt; 300°F)</b>	NR	NR	OK	OK	?	NR	NR	NR	NR
<b>ZINC OR CALCIUM BROMIDE</b>	NR	NR	?	OK	OK	?	?	?	NR
<b>MAXIMUM TEMPERATURE<sup>8</sup> (F)</b>	275°	275°	350°	550°	400°	275°	325°	250°	250°

\* AVAILABLE UPON SPECIAL REQUEST

OK – RECOMMENDED

? – DEPENDS ON MORE FACTORS

NR – NOT RECOMMENDED

1 STANDARD SERVICE includes crude oil, natural gas, brine, most drilling muds, etc.

2 HNBR can be used in H2S up to a concentration of 10% (Sulfur cured) or 15% (Peroxide cured).

3 VITON & FLUOREL are very similar, except in a few applications.

4 EXPLOSIVE DECOMPRESSION can be controlled using a proper bleed-off procedure.

5 NITRILE or HNBR in high pH depends on type of fluid, temperature and concentration.

6 AROMATIC SOLVENTS include: Benzene, Xylene, MEK, Toluene, etc.

7 HALOGENATED SOLVENTS include: Carbon Tetrachloride, Trichloroethylene, Trichlorethane, etc.

8 MAXIMUM TEMPERATURE LIMIT: Listed is the temperature above which serious distortion of the rubber is likely to occur.

This is for applications having a very good back up system for the rubber, such as o-rings with back up rings, packer elements with petal plates, or garter springs, ect.

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**BGW PACKER CUP**

The Badger BGW packer has an extensive product offering to meet industry demands for various tubing and casing size applications. The BGW cup is available in standard wire reinforcement and heavy duty plate type reinforcement, along with various rubber compounds to meet your down hole requirements.

**STANDARD RUBBER COMPOUNDS AND REINFORCEMENTS**

**STANDARD SERVICE:** 75 duro Nitrile with loop formed spring steel wires.

**HEAVY DUTY:** 85 duro Nitrile with double rows of overlapping spring steel plates.

For an Extra Heavy Duty cup with HNBR rubber, add -001 to the end of the part number.

For a Heavy Duty Fluorelastomer cup, add -003 to the end of the part number.

**HIGH TEMP STEAM:** 85 duro EPDM Peroxide cured with double rows of overlapping spring steel plates.

**POSITIVE SEAL:** 75 duro Nitrile, smaller I.D. and O-ring for sealing assurance, and loop formed spring steel wires.

To add an O-ring groove to a cup, add -07 to the end of the part number.

See the Downhole Environment Compatability chart for temperature and downhole applications for various rubber compounds.



LOOP FORMED SPRING STEEL WIRES



DOUBLE ROW OF OVERLAPPING  
SPRING STEEL PLATES

**BGW PACKER CUPS**



CASING/TUBING DATA		PART NUMBER			
OUTSIDE DIAMETER	WEIGHT (lb/ft)	STANDARD SERVICE	HEAVY DUTY	HIGH TEMP STEAM	POSITIVE SEAL
2-3/8"	4.60 - 4.70	BGW-20	--	--	--
2-7/8"	6.40 - 6.50	BGW-25	--	BGW-87307	--
3-1/8"	5.63	BGW-16370	--	--	--
3-1/2"	9.20 - 10.20	BGW-14960	--	BGW-87310	--
		BGW-16146		--	
	12.95 - 13.30	BGW-14082		BGW-87311	
4"	9.50 - 11.60	BGW-14036	--	BGW-87312	--
4-1/2"	9.50 - 12.60	BGW-30509	BGW-54864	BGW-87313	--
	13.50 - 18.90	BGW-10430	BGW-54430	BGW-87314	
	21.50 - 23.70	BGW-14036	--	BGW-87312	
5"	13.00 - 15.00	BGW-25389	BGW-54865	BGW-87315	--
	18.00 - 21.00	BGW-17831	BGW-54866	--	
	23.20 - 24.10	BGW-30509	BGW-54864	BGW-87313	
5-1/2"	13.00 - 17.00	BGW-22625	BGW-54753	BGW-87318	--
		--	--	--	BGW-30848
	17.00 - 23.00	BGW-19711	BGW-54760	BGW-87316	--
		--	--	--	BGW-30846
	26.80 - 29.70	BGW-25389	BGW-54865	BGW-87315	--
	32.60 - 35.30	BGW-17831	BGW-54866	--	
	35.30 - 38.00	BGW-30509	BGW-54864	BGW-87313	
40.50 - 43.10	BGW-10430	BGW-54430	BGW-87314		
5-3/4"	14.00 - 17.00	BGW-14714	--	BGW-87335	--
6"	14.00 - 18.00	BGW-14721	BGW-54721	BGW-87336	--
	20.00	BGW-14714	--	BGW-87335	
6-5/8"	20.00 - 24.00	BGW-19389	BGW-54872	BGW-87319	--
		--	--	--	BGW-30851
	28.00 - 32.00	BGW-19277	BGW-54870	BGW-87320	--
		--	--	--	BGW-30850
7"	17.00 - 20.00	BGW-17819	BGW-54819	BGW-87322	--
		--	--	--	BGW-30854
	23.00 - 29.00	BGW-17462	BGW-54796	BGW-87323	--
		--	--	--	BGW-30853
	32.00 - 35.00	BGW-19389	BGW-54872	BGW-87319	--
		--	--	--	BGW-30851
	38.00 - 42.70	BGW-19277	BGW-54870	BGW-87320	--
		--	--	--	BGW-30850
46.40 - 53.60	BGW-14721	BGW-54721	BGW-87336	--	

