


SPECIFICATION GUIDE
QUEST-TEC SOLUTIONS GLASS-TRAC

STEP 1: Valve to Chamber Arrangement is illustrated in below Figure 1 & Figure 2. Select Figure 1 or Figure 2 to begin level gage specification process.

END CONNECTED GLASS-TRAC GAGE
REFLEX & TRANSPARENT

FG. 1



TIP: Figure 1 End Connected Gage.
Slightly less visible for center to center
dimension (most popular specified)


For Valve Information
Click Here

SERIES	GAGE CONNECTION TYPE*	GAGE CONNECTION SIZE*	CHAMBER MATERIAL*	PAGE	
RL (REFLEX LOW PRESSURE)	1/2"	THREADED (NPT)	CARBON STEEL (STANDARD)	2-6	
RM (REFLEX MEDIUM PRESSURE)	3/4"	SOCKET WELD (SW)	316 SST		
RH (REFLEX HIGH PRESSURE)					
TL (TRANSPARENT LOW PRESSURE)	1/2"	THREADED (NPT)	CARBON STEEL (STANDARD)	5-9	
TM (TRANSPARENT MEDIUM PRESSURE)	3/4"	SOCKET WELD (SW)	316 SST		
TH (TRANSPARENT HIGH PRESSURE)					

***For additional sizes, flanged connections, and exotic materials please contact Quest-Tec Solutions Sales Department

SIDE CONNECTED (CLOSE HOOK-UP)
GLASS-TRAC GAGE
REFLEX & TRANSPARENT

FG. 2



TIP: Figure 2 Side Connected Gage.
Increased visible for center to center
dimension

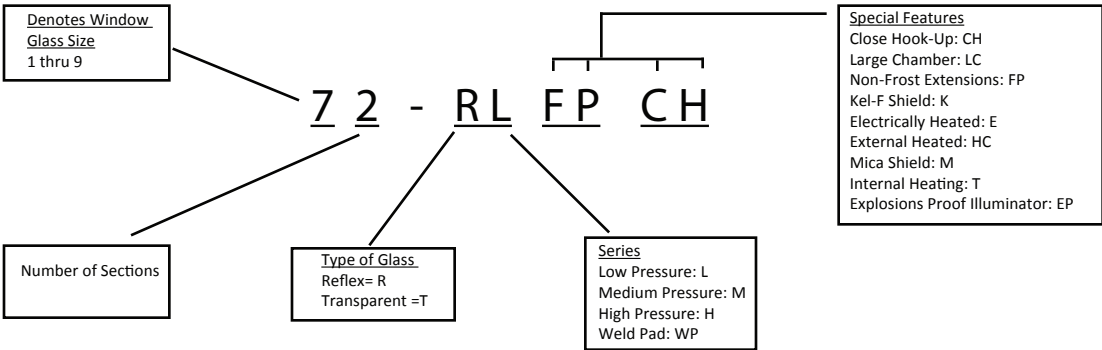
For Valve Information
Click Here

SERIES	GAGE CONNECTION TYPE*	GAGE CONNECTION SIZE*	CHAMBER MATERIAL*	PAGE	
RL-CH (REFLEX LOW PRESSURE)	1/2"	THREADED (NPT)	CARBON STEEL (STANDARD)	2-6	
RM-CH (REFLEX MEDIUM PRESSURE)	3/4"	SOCKET WELD (SW)	316 SST		
RH-CH (REFLEX HIGH PRESSURE)					
TL-CH (TRANSPARENT LOW PRESSURE)	1/2"	THREADED (NPT)	CARBON STEEL (STANDARD)	5-9	
TM-CH (TRANSPARENT MEDIUM PRESSURE)	3/4"	SOCKET WELD (SW)	316 SST		
TH-CH (TRANSPARENT HIGH PRESSURE)					

***For additional sizes, flanged connections, and exotic materials please contact Quest-Tec Solutions Sales Department

Note: Reflex Side Connect minimum center guide can be used for back connected gages. Please consult Sales for Transparent back Connected gages.

GLASS-TRAC
MODEL CODE BREAKDOWN



REFLEX GAGES QUEST-TEC GLASS-TRAC

Glass-Trac Reflex Gages use prism glass to provide an excellent indication of the liquid level. All liquids appear black in contrast to the mirror-like surface above. The clean line of separation can be sighted from many yards away. Reflex Gages are made in three pressures series (maximum 4000 psig @100°F) and are tapped for ½" or ¾" NPT connections. The standard Glass-Trac level gages are designed for minimum -20°F service.

On Glass-Trac Reflex Close Hook-Up Gages with ½" NPT connections, the center-to-center dimension is the same as the overall length on a standard gage. On Close Hook-Up Gages with ¾" NPT connections, the center-to-center dimension is the same as the overall length on standard gages plus 3/8".



Typical Reflex
Top/Bottom



Typical Reflex
Close Hook-Up

MATERIALS

Body (Liquid Chamber): Accurately machined from square tubes to provide perfect seating for gage glasses. Glass is recessed for protection. Body materials include 316 stainless steel and carbon steel.

Cover: Glass-Trac gage covers are made of carbon steel or 316 stainless steel in all sizes and pressure ratings for higher strength and dependable service. All covers are machined to provide recessed seating protection for the glass.

Glass: All standard Glass-Trac Reflex Gages use tempered borosilicate glass in nine standard lengths. Each glass has expertly molded reflecting prisms.

Gaskets: High grade non-asbestos is used in gaskets and cushions for Glass-Trac gages. The machined recess in the gage body and cover protects the gasket and cushion as well as the glass.

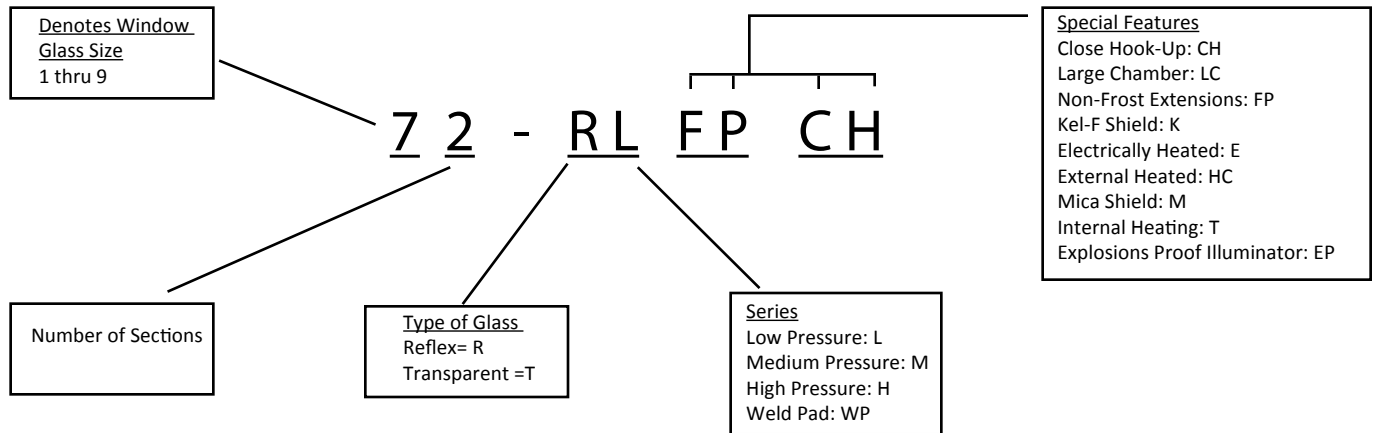
Bolts: Glass-Trac gage bolts are made of alloy steel, ASTM A-193 Grade B7.

Nuts: Gage nuts are made of steel, ASTM A-194 Grade 2H.

(Torque instructions for gage bolts are on the back cover)

