

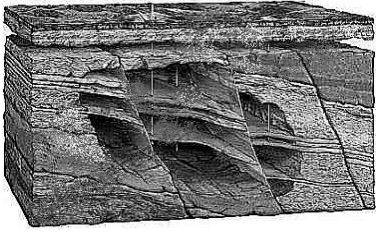
# TEXAS PRODUCTS

## WELL SERVICE DIVISION, INC.



**GENERAL DOWNHOLE ENVIRONMENT COMPATIBILITY**

This chart offers a general guideline for the use of various elastomers in downhole oilfield applications. See the notes below the chart for some of the specific assumptions and discussion.

GENERAL DOWNHOLE ENVIRONMENT COMPATIBILITY													
DOWNHOLE - ENVIRONMENT		NOTES (SEE REFERENCE)	NATURAL RUBBER	NITRILE (A)	NITRILE (B)	HNBR (C)	HNBR (D)	NEOPRENE	EPDM (E)	VITON / FLUOREL (F) / (1)	AFLAS	HYDRIN	
	STANDARD OILFIELD SERVICE	(2)	OK / ?	OK	OK	OK	OK	OK	OK	NR	OK	OK	OK
	SOUR SERVICE (H <sub>2</sub> S)		NR	NR	NR	? (3)	OK (3)	?	OK	OK	OK	NR	
	CARBON DIOXIDE (CO <sub>2</sub> )		NR	?	OK	?	?	?	OK	OK	OK	OK	
	EXPLOSIVE DECOMPRESSION	(4)	NR	NR	OK	?	?	NR	NR	?	OK	OK	
	ZINC / CALCIUM BROMIDE		NR	NR	NR	?	?	?	OK	OK	OK	---	
	METHANE / NATURAL GAS		?	?	?	?	?	?	?	OK	OK	OK	
	STEAM (ABOVE 300° F)		NR	NR	NR	NR	OK	NR	OK	?	OK	NR	
	STRONG ACID (HCl, HF) COLD		NR	?	?	?	?	?	OK	OK	OK	?	
	STRONG ACID - HOT (>200° F)		NR	NR	NR	NR	NR	NR	NR	OK	OK	NR	
	WATER BASE AMINE INHIBITORS		NR	OK	OK	OK	OK	OK	OK	NR	OK	NR	
	OIL BASE AMINE INHIBITORS		NR	NR	NR	NR	NR	NR	NR	NR	OK	NR	
	HIGH pH FLUIDS (ALKALINE)	(5)		?	?	?	?	?	OK	NR	OK	?	
	AROMATIC SOLVENTS	(6)	NR	NR	NR	NR	NR	NR	NR	OK	?	NR	
HALOGENATED SOLVENTS	(7)	NR	NR	NR	NR	NR	NR	NR	OK	OK	NR		
MAXIMUM TEMPERATURE LIMIT		° F	250°	275°	275°	325°	350°	250°	550°	400°	450°	275°	
		° C	121°	135°	135°	163°	177°	121°	288°	204°	232°	135°	

\* Important notes above; for example SOUR SERVICE / HNBR shows ? (3) - you can locate this information below, as well as any other notes listed.

**NOTES / DESCRIPTIONS & ABBREVIATIONS REFERENCE**

- OK Type of Service - **Recommended**
- NR Type of Service - **Not Recommended**
- ? Type of Service - **Questionable / Depends on more factors**

- (A) **NITRILE** - Soft/Medium (60-85 Duro)
- (B) **NITRILE** - Hard (85+ Duro)
- (C) **HNBR** - Sulfur Cured
- (D) **HNBR** - Peroxide Cured
- (E) **EPDM** - Peroxide Cured
- (F) **VITON / FLUOREL** - High Fluorine Fluorel

- (1) **VITON / FLOUREL** - are very similar, except in a few applications
- (2) **STANDARD SERVICE** - crude oil, natural gas, brine, most drilling muds, etc...
- (3) **HNBR** - can be used in H<sub>2</sub>S up to a concentration of 10% (sulfur cured) or 15% (peroxide cured)
- (4) **EXPLOSIVE DECOMPRESSION** - can be controlled using a proper bleed-off procedure
- (5) **NITRILE / HNBR (HIGH pH FLUIDS)** - use of these depends on type of fluid, temperature & concentration
- (6) **AROMATIC SOLVENTS** - include: Benzene, Xylene, MEK, Toluene, etc...
- (7) **HALOGENATED SOLVENTS** - include: Carbon Tetrachloride, Trichloroethylene, Trichloroethane, etc...
- (8) **MAXIMUM TEMPERATURE LIMIT** - listed is the temperature above which serious deterioration 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, etc...). Rod guides, drill pipe protectors and control line protectors seem to perform well up to 250°F (121°C) due to the specialized rubber compounding used in the products. For applications having no back-up system, such as all rubber swab cups, the practical limit is 200°F (93°C), due to softening of the rubber. Having a limited back-up system, such as wire reinforced swab cups or standard packer cups, the practical temperature limit is 225°F (107°C).

**GW PACKER CUP - PRODUCT LINE**

The new and improved streamlined packer cup series was established over ten years ago and is now set for a global takeover. In addition to expanding, improving and streamlining the standard packer / swab cups, Texas Products WSD new "GW" series product line includes: Heavy-Duty, Extra Heavy-Duty and Hi-Temp Steam cups in all casing sizes.

Texas Products WSD is becoming one of the most reputable, sought after rubber producers in the oilfield. The new "GW" series product line is the most reliable cup the industry has to offer, while exceeding all of our competitors packer cups. In fact these cups are so reliable even our competitors have had a taste.

The question is, how do you improve on a basic product line that has been around since 1941? With a tremendous amount of oilfield knowledge and experience, along with our design capabilities that our OEM group has. First you review the problems that you have ran into in the past, then we systematically eliminate them in the new product.

The new "GW" series packer cups have an improved seal on the I.D. of the cup. In the past many users of the "historical" cups had to incorporate an o-ring on their mandrels to get them to seal. With our design improvements that have been made, this new series of cups seal on the mandrel when the assembly is tightened. This has been tested in an independant laboratory as well as in the field with outstanding results.

New rubber compounds have been developed which add to the strength of the new "GW" series. We are very proud of the temperature and pressure ratings that this new series of cups can withstand, especially the new "GW-HD" (HNBR) cups that utilize an extremely rugged HNBR rubber compound

For each casing size (4 1/2" & larger) the new "GW" series cups have been designed to function in one weight range larger or smaller than the weight range listed for the cups. This allows for use with mixed casing weights in the well and/or when casing weight is doubtful in older wells. Even though each cup will function in another weight range, this is not recommended as a normal practice due to some pressure holding limitations that may exist.

With this being the newest product line on the market today, design changes to the cups can always be made. The possiblilty to make design adjustments to the new "GW" series packer cups is always there in order to reduce complication of selecting the appropriate cup for the proper application. Since there wasn't a group of rubber molds to use already, there are only two cups for any size casing. In some cases the "historical" cups were designed for certain weight ranges as "after-thoughts", while in other cases the weight ranges that are specified for the "historical" cups are not even used in todays oilfield. However, even with the improvements to the new streamlined "GW" series, all of these cups are interchangeable with the "historical" GW series produced by the Guiberson group.

NEW "GW" SERIES RATINGS					
CUP	0 - 150° F	250° F	350° F	450° F	550° F
GW-SS	4500 PSI	3250 PSI	---	---	---
GW-HD	8000 PSI	6500 PSI	---	---	---
GW-HD (HNBR)	8500 PSI	7000 PSI	5000 PSI	---	---
GW-ST	4500 PSI	4000 PSI	3250 PSI	2500 PSI	1500 PSI
GW-SP	6000 PSI	3000 PSI	---	---	---

**GW-SS**

The standard "GW" packer cup, molded using a very tough 80 durometer proprietary nitrile rubber compound. The "GW-SS" is reinforced by loop-formed spring steel wires. This cup is for standard, limited pressure, moderate temperature service.