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CASING/TUBING DATA		CUP DIMENSION				
OUTSIDE DIAMETER	WEIGHT (lb/ft)	MAJOR O.D.	MINOR O.D.	SLEEVE DIAMETER	INSIDE DIAMETER	INSIDE HEIGHT
2-3/8"	4.60 - 4.70	2.05"	1.90"	1.28"	1.09"	0.96"
2-7/8"	6.40 - 6.50	2.50"	2.33"	1.54"	1.34"	1.32"
3-1/8"	5.63	3.15"	2.98"	2.17"	1.94"	1.33"
3-1/2"	9.20 - 10.20	3.05"	2.77"	1.54"	1.34"	1.30"
		3.06"	2.86"	2.16"	1.94"	1.33"
	12.95 - 13.30	2.85"	2.52"	1.55"	1.34"	1.35"
4"	9.50 - 11.60	3.62"	3.21"	2.16"	1.94"	1.33"
4-1/2"	9.50 - 12.60	4.18"	3.77"	2.65"	2.40"	1.51"
	13.50 - 18.90	4.02"	3.51"	2.64"		
	21.50 - 23.70	3.62"	3.21"	2.16"	1.94"	1.33"
5"	13.00 - 15.00	4.64"	4.16"	2.65"	2.38"	1.52"
	18.00 - 21.00	4.50"	3.83"	2.63"		
	23.20 - 24.10	4.18"	3.77"	2.65"	2.40"	1.51"
5-1/2"	13.00 - 17.00	5.14"	4.70"	3.31"	2.91"	1.63"
					2.40"	
	17.00 - 23.00	5.02"	4.42"	3.27"	2.91"	1.64"
					2.40"	
	26.80 - 29.70	4.64"	4.16"	2.65"	2.38"	1.52"
	32.60 - 35.30	4.50"	3.83"	2.63"	2.39"	
35.30 - 38.00	4.18"	3.77"	2.65"	2.40"	1.51"	
40.50 - 43.10	4.02"	3.51"	2.64"			
5-3/4"	14.00 - 17.00	5.43"	4.96"	3.29"	2.91"	1.63"
6"	14.00 - 18.00	5.67"	5.10"	3.28"	2.91"	1.66"
	20.00	5.43"	4.96"	3.29"		1.63"
6-5/8"	20.00 - 24.00	6.24"	5.58"	4.02"	3.53"	1.56"
					2.91"	
	28.00 - 32.00	6.03"	5.44"		3.53"	
					2.91"	
7"	17.00 - 20.00	6.65"	6.05"	4.03"	3.53"	1.60"
					23.00 - 29.00	
	32.00 - 35.00	6.24"	5.58"			
					38.00 - 42.70	
	46.40 - 53.60	5.67"	5.10"	3.28"		2.91"

CONTINUED ON NEXT PAGE...

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**BGW PACKER CUPS**



CASING/TUBING DATA		PART NUMBER			
OUTSIDE DIAMETER	WEIGHT (lb/ft)	STANDARD SERVICE	HEAVY DUTY	HIGH TEMP STEAM	POSITIVE SEAL
7-5/8"	26.40 - 29.70	BGW-19391	BGW-54826	BGW-87338	--
	33.70 - 39.00	BGW-23051	BGW-54825	BGW-87339	
	42.80 - 45.30	BGW-17819	BGW-54819	BGW-87322	
	47.10 - 51.20	BGW-17462	BGW-54796	BGW-87323	--
		--	--	--	BGW-30853
8"	26.00	BGW-16009	--	BGW-87324	--
	28.20	--		BGW-54827	--
8-5/8"	24.00	BGW-15941	--	--	--
		--		BGW-87326	BGW-15942
	28.00 - 36.00	BGW-16111		--	BGW-16110
		--		BGW-87327	--
	36.00 - 49.00	BGW-16115		--	BGW-16114
9"	40.00 - 45.00	BGW-15941	--	--	--
		--	--	BGW-15942	
9-5/8"	36.00 - 43.50	BGW-10354	BGW-54354	BGW-87329	--
		--	--	--	BGW-14970
	47.00 - 53.50	BGW-33850	BGW-54850	BGW-87330	--
		--	--	--	BGW-14971
64.90 - 75.60	BGW-15941	--	--	--	
	--	--	--	BGW-15942	
10-3/4"	32.75 - 55.50	BGW-13197	BGW-54034	BGW-87331	--
	55.50 - 73.20	BGW-13198	BGW-54198	BGW-87332	
11-3/4"	38.00 - 60.00	BGW-14246	BGW-54296	BGW-87333	--
	60.00 - 65.00	BGW-14247	BGW-54297	BGW-87335	
13-3/8"	48.00 - 72.00	BGW-16298	BGW-54298	BGW-87334	--
16"	65.00 - 109.00	BGW-16000	--	--	--
		BGW-16000-0005			

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CASING/TUBING DATA		CUP DIMENSION				
OUTSIDE DIAMETER	WEIGHT (lb/ft)	MAJOR O.D.	MINOR O.D.	SLEEVE DIAMETER	INSIDE DIAMETER	INSIDE HEIGHT
7-5/8"	26.40 - 29.70	7.17"	6.60"	4.03"	3.53"	1.68"
	33.70 - 39.00	6.99"	6.38"			
	42.80 - 45.30	6.65"	6.05"		2.91"	1.60"
	47.10 - 51.20	6.55"	6.00"			
8"	26.00	7.48"	7.21"	5.03"	4.53"	1.68"
	28.20	7.31"	7.18"		3.53"	
8-5/8"	24.00	8.38"	7.70"	5.04"	4.53"	1.65"
					3.53"	
	28.00 - 36.00	8.19"	7.47"	5.03"	4.53"	1.61"
					3.53"	
36.00 - 49.00	8.04"	7.20"	5.03"	4.53"	1.60"	
				3.53"		
9"	40.00 - 45.00	8.38"	7.70"	5.04"	4.53"	1.65"
					3.53"	
9-5/8"	36.00 - 43.50	9.18"	8.40"	5.04"	4.53"	1.68"
					3.53"	
	47.00 - 53.50	8.96"	8.25"	5.03"	4.53"	1.63"
					3.53"	
64.90 - 75.60	8.38"	7.70"	5.04"	4.53"	1.65"	
				3.53"		
10-3/4"	32.75 - 55.50	10.45"	9.30"	5.07"	4.53"	1.73"
	55.50 - 73.20	10.03"	9.01"	5.04"		1.68"
11-3/4"	38.00 - 60.00	11.38"	10.42"	5.05"	4.53"	1.65"
	60.00 - 65.00	11.00"	10.14"			1.70"
13-3/8"	48.00 - 72.00	12.98"	12.20"	6.08"	4.53"	1.76"
16"	65.00 - 109.00	15.53"	14.31"	8.27"	4.53"	1.81"
					5.53"	