MODEL CODE BREAKDOWN

PRESSURE RATINGS & DIMENSIONS



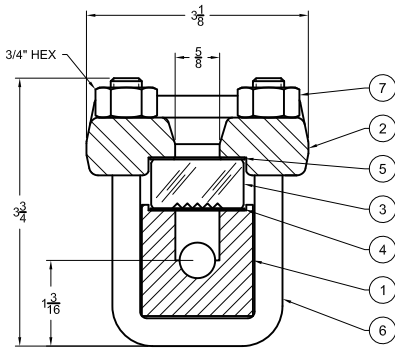
REFLEX GAGES

SIZE & WEIGHTS											
SIZE NUMBERS			OVER-ALL LENGTH (IN.)			VISIBLE GLASS (IN.) B	GLASS SIZE C	CLOSE HOOK-UP CENTER-TO-CENTER (IN.)		APPROX. WT. (LBS.)	
LOW PRESS.	MID PRESS.	HIGH PRESS.	A (STD)* ½" OR ¾" NPT	A (CH) ½" NPT	A (CH) ¾" NPT			D ½" NPT	D ¾" NPT	LOW PRESS.	MID-HIGH PRESS.
SINGLE-SECTION GAGE											
11RL	11RM	11RH	5.25	8.875	9.25	3.75	3.75	5.25	5.625	7	8
21RL	21RM	21RH	6.25	9.875	10.25	4.75	4.75	6.25	6.625	8	9
31RL	31RM	31RH	7.25	10.875	11.25	5.75	5.75	7.25	7.625	9	11
41RL	41RM	41RH	8.25	11.875	12.25	6.75	6.75	8.25	8.625	10	12
51RL	51RM	51RH	9.375	13	13.375	7.875	7.875	9.375	9.75	12	14
61RL	61RM	61RH	10.625	14.25	14.625	9.125	9.125	10.625	11	14	16
71RL	71RM	71RH	11.75	15.375	15.75	10.25	10.25	11.75	12.125	15	18
81RL	81RM	81RH	13.375	17	17.375	11.875	11.875	13.375	13.75	17	20
91RL	91RM	91RH	14.125	17.75	18.125	12.625	12.625	14.125	14.5	18	21
TWO-SECTION GAGE											
32RL	32RM	32RH	14.5	18.125	18.5	13	5.75	14.5	14.875	19	22
42RL	42RM	42RH	16.5	20.125	20.5	15	6.75	16.5	16.875	22	25
52RL	52RM	52RH	18.75	22.375	22.75	17.25	7.875	18.75	19.125	24	28
62RL	62RM	62RH	21.25	24.875	25.25	19.75	9.125	21.25	21.625	27	32
72RL	72RM	72RH	23.5	27.25	27.5	22	10.125	23.5	23.875	29	35
82RL	82RM	82RH	26.75	30.375	30.75	25.25	11.875	26.75	27.125	34	40
92RL	92RM	92RH	28.25	31.875	32.25	26.75	12.625	28.25	28.625	37	43
THREE-SECTION GAGE											
63RL	63RM	63RH	31.875	35.5	35.875	30.375	9.125	31.875	32.25	41	48
73RL	73RM	73RH	35.25	38.875	39.25	33.75	10.25	35.25	35.875	45	53
83RL	83RM	83RH	40.125	43.75	44.125	38.625	11.875	40.125	40.5	52	60
93RL	93RM	93RH	42.375	46	46.375	40.875	12.625	42.375	42.75	55	64
FOUR-SECTION GAGE											
74RL	74RM	74RH	47	50.875	51	45.5	10.25	47	47.375	60	71
84RL	84RM	84RH	53.5	57.125	57.5	52	11.875	53.5	53.875	69	80
94RL	94RM	94RH	56.5	60.125	60.5	55	12.625	56.5	56.875	72	85
FIVE-SECTION GAGE											
75RL	75RM	75RH	58.25	62.375	62.75	57.25	10.25	58.75	59.125	74	88
85RL	85RM	85RH	66.875	70.5	70.875	65.375	11.875	66.875	67.25	86	100
95RL	95RM	95RH	70.625	74.25	74.625	69.125	12.625	70.625	71	90	106

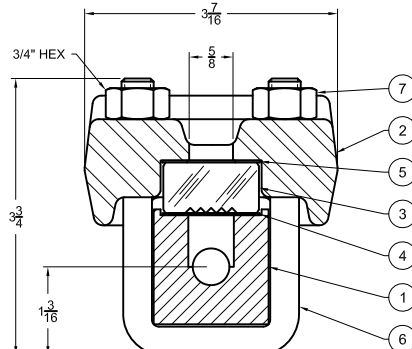
*3/4" NPT Tapped High Pressure Gages Add 1-1/2" to 'A' Dimension

REFLEX GAGES CONNECTIONS

Reflex Gages -Straight Thru Connections



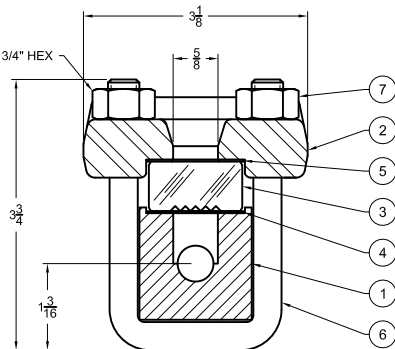
Section "X-X"
Low Pressure



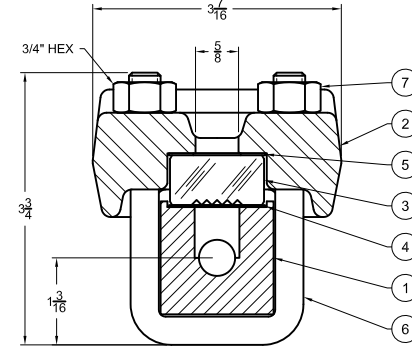
Section "X-X"
Mid/High Pressure

Item No.	Name	Material
1	Chamber	Carbon Steel
2	Cover	Carbon Steel
3	Glass	Tempered
4	Gasket	Non-Asbestos
5	Cushion	Non-Asbestos
6	Bolt	ASTM A193 B7
7	Nut	ASTM A193 B7

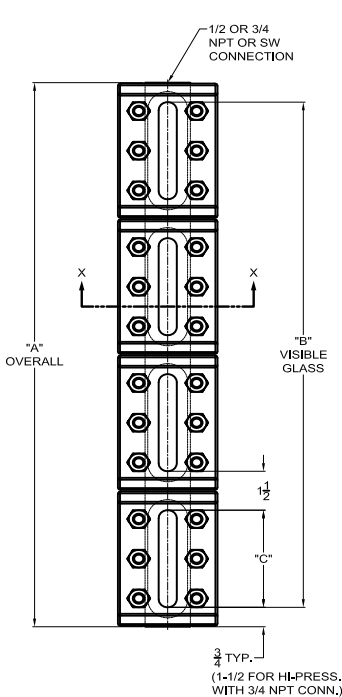
Reflex Gages -Close Hook-Up Connections



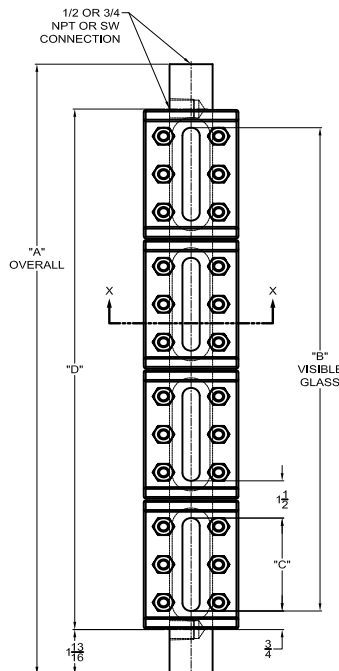
Section "X-X"
Low Pressure



Section "X-X"
Mid/High Pressure



STANDARD



CLOSE HOOK-UP

Pressure Ratings At °F*

Low Pressure Gage**

Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
1	2400	2320	2240	2150	2000	1780	1520
2	2325	2250	2170	2090	1940	1720	1470
3	2250	2180	2100	2020	1880	1670	1420
4	2175	2100	2020	1940	1820	1600	1370
5	2100	2030	1960	1880	1750	1550	1320
6	2025	1950	1890	1810	1680	1500	1280
7	1950	1890	1820	1750	1630	1440	1230
8	1875	1820	1750	1680	1560	1390	1180
9	1800	1740	1680	1620	1510	1340	1140

Mid-Pressure Gage**

Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
1	3000	2900	2800	2690	2500	2220	1890
2	2910	2820	2720	2600	2420	2150	1840
3	2820	2720	2625	2530	2350	2080	1780
4	2725	2640	2560	2460	2270	2040	1740
5	2630	2540	2460	2360	2190	1950	1660
6	2535	2450	2360	2270	2110	1875	1600
7	2440	2360	2280	2190	2030	1805	1540
8	2345	2270	2190	2110	1960	1740	1480
9	2250	2180	2100	2020	1880	1670	1420

High Pressure Gage**

Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
ALL	4000	3890	3790	3700	3470	3080	2530

**Gages for service up to 800°F are available. Consult QTS for applications and ratings

**Saturated steam to 300 WSP. Above 300 WSP, use transparent gage with mica shields.

TRANSPARENT GAGES QUEST-TEC GLASS-TRAC

Glass-Trac Transparent Gages use clear, see-through glass on both sides so that both the color and the interface of liquids can be viewed. Electric lighted gage illuminators are available for use on Transparent Gages and provide easy viewing of liquid levels in dimly lighted areas. Transparent Gages are made in three pressure series (maximum 3000 psig @ 100°F) and are tapped for $\frac{1}{2}$ " or $\frac{3}{4}$ " NPT connections. The standard Glass-Trac level gages are designed for -20°F service.

On Glass-Trac Transparent Close Hook-up Gages with $\frac{1}{2}$ " NPT connections, the center-to-center dimension is the same as the overall length on standard gages. On Close Hook-up Gages with $\frac{3}{4}$ " NPT connections the center-to-center dimensions is the same as the overall length on standard gages plus $\frac{3}{8}$ ".



Typical Transparent
Top/Bottom



Typical Transparent
Close Hook-Up

MATERIALS

Body (Liquid Chamber): Accurately machined from square tubes to provide perfect seating for gage glasses. Glass is recessed for protection. Body materials include 316 stainless steel and carbon steel.

Cover: Glass-Trac gage covers are made of carbon steel or 316 stainless steel in all sizes and pressure ratings for higher strength and dependable service. All covers are machined to provide recessed seating protection for the glass.

Glass: All standard Glass-Trac Reflex Gages use tempered borosilicate glass in nine standard lengths. Each glass has expertly molded reflecting prisms.