**GW-HD**

A heavy-duty "GW" packer cup, molded using an extra strong 85 durometer proprietary nitrile rubber compound. Rather than wire reinforcing, the "GW-HD" uses a heavy-duty insert made with a double row of overlapping spring steel plates to provide the strongest reinforcement.

**GW-HD (HNBR)**

The extra heavy-duty "GW" packer cup uses the same heavy-duty overlapping spring steel plate reinforcement as the "GW-HD". Molded using an extremely durable 85 durometer proprietary hydrogenated nitrile rubber compound. The HNBR rubber provides better chemical resistance and a higher operating temperature than standard nitrile. The "GW-HD" (HNBR) can be used in wells with up to 15% H<sub>2</sub>S and temperatures up to 350° F.

**GW-ST**

A hi-temp steam "GW" packer cup, molded using a special 85 durometer proprietary EPDM rubber compound. This compound utilizes technology developed for the "Hot Rock Geothermal Project" by the U.S. Department of Energy in New Mexico a few years back when alternate energy sources were first being sought. The "GW-ST" uses the heavy-duty overlapping spring steel plate reinforcement and the special rubber compound allows this cup to be used in water or steam up to 550° F. This cup must never be used in liquid hydrocarbons. EPDM swells dramatically in oil or grease.

**GW-SP**

The "GW-SP" (special packer) cup, is bacically the smae make and configuration as the "GW-SS". However, this cup contains additional I.D. seals (o-rings) and a thick cross section for added durability.

**GW-SC**

The "GW" swab cup also known as "GW-SC", is the cup to use when lifting the last drop from a well. In tubing sizes 2 3/8" - 4" the swab cup and the "GW-SS" cup are the same; with the same wire-loop reinforcing and the same tough nitrile rubber. In casing size cups 4 1/2" and larger) the "GW-SC" is molded from the same tough nitrile rubber as the "GW-SS", but there are no wires in the "GW-SC" casing cups.

**PACKER ASSEMBLIES**

A "GW" packer assemblies parts list is included in this catalog. Please reference the "PACKERS" section of this catalog.

**GW SERIES PACKER CUPS - DIMENSIONAL DATA**

**ENGINEERING DATA AND PART NUMBERS**

O.D. (IN.)	WEIGHT (LB/FT)	GW-SS (NITRILE)	GWD-HD (NITRILE)	GWD-HD (HNBR)	GW-ST (EPDM)	GW-SC (NITRILE)	GW-SEAL (O-RING)	MAJOR O.D. (IN.)	MINOR O.D. (IN.)	SLEEVE O.D. (IN.)	I.D. (IN.)	INSIDE HEIGHT (IN.)
2 3/8	4.60-4.70	TP10716	---	---	---	TP10716	---	2.050	1.900	1.280	1.090	0.960
2 7/8	6.40-6.50	TP10047	---	---	TP87307	TP10047	---	2.500	2.330	1.540	1.340	1.320
3 1/8	---	TP16370	---	---	---	---	---	3.125	3.000	2.125	1.937	1.000
3 1/2	9.20-10.20	TP14960	---	---	TP87310	TP14960	---	3.050	2.830	1.530	1.340	1.330
	[LARGE I.D.]	TP16146	---	---	---	---	---	3.050	2.830	2.160	1.940	1.330
	[KOBE]	TP61943	---	---	---	---						
	12.95-13.30	TP14082	---	---	TP87311	TP14082	---	2.840	2.510	1.530	1.340	1.330
4	9.50-11.60	TP14036	---	---	TP87312	TP14036	---	3.630	3.250	2.160	1.940	1.330
4 1/2	21.50-23.70											
4 1/2	9.50-12.60	TP30509	TP54864	TP54864-001	TP87313	TP19841	---	4.180	3.770	2.650	2.400	1.510
5	23.20-24.10											
5.5	35.30-38.00											
4 1/2	13.50-18.90											
5 1/2	40.50-43.10	TP10430	TP54430	TP54430-001	TP87314	TP19840	---	4.020	3.510	2.640	2.400	1.510
5	13.00-15.00	TP25389	TP54865	TP54865-001	TP87315	TP19843	---	4.630	4.190	2.640	2.410	1.560
5 1/2	26.80-29.70											
5	18.00-23.20	TP17831	TP54866	TP54866-001	---	TP19842	---	4.490	3.850	2.640	2.410	1.560
5 1/2	32.60-35.30											
5 1/2	13.00-17.00	TP22625	TP54753	TP54753-001	TP87318	TP19846	TP30848	5.140	4.700	3.310	2.910	1.630
	17.00-23.00	TP19711	TP54760	TP54760-001	TP87316	TP19844	TP30846	5.020	4.420	3.270	2.900	1.640
5 3/4	14.00-17.00	TP14714	TP54714	TP54714-001	TP87335	TP19847	TP30847	5.440	4.950	3.270	2.910	1.660
6	20.00											
6	15.00-18.00	TP14721	---	---	TP87336	TP19848	---	5.670	5.190	3.270	2.910	1.660
7	46.40-53.60											
6 5/8	20.00-24.00	TP19389	TP54872	TP54872-001	TP87319	TP19850	TP30851	6.240	5.650	4.020	3.530	1.560
7	32.00-35.00											
6 5/8	28.00-32.00	TP19277	TP54870	TP54870-001	TP87320	TP19849	TP30850	6.030	5.500	4.020	3.530	1.560
7	38.00-42.70											
7	17.00-20.00	TP17819	TP54819	TP54819-001	TP87322	TP19853	TP30854	6.650	6.050	4.030	3.530	1.680
7 5/8	42.80-45.30											
7	23.00-29.00	TP17462	TP54796	TP54796-001	TP87323	TP19852	TP30853	6.550	6.000	4.030	3.530	1.680
7 5/8	47.10-51.20											
7 5/8	26.40-29.70	TP19391	TP54826	TP54826-001	TP87338	TP19855	---	7.150	6.600	4.030	3.530	1.680
	33.70-39.00	TP23051	TP54825	TP54825-001	TP87339	TP19854	---	6.990	6.350	4.030	3.530	1.680
8	26.00	TP16009	TP54827	TP54827-001	TP87324	---	TP93421	7.486	7.290	4.030	3.530	1.680
	28.20	TP16110	---	TP54826-006	---	---	---	7.310	7.180	4.030	3.530	1.680
8 5/8	28.00-36.00	TP16111	---	---	TP87326	---	TP16110	8.230	7.600	5.030	4.530	1.680
	40.00-49.00	TP16115	---	---	TP87327	---	TP16114	8.040	7.300	5.030	4.530	1.680
9	40.00-45.00	TP15941	---	---	---	---	TP15942	8.380	7.700	5.030	4.530	1.680
8 5/8	24.00											
9 5/8	64.90-75.60	TP10354	TP54354	TP54354-001	TP87329	---	TP14970	9.180	8.400	5.040	4.530	1.680
9 5/8	36.00-43.50											
	47.00-53.50	TP33850	TP54850	TP54850-001	TP87330	---	TP14971	8.960	8.160	5.030	4.530	1.630
10 3/4	32.75-55.50	TP13197	TP54034	TP54034-001	TP87331	TP19034	---	10.450	9.400	5.030	4.530	1.680
	55.50-65.70	TP13198	TP54198	TP54198-001	TP87332	---	---	10.040	9.100	5.030	4.530	1.680
11 3/4	38.00-60.00	TP14246	TP54296	TP54296-001	TP87333	---	---	11.380	10.540	5.030	4.530	1.680
	60.00-65.00	TP14247	TP54297	TP54297-001	TP87335	---	---	11.060	10.350	5.030	4.530	1.680
13 3/8	48.00-72.00	TP16298	TP54298	TP54298-001	TP87334	---	---	12.980	12.200	6.030	4.530	1.750
16	65.00-109.0	TP16299	TP54299	TP54299-001	TP87336	---	---	15.530	14.310	8.270	4.530	2.500
18 5/8	87.50-94.00	TP18299	TP54189	TP54189-001	TP87337	---	---	18.070	16.380	8.270	4.530	2.500
20	78.60-135.0	TP20010	TP56200	TP56200-001	TP97355	---	---	19.560	17.520	---	4.530	2.000

\* **FHD-GW:** For a Heavy Duty Fluorocarbon Cup, replace "-001" with "-003" (ex. TP54864-001 becomes TP54864-003).