BGW PACKER ASSEMBLY



<b>CASING OR TUBING*</b>	<b>2-3/8"</b>	<b>2-7/8"</b>	<b>3-1/2"</b>	<b>3-1/2" DP</b>	<b>4"</b>
<b>WEIGHT (lb/ft)</b>	4.60 - 4.70	6.40 - 6.50	9.20 - 10.20	12.95 - 13.30	9.50 - 11.60
<b>THREADS</b>	1.050" EUE	1.315" EUE			1.900" EUE
<b>PACKER TYPE</b>	STD SVC 2 CUP				
<b>ASSEMBLY COMPLETE</b>	<b>B20408</b>	<b>B20410</b>	<b>B20411</b>	<b>B20412</b>	<b>B20414</b>
<b>TOP COUPLING</b>	B6423	B15650			B30747
<b>MANDREL</b>	B15439	B9550			B30431
<b>ADJUSTING RING</b>	--	--	--	--	--
<b>ADJUSTING SLEEVE</b>	--	--	--	--	--
<b>STANDARD SERVICE PACKER CUP</b>	BGW-20 (2)	BGW-25 (2)	BGW-14960 (2)	BGW-14082 (2)	BGW-14036 (2)
<b>THIMBLE</b>	THIMBLE-20 (2)	THIMBLE-25 (2)	B6437 (2)	B14085 (2)	B6695 (2)
<b>SLEEVE</b>	SLEEVE-20 (2)	SLEEVE-25 (2)			B6692 (2)
<b>CONNECTOR COUPLING</b>	--	--	--	--	--
<b>ADAPTER</b>	B93114	B93315			B93316
<b>PACKER LENGTH</b>	16-7/8"	19-7/8"			22-3/8"
<b>MAX METAL O.D.</b>	1.875"	2.260"	2.750"	2.438"	3.250"
<b>MINIMUM I.D.</b>	3/4"	7/8"			1.610"
<b>CUP &amp; THIMBLE LENGTH</b>	3-5/8"	3-13/16"	4"		3-3/4"
<b>CUP MAJOR O.D.*</b>	2.05"	2.50"	3.05"	2.85"	3.62"
<b>CUP MINOR O.D.*</b>	1.90"	2.33"	2.77"	2.52"	3.21"
<b>CUP I.D.</b>	1.09"	1.34"			1.94"

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.



<b>CASING OR TUBING*</b>	<b>4-1/2" and 4-3/4"</b>		<b>4-1/2" DP</b>	
<b>WEIGHT (lb/ft)</b>	9.50 - 12.60	16.00	13.50 - 18.90	
<b>THREADS</b>	2-3/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31254</b>	<b>B31255</b>	<b>B18279</b>	<b>B20349</b>
<b>TOP COUPLING</b>	B30365			
<b>MANDREL</b>	B30331	B30331 (2)	B30331	B30331 (2)
<b>ADJUSTING RING</b>	B15489	B15489 (2)	B15489	B15489 (2)
<b>ADJUSTING SLEEVE</b>	B15488	B15488 (2)	B15488	B15488 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-30509 (2)	BGW-30509 (4)	BGW-10430 (2)	BGW-10430 (4)
<b>THIMBLE</b>	B18319 (2)	B18319 (4)	B16297 (2)	B16297 (4)
<b>SLEEVE</b>	B1483	B1483 (2)	B1483	B1483 (2)
<b>CONNECTOR COUPLING</b>	--	B11608	--	B11608
<b>ADAPTER</b>	B30867			
<b>PACKER LENGTH</b>	26-1/8"	44-7/8"	26-1/8"	44-7/8"
<b>MAX METAL O.D.</b>	3.688"		3.500"	
<b>MINIMUM I.D.</b>	2"			
<b>CUP &amp; THIMBLE LENGTH</b>	4-3/4"		4"	
<b>CUP MAJOR O.D.*</b>	4.18"		4.02"	
<b>CUP MINOR O.D.*</b>	3.77"		3.51"	
<b>CUP I.D.</b>	2.40"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