Gaskets: High grade non-asbestos is used in gaskets and cushions for Glass-Trac gages. The machined recess in the gage body and cover protects the gasket and cushion as well as the glass.

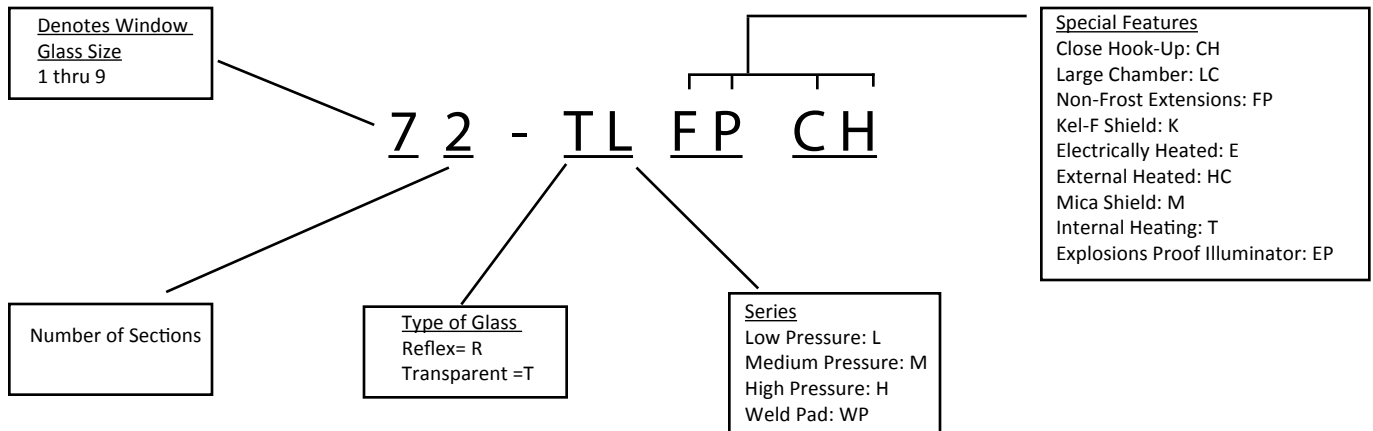
Bolts: Glass-Trac gage bolts are made of alloy steel, ASTM A-193 Grade B7.

Nuts: Gage nuts are made of steel, ASTM A-194 Grade 2H.

(Torque instructions for gage bolts are on the back cover)

MODEL CODE BREAKDOWN

PRESSURE RATINGS & DIMENSIONS



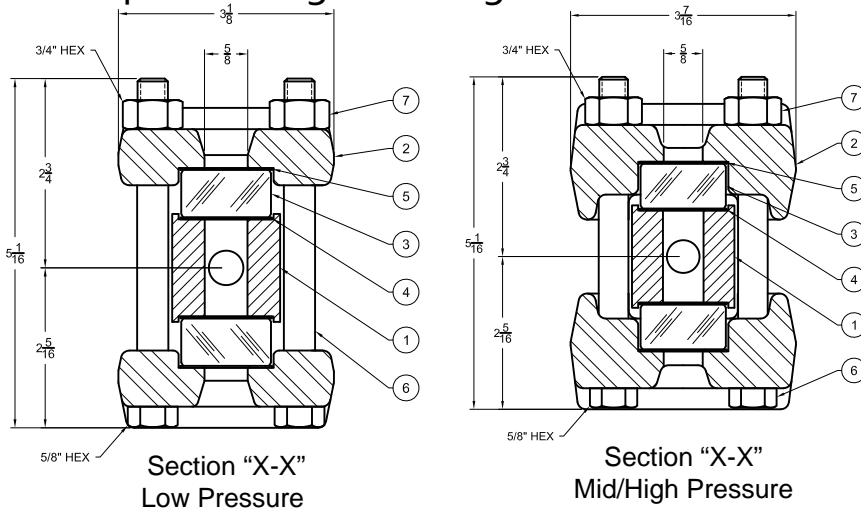
TRANSPARENT GAGES

SIZE & WEIGHTS											
SIZE NUMBERS			OVER-ALL LENGTH (IN.)			VISIBLE GLASS (IN.) B	GLASS SIZE C	CLOSE HOOK-UP CENTER-TO-CENTER (IN.)		APPROX. WT. (LBS.)	
LOW PRESS.	MID PRESS.	HIGH PRESS.	A (STD)* ½" OR ¾" NPT	A (CH) ½" NPT	A (CH) ¾" NPT			D ½" NPT	D ¾" NPT	LOW PRESS.	MID-HIGH PRESS.
SINGLE-SECTION GAGE											
11TL	11TM	11TH	5.25	8.875	9.25	3.75	3.75	5.25	5.625	10	12
21TL	21TM	21TH	6.25	9.875	10.25	4.75	4.75	6.25	6.625	11	14
31TL	31TM	31TH	7.25	10.875	11.25	5.75	5.75	7.25	7.625	14	17
41TL	41TM	41TH	8.25	11.875	12.25	6.75	6.75	8.25	8.625	16	19
51TL	51TM	51TH	9.375	13	13.375	7.875	7.875	9.375	9.75	17	21
61TL	61TM	61TH	10.625	14.25	14.625	9.125	9.125	10.625	11	19	24
71TL	71TM	71TH	11.75	15.375	15.75	10.25	10.25	11.75	12.125	21	27
81TL	81TM	81TH	13.375	17	17.375	11.875	11.875	13.375	13.75	24	30
91TL	91TM	91TH	14.125	17.75	18.125	12.625	12.625	14.125	14.5	26	32
TWO-SECTION GAGE											
32TL	32TM	32TH	14.5	18.125	18.5	13	5.75	14.5	14.875	27	33
42TL	42TM	42TH	16.5	20.125	20.5	15	6.75	16.5	16.875	32	38
52TL	52TM	52TH	18.75	22.375	22.75	17.25	7.875	18.75	19.125	36	43
62TL	62TM	62TH	21.25	24.875	25.25	19.75	9.125	21.25	21.625	40	49
72TL	72TM	72TH	23.5	27.25	27.5	22	10.125	23.5	23.875	43	54
82TL	82TM	82TH	26.75	30.375	30.75	25.25	11.875	26.75	27.125	50	61
92TL	92TM	92TH	28.25	31.875	32.25	26.75	12.625	28.25	28.625	51	64
THREE-SECTION GAGE											
63TL	63TM	63TH	31.875	35.5	35.875	30.375	9.125	31.875	32.25	59	73
73TL	73TM	73TH	35.25	38.875	39.25	33.75	10.25	35.25	35.875	63	80
83TL	83TM	83TH	40.125	43.75	44.125	38.625	11.875	40.125	40.5	75	92
93TL	93TM	93TH	42.375	46	46.375	40.875	12.625	42.375	42.75	78	97
FOUR-SECTION GAGE											
74TL	74TM	74TH	47	50.875	51	45.5	10.25	47	47.375	85	107
84TL	84TM	84TH	53.5	57.125	57.5	52	11.875	53.5	53.875	100	122
94TL	94TM	94TH	56.5	60.125	60.5	55	12.625	56.5	56.875	104	129
FIVE-SECTION GAGE											
75TL	75TM	75TH	58.25	62.375	62.75	57.25	10.25	58.75	59.125	106	134
85TL	85TM	85TH	66.875	70.5	70.875	65.375	11.875	66.875	67.25	124	152
95TL	95TM	95TH	70.625	74.25	74.625	69.125	12.625	70.625	71	129	161