\*\* **SEAL-GW:** Has a smaller I.D. with o-ring for sealing insurance; on cups 10 3/4" & larger they do not have a smaller I.D., but if an o-ring is desired add a -007 to the base part number (ex. TP14246 becomes TP14246-007)

**"CP" CASING PACKER CUPS**

The "CP" type casing packer cup is a one piece unit designed for use between casing strings. The "CP" is used to seal liner or the inner casing string and to protect low pressure productive sands during cementing, acidizing and similar operations. Made from oil resistant compounds developed in rubber laboratories especially for oilfield use, the "CP" cup is reinforced with spring steel wires and a steel bushing, molded in as an integral part of the cup. The "CP" cup may be run facing up or down as required and is easily assembled by slipping it over a joint of inner casing or liner and securing it with set screws or by welding.

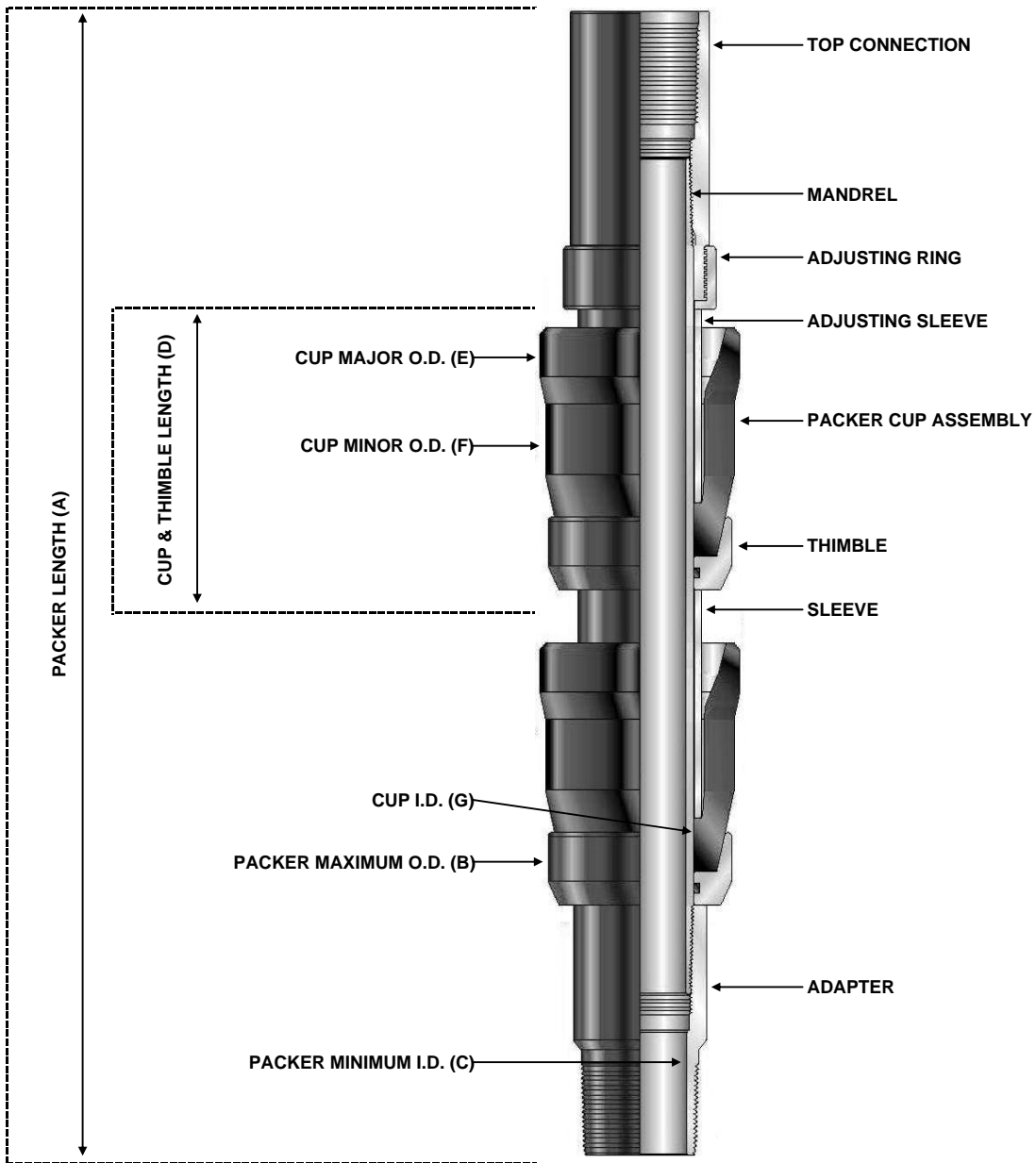
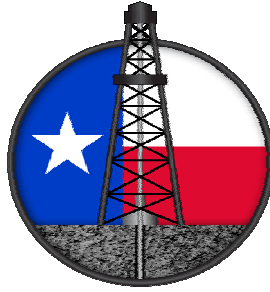


**ENGINEERING DATA AND PART NUMBERS**

CASING		TUBING	CUP	SEAL	INSERT	CUP				
O.D. (IN.)	WEIGHT (LB/FT)	O.D. (IN.)	PART NUMBER	O.D. (IN.)	O.D. (IN.)	I.D. (IN.)	LENGTH (IN.)	O-RING SIZE	NOTES	
4	9.5-13.2	2 3/8	TP33463	3.630	3.250	2.400	5.750	332	---	
4 1/2	9.5-11.6		TP98001	4.200	3.680			2.400	5.500	332
	13.5-15.1		TP98003	4.040			---			---
5	13.0-15.0	2 7/8	TP98004	4.610	4.000	2.910	5.000	336	---	
	18.0-21.0		TP16674	4.380				336	---	
5 1/2	14.0-17.0	3 1/2	TP20601	5.130	4.580	3.520	6.000	341	---	
	17.0-23.0		TP98005	5.030				341	---	
7	23.0-26.0	4 1/2	TP17786	6.470	5.800	4.550	7.000	349	---	
	29		TP17786-001					349E	HI-TEMP STEAM	
		20.0-23.0	5	TP17788		349		---		
	23.0-26.0	TP62776		6.470		5.050		353	---	
7 5/8	26.4-29.7	5	TP17787	7.090	6.460	5.060	353	---		
	33.7-39.0		TP79095	6.890	6.450	5.030	353	---		
8 5/8	24.0-36.0	6 5/8	TP18935	8.220	7.720	6.670	7.000	364	---	
			TP91536					364E	HI-TEMP STEAM	
9 5/8	36.0-43.5	6 5/8	TP14749	9.070	8.530	6.670	7.000	364	---	
	47		TP81753	8.840				364	---	
11 3/4	47.0-60.0	8 5/8	TP13718	10.700	10.700	8.670	7.000	372	---	
13 3/8	48.0-72.0	9 5/8	TP14741	12.100	12.100	9.670	7.000	376	---	

**NOTES:**

All cups are molded from a tough, oil resistant nitrile rubber, EXCEPT those rated for "Hi-Temp Steam". Cups designated as "Hi-Temp Steam" are made from a tough EPDM rubber and is rated for up to 550° F usage. All "CP" cups may be run either facing upward or downward with equal performance. All cups may be secured to the inner pipe string (seals on) using either the set screws furnished with the cup or by welding. In either case, the o-ring (furnished) should always be installed to produce more secure sealing between the two pipe strings. Sizes other than those shown in the chart above may be ordered by special request.