<b>CASING OR TUBING*</b>	<b>5"</b>			
<b>WEIGHT (lb/ft)</b>	13.00 - 15.00		18.00 - 21.00	
<b>THREADS</b>	2-3/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31040</b>	<b>B31041</b>	<b>B31042</b>	<b>B31043</b>
<b>TOP COUPLING</b>	B30365			
<b>MANDREL</b>	B30331	B30331 (2)	B30331	B30331 (2)
<b>ADJUSTING RING</b>	B15489	B15489 (2)	B15489	B15489 (2)
<b>ADJUSTING SLEEVE</b>	B15488	B15488 (2)	B15488	B15488 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-25389 (2)	BGW-25389 (4)	BGW-17831 (2)	BGW-17831 (4)
<b>THIMBLE</b>	B6448 (2)	B6448 (4)	B6754 (2)	B6754 (4)
<b>SLEEVE</b>	B1483	B1483 (2)	B1483	B1483 (2)
<b>CONNECTOR COUPLING</b>	--	B11608	--	B11608
<b>ADAPTER</b>	B30867			
<b>PACKER LENGTH</b>	26-1/8"	44-7/8"	26-1/8"	44-7/8"
<b>MAX METAL O.D.</b>	4.125"		3.500"	
<b>MINIMUM I.D.</b>	2"			
<b>CUP &amp; THIMBLE LENGTH</b>	5-1/2"			
<b>CUP MAJOR O.D.*</b>	4.64"		4.50"	
<b>CUP MINOR O.D.*</b>	4.16"		3.83"	
<b>CUP I.D.</b>	2.38"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>5-1/2"</b>		<b>5-3/4" and 6"</b>		<b>6"</b>	
<b>WEIGHT (lb/ft)</b>	17.00 - 23.00		14.00 - 17.00	20.00	14.00 - 18.00	
<b>THREADS</b>	2-3/8" EUE					
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31052</b>	<b>B31053</b>	<b>B18286</b>	<b>B20356</b>	<b>B18267</b>	<b>B20357</b>
<b>TOP COUPLING</b>	B30366					
<b>MANDREL</b>	B30332	B30332 (2)	B30332	B30332 (2)	B30332	B30332 (2)
<b>ADJUSTING RING</b>	B15716	B15716 (2)	B15716	B15716 (2)	B15716	B15716 (2)
<b>ADJUSTING SLEEVE</b>	B15715	B15715 (2)	B15715	B15715 (2)	B15715	B15715 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19711 (2)	BGW-19711 (4)	BGW-14714 (2)	BGW-14714 (4)	BGW-14721 (2)	BGW-14721 (4)
<b>THIMBLE</b>	B18320 (2)	B18320 (4)	B93175 (2)	B93175 (4)	B8160 (2)	B8160 (4)
<b>SLEEVE</b>	B1414	B1414 (2)	B1414	B1414 (2)	B1414	B1414 (2)
<b>CONNECTOR COUPLING</b>	--	B11619	--	B11619	--	B11619
<b>ADAPTER</b>	B93117					
<b>PACKER LENGTH</b>	27"	46-7/8"	27"	46-7/8"	27"	46-7/8"
<b>MAX METAL O.D.</b>	4.625"		4.813"		5.125"	
<b>MINIMUM I.D.</b>	2"					
<b>CUP &amp; THIMBLE LENGTH</b>	5-1/2"					
<b>CUP MAJOR O.D.*</b>	5.02"		5.43"		5.67"	
<b>CUP MINOR O.D.*</b>	4.42"		4.96"		5.10"	
<b>CUP I.D.</b>	2.91"					

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

BGW PACKER ASSEMBLY



<b>CASING OR TUBING*</b>	<b>6-5/8" and 7"</b>		<b>6-5/8" and 7"</b>	
<b>WEIGHT (lb/ft)</b>	20.00 - 24.00	32.00 - 35.00	28.00 - 32.00	38.00 - 42.70
<b>THREADS</b>	2-3/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31060</b>	<b>B31061</b>	<b>B31064</b>	<b>B20357</b>
<b>TOP COUPLING</b>	B30369			
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19389 (2)	BGW-19389 (4)	BGW-19277 (2)	BGW-19277 (4)
<b>THIMBLE</b>	B18322 (2)	B18322 (4)	B18322 (2)	B18322 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B93118			
<b>PACKER LENGTH</b>	31-1/4"	55-1/16"	31-1/4"	55-1/16"
<b>MAX METAL O.D.</b>	5.625"		4.813"	
<b>MINIMUM I.D.</b>	2"			
<b>CUP &amp; THIMBLE LENGTH</b>	5-5/8"			
<b>CUP MAJOR O.D.*</b>	6.24"		6.03"	
<b>CUP MINOR O.D.*</b>	5.58"		5.44"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>7"</b>			
<b>WEIGHT (lb/ft)</b>	17.00 - 20.00		23.00 - 29.00	
<b>THREADS</b>	2-3/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31048</b>	<b>B31049</b>	<b>B31072</b>	<b>B31073</b>
<b>TOP COUPLING</b>	B30369			
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-17819 (2)	BGW-17819 (4)	BGW-17462 (2)	BGW-17462 (4)
<b>THIMBLE</b>	B17542 (2)	B17542 (4)	B17542 (2)	B17542 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B93118			
<b>PACKER LENGTH</b>	31-1/4"	55-1/16"	31-1/4"	55-1/16"
<b>MAX METAL O.D.</b>	6.000"			
<b>MINIMUM I.D.</b>	2"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-1/4"			
<b>CUP MAJOR O.D.*</b>	6.65"		6.55"	
<b>CUP MINOR O.D.*</b>	6.05"		6.00"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



<b>CASING OR TUBING*</b>	<b>5-1/2"</b>			
<b>WEIGHT (lb/ft)</b>	13.00 - 17.00		17.00 - 23.00	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31046</b>	<b>B31047</b>	<b>B31072</b>	<b>B31073</b>
<b>TOP COUPLING</b>	B30367			
<b>MANDREL</b>	B30332	B30332 (2)	B30332	B30332 (2)
<b>ADJUSTING RING</b>	B15716	B15716 (2)	B15716	B15716 (2)
<b>ADJUSTING SLEEVE</b>	B15715	B15715 (2)	B15715	B15715 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-22625 (2)	BGW-22625 (4)	BGW-19711 (2)	BGW-19711 (4)
<b>THIMBLE</b>	B18320 (2)	B18320 (4)	B18320 (2)	B18320 (4)
<b>SLEEVE</b>	B1414	B1414 (2)	B1414	B1414 (2)
<b>CONNECTOR COUPLING</b>	--	B11619	--	B11619
<b>ADAPTER</b>	B43884			
<b>PACKER LENGTH</b>	28-7/8"	48-3/4"	28-7/8"	48-3/4"
<b>MAX METAL O.D.</b>	4.625"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	5-1/2"			
<b>CUP MAJOR O.D.*</b>	5.14"		5.02"	
<b>CUP MINOR O.D.*</b>	4.70"		4.42"	
<b>CUP I.D.</b>	2.91"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