*3/4" NPT Tapped High Pressure Gages Add 1-1/2" to 'A' Dimension

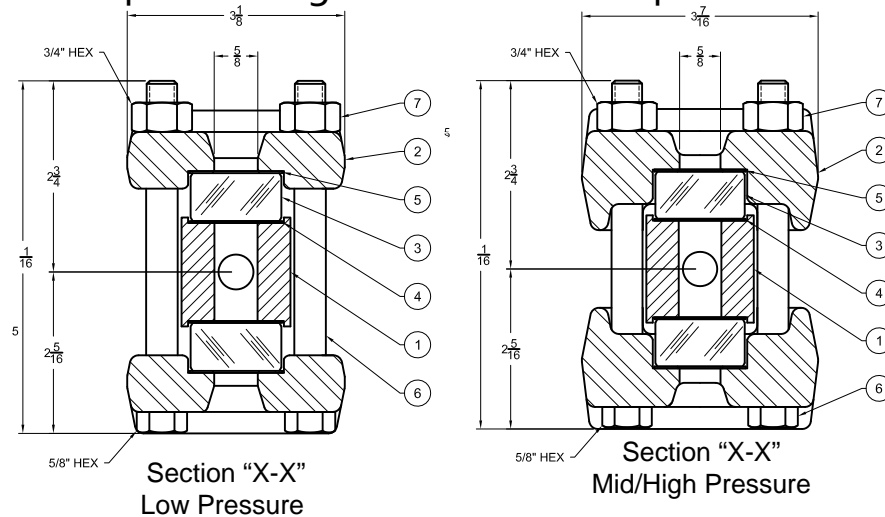
TRANSPARENT GAGE CONNECTIONS

Transparent Gages -Straight Thru Connections



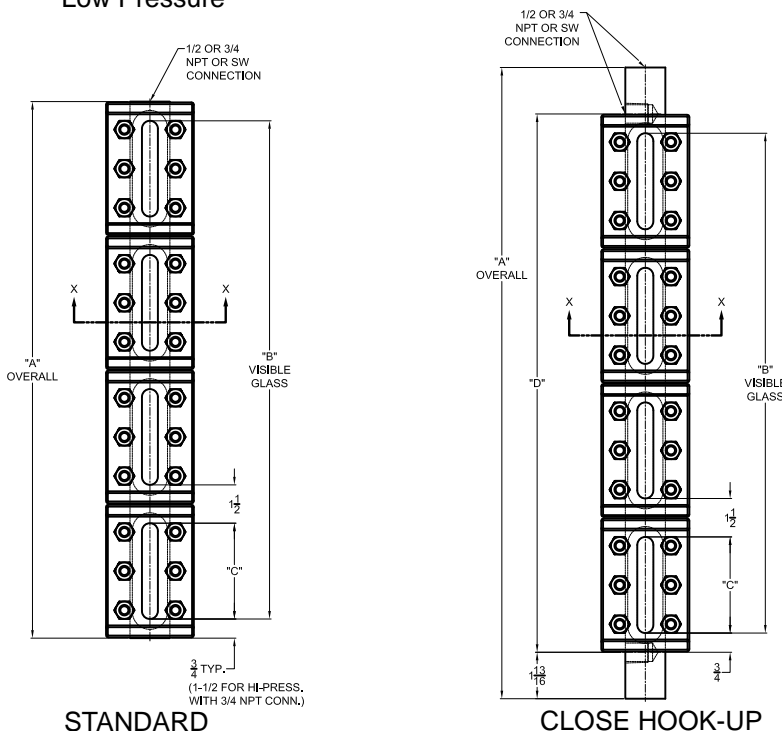
Item No.	Name	Material
1	Chamber	Carbon Steel
2	Cover	Carbon Steel
3	Glass	Tempered
4	Gasket	Non-Asbestos
5	Cushion	Non-Asbestos
6	Bolt	ASTM A193 B7
7	Nut	ASTM A193 B7

Transparent Gages -Close Hook-Up Connections

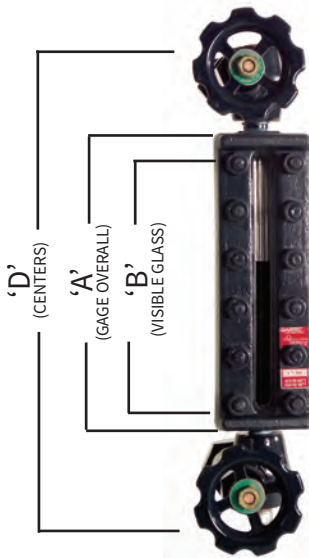


Pressure Ratings At °F*							
Low Pressure Gage**							
Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
1	2000	1935	1870	1790	1660	1480	1260
2	1815	1750	1690	1620	1510	1340	1150
3	1630	1580	1520	1460	1360	1210	1050
4	1440	1390	1340	1290	1200	1060	900
5	1250	1210	1170	1120	1040	920	790
6	1065	1030	995	950	890	790	680
7	875	845	815	785	730	645	550
8	690	665	645	620	575	510	440
9	500	480	465	445	415	370	320
Mid-Pressure Gage**							
Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
1	2500	2420	2340	2240	2080	1850	1580
2	2315	2250	2170	2090	1940	1720	1470
3	2130	2060	1990	1910	1770	1575	1340
4	1940	1875	1810	1740	1620	1435	1230
5	1750	1690	1630	1570	1460	1295	1100
6	1565	1510	1460	1400	1305	1160	990
7	1375	1330	1280	1230	1145	1015	870
8	1190	1150	1110	1065	990	880	750
9	1000	970	935	985	835	740	630
High Pressure Gage**							
Glass Size	100°F	200°F	300°F	400°F	500°F	600°F	700°F
ALL	4000	2920	2850	2780	2600	2310	1890

**Gages for service up to 800°F are available. Consult QTS for applications and ratings



INSTALLATION: STANDARD GAGES (TOP/BOTTOM CONNECTION)



Note: Use the following constants for other level gages.

1. Low pressure (series L) large chamber, add 1" to dimensions "A" and "D"
2. Low pressure (series L), mid pressure (series M) externally heated/ cooled, add 2-1/4" to above "D" dimensions
3. For valve Types 3, 5, or 7 add 7/8" to Column "D" to obtain minimum centers
4. For High Pressure (series H) with 3/4" NPT, add 1 1/2" to dimensions "A" and "D"
5. For a 1/2" NPT Female Spherical Gage Connection add 1-7/8"

SIZE NO.		A GAGE OVERALL	B VISIBLE GLASS	C VISIBLE GLASS	D* MINIMUM VALVE CENTER-TO-CENTER WITH GAGE CONNECTION							
					FOR GAGES TAPPED 1/2" NPT				FOR GAGES TAPPED 3/4" NPT			
					** 1/2"- NPT FEMALE SCREWED CAT. 1S, 2S, 4S	** 1/2"- NPT FEMALE SCREWED CAT. 1U, 2U, 4U	1/2"-NPT MALE UNION FIG. VIII	1/2"-NPT MALE SPHERICAL FIG. XIV	**3/4"-NPT FEMALE SCREWED CAT. 1S, 2S, 4S	3/4"-NPT FEMALE SCREWED CAT. 1U, 2U, 4U	3/4"-NPT MALE UNION FIG. XI	3/4"-NPT MALE SPHERICAL FIG. X
1	1	5 1/4	3 3/4	3 3/4	8 1/2	11	11 5/8	12 3/4	8 3/4	11 5/8	11 1/2	12 5/8
2	1	6 1/4	4 3/4	4 3/4	9 1/2	12	12 5/8	13 3/4	9 3/4	12 5/8	12 1/2	13 5/8
3	1	7 1/4	5 3/4	5 3/4	10 1/2	13	13 5/8	14 3/4	10 3/4	13 5/8	13 1/2	14 5/8
4	1	8 1/4	6 3/4	6 3/4	11 1/2	14	14 5/8	15 3/4	11 3/4	14 5/8	14 1/2	15 5/8
5	1	9 3/8	7 7/8	7 7/8	12 5/8	15 1/8	15 3/4	16 7/8	12 7/8	15 3/4	15 5/8	16 3/4
6	1	10 5/8	9 1/8	9 1/8	13 7/8	16 3/8	17	18 1/8	14 1/8	17	16 7/8	18
7	1	11 3/4	10 1/4	10 1/4	15	17 1/2	18 1/8	19 1/4	15 1/4	18 1/8	18	19 1/8
8	1	13 3/8	11 7/8	11 7/8	16 5/8	19 1/8	19 3/4	20 7/8	16 7/8	19 3/4	19 5/8	20 3/4
9	1	14 1/8	12 5/8	12 5/8	17 3/8	19 7/8	20 1/2	21 5/8	17 5/8	20 1/2	20 3/8	21 1/2
3	2	14 1/2	13	5 3/4	17 3/4	20 1/4	20 7/8	22	18	20 7/8	20 3/4	21 7/8
4	2	16 1/2	15	6 3/4	19 3/4	22 1/4	22 7/8	24	20	22 7/8	22 3/4	23 7/8
5	2	18 3/4	17 1/4	7 7/8	22	24 1/2	25 1/8	26 1/4	22 1/4	25 1/8	25	26 1/8
6	2	21 1/4	19 3/4	9 1/8	24 1/2	27	27 5/8	28 3/4	24 3/4	27 5/8	27 1/2	28 5/8
7	2	23 1/2	22	10 1/4	26 3/4	29 1/4	29 7/8	31	27	29 7/8	29 3/4	30 7/8
8	2	26 3/4	25 1/4	11 7/8	30	32 1/2	33 1/8	34 1/4	30 1/4	33 1/8	33	34 1/8
9	2	28 1/4	26 3/4	12 5/8	31 1/2	34	34 5/8	35 3/4	31 3/4	34 5/8	34 1/2	35 5/8
6	3	31 7/8	30 3/8	9 1/8	35 1/8	37 5/8	38 1/4	39 3/8	35 5/8	38 1/4	38 1/8	39 1/4
7	3	35 1/4	33 3/4	10 1/4	38 1/2	41	41 5/8	42 3/4	38 3/4	41 5/8	41 1/2	42 5/8
8	3	40 1/8	38 5/8	11 7/8	43 3/8	45 7/8	46 1/2	47 5/8	43 5/8	46 1/2	46 3/8	47 1/2
9	3	42 3/8	40 7/8	12 5/8	45 5/8	48 1/8	48 3/4	49 7/8	45 7/8	48 3/4	48 5/8	49 3/4
7	4	47	45 1/2	10 1/4	50 1/4	52 3/4	53 3/8	54 1/2	50 1/2	53 5/8	53 1/4	54 3/8
8	4	53 1/2	52	11 7/8	56 3/4	59 1/4	59 7/8	61	57	59 7/8	59 3/4	60 7/8
9	4	56 1/2	55	12 5/8	59 3/4	62 1/4	62 7/8	64	60	62 7/8	62 3/4	63 7/8
7	5	58 3/4	57 1/4	10 1/4	62	64 1/2	65 1/8	66 1/4	62 1/4	65 1/8	65	66 1/8
8	5	66 7/8	65 3/8	11 7/8	70 1/8	72 5/8	73 1/4	74 3/8	70 3/8	73 1/4	73 1/8	74 1/4
9	5	70 5/8	69 1/8	12 5/8	73 7/8	76 3/8	77	78 1/8	74 1/8	77	76 7/8	78
8	6	80 1/4	78 3/4	11 7/8	83 1/2	86	86 5/8	87 3/4	83 3/4	86 5/8	86 1/2	87 5/8
9	6	84 3/4	83 1/4	12 5/8	88	90 1/2	91 1/8	92 1/4	88 1/4	91 1/8	91	92 1/8
8	7	93 5/8	92 1/8	11 7/8	96 7/8	99 3/8	100	101 1/8	97 1/8	100	99 7/8	101
9	7	98 7/8	97 3/8	12 5/8	102 1/8	104 5/8	105 1/4	106 3/8	102 3/8	105 1/4	105 1/8	106 1/4
8	8	107	105 1/2	11 7/8	110 1/4	112 3/4	113 3/8	114 1/2	110 1/2	113 3/8	113 1/4	114 3/8
9	8	113	111 1/2	12 5/8	116 1/4	118 3/4	119 3/8	120 1/2	116 1/2	119 3/8	119 1/4	120 3/8
8	9	120 3/8	118 7/8	11 7/8	123 5/8	126 1/8	126 3/4	127 7/8	123 7/8	126 3/4	126 5/8	127 3/4
9	9	127 1/8	125 5/8	12 5/8	130 3/8	132 7/8	133 1/2	134 5/8	130 5/8	133 1/2	133 3/8	134 1/2