**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 2 CUP	GW-SS 2 CUP	GW-SS 2 CUP	GW-SS 2 CUP
TUBING CONNECTION O.D. (IN)	1.050 EUE	1.315 EUE	1.315 EUE	1.315 EUE	1.900 EUE
CASING / TUBING O.D. (IN.)	2 3/8	2 7/8	3 1/2	3 1/2 D.P.	4
WEIGHT (LB/FT)	4.6 - 4.7	6.4 - 6.5	9.2 - 10.2	12.95 - 13.2	9.5 - 11.6
ASSEMBLY COMPLETE	TP20408	TP20410	TP20411	TP20412	TP20414
TOP COUPLING	TP6423	TP15650	TP15650	TP15650	TP30747
MANDREL	TP15439	TP9550	TP9550	TP9550	TP30431
ADJUSTING RING	---	---	---	---	---
ADJUSTING SLEEVE	---	---	---	---	---
PACKER CUPS	TP10716 (2)	TP10047 (2)	TP14960 (2)	TP14082 (2)	TP14036 (2)
THIMBLE	TP6435 (2)	TP6436 (2)	TP6437 (2)	TP14085 (2)	TP66696 (2)
SLEEVE	TP15440 (2)	TP1506 (2)	TP1506 (2)	TP1506 (2)	TP6692 (2)
CONNECTOR COUPLING	---	---	---	---	---
ADAPTER	TP93114	TP93115	TP93115	TP93115	TP93116
PACKER LENGTH (IN.) (A)	16.875	19.875	19.875	19.875	22.375
PACKER MAX METAL O.D. (IN.) (B)	1.875	2.260	2.750	2.438	3.250
PACKER MINIMUM I.D. (IN.) (C)	0.750	0.875	0.875	0.875	1.610
CUP & THIMBLE LENGTH (IN.) (D)	3.625	3.813	4.000	4.000	3.750
CUP MAJOR O.D. (IN.) (E)	2.050	2.500	3.050	2.840	3.630
CUP MINOR O.D. (IN.) (F)	1.900	2.330	2.830	2.510	3.250
CUP I.D. (IN.) (G)	1.900	1.340	1.340	1.340	1.940

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE
CASING / TUBING O.D. (IN.)	4 1/2 & 4 3/4	4 1/2 & 4 3/4	4 1/2 D.P.	4 1/2 D.P.
WEIGHT (LB/FT)	9.5 - 12.6 & 16	9.5 - 12.6 & 16	13.5 - 18.1	16
ASSEMBLY COMPLETE	TP31254	TP31255	TP18279	TP20349
TOP COUPLING	TP30365	TP30365	TP30365	TP30365
MANDREL	TP30331	TP30331 (2)	TP30331	TP30331 (2)
ADJUSTING RING	TP15489	TP15489 (2)	TP15489	TP15489 (2)
ADJUSTING SLEEVE	TP15488	TP15488 (2)	TP15488	TP15488 (2)
PACKER CUPS	TP30509 (2)	TP30509 (4)	TP10430 (2)	TP10430 (4)
THIMBLE	TP18319 (2)	TP18319 (4)	TP16297 (2)	TP16297 (4)
SLEEVE	TP1483	TP1483 (2)	TP1483	TP1483 (2)
CONNECTOR COUPLING	---	TP11608	---	TP11608
ADAPTER	TP30867	TP30867	TP30867	TP30867
PACKER LENGTH (IN.) (A)	26.125	44.875	26.125	44.875
PACKER MAX METAL O.D. (IN.) (B)	3.688	3.688	2.750	3.500
PACKER MINIMUM I.D. (IN.) (C)	2.000	2.000	2.000	2.000
CUP & THIMBLE LENGTH (IN.) (D)	4.750	4.750	4.000	4.000
CUP MAJOR O.D. (IN.) (E)	3.770	3.770	4.020	4.020
CUP MINOR O.D. (IN.) (F)	3.770	3.770	3.510	3.510
CUP I.D. (IN.) (G)	2.400	2.400	2.400	2.400

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 3/8 EUE	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE
CASING / TUBING O.D. (IN.)		5	5	5	5
WEIGHT (LB/FT)		13 - 15	13 - 15	18 - 21	18 - 21
ASSEMBLY COMPLETE		TP31040	TP31041	TP31042	TP31043
TOP COUPLING		TP30365	TP30365	TP30365	TP30365
MANDREL		TP30331	TP30331 (2)	TP30331	TP30331 (2)
ADJUSTING RING		TP15489	TP15489 (2)	TP15489	TP15489 (2)
ADJUSTING SLEEVE		TP15488	TP15488 (2)	TP15488	TP15488 (2)
PACKER CUPS		TP25389 (2)	TP25389 (4)	TP17831 (2)	TP17831 (4)
THIMBLE		TP6448 (2)	TP6448 (4)	TP6754 (2)	TP6754 (4)
SLEEVE		TP1483	TP1483 (2)	TP1483	TP1483 (2)
CONNECTOR COUPLING		---	TP11608	---	TP11608
ADAPTER		TP30867	TP30867	TP30867	TP30867
PACKER LENGTH (IN.)	(A)	26.125	44.875	26.125	44.875
PACKER MAX METAL O.D. (IN.)	(B)	4.125	4.125	3.500	3.500
PACKER MINIMUM I.D. (IN.)	(C)	2.000	2.000	2.000	2.000
CUP & THIMBLE LENGTH (IN.)	(D)	5.500	5.500	5.500	5.500
CUP MAJOR O.D. (IN.)	(E)	4.630	4.630	4.490	4.490
CUP MINOR O.D. (IN.)	(F)	4.190	4.190	3.850	3.850
CUP I.D. (IN.)	(G)	2.410	2.410	2.410	2.410

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 3/8 EUE	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE
CASING / TUBING O.D. (IN.)		5 1/2	5 1/2	5 1/2	5 1/2
WEIGHT (LB/FT)		13 - 17	13 - 17	17 - 23	17 - 23
ASSEMBLY COMPLETE		TP31044	TP31045	TP31048	TP31049
TOP COUPLING		TP30366	TP30366	TP30366	TP30366
MANDREL		TP30332	TP30332 (2)	TP30332	TP30332 (2)
ADJUSTING RING		TP15716	TP15716 (2)	TP15716	TP15716 (2)
ADJUSTING SLEEVE		TP15715	TP15715 (2)	TP15715	TP15715 (2)
PACKER CUPS		TP22625 (2)	TP22625 (4)	TP19711 (2)	TP19711 (4)
THIMBLE		TP18320 (2)	TP18320 (4)	TP18320 (2)	TP18320 (4)
SLEEVE		TP1414	TP1414 (2)	TP1414	TP1414 (2)
CONNECTOR COUPLING		---	TP11619	---	TP11619
ADAPTER		TP93117	TP93117	TP93117	TP93117
PACKER LENGTH (IN.)	(A)	27.000	46.875	27.000	46.875
PACKER MAX METAL O.D. (IN.)	(B)	4.625	4.625	4.625	4.625
PACKER MINIMUM I.D. (IN.)	(C)	2.000	2.000	2.000	2.000
CUP & THIMBLE LENGTH (IN.)	(D)	5.500	5.500	5.500	5.500
CUP MAJOR O.D. (IN.)	(E)	5.140	5.140	5.020	5.020
CUP MINOR O.D. (IN.)	(F)	4.700	4.700	4.420	4.420
CUP I.D. (IN.)	(G)	2.910	2.910	2.910	2.910