CASING OR TUBING*	5-3/4" and 6"		6"	
WEIGHT (lb/ft)	14.00 - 17.00	20.00	14.00 - 18.00	
THREADS	2-7/8" EUE			
PACKER TYPE	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
ASSEMBLY COMPLETE	<b>B18304</b>	<b>B20366</b>	<b>B18305</b>	<b>B20367</b>
TOP COUPLING	B30367			
MANDREL	B30332	B30332 (2)	B30332	B30332 (2)
ADJUSTING RING	B15716	B15716 (2)	B15716	B15716 (2)
ADJUSTING SLEEVE	B15715	B15715 (2)	B15715	B15715 (2)
STANDARD SERVICE PACKER CUP	BGW-14714 (2)	BGW-14714 (4)	BGW-14721 (2)	BGW-14721 (4)
THIMBLE	B93175 (2)	B93175 (4)	B8160 (2)	B8160 (4)
SLEEVE	B1414	B1414 (2)	B1414	B1414 (2)
CONNECTOR COUPLING	--	B11619	--	B11619
ADAPTER	B43884			
PACKER LENGTH	28-7/8"	48-3/4"	28-7/8"	48-3/4"
MAX METAL O.D.	4.813"		5.125"	
MINIMUM I.D.	2-1/2"			
CUP & THIMBLE LENGTH	5-1/2"			
CUP MAJOR O.D.*	5.43"		5.67"	
CUP MINOR O.D.*	4.96"		5.10"	
CUP I.D.	2.91"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



<b>CASING OR TUBING*</b>	<b>6-5/8" and 7"</b>		<b>6-5/8" and 7"</b>	
<b>WEIGHT (lb/ft)</b>	20.00 - 24.00	32.00 - 35.00	28.00 - 32.00	38.00 - 42.70
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31062</b>	<b>B31063</b>	<b>B31066</b>	<b>B31067</b>
<b>TOP COUPLING</b>	B30368	B30366	B30368	
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19389 (2)	BGW-19389 (4)	BGW-19277 (2)	BGW-19277 (4)
<b>THIMBLE</b>	B18322 (2)	B18322 (4)	B18322 (2)	B18322 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B67117			
<b>PACKER LENGTH</b>	32-15/16"	56-3/4"	32-15/16"	56-3/4"
<b>MAX METAL O.D.</b>	5.625"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	5-5/8"			
<b>CUP MAJOR O.D.*</b>	6.24"		6.03"	
<b>CUP MINOR O.D.*</b>	5.58"		5.44"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.



<b>CASING OR TUBING*</b>	<b>7"</b>			
<b>WEIGHT (lb/ft)</b>	17.00 - 20.00		23.00 - 29.00	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31070</b>	<b>B31071</b>	<b>B31074</b>	<b>B31075</b>
<b>TOP COUPLING</b>	B30368	B30366	B30368	
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-17819 (2)	BGW-17819 (4)	BGW-17462 (2)	BGW-17462 (4)
<b>THIMBLE</b>	B17542 (2)	B17542 (4)	B17542 (2)	B17542 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B67117			
<b>PACKER LENGTH</b>	32-15/16"	56-3/4"	32-15/16"	56-3/4"
<b>MAX METAL O.D.</b>	6.000"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-1/4"			
<b>CUP MAJOR O.D.*</b>	6.65"		6.55"	
<b>CUP MINOR O.D.*</b>	6.05"		6.00"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>7-5/8"</b>			
<b>WEIGHT (lb/ft)</b>	26.40 - 29.70		33.70 - 39.00	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B31080</b>	<b>B31081</b>	<b>B25386</b>	<b>B25387</b>
<b>TOP COUPLING</b>	B30368	B30366	B30368	
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19391 (2)	BGW-19391 (4)	BGW-23051 (2)	BGW-23051 (4)
<b>THIMBLE</b>	B6366 (2)	B6366 (4)	B6366 (2)	B6366 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B67117			
<b>PACKER LENGTH</b>	32-15/16"	56-3/4"	32-15/16"	56-3/4"
<b>MAX METAL O.D.</b>	6.375"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-1/4"			
<b>CUP MAJOR O.D.*</b>	7.17"		6.99"	
<b>CUP MINOR O.D.*</b>	6.60"		6.38"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>8-5/8"</b>			
<b>WEIGHT (lb/ft)</b>	28.00 - 36.00		36.00 - 49.00	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B18315</b>	<b>B20377</b>	<b>B18313</b>	<b>B20375</b>
<b>TOP COUPLING</b>	B30370			
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-16111 (2)	BGW-16111 (4)	BGW-16115 (2)	BGW-16115 (4)
<b>THIMBLE</b>	B17545 (2)	B17545 (4)	B17545 (2)	B17545 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420
<b>ADAPTER</b>	B93119			
<b>PACKER LENGTH</b>	35-7/8"	63-1/8"	35-7/8"	63-1/8"
<b>MAX METAL O.D.</b>	7.375"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-3/8"			
<b>CUP MAJOR O.D.*</b>	8.19"		8.04"	
<b>CUP MINOR O.D.*</b>	7.47"		7.20"	
<b>CUP I.D.</b>	4.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