*Dimensions in column "D" apply to low-pressure (series L), mid-pressure (series M), 1/2" NPT high-pressure (series H), frost free (all series), and internally heated/cooled reflex and transparent level gages tapped 1/2" NPT or 3/4" NPT. For installation dimensions on other level gages see footnote.

**These dimensions use close pipe nipples. For short 1/2" nipple add 3/4", for short 3/4" nipple add 1-1/4"

INSTALLATION: CLOSE HOOK-UP GAGES (SIDE/SIDE CONNECTED GAGE CONNECTIONS)

SIZE NO.	MINIMUM CENTER-TO-CENTER TANK CONNECTIONS					
	STRAIGHT-THRU 1/2" VALVE 3/4"		OFFSET VALVE HANDLES 1/2" INSIDE 3/4"		OFFSET VALVE HANDLES 1/2" OUTSIDE 3/4"	
11	5 1/4"	5 5/8"	3 1/2"	3 7/8"	7"	7 3/8"
21	6 1/4"	6 5/8"	4 1/2"	4 7/8"	8"	8 3/8"
31	7 1/4"	7 5/8"	5 1/2"	5 7/8"	9"	9 3/8"
41	8 1/4"	8 5/8"	6 1/2"	6 7/8"	10"	10 3/8"
51	9 3/8"	9 3/4"	7 5/8"	8"	11 1/8"	11 1/2"
61	10 5/8"	11"	8 7/8"	9 1/4"	12 3/8"	12 3/4"
71	11 3/4"	12 1/8"	10"	10 3/8"	13 1/2"	13 7/8"
81	13 3/8"	13 3/4"	11 5/8"	12"	15 1/8"	15 1/2"
91	14 1/8"	14 1/2"	12 3/8"	12 3/4"	15 7/8"	16 1/4"
32	14 1/2"	14 7/8"	12 3/4"	13 1/8"	16 1/4"	16 5/8"
42	16 1/2"	16 7/8"	14 3/4"	15 1/8"	18 1/4"	18 5/8"
52	18 3/4"	19 1/8"	17"	17 3/8"	20 1/2"	20 7/8"
62	21 1/4"	21 5/8"	19 1/2"	19 7/8"	23"	23 3/8"
72	23 1/2"	23 7/8"	21 3/4"	22 1/8"	25 1/4"	25 5/8"
82	26 3/4"	27 1/8"	25"	25 3/8"	28 1/2"	28 7/8"
92	28 1/4"	28 5/8"	26 1/2"	26 7/8"	30"	30 3/8"
63	31 7/8"	32 1/4"	30 1/8"	30 1/2"	33 5/8"	34"
73	35 1/4"	35 5/8"	33 1/2"	33 7/8"	37"	37 3/8"
83	40 1/8"	40 1/2"	38 3/8"	38 3/4"	41 7/8"	42 1/4"
93	42 3/8"	42 3/4"	40 5/8"	41"	44 1/8"	44 1/2"
74	47"	47 3/8"	45 1/4"	45 5/8"	48 3/4"	49 1/8"
84	53 1/2"	53 7/8"	51 3/4"	52 1/8"	55 1/4"	55 5/8"
94	56 1/2"	56 7/8"	54 3/4"	55 1/8"	58 1/4"	58 5/8"
75	58 3/4"	59 1/8"	57"	57 3/8"	60 1/2"	60 7/8"
85	66 7/8"	67 1/4"	65 1/8"	65 1/2"	68 5/8"	69"
95	70 5/8"	71"	68 7/8"	69 1/8"	72 3/8"	72 3/4"
86	80 1/4"	80 5/8"	78 1/2"	78 7/8"	82"	82 3/8"
96	84 3/4"	85 1/8"	83"	83 3/8"	86 1/2"	86 7/8"
87	93 5/8"	94"	91 7/8"	92 1/4"	95 3/8"	95 3/4"
97	98 7/8"	99 1/4"	97 1/8"	97 1/2"	100 5/8"	101"
88	107"	107 3/8"	105 1/4"	105 5/8"	108 3/4"	109 1/8"
98	113"	113 3/8"	111 1/4"	111 5/8"	114 3/4"	115 1/8"
89	120 3/8"	120 3/4"	118 5/8"	119"	122 1/8"	122 1/2"
99	127 1/8"	127 1/2"	125 3/8"	125 3/4"	128 7/8"	129 1/4"

VALVES QUEST-TEC GLASS-TRAC

TYPE 1S & 1U | TYPE 2S & 2U

SCREWED BONNET

UNION REPLACEABLE SEAT

4000 psig CWP 6000 psig Test
 $\frac{3}{4}$ " NPT Male Union Tank Connection
 $\frac{1}{2}$ " NPT Female Gage Connection
 $\frac{1}{2}$ " NPT Female Drain Connection

PRESSURE - TEMPERATURE RATING			
Teflon Packing		Wire-Graphite Packing	
4000 psi	100° F	2950 psi	500° F
3730 psi	200° F	2700 psi	600° F
3470 psi	300° F	2430 psi	700° F
3200 psi	400° F		

PARTS			
ITEM#	NAME	STANDARD	316 SS WETTED PARTS
		MATERIAL	MATERIAL
1	BODY	FORGED CARBON STEEL	316 SS
2	UNION NUT	CARBON STEEL	CARBON STEEL
3	BALL	440 SS	316 SS
4	BALL RETAINER	316 SS	316 SS
5	MALE CONNECTOR	CARBON STEEL	316 SS
6	STEM	416 SS	316 SS
7	PACKING WASHER	17-4 PH SS	316 SS
8	PACKING RING	TEFLON	TEFLON
9	PACKING FOLLOWER	316 SS	316 SS
10	PACKING NUT	CARBON STEEL	CARBON STEEL
11	HANDWHEEL	IRON	IRON
12	NAMEPLATE	304 SS	304 SS
13	HANDWHEEL NUT	316 SS	316 SS
14	FEMALE CONNECTOR	CARBON STEEL	316 SS
15	SEAT	416 SS	316 SS
16	BONNET	CARBON STEEL	316 SS

Item No. 13 has hole with 1/16 eccentricity for $\pm 1/8$ maximum misalignment on the overall center-to-center

Note: Valve shown is for bottom left hand (or top right hand) location.

Opposite hand is reversed Valves are furnished in pairs of one bottom left and one top left hand.

Note: 316 SS wetted parts not available in Type 1 valves.

OFFSET VALVES

Glass-Trac Type 1 & 2 Offset Gage Valves are available with screwed (S), union (U), (illustrated below) and tubular (T) gage connections. Both 1 and 2 Valves are used with Reflex and Transparent Gages in working pressures up to 4000 psi and with Tubular Gages to their maximum rating. The Teflon packing ring is standard and used in services up to 450° F. For temperatures to 700° F, valves are fitted with special wire graphite packing. Both valves have stainless steel ball checks to shut off the flow automatically in case of gage glassbreakage.

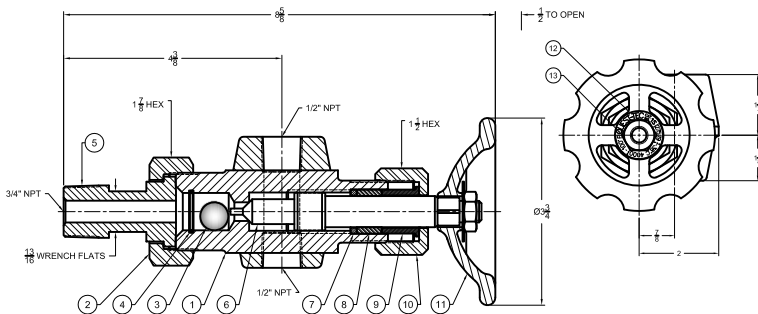
The "offset" feature permits easy cleaning of gages. A floating tailpiece on Type 1 valves permits an overall vertical adjustment of $1/8$ " if the gage center-to-centers are not precisely located. Installation is quicker and gage strain is eliminated

Type 2 Valves have an optional backseating stem allowing the packing to be changed without shutting down the vessel.