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F).  
ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 3/8 EUE	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE
CASING / TUBING O.D. (IN.)		5 3/4 & 6	5 3/4 & 6	6	6
WEIGHT (LB/FT)		17 - 17 & 20	17 - 17 & 20	15 - 18	15 - 18
ASSEMBLY COMPLETE		TP18286	TP20356	TP18267	TP20357
TOP COUPLING		TP30366	TP30366	TP30366	TP30366
MANDREL		TP30332	TP30332 (2)	TP30332	TP30332 (2)
ADJUSTING RING		TP15716	TP15716 (2)	TP15716	TP15716 (2)
ADJUSTING SLEEVE		TP15715	TP15715 (2)	TP15715	TP15715 (2)
PACKER CUPS		TP14714 (2)	TP14714 (4)	TP14721 (2)	TP14721 (4)
THIMBLE		TP93175 (2)	TP93175 (4)	TP8160 (2)	TP8160 (4)
SLEEVE		TP1414	TP1414 (2)	TP1414	TP1414 (2)
CONNECTOR COUPLING		---	TP11619	---	TP11619
ADAPTER		TP93117	TP93117	TP93117	TP93117
PACKER LENGTH (IN.)	(A)	27.000	46.875	27.000	46.875
PACKER MAX METAL O.D. (IN.)	(B)	4.813	4.813	5.125	5.125
PACKER MINIMUM I.D. (IN.)	(C)	2.000	2.000	2.000	2.000
CUP & THIMBLE LENGTH (IN.)	(D)	5.500	5.500	5.500	5.500
CUP MAJOR O.D. (IN.)	(E)	5.440	5.440	5.670	5.670
CUP MINOR O.D. (IN.)	(F)	4.950	4.950	5.190	5.190
CUP I.D. (IN.)	(G)	2.910	2.910	2.910	2.910

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 3/8 EUE	2 3/8 EUE	2 3/8 EUE	2 3/8 EUE
CASING / TUBING O.D. (IN.)		6 5/8 & 7	6 5/8 & 7	6 5/8 & 7	6 5/8 & 7
WEIGHT (LB/FT)		20 - 24 & 32 - 35.3	20 - 24 & 32 - 35.3	24 - 32 & 38 - 42.7	24 - 32 & 38 - 42.7
ASSEMBLY COMPLETE		TP31060	TP31061	TP31064	TP20357
TOP COUPLING		TP30369	TP30369	TP30369	TP30369
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP19389 (2)	TP19389 (4)	TP19277 (2)	TP19277 (4)
THIMBLE		TP18322 (2)	TP18322 (4)	TP18322 (2)	TP18322 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP93118	TP93118	TP93118	TP93118
PACKER LENGTH (IN.)	(A)	31.250	55.063	31.250	55.063
PACKER MAX METAL O.D. (IN.)	(B)	5.625	5.625	5.625	5.625
PACKER MINIMUM I.D. (IN.)	(C)	2.000	2.000	2.000	2.000
CUP & THIMBLE LENGTH (IN.)	(D)	5.625	5.625	5.625	5.625
CUP MAJOR O.D. (IN.)	(E)	6.240	6.240	6.030	6.030
CUP MINOR O.D. (IN.)	(F)	5.650	5.650	5.500	5.500
CUP I.D. (IN.)	(G)	3.530	3.530	3.530	3.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F).  
ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)	5 1/2	5 1/2	5 1/2	5 1/2
WEIGHT (LB/FT)	17 - 20	17 - 20	23	23
ASSEMBLY COMPLETE	TP31054	TP31055	TP31058	TP31059
TOP COUPLING	TP30367	TP30367	TP30367	TP30367
MANDREL	TP30332	TP30332 (2)	TP30332	TP30332 (2)
ADJUSTING RING	TP15716	TP15716 (2)	TP15716	TP15716 (2)
ADJUSTING SLEEVE	TP15715	TP15715 (2)	TP15715	TP15715 (2)
PACKER CUPS	TP19711 (2)	TP19711 (4)	TP19711 (2)	TP19711 (4)
THIMBLE	TP18320 (2)	TP18320 (4)	TP18320 (2)	TP18320 (4)
SLEEVE	TP1414	TP1414 (2)	TP1414	TP1414 (2)
CONNECTOR COUPLING	---	TP11619	---	TP11619
ADAPTER	TP43884	TP43884	TP43884	TP43884
PACKER LENGTH (IN.) (A)	28.875	48.750	28.875	48.750
PACKER MAX METAL O.D. (IN.) (B)	4.625	4.625	4.500	4.500
PACKER MINIMUM I.D. (IN.) (C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.) (D)	5.500	5.500	5.500	5.500
CUP MAJOR O.D. (IN.) (E)	5.020	5.020	5.020	5.020
CUP MINOR O.D. (IN.) (F)	4.420	4.420	4.420	4.420
CUP I.D. (IN.) (G)	2.900	2.900	2.900	2.900

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)	5 3/4 & 6	5 3/4 & 6	6	6
WEIGHT (LB/FT)	14 - 17 & 20	14 - 17 & 20	15 - 18	15 - 18
ASSEMBLY COMPLETE	TP18304	TP20366	TP18305	TP20367
TOP COUPLING	TP30367	TP30367	TP30367	TP30367
MANDREL	TP30332	TP30332 (2)	TP30332	TP30332 (2)
ADJUSTING RING	TP15716	TP15716 (2)	TP15716	TP15716 (2)
ADJUSTING SLEEVE	TP15715	TP15715 (2)	TP15715	TP15715 (2)
PACKER CUPS	TP14714 (2)	TP14714 (4)	TP14721 (2)	TP14721 (4)
THIMBLE	TP93175 (2)	TP93175 (4)	TP8160 (2)	TP8160 (4)
SLEEVE	TP1414	TP1414 (2)	TP1414	TP1414 (2)
CONNECTOR COUPLING	---	TP11619	---	TP11619
ADAPTER	TP43884	TP43884	TP43884	TP43884
PACKER LENGTH (IN.) (A)	28.875	48.750	28.875	48.750
PACKER MAX METAL O.D. (IN.) (B)	4.813	4.813	5.125	5.125
PACKER MINIMUM I.D. (IN.) (C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.) (D)	5.500	5.500	5.500	5.500
CUP MAJOR O.D. (IN.) (E)	5.440	5.440	5.670	5.670
CUP MINOR O.D. (IN.) (F)	4.950	4.950	5.190	5.190
CUP I.D. (IN.) (G)	2.910	2.910	2.910	2.910