CASING OR TUBING*	9"			9-5/8"		
WEIGHT (lb/ft)	40.00 - 45.00			36.00 - 43.50		47.00 - 53.50
THREADS	2-7/8" EUE					
PACKER TYPE	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
ASSEMBLY COMPLETE	<b>B18316</b>	<b>B20378</b>	<b>B18315</b>	<b>B20377</b>	<b>B18313</b>	<b>B20375</b>
TOP COUPLING	B30370					
MANDREL	B30334	B30334 (2)	B30334	B30334 (2)	B30334	B30334 (2)
ADJUSTING RING	B19749	B19749 (2)	B19749	B19749 (2)	B19749	B19749 (2)
ADJUSTING SLEEVE	B19750	B19750 (2)	B19750	B19750 (2)	B19750	B19750 (2)
STANDARD SERVICE PACKER CUP	BGW-15941 (2)	BGW-15941 (4)	BGW-10354 (2)	BGW-10354 (4)	BGW-33850 (2)	BGW-33850 (4)
THIMBLE	B17545 (2)	B17545 (4)	B17545 (2)	B17545 (4)	B34702 (2)	B34702 (4)
SLEEVE	B60122	B60122 (2)	B60122	B60122 (2)	B60122	B60122 (2)
CONNECTOR COUPLING	--	B93420	--	B93420	--	B93420
ADAPTER	B93119					
PACKER LENGTH	35-7/8"	63-1/8"	35-7/8"	63-1/8"	35-7/8"	63-1/8"
MAX METAL O.D.	7.375"		8.250"		8.125"	
MINIMUM I.D.	2-1/2"		2-1/2"			
CUP & THIMBLE LENGTH	6-3/8"		8"		6-3/4"	
CUP MAJOR O.D.*	8.38"		9.18"		8.96"	
CUP MINOR O.D.*	7.70"		8.40"		8.25"	
CUP I.D.	4.53"					

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>10-3/4"</b>			
<b>WEIGHT (lb/ft)</b>	32.75 - 55.50		55.50 - 73.20	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B18318</b>	<b>B20380</b>	<b>B18318A</b>	<b>B20380A</b>
<b>TOP COUPLING</b>	B30370			
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-13197 (2)	BGW-13197 (4)	BGW-13198 (2)	BGW-13198 (4)
<b>THIMBLE</b>	B1478 (2)	B1478 (4)	B1478 (2)	B1478 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420
<b>ADAPTER</b>	B93119			
<b>PACKER LENGTH</b>	35-7/8"	63-1/8"	35-7/8"	63-1/8"
<b>MAX METAL O.D.</b>	9.500"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	8"			
<b>CUP MAJOR O.D.*</b>	10.45"		10.03"	
<b>CUP MINOR O.D.*</b>	9.30"		9.01"	
<b>CUP I.D.</b>	4.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.



<b>CASING OR TUBING*</b>	<b>11-3/4"</b>			
<b>WEIGHT (lb/ft)</b>	38.00 - 60.00		60.00 - 65.00	
<b>THREADS</b>	2-7/8" EUE			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B20384</b>	<b>B20381</b>	<b>B20384A</b>	<b>B20381A</b>
<b>TOP COUPLING</b>	B30370			
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-14246 (2)	BGW-14246 (4)	BGW-14247 (2)	BGW-14247 (4)
<b>THIMBLE</b>	B1478 (2)	B1478 (4)	B1478 (2)	B1478 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420
<b>ADAPTER</b>	B93119			
<b>PACKER LENGTH</b>	35-7/8"	63-1/8"	35-7/8"	63-1/8"
<b>MAX METAL O.D.</b>	10.375"			
<b>MINIMUM I.D.</b>	2-1/2"			
<b>CUP &amp; THIMBLE LENGTH</b>	8"			
<b>CUP MAJOR O.D.*</b>	11.38"		11.00"	
<b>CUP MINOR O.D.*</b>	10.42"		10.14"	
<b>CUP I.D.</b>	4.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>13-3/8"</b>	
<b>WEIGHT (lb/ft)</b>	48.00 - 72.00	
<b>THREADS</b>	2-7/8" EUE	
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B20383</b>	<b>B20382</b>
<b>TOP COUPLING</b>	B30370	
<b>MANDREL</b>	B30334	B30334 (2)
<b>ADJUSTING RING</b>	--	--
<b>ADJUSTING SLEEVE</b>	--	--
<b>STANDARD SERVICE PACKER CUP</b>	BGW-16298 (2)	BGW-16298 (4)
<b>THIMBLE</b>	B16312 (2)	B16312 (4)
<b>SLEEVE</b>	B93422	B93422 (2)
<b>CONNECTOR COUPLING</b>	--	B93420
<b>ADAPTER</b>	B93119	
<b>PACKER LENGTH</b>	35-7/8"	63-1/8"
<b>MAX METAL O.D.</b>	11.875"	
<b>MINIMUM I.D.</b>	2-1/2"	
<b>CUP &amp; THIMBLE LENGTH</b>	9"	
<b>CUP MAJOR O.D.*</b>	12.98"	
<b>CUP MINOR O.D.*</b>	12.20"	
<b>CUP I.D.</b>	4.53"	

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



<b>CASING OR TUBING*</b>	<b>6-5/8" and 7"</b>		<b>6-5/8" and 7"</b>	
<b>WEIGHT (lb/ft)</b>	20.00 - 24.00	32.00 - 35.00	28.00 - 32.00	38.00 - 42.70
<b>THREADS</b>	3-1/2" 8V			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B93126</b>	<b>B93127</b>	<b>B93130</b>	<b>B93131</b>
<b>TOP COUPLING</b>	B11657			
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19389 (2)	BGW-19389 (4)	BGW-19277 (2)	BGW-19277 (4)
<b>THIMBLE</b>	B18322 (2)	B18322 (4)	B18322 (2)	B18322 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B63917			
<b>PACKER LENGTH</b>	30-5/8"	54-7/16"	30-5/8"	54-7/16"
<b>MAX METAL O.D.</b>	5.625"			
<b>MINIMUM I.D.</b>	2.992"			
<b>CUP &amp; THIMBLE LENGTH</b>	5-5/8"			
<b>CUP MAJOR O.D.*</b>	6.24"		6.03"	
<b>CUP MINOR O.D.*</b>	5.58"		5.44"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

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<b>CASING OR TUBING*</b>	<b>7"</b>			
<b>WEIGHT (lb/ft)</b>	17.00 - 20.00		23.00 - 29.00	
<b>THREADS</b>	3-1/2" 8V			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B93134</b>	<b>B93135</b>	<b>B93137</b>	<b>B93138</b>
<b>TOP COUPLING</b>	B11657			
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-17819 (2)	BGW-17819 (4)	BGW-17462 (2)	BGW-17462 (4)
<b>THIMBLE</b>	B17542 (2)	B17542 (4)	B17542 (2)	B17542 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B63917			
<b>PACKER LENGTH</b>	30-5/8"	54-7/16"	30-5/8"	54-7/16"
<b>MAX METAL O.D.</b>	6.000"			
<b>MINIMUM I.D.</b>	2.992"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-1/4"			
<b>CUP MAJOR O.D.*</b>	6.65"		6.55"	
<b>CUP MINOR O.D.*</b>	6.05"		6.00"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.