For Type 1 & 2 Tubular Gage Valves see page 15. Optional Gage & Tank Connections are shown on pages 25 thru 27.

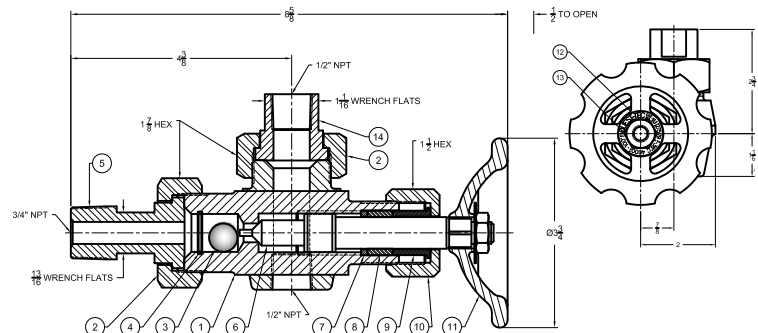
TYPE 1S

Weight per set approximately 10lbs. 6oz.



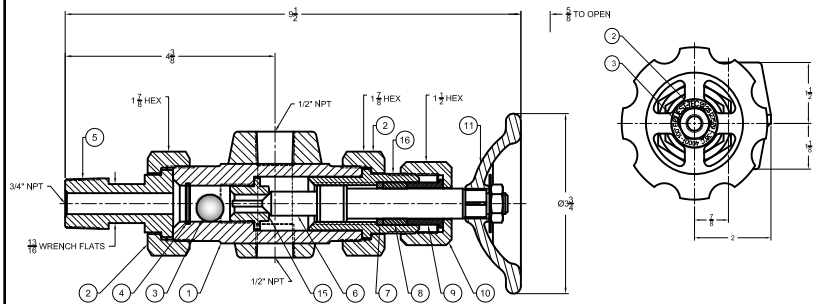
TYPE 1U

Weight per set approximately 11lbs. 6oz.



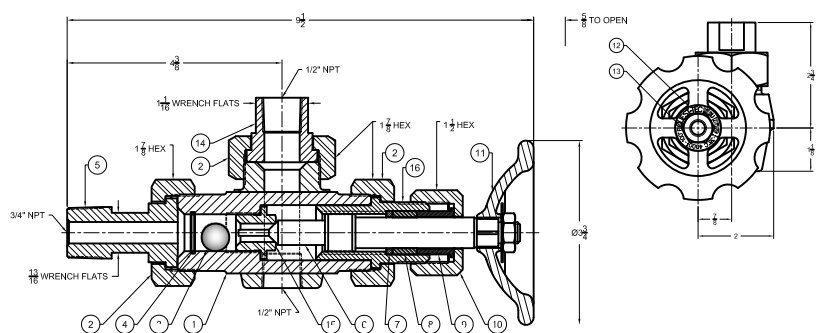
TYPE 2S

Weight per set approximately 10lbs. 6oz.



TYPE 2U

Weight per set approximately 11lbs. 6oz.



VALVES QUEST-TEC GLASS-TRAC

TYPE 3S & 3U

HEAVY DUTY OUTSIDE SCREW & YOKE

4000 psig CWP 6000 psig Test
 $\frac{1}{2}$ " $\frac{3}{4}$ " (Std.) or 1" NPT or IPS Solid Shank Tank
 Connection or Flanged Tank Connection
 $\frac{1}{2}$ " NPT Female Gage Connection
 $\frac{1}{2}$ " NPT Female Drain Connection

PRESSURE - TEMPERATURE RATING			
Teflon Packing		Wire-Graphite Packing	
4000 psi	100° F	2950 psi	500° F
3730 psi	200° F	2700 psi	600° F
3470 psi	300° F	2430 psi	700° F
3200 psi	400° F		

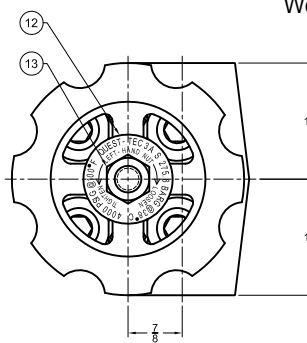
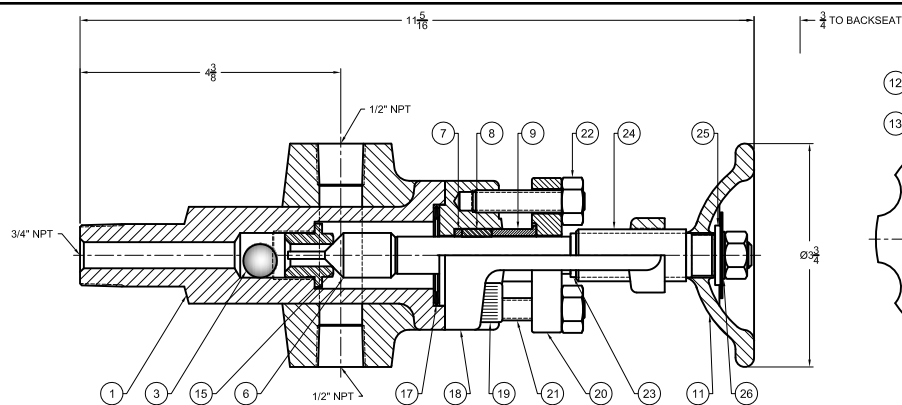
ITEM NO	NAME	STANDARD MATERIAL	316 SS WETTED PARTS MATERIAL
1	BODY	CARBON STEEL	316 SS
2	PACKING FOLLOWER	316 SS	316 SS
*3	PACKING RING	TEFLON	TEFLON
4	PACKING WASHER	17-4 PH SS	17-4 PH SS
5	STEM	416 SS	316 SS
6	STEM NUT	CARBON STEEL	CARBON STEEL
7	NAME PLATE	304 SS	304 SS
8	BALL	440 SS	316 SS
9	SEAT	416 SS	316 SS
10	FEMALE CONNECTOR	CARBON STEEL	316 SS
11	YOKE	FORGED STEEL	316 SS
12	YOKE GASKET	ASB-304 SS	ASB-304 SS
*13	YOKE SCREW	CARBON STEEL	CARBON STEEL
14	PRESSURE BAR	FORGED STEEL	FORGED STEEL
**15	PRESS BAR SCREW	ALLOY STEEL	ALLOY STEEL
16	INNER THRUST WASHER	17-4 PH SS	17-4 PH SS
17	HANDWHEEL ASSY.	IRON	IRON
18	OUTER THRUST WASHER	17-4 PH SS	17-4 PH SS

OFFSET OS&Y VALVES

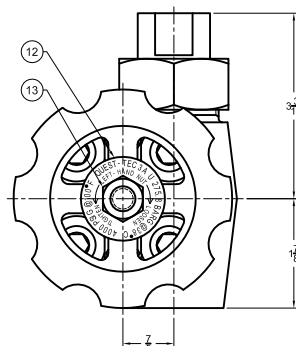
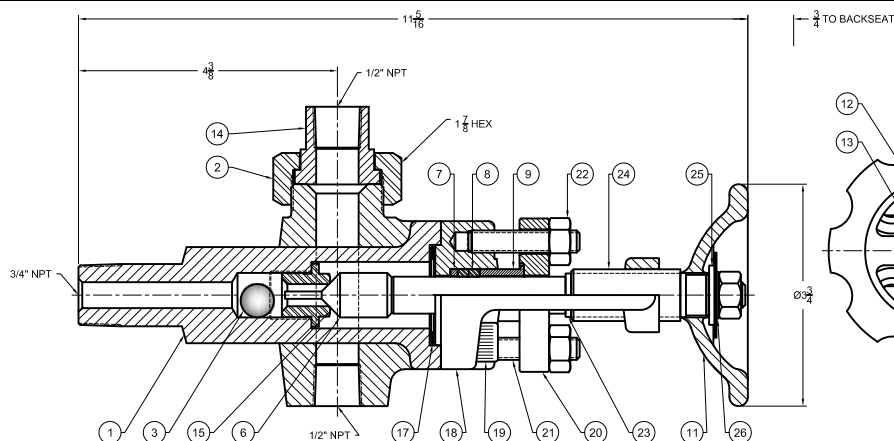
The Glass-Trac Type 3 Offset Gage Valve has the Outside Screw & Yoke design which prevents excessively hot and corrosive fluids from contracting stem threads, causing possible malfunction. The stem backs directly off the regrindable valve seat using the positive, non-rotating stem principle. The valve is offset for ease in gage cleaning and comes in both screwed (S) and a union (U) gage as standard. On special order, tubular (T) gage or other type connection can be supplied. Type 3 valves are used with Reflex and Transparent Gages in working pressures up to 4000 psi.