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		6 5/8 & 7	6 5/8 & 7	6 5/8 & 7	6 5/8 & 7
WEIGHT (LB/FT)		20 - 24 & 32 - 35.3	20 - 24 & 32 - 35.3	24 - 32 & 38 - 42.7	24 - 32 & 38 - 42.7
ASSEMBLY COMPLETE		TP31062	TP31063	TP31066	TP31063
TOP COUPLING		TP30368	TP30368	TP30368	TP30368
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP19389 (2)	TP19389 (4)	TP19277 (2)	TP19277 (4)
THIMBLE		TP18322 (2)	TP18322 (4)	TP18322 (2)	TP18322 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP67117	TP67117	TP67117	TP67117
PACKER LENGTH (IN.)	(A)	32.938	56.750	32.938	56.750
PACKER MAX METAL O.D. (IN.)	(B)	5.625	5.625	5.625	5.625
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	5.625	5.625	5.625	5.625
CUP MAJOR O.D. (IN.)	(E)	6.240	6.240	6.030	6.030
CUP MINOR O.D. (IN.)	(F)	5.650	5.650	5.500	5.500
CUP I.D. (IN.)	(G)	3.530	3.530	3.530	3.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		7	7	7	7
WEIGHT (LB/FT)		17 - 20	17 - 20	23 - 29	23 - 29
ASSEMBLY COMPLETE		TP31070	TP31071	TP31078	TP31079
TOP COUPLING		TP30368	TP30368	TP30368	TP30368
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP17819 (2)	TP17819 (4)	TP17462 (2)	TP17462 (4)
THIMBLE		TP17542 (2)	TP17542 (4)	TP17542 (2)	TP17542 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP67117	TP67117	TP67117	TP67117
PACKER LENGTH (IN.)	(A)	32.938	56.750	32.938	56.750
PACKER MAX METAL O.D. (IN.)	(B)	6.000	6.000	6.000	6.000
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	6.250	6.250	6.250	6.250
CUP MAJOR O.D. (IN.)	(E)	6.650	6.650	6.550	6.550
CUP MINOR O.D. (IN.)	(F)	6.050	6.050	6.000	6.000
CUP I.D. (IN.)	(G)	3.530	3.530	3.530	3.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F).  
ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		7 5/8	7 5/8	7 5/8	7 5/8
WEIGHT (LB/FT)		26.4 - 29.7	26.4 - 29.7	33.7 - 39	33.7 - 39
ASSEMBLY COMPLETE		TP31080	TP31081	TP25386	TP25387
TOP COUPLING		TP30368	TP30368	TP30368	TP30368
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP19391 (2)	TP19391 (4)	TP23051 (2)	TP23051 (4)
THIMBLE		TP6366 (2)	TP6366 (4)	TP6366 (2)	TP6366 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP67117	TP67117	TP67117	TP67117
PACKER LENGTH (IN.)	(A)	32.938	56.750	32.938	56.750
PACKER MAX METAL O.D. (IN.)	(B)	6.375	6.375	6.375	6.375
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	6.250	6.250	6.250	6.250
CUP MAJOR O.D. (IN.)	(E)	7.150	7.150	6.990	6.990
CUP MINOR O.D. (IN.)	(F)	6.600	6.600	6.350	6.350
CUP I.D. (IN.)	(G)	3.530	3.530	3.530	3.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		8 5/8	8 5/8	8 5/8	8 5/8
WEIGHT (LB/FT)		28 - 36	28 - 36	40 - 49	40 - 49
ASSEMBLY COMPLETE		TP18315	TP20377	TP18313	TP20375
TOP COUPLING		TP30370	TP30370	TP30370	TP30370
MANDREL		TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING		TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE		TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS		TP16111 (2)	TP16111 (4)	TP16115 (2)	TP16115 (4)
THIMBLE		TP17545 (2)	TP17545 (4)	TP17545 (2)	TP17545 (4)
SLEEVE		TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING		---	TP93420	---	TP93420
ADAPTER		TP93119	TP67117	TP93119	TP67117
PACKER LENGTH (IN.)	(A)	35.875	63.125	35.875	63.125
PACKER MAX METAL O.D. (IN.)	(B)	7.375	7.375	7.375	7.375
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	6.375	6.375	6.375	6.375
CUP MAJOR O.D. (IN.)	(E)	8.230	8.230	8.040	8.040
CUP MINOR O.D. (IN.)	(F)	7.600	7.600	7.300	7.300
CUP I.D. (IN.)	(G)	4.530	4.530	4.530	4.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)	9	9
WEIGHT (LB/FT)	40 - 45	40 - 45
ASSEMBLY COMPLETE	TP18316	TP20378
TOP COUPLING	TP30370	TP30370
MANDREL	TP30334	TP30334 (2)
ADJUSTING RING	TP19749	TP19749 (2)
ADJUSTING SLEEVE	TP19750	TP19750 (2)
PACKER CUPS	TP15941 (2)	TP15941 (4)
THIMBLE	TP17545 (2)	TP17545 (4)
SLEEVE	TP60122	TP60122 (2)
CONNECTOR COUPLING	---	TP93420
ADAPTER	TP93119	TP93119
PACKER LENGTH (IN.) (A)	35.875	63.125
PACKER MAX METAL O.D. (IN.) (B)	7.375	7.375
PACKER MINIMUM I.D. (IN.) (C)	2.500	2.500
CUP & THIMBLE LENGTH (IN.) (D)	6.375	6.375
CUP MAJOR O.D. (IN.) (E)	8.380	8.380
CUP MINOR O.D. (IN.) (F)	7.700	7.700
CUP I.D. (IN.) (G)	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)	9 5/8	9 5/8	9 5/8	9 5/8
WEIGHT (LB/FT)	36 - 43.5	36 - 43.5	47 - 53.5	47 - 53.5
ASSEMBLY COMPLETE	TP19317	TP20379	TP93173	TP93174
TOP COUPLING	TP30370	TP30370	TP30370	TP30370
MANDREL	TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING	TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE	TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS	TP10354 (2)	TP10354 (4)	TP33850 (2)	TP33850 (4)
THIMBLE	TP17545 (2)	TP17545 (4)	TP34702 (2)	TP34702 (4)
SLEEVE	TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING	---	TP93420	---	TP93420
ADAPTER	TP93119	TP93119	TP93119	TP93119
PACKER LENGTH (IN.) (A)	35.875	63.125	35.875	63.125
PACKER MAX METAL O.D. (IN.) (B)	8.250	8.250	8.125	8.125
PACKER MINIMUM I.D. (IN.) (C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.) (D)	8.000	8.000	6.750	6.750
CUP MAJOR O.D. (IN.) (E)	9.180	9.180	8.960	8.960
CUP MINOR O.D. (IN.) (F)	8.400	8.400	8.160	8.160
CUP I.D. (IN.) (G)	4.530	4.530	4.530	4.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		10 3/4	10 3/4	10 3/4	10 3/4
WEIGHT (LB/FT)		32.8 - 55.5	32.8 - 55.5	55.5 - 65.7	55.5 - 65.7
ASSEMBLY COMPLETE		TP18318	TP20380	TP18318A	TP20380A
TOP COUPLING		TP30370	TP30370	TP30370	TP30370
MANDREL		TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING		TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE		TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS		TP13197 (2)	TP13197 (4)	TP13198 (2)	TP13198 (4)
THIMBLE		TP1478 (2)	TP1478 (4)	TP1478 (2)	TP1478 (4)
SLEEVE		TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING		---	TP93420	---	TP93420
ADAPTER		TP93119	TP93119	TP93119	TP93119
PACKER LENGTH (IN.)	(A)	35.875	63.125	35.875	63.125
PACKER MAX METAL O.D. (IN.)	(B)	9.500	9.500	9.500	9.500
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	8.000	8.000	6.750	6.750
CUP MAJOR O.D. (IN.)	(E)	10.450	10.450	10.040	10.040
CUP MINOR O.D. (IN.)	(F)	9.400	9.400	9.100	9.100
CUP I.D. (IN.)	(G)	4.530	4.530	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		2 7/8 EUE	2 7/8 EUE	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)		11 3/4	11 3/4	11 3/4	11 3/4
WEIGHT (LB/FT)		38 - 60	38 - 60	60 - 65	60 - 65
ASSEMBLY COMPLETE		TP20384	TP20381	TP20384A	TP20381A
TOP COUPLING		TP30370	TP30370	TP30370	TP30370
MANDREL		TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING		TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE		TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS		TP14246 (2)	TP14246 (4)	TP14247 (2)	TP14247 (4)
THIMBLE		TP14248 (2)	TP14248 (4)	TP14248 (2)	TP14248 (4)
SLEEVE		TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING		---	TP93420	---	TP93420
ADAPTER		TP93119	TP93119	TP93119	TP93119
PACKER LENGTH (IN.)	(A)	35.875	63.125	35.875	63.125
PACKER MAX METAL O.D. (IN.)	(B)	10.375	10.375	10.375	10.375
PACKER MINIMUM I.D. (IN.)	(C)	2.500	2.500	2.500	2.500
CUP & THIMBLE LENGTH (IN.)	(D)	8.000	8.000	8.000	8.000
CUP MAJOR O.D. (IN.)	(E)	11.380	11.380	11.060	11.060
CUP MINOR O.D. (IN.)	(F)	10.540	10.540	10.350	10.350
CUP I.D. (IN.)	(G)	4.530	4.530	4.530	4.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F).  
ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	2 7/8 EUE	2 7/8 EUE
CASING / TUBING O.D. (IN.)	13 3/8	13 3/8
WEIGHT (LB/FT)	48 - 72	48 - 72
ASSEMBLY COMPLETE	TP20383	TP20382
TOP COUPLING	TP30370	TP30370
MANDREL	TP30334	TP30334 (2)
ADJUSTING RING	---	---
ADJUSTING SLEEVE	---	---
PACKER CUPS	TP16298 (2)	TP16298 (4)
THIMBLE	TP16312 (2)	TP16312 (4)
SLEEVE	TP93422	TP93422 (2)
CONNECTOR COUPLING	---	TP93420
ADAPTER	TP93119	TP93119
PACKER LENGTH (IN.) (A)	35.875	63.125
PACKER MAX METAL O.D. (IN.) (B)	11.875	11.875
PACKER MINIMUM I.D. (IN.) (C)	2.500	2.500
CUP & THIMBLE LENGTH (IN.) (D)	9.000	9.000
CUP MAJOR O.D. (IN.) (E)	12.980	12.980
CUP MINOR O.D. (IN.) (F)	12.200	12.200
CUP I.D. (IN.) (G)	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)	6 5/8 & 7	6 5/8 & 7	6 5/8 & 7	6 5/8 & 7
WEIGHT (LB/FT)	20 - 24 & 32 - 35.3	20 - 24 & 32 - 35.3	24 - 32 & 38 - 42.7	24 - 32 & 38 - 42.7
ASSEMBLY COMPLETE	TP93126	TP93127	TP93130	TP93131
TOP COUPLING	TP11657	TP11657	TP11657	TP11657
MANDREL	TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING	TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE	TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS	TP19389 (2)	TP19389 (4)	TP19277 (2)	TP19277 (4)
THIMBLE	TP18322 (2)	TP18322 (4)	TP18322 (2)	TP18322 (4)
SLEEVE	TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING	---	TP20864	---	TP20864
ADAPTER	TP63197	TP63197	TP63197	TP63197
PACKER LENGTH (IN.) (A)	30.625	54.438	30.625	54.438
PACKER MAX METAL O.D. (IN.) (B)	5.625	5.625	5.625	5.625
PACKER MINIMUM I.D. (IN.) (C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.) (D)	5.625	5.625	5.625	5.625
CUP MAJOR O.D. (IN.) (E)	6.240	6.240	6.030	6.030
CUP MINOR O.D. (IN.) (F)	5.650	5.650	5.500	5.500
CUP I.D. (IN.) (G)	3.530	3.530	3.530	3.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)		7	7	7	7
WEIGHT (LB/FT)		17 - 20	17 - 20	23 - 29	23 - 29
ASSEMBLY COMPLETE		TP93134	TP93135	TP93137	TP93138
TOP COUPLING		TP11657	TP11657	TP11657	TP11657
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP17819 (2)	TP17819 (4)	TP17462 (2)	TP17462 (4)
THIMBLE		TP17542 (2)	TP17542 (4)	TP17542 (2)	TP17542 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP63197	TP63197	TP63197	TP63197
PACKER LENGTH (IN.)	(A)	30.625	54.438	30.625	54.438
PACKER MAX METAL O.D. (IN.)	(B)	6.000	6.000	6.000	6.000
PACKER MINIMUM I.D. (IN.)	(C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.)	(D)	6.250	6.250	6.250	6.250
CUP MAJOR O.D. (IN.)	(E)	6.650	6.650	6.550	6.550
CUP MINOR O.D. (IN.)	(F)	6.050	6.050	6.000	6.000
CUP I.D. (IN.)	(G)	3.350	3.350	3.350	3.350