<b>CASING OR TUBING*</b>	<b>7-5/8"</b>			
<b>WEIGHT (lb/ft)</b>	26.40 - 29.70		33.70 - 39.00	
<b>THREADS</b>	3-1/2" 8V			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B93144</b>	<b>B93145</b>	<b>B93150</b>	<b>B93151</b>
<b>TOP COUPLING</b>	B11657			
<b>MANDREL</b>	B30333	B30333 (2)	B30333	B30333 (2)
<b>ADJUSTING RING</b>	B15718	B15718 (2)	B15718	B15718 (2)
<b>ADJUSTING SLEEVE</b>	B15717	B15717 (2)	B15717	B15717 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-19391 (2)	BGW-19391 (4)	BGW-23051 (2)	BGW-23051 (4)
<b>THIMBLE</b>	B6366 (2)	B6366 (4)	B6366 (2)	B6366 (4)
<b>SLEEVE</b>	B1413	B1413 (2)	B1413	B1413 (2)
<b>CONNECTOR COUPLING</b>	--	B20864	--	B20864
<b>ADAPTER</b>	B63917			
<b>PACKER LENGTH</b>	30-5/8"	54-7/16"	30-5/8"	54-7/16"
<b>MAX METAL O.D.</b>	6.375"			
<b>MINIMUM I.D.</b>	2.992"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-1/4"			
<b>CUP MAJOR O.D.*</b>	7.17"		6.99"	
<b>CUP MINOR O.D.*</b>	6.60"		6.38"	
<b>CUP I.D.</b>	3.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

<b>CASING OR TUBING*</b>	<b>8-5/8"</b>			
<b>WEIGHT (lb/ft)</b>	28.00 - 36.00		36.00 - 49.00	
<b>THREADS</b>	3-1/2" 8V			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B93152</b>	<b>B93153</b>	<b>B93156</b>	<b>B93157</b>
<b>TOP COUPLING</b>	B64789			
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-16111 (2)	BGW-16111 (4)	BGW-16115 (2)	BGW-16115 (4)
<b>THIMBLE</b>	B17545 (2)	B17545 (4)	B17545 (2)	B17545 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420
<b>ADAPTER</b>	B65584			
<b>PACKER LENGTH</b>	35-3/8"	56-1/4"	35-3/8"	56-1/4"
<b>MAX METAL O.D.</b>	7.375"			
<b>MINIMUM I.D.</b>	2.992"			
<b>CUP &amp; THIMBLE LENGTH</b>	6-3/8"			
<b>CUP MAJOR O.D.*</b>	8.19"		8.04"	
<b>CUP MINOR O.D.*</b>	7.47"		7.20"	
<b>CUP I.D.</b>	4.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



CASING OR TUBING*	9"			9-5/8"		
WEIGHT (lb/ft)	40.00 - 45.00			36.00 - 43.50		47.00 - 53.50
THREADS	3-1/2" 8V					
PACKER TYPE	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
ASSEMBLY COMPLETE	<b>B93158</b>	<b>B93159</b>	<b>B64733</b>	<b>B93160</b>	<b>B93161</b>	<b>B66279</b>
TOP COUPLING	B64789					
MANDREL	B30334	B30334 (2)	B30334	B30334 (2)	B30334	B30334 (2)
ADJUSTING RING	B19749	B19749 (2)	B19749	B19749 (2)	B19749	B19749 (2)
ADJUSTING SLEEVE	B19750	B19750 (2)	B19750	B19750 (2)	B19750	B19750 (2)
STANDARD SERVICE PACKER CUP	BGW-15941 (2)	BGW-15941 (4)	BGW-10354 (2)	BGW-10354 (4)	BGW-33850 (2)	BGW-33850 (4)
THIMBLE	B17545 (2)	B17545 (4)	B17545 (2)	B17545 (4)	B34702 (2)	B34702 (4)
SLEEVE	B60122	B60122 (2)	B60122	B60122 (2)	B60122	B60122 (2)
CONNECTOR COUPLING	--	B93420	--	B93420	--	B93420
ADAPTER	B65584					
PACKER LENGTH	35-3/8"	62-5/8"	35-3/8"	62-5/8"	35-3/8"	62-5/8"
MAX METAL O.D.	8.250"					
MINIMUM I.D.	2.992"					
CUP & THIMBLE LENGTH	6-3/8"		8"		6-3/8"	
CUP MAJOR O.D.*	8.38"		9.18"		8.96"	
CUP MINOR O.D.*	7.70"		8.40"		8.25"	
CUP I.D.	4.53"					

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.