The standard tank connection for Type 3 OS&Y Offset Gage valves is a $\frac{3}{4}$ " NPT solid shank, with optional $\frac{1}{2}$ " and 1" NPT sizes. Ends beveled for welding also are available. Valve materials include forged carbon steel and 316 stainless steel. A molded Teflon packing ring is standard at no extra cost in valves for services up to 450° F. For temperatures to 700° F, valves have wire-graphite packing. The Type 3 valve has stainless steel safety ball checks to shut off the flow automatically in case of gage glass breakage.

Type 3 Tubular Gage Valves available upon request
 Optional Gage & Tank Connections are shown on
 pages 25 thru 27.



TYPE 3S
 Weight per set approximately 17lbs. 8oz.



TYPE 3U
 Weight per set approximately 17lbs. 8oz.

VALVES QUEST-TEC GLASS-TRAC

TYPE 7S & 7U

STANDARD OUTSIDE SCREW & YOKE

1440 psig CWP 2160 psig Test (600lb. Class)

$\frac{3}{4}$ " NPT Male Tank Connection

1/2" NPT Female Union Gage Connection

PRESSURE - TEMPERATURE RATING			
Teflon Packing		Wire-Graphite Packing	
1440 psi	100°F	1250 psi	500°F
1400 psi	200°F	1110 psi	600°F
1365 psi	300°F	1065 psi	700°F
1330 psi	400°F		

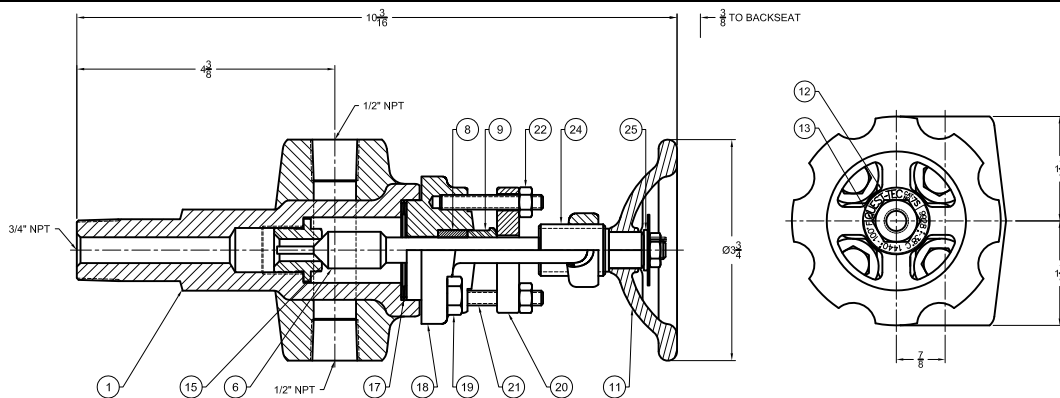
OFFSET OS&Y VALVES

The Glass-Trac Type 7 Offset Gage Valve features the Outside Screw & Yoke (OS&Y) design which prevents excessively hot or corrosive fluids from contacting stem treads. The stem uses the positive non-rotating stem principle and backs directly off the regrindable seat. This valve is offset for ease in gage cleaning and is available in screwed (S) and union (U) gage connections. The Type 7 Valve also has a backseating stem as a standard feature. Stainless steel ball checks are available upon request.

Type 7 Tubular Gage Valves available upon request
Optional Gage & Tank Connections are shown on
pages 25 thru 27.

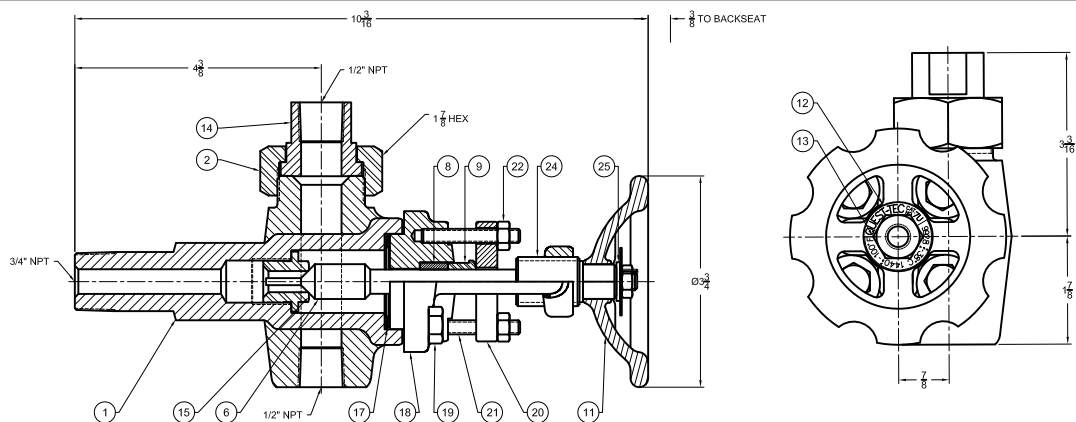
PARTS			
ITEM#	NAME	STANDARD	316 SS WETTED PARTS
		MATERIAL	MATERIAL
1	BODY	FORGED CARBON STEEL	316 SS
2	UNION NUT	CARBON STEEL	316 SS
6	STEM	416 SS	316 SS
8	PACKING RING	TEFLON	TEFLON
9	PACKING FOLLOWER	316 SS	316 SS
11	HANDWHEEL	IRON	IRON
12	NAMEPLATE	304 SS	304 SS
13	HANDWHEEL NUT	316 SS	316 SS
14	FEMALE CONNECTOR	CARBON STEEL	316 SS
15	SEAT	416 SS	316 SS
17	YOKE GASKET	304 SS / GRAPHITE	316 SS / GRAPHITE
18	YOKE	FORGED CARBON STEEL	316 SS
19	YOKE SCREW	SA-193 B7	SA-193 B7
20	PRESSURE BAR	CARBON STEEL	CARBON STEEL
21	PRESSURE BAR STUD	SA-193 B7	SA-193 B7
22	PRESSURE BAR NUT	SA-194 2H	SA-194 2H
24	HANDWHEEL SCREW	SIL BRZ	SIL BRZ
25	OUTER THRUST WASHER	17-4 PH SS	17-4 PH SS

Note: Valve shown is for bottom left hand (or top right hand) location. Opposite hand is reversed. Valves are furnished in pairs of one bottom left and one top left hand.



TYPE 7S

Weight per set approximately 12lbs.



TYPE 7U

Weight per set approximately 12lbs.

VALVES QUEST-TEC GLASS-TRAC

TYPE 4S & 4U

RENEWABLE INTERNAL STEM BONNET

4000 psig CWP 6000 psig Test

3/4" NPT Male Union Tank Connection

1/2" NPT Female Gage Connection

1/2" NPT Female Drain Connection

PRESSURE - TEMPERATURE RATING			
Teflon Packing		Wire-Graphite Packing	
4000 psi	100°F	2950 psi	500°F
3730 psi	200°F	2700 psi	600°F
3470 psi	300°F	2430 psi	700°F
3200 psi	400°F		

STRAIGHT-THRU VALVES

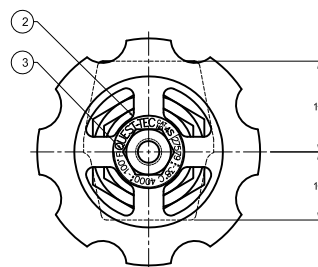
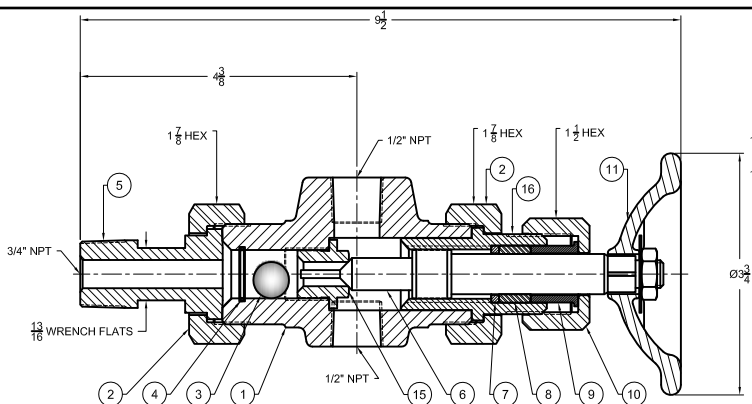
The Glass-Trac Type 4 Straight-Thru Gage Valve is available with screwed (S) and Union (U) gage connections and used with Reflex and Transparent Gages in working pressures up to 4000 psi. The "straight-thru" valve body design is popularly used with close hook-up (side connection) gages because the gage side connection centers and vessel centers can be identical. (With offset valves, vessel centers must be inside or outside side connection centers.) Type 4 Valves have a 3/4" NPT Male Tank Connection as standard, with other connections available on order.

Type 4 Straight-Thru Gage Valves are stocked in carbon steel with stainless steel trims. A molded Teflon packing ring is standard at no extra cost in valves for services to 450°F. For temperatures to 700° F, valves have wire-graphite packing. The Type 4 Valve has stainless steel ball checks to shut off the flow automatically in case of gage glass breakage. An optional back seating stem is available on request.