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)		7 5/8	7 5/8	7 5/8	7 5/8
WEIGHT (LB/FT)		26.4 - 29.7	26.4 - 29.7	33.7 - 39	33.7 - 39
ASSEMBLY COMPLETE		TP93144	TP93145	TP93150	TP93151
TOP COUPLING		TP11657	TP11657	TP11657	TP11657
MANDREL		TP30333	TP30333 (2)	TP30333	TP30333 (2)
ADJUSTING RING		TP15718	TP15718 (2)	TP15718	TP15718 (2)
ADJUSTING SLEEVE		TP15717	TP15717 (2)	TP15717	TP15717 (2)
PACKER CUPS		TP19391 (2)	TP19391 (4)	TP23051 (2)	TP23051 (4)
THIMBLE		TP6366 (2)	TP6366 (4)	TP6366 (2)	TP6366 (4)
SLEEVE		TP1413	TP1413 (2)	TP1413	TP1413 (2)
CONNECTOR COUPLING		---	TP20864	---	TP20864
ADAPTER		TP63197	TP63197	TP63197	TP63197
PACKER LENGTH (IN.)	(A)	30.625	54.438	30.625	54.438
PACKER MAX METAL O.D. (IN.)	(B)	6.375	6.375	6.375	6.375
PACKER MINIMUM I.D. (IN.)	(C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.)	(D)	6.250	6.250	6.250	6.250
CUP MAJOR O.D. (IN.)	(E)	7.050	7.050	6.688	6.688
CUP MINOR O.D. (IN.)	(F)	6.862	6.862	6.470	6.470
CUP I.D. (IN.)	(G)	3.530	3.530	3.530	3.530

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**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)	8 5/8	8 5/8	8 5/8	8 5/8
WEIGHT (LB/FT)	28 - 36	28 - 36	40 - 49	40 - 49
ASSEMBLY COMPLETE	TP93152	TP93153	TP93156	TP93157
TOP COUPLING	TP64789	TP64789	TP64789	TP64789
MANDREL	TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING	TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE	TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS	TP16111 (2)	TP16111 (4)	TP16115 (2)	TP16115 (4)
THIMBLE	TP17545 (2)	TP17545 (4)	TP17545 (2)	TP17545 (4)
SLEEVE	TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING	---	TP93420	---	TP93420
ADAPTER	TP65584	TP65584	TP65584	TP65584
PACKER LENGTH (IN.) (A)	35.375	56.250	35.375	56.250
PACKER MAX METAL O.D. (IN.) (B)	7.375	7.375	7.375	7.375
PACKER MINIMUM I.D. (IN.) (C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.) (D)	6.375	6.375	6.375	6.375
CUP MAJOR O.D. (IN.) (E)	8.230	8.230	8.040	8.040
CUP MINOR O.D. (IN.) (F)	7.600	7.600	7.300	7.300
CUP I.D. (IN.) (G)	4.530	4.530	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)	9	9
WEIGHT (LB/FT)	40 - 45	40 - 45
ASSEMBLY COMPLETE	TP93158	TP93159
TOP COUPLING	TP64789	TP64789
MANDREL	TP30334	TP30334 (2)
ADJUSTING RING	TP19749	TP19749 (2)
ADJUSTING SLEEVE	TP19750	TP19750 (2)
PACKER CUPS	TP15941 (2)	TP15941 (4)
THIMBLE	TP17545 (2)	TP17545 (4)
SLEEVE	TP60122	TP60122 (2)
CONNECTOR COUPLING	---	TP93420
ADAPTER	TP65584	TP65584
PACKER LENGTH (IN.) (A)	35.375	62.625
PACKER MAX METAL O.D. (IN.) (B)	8.250	8.250
PACKER MINIMUM I.D. (IN.) (C)	2.992	2.992
CUP & THIMBLE LENGTH (IN.) (D)	6.375	6.375
CUP MAJOR O.D. (IN.) (E)	8.170	8.170
CUP MINOR O.D. (IN.) (F)	8.000	8.000
CUP I.D. (IN.) (G)	4.530	4.530