**BGW PACKER ASSEMBLY**

<b>CASING OR TUBING*</b>	<b>10-3/4"</b>			
<b>WEIGHT (lb/ft)</b>	32.75 - 55.50		55.50 - 73.20	
<b>THREADS</b>	3-1/2" 8V			
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B64763</b>	<b>B93162</b>	<b>B64763A</b>	<b>B93162A</b>
<b>TOP COUPLING</b>	B64789			
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)
<b>STANDARD SERVICE PACKER CUP</b>	BGW-13197 (2)	BGW-13197 (4)	BGW-13198 (2)	BGW-13198 (4)
<b>THIMBLE</b>	B1478 (2)	B1478 (4)	B1478 (2)	B1478 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420
<b>ADAPTER</b>	B65584			
<b>PACKER LENGTH</b>	35-3/8"	62-5/8"	35-3/8"	62-5/8"
<b>MAX METAL O.D.</b>	9.500"			
<b>MINIMUM I.D.</b>	2.992"			
<b>CUP &amp; THIMBLE LENGTH</b>	8"			
<b>CUP MAJOR O.D.*</b>	10.45"		10.03"	
<b>CUP MINOR O.D.*</b>	9.30"		9.01"	
<b>CUP I.D.</b>	4.53"			

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

**BGW PACKER ASSEMBLY**



CASING OR TUBING*	11-3/4"				13-3/8"	
WEIGHT (lb/ft)	38.00 - 60.00		60.00 - 65.00		48.00 - 72.00	
THREADS	3-1/2" 8V					
<b>PACKER TYPE</b>	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP	STD SVC 2 CUP	STD SVC 4 CUP
<b>ASSEMBLY COMPLETE</b>	<b>B93163</b>	<b>B93164</b>	<b>B93163A</b>	<b>B93164A</b>	<b>B93165</b>	<b>B93166</b>
<b>TOP COUPLING</b>	B64789					
<b>MANDREL</b>	B30334	B30334 (2)	B30334	B30334 (2)	B30334	B30334 (2)
<b>ADJUSTING RING</b>	B19749	B19749 (2)	B19749	B19749 (2)	--	--
<b>ADJUSTING SLEEVE</b>	B19750	B19750 (2)	B19750	B19750 (2)	--	--
<b>STANDARD SERVICE PACKER CUP</b>	BGW-14246 (2)	BGW-14246 (4)	BGW-14247 (2)	BGW-14247 (4)	BGW-16298 (2)	BGW-16298 (4)
<b>THIMBLE</b>	B14248 (2)	B14248 (4)	B14248 (2)	B14248 (4)	B16312 (2)	B16312 (4)
<b>SLEEVE</b>	B60122	B60122 (2)	B60122	B60122 (2)	B93422	B93422 (2)
<b>CONNECTOR COUPLING</b>	--	B93420	--	B93420	--	B93420
<b>ADAPTER</b>	B65584					
<b>PACKER LENGTH</b>	35-3/8"	62-5/8"	35-3/8"	62-5/8"	35-3/8"	62-5/8"
<b>MAX METAL O.D.</b>	10.375"				11.875"	
<b>MINIMUM I.D.</b>	2.992"					
<b>CUP &amp; THIMBLE LENGTH</b>	8"				9"	
<b>CUP MAJOR O.D.*</b>	11.38"		11.00"		12.980"	
<b>CUP MINOR O.D.*</b>	10.42"		10.14"		12.200"	
<b>CUP I.D.</b>	4.53"					

CASING OR TUBING I.D. SHOULD BE BETWEEN THE CUPS MAJOR & MINOR O.D.

## **GUARANTEE/WARRANTY**

Unless otherwise specifically stated in writing, our guarantee is limited to the following:

We agree to repair or replace at our cost all products of our manufacture, which are found by us to be defective in material or workmanship, provided that notice of claim of defects is received by us within one year after date of shipment from our plant. All products claimed to be defective shall be held subject to inspection by us.

Goods or parts thereof which are not wholly of our manufacture are warranted and guaranteed only to the extent and in the manner warranted and guaranteed to us by the manufacturer and then only to the extent we are able to enforce such warranty or guarantee.

We have the option of requiring the return of the defective material, transportation prepaid, to establish the claim, and we are not obligated to pay the cost of transporting the goods replaced or repaired by us either from the Buyer to us or from us to the Buyer.

We shall in no event be liable for any claims of damages of any kind arising out of alleged defects in manufacture, material, design or workmanship in the goods sold.

The above provisions set forth are our sole and only obligation or liability in connection with goods sold by us.

## **PRICES**

Prices on all products are subject to change without notice.

## **RETURNS OF MERCHANDISE**

Authority to return all materials must be obtained from BADGER OILFIELD PRODUCTS, LLC. WICHITA FALLS, TEXAS or other regional office as may be designated. The following terms and conditions will apply:

1. List of material submitted for return must show date of purchase and invoice or purchase order.
2. Material, as listed below, is not acceptable for credit:
  - a) Material not in new or saleable condition, any material returned not in sellable condition will be reconditioned only if our inspection determines it feasible to do so. An appropriate charge will be made for reconditioning.
  - b) Material with damaged threads or wrench marks will not be accepted.
  - c) Material purchased prior to twelve (12) months of date of return.
  - d) Material purchased from others.
  - e) Obsolete material.
  - f) Material made special or to non-standard specifications. Rubber products which have been purchased more than twelve (12) months prior to date of return.
3. Credit will be based on prices in effect at time of shipment or current prices, whichever is less. If purchase date or invoice number is not furnished, we reserve the right to determine what price basis credit will be allowed.
4. Material must be packed to avoid damage in transit and material, which is rendered un-saleable by damage in transit, will not be accepted for credit.
5. All transportation charges, inbound and outbound, will be for our customer's account.
6. After receipt of material credit will be issued. This credit shall be applicable to the future purchase of BADGER OILFIELD PRODUCTS, LLC. products only. Due to the details involved in processing, a period of 30 to 60 days may be required to handle the credit. A debit memorandum will not be accepted for return of merchandise.
7. A 25% restocking charge, over and above any reconditioning charge, which may be applicable, will be charged on all items returned for credit.

## **CANCELLATION CHARGES**

1. Orders for standard BADGER OILFIELD PRODUCTS, LLC. products are subject to a 25% cancellation charge.
2. Orders for non-standard or special materials are subject to a 100% cancellation charge.



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