Type 4 Tubular Gage Valves available upon request
Optional Gage & Tank Connections are shown on
pages 25 thru 27.

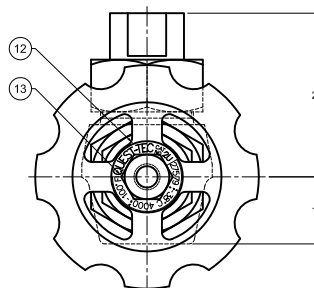
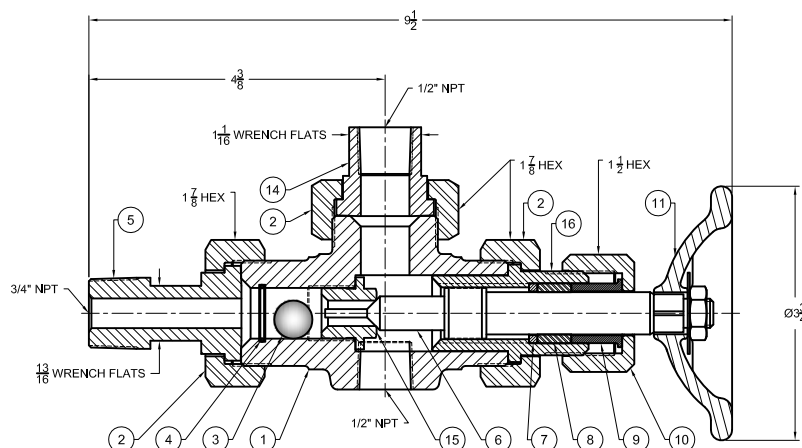
PARTS			
ITEM#	NAME	STANDARD	316 SS WETTED PARTS
		MATERIAL	MATERIAL
1	BODY	FORGED CARBON STEEL	316 SS
2	UNION NUT	CARBON STEEL	CARBON STEEL
3	BALL	440 SS	316 SS
4	BALL RETAINER	316 SS	316 SS
5	MALE CONNECTOR	CARBON STEEL	316 SS
6	STEM	416 SS	316 SS
7	PACKING WASHER	17-4 PH SS	316 SS
8	PACKING RING	TEFLON	TEFLON
9	PACKING FOLLOWER	316 SS	316 SS
10	PACKING NUT	CARBON STEEL	CARBON STEEL
11	HANDWHEEL	IRON	IRON
12	NAMEPLATE	304 SS	304 SS
13	HANDWHEEL NUT	316 SS	316 SS
14	FEMALE CONNECTOR	CARBON STEEL	316 SS
15	SEAT	416 SS	316 SS
16	BONNET	CARBON STEEL	316 SS

Item No. 13 has hole with 1/16 eccentricity for $\pm 1/8$ maximum misalignment on the overall center-to-center
 Note: Valve shown is for bottom left hand (or top right hand) location.
 Opposite hand is reversed Valves are furnished in pairs of one bottom left and one top left hand.



TYPE 4S

Weight per set approximately 12lbs.



TYPE 4U

Weight per set approximately 12lbs.

VALVES QUEST-TEC GLASS-TRAC

TYPE 5S & 5U

STANDARD OUTSIDE SCREW & YOKE

1440 psig CWP 2160 psig Test (600lb. Class)

¾" NPT Male Tank Connection

½" NPT Female Union Gage Connection

½" NPT Female Drain Connection Only

PRESSURE - TEMPERATURE RATING			
Teflon Packing		Wire-Graphite Packing	
1440 psi	100°F	1250 psi	500°F
1400 psi	200°F	1110 psi	600°F
1365 psi	300°F	1065 psi	700°F
1330 psi	400°F		

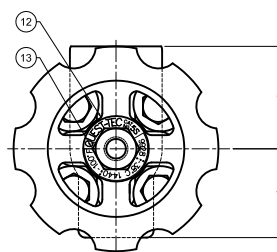
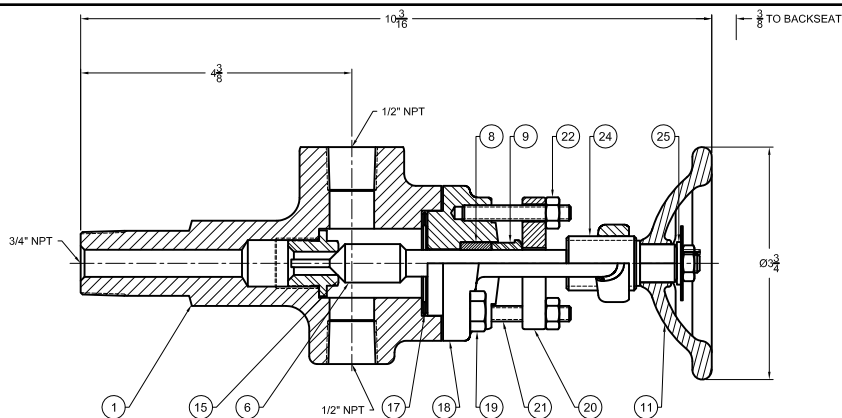
PARTS			
ITEM#	NAME	STANDARD MATERIAL	316 SS WETTED PARTS MATERIAL
1	BODY	FORGED CARBON STEEL	316 SS
2	UNION NUT	CARBON STEEL	316 SS
6	STEM	416 SS	316 SS
8	PACKING RING	TEFLON	TEFLON
9	PACKING FOLLOWER	316 SS	316 SS
11	HANDWHEEL	IRON	IRON
12	NAMEPLATE	304 SS	304 SS
13	HANDWHEEL NUT	316 SS	316 SS
14	FEMALE CONNECTOR	CARBON STEEL	316 SS
15	SEAT	416 SS	316 SS
17	YOKE GASKET	304 SS / GRAPHITE	316 SS / GRAPHITE
18	YOKE	FORGED CARBON STEEL	316 SS
19	YOKE SCREW	SA-193 B7	SA-193 B7
20	PRESSURE BAR	CARBON STEEL	CARBON STEEL
21	PRESSURE BAR STUD	SA-193 B7	SA-193 B7
22	PRESSURE BAR NUT	SA-194 2H	SA-194 2H
24	HANDWHEEL SCREW	SIL BRZ	SIL BRZ
25	OUTER THRUST WASHER	17-4 PH SS	17-4 PH SS

STRAIGHT-THRU OS&Y VALVES

The Glass-Trac Type 5 Gage Valve has the Outside Screw & Yoke design which prevents excessively hot and corrosive fluids from contacting stem threads, causing possible malfunction. The stem backs directly off the regrindable valve seat using the positive, non-rotating stem principle. The valve has a "straight-thru" body design and, with an optional bleed valve, can be used in a block and bleed application. Standard gage connections are screwed (S) and union (U) but any other type connection can be supplied on special order.

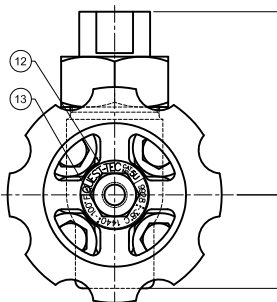
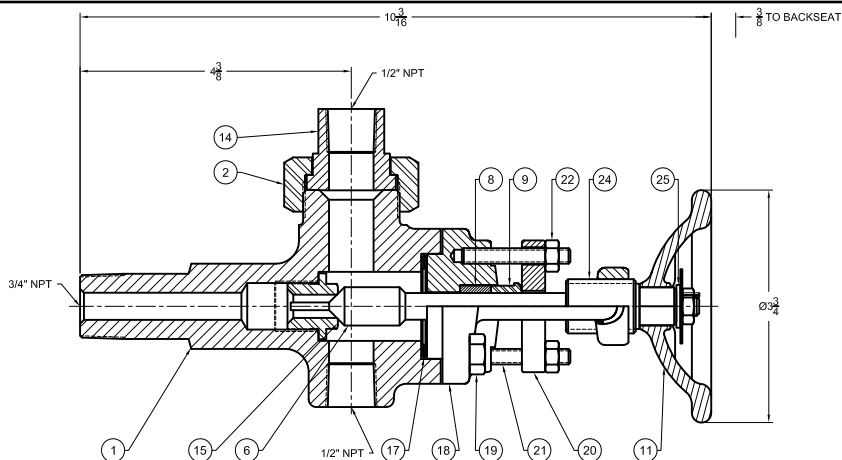
The standard tank connection for Type 5 OS&Y Straight-Thru Gage Valves is a ¾" NPT solid shank, with optional ½" and 1" NPT sizes. Ends beveled for welding also are available. Valve materials include forged carbon steel with stainless steel trims. A molded Teflon packing ring is standard at no extra cost in valves for services up to 450°F. For temperatures to 700°F, valves have wire-graphite packing. The standard Type 5 Valve has a back seating stem that allows the packing to be changed without shutting down the vessel. Stainless steel ball checks are available upon request.

Type 5 Tubular Gage Valves available upon request
Optional Gage & Tank Connections are shown on pages 25 thru 27.



TYPE 5S

Weight per set approximately 12lbs.



TYPE 5U

Weight per set approximately 12lbs.

½" NPT & 1" NPT OPTIONAL.
½" IPS & 1" IPS BEVELED
ENDS OPTIONAL.