**NOTES:**

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**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)		9 5/8	9 5/8	9 5/8	9 5/8
WEIGHT (LB/FT)		36 - 43.5	36 - 43.5	47 - 53.5	47 - 53.5
ASSEMBLY COMPLETE		TP64733	TP93160	TP93161	TP66279
TOP COUPLING		TP64789	TP64789	TP64789	TP64789
MANDREL		TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING		TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE		TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS		TP10354 (2)	TP10354 (4)	TP33850 (2)	TP33850 (4)
THIMBLE		TP17575 (2)	TP17575 (4)	TP34702 (2)	TP34702 (4)
SLEEVE		TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING		---	TP93420	---	TP93420
ADAPTER		TP65584	TP65584	TP65584	TP65584
PACKER LENGTH (IN.)	(A)	35.375	62.625	35.375	62.625
PACKER MAX METAL O.D. (IN.)	(B)	8.250	8.250	8.250	8.250
PACKER MINIMUM I.D. (IN.)	(C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.)	(D)	8.000	8.000	6.375	6.375
CUP MAJOR O.D. (IN.)	(E)	8.950	8.950	8.781	8.781
CUP MINOR O.D. (IN.)	(F)	8.730	8.730	8.375	8.375
CUP I.D. (IN.)	(G)	4.530	4.530	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE		GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)		3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)		10 3/4	10 3/4	10 3/4	10 3/4
WEIGHT (LB/FT)		32.8 - 55.5	32.8 - 55.5	55.5 - 65.7	55.5 - 65.7
ASSEMBLY COMPLETE		TP64763	TP93162	TP64763A	TP93162A
TOP COUPLING		TP64789	TP64789	TP64789	TP64789
MANDREL		TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING		TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE		TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS		TP13197 (2)	TP13197 (4)	TP13198 (2)	TP13198 (4)
THIMBLE		TP1478 (2)	TP1478 (4)	TP1478 (2)	TP1478 (4)
SLEEVE		TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING		---	TP93420	---	TP93420
ADAPTER		TP65584	TP65584	TP65584	TP65584
PACKER LENGTH (IN.)	(A)	35.375	62.625	35.375	62.625
PACKER MAX METAL O.D. (IN.)	(B)	9.500	9.500	9.500	9.500
PACKER MINIMUM I.D. (IN.)	(C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.)	(D)	8.000	8.000	8.000	8.000
CUP MAJOR O.D. (IN.)	(E)	10.450	10.450	10.040	10.040
CUP MINOR O.D. (IN.)	(F)	9.400	9.400	9.100	9.100
CUP I.D. (IN.)	(G)	4.530	4.530	4.530	4.530

**NOTES:**

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ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

**GW-SS PACKERS & PARTS LIST**

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)	11 3/4	11 3/4	11 3/4	11 3/4
WEIGHT (LB/FT)	38 - 60	38 - 60	60 - 65	60 - 65
ASSEMBLY COMPLETE	TP93163	TP93164	TP93163A	TP93164A
TOP COUPLING	TP64789	TP64789	TP64789	TP64789
MANDREL	TP30334	TP30334 (2)	TP30334	TP30334 (2)
ADJUSTING RING	TP19749	TP19749 (2)	TP19749	TP19749 (2)
ADJUSTING SLEEVE	TP19750	TP19750 (2)	TP19750	TP19750 (2)
PACKER CUPS	TP14246 (2)	TP14246 (4)	TP14247 (2)	TP14247 (4)
THIMBLE	TP14248 (2)	TP14248 (4)	TP14248 (2)	TP14248 (4)
SLEEVE	TP60122	TP60122 (2)	TP60122	TP60122 (2)
CONNECTOR COUPLING	---	TP93420	---	TP93420
ADAPTER	TP65584	TP65584	TP65584	TP65584
PACKER LENGTH (IN.) (A)	35.375	62.625	35.375	62.625
PACKER MAX METAL O.D. (IN.) (B)	10.375	10.375	10.375	10.375
PACKER MINIMUM I.D. (IN.) (C)	2.992	2.992	2.992	2.992
CUP & THIMBLE LENGTH (IN.) (D)	8.000	8.000	8.000	8.000
CUP MAJOR O.D. (IN.) (E)	11.380	11.380	11.060	11.060
CUP MINOR O.D. (IN.) (F)	10.540	10.540	10.350	10.350
CUP I.D. (IN.) (G)	4.530	4.530	4.530	4.530

**PART NUMBER LIST & DIMENSIONAL DATA**

PACKER TYPE	GW-SS 2 CUP	GW-SS 4 CUP
TUBING CONNECTION O.D. (IN)	3 1/2 EUE	3 1/2 EUE
CASING / TUBING O.D. (IN.)	13 3/8	13 3/8
WEIGHT (LB/FT)	48 - 72	48 - 72
ASSEMBLY COMPLETE	TP93165	TP93166
TOP COUPLING	TP64789	TP64789
MANDREL	TP30334	TP30334 (2)
ADJUSTING RING	---	---
ADJUSTING SLEEVE	---	---
PACKER CUPS	TP16298 (2)	TP16298 (4)
THIMBLE	TP16312 (2)	TP16312 (4)
SLEEVE	TP93422	TP93422 (2)
CONNECTOR COUPLING	---	TP93420
ADAPTER	TP65584	TP65584
PACKER LENGTH (IN.) (A)	35.375	62.625
PACKER MAX METAL O.D. (IN.) (B)	11.875	11.875
PACKER MINIMUM I.D. (IN.) (C)	2.992	2.992
CUP & THIMBLE LENGTH (IN.) (D)	9.000	9.000
CUP MAJOR O.D. (IN.) (E)	12.980	12.980
CUP MINOR O.D. (IN.) (F)	12.200	12.200
CUP I.D. (IN.) (G)	4.530	4.530

**NOTES:**

PACKER CUPS ARE TO BE USED IN PIPE HAVING AN INSIDE DIAMETER BETWEEN THE CUP DIMENSIONS (E) AND (F). ALL PACKER CUPS DIMENSIONS ARE AVERAGE AND MAY VARY ±1/2 OF 1%.

# COMPANY POLICIES

## TERMS & CONDITIONS

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### GUARANTEE

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, that 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. We shall hold all products claimed to be defective subject to inspection by TPWSD.

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.

In no event, shall we 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 any and all materials have to be obtained from TEXAS PRODUCTS WSD, INC. ARLINGTON, TEXAS or other regional office as 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) 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 TEXAS PRODUCTS WSD, INC. 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 TEXAS PRODUCTS WSD, INC. products are subject to a 25% cancellation charge.
2. Orders for non-standard or special materials are subject to a 100% cancellation charge.



**TEXAS PRODUCTS WELL SERVICE DIVISION, INC.**  
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