

# Liquid filling instructions

## Liquid filling valves

Agricultural wheels are normally equipped with combined air and liquid-filling valves. For tube tires the valve number is TR218A and TR220A (or ETRTO 4.03.2) and TR618A for tubeless tires (or ETRTO V5.15.1).

## Instructions for liquid filling

1. Tires should be mounted as usual with required bead seating pressure.
2. Equip the tractor with the required tools.
3. Inflate the tires to the recommended pressure.
4. Move the tractor until the valve is pointing to desired filling level (at the highest vertical point for 75%).
5. Insert a jack under the axle, near the wheel, and raise it until it makes contact with the axle (the jack will sustain the tractor in the original position when the tire is deflated).
6. Deflate the tire. Unscrew the entire air valve housing.
7. Connect the liquid filling valve (this is a special valve with an air drain pipe).
8. Introduce the liquid into the tire through a normal rubber hose fixed to the stem of the valve until it flows out of the drainpipe.
9. When the liquid filling valve is not available, introduce liquid in to the tire by fixing a normal rubber hose to the stem of the normal valve. During the filling operation occasionally remove the hose

from the valve in order to allow the air in the tire to escape.

10. Stop filling when water starts to come out.
11. Replace the air valve and inflate to the desired pressure (same as point 3).

Note: Only use an inflation pressure gauge that is resistant to anti-freeze liquid. Make sure that the air valve is above liquid level before measuring the air pressure.

## Instructions for draining water

1. Jack the wheel up and position the valve at the lowest vertical point.
2. Unscrew the valve housing and let the water drain out.
3. Connect a liquid draining valve to allow all the liquid to come out, then screw the washer down over the stem of the valve.
4. When the liquid draining valve is not available, inflate the tire with air, remove the internal valve stem, using the special cap key, introduce a small rubber (drainage) hose of suitable length and let the remaining water drain from the tire.
5. Remove the rubber tube, replace the internal valve stem and screw the locking washer back down.
6. Inflate the tire with air to the recommended pressure.

# Liquid ballasting (Radial)

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
IF 650/60R34	DW23B	455	109	409	518	223	345	568
IF 710/60R34	DW25B	575	138	517	655	281	437	718
IF 900/60R42	DW30B	1167	279	1049	1328	571	886	1457
IF 650/65R34	DW23B	512	122	460	582	250	389	639
IF 600/70R30	DW21B	428	102	384	486	209	324	533
IF 650/65R38	DW23B	548	131	493	624	268	416	684
IF 710/60R38	DW25B	607	145	546	691	297	461	758
IF 710/70R42	DW25B	813	195	731	926	398	617	1015
IF 710/75R42	DW25B	904	217	813	1030	443	687	1130
IF 750/75R46	DW25B	1101	264	991	1255	539	837	1376
IF 900/65R46	DW30B	1401	336	1260	1596	686	1064	1750
VF 380/90R46	DW13A	285	68	256	324	139	216	355
IF 800/65R32 CFO	DW27B	825	198	742	940	404	627	1031
IF 800/70R32 CFO	DW27B	927	222	834	1056	454	704	1158
IF 800/70R38 CFO	DW27B	1035	248	931	1179	507	786	1293

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
710/60R30	DW23B	519	124	467	591	254	394	648
900/60R32	DW30B	1005	241	904	1145	492	764	1256
650/60R34	DW20B	444	106	399	505	217	337	554
710/60R34	DW23B	566	135	509	644	277	430	707
900/60R38	DW28B	1082	259	973	1232	530	822	1352
900/60R42	DW28B	1159	278	1043	1321	568	881	1449

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
440/65R24	DW14L	151	41	136	175	74	115	189
480/65R24	DW15L	187	51	169	217	92	142	234
540/65R24	DW16L	247	67	223	287	121	188	309
540/65R26	DW16L	270	65	254	313	132	205	340
440/65R28	DW14L	169	46	152	196	83	129	212
480/65R28	DW15L	206	56	186	239	101	157	258
540/65R28	DW16L	275	74	248	319	135	209	344
600/65R28	DW18L	363	98	326	421	178	276	453
540/65R30	DW16L	289	78	260	335	142	220	361
800/65R32	DW27B	843	202	758	960	413	640	1053
540/65R34	DW16L	317	86	285	368	155	241	396
600/65R34	DW20B	420	100	378	478	205	319	524
540/65R38	DW16L	342	92	308	397	168	260	428
600/65R38	DW18L	446	120	401	517	218	339	557
650/65R38	DW20B	541	146	487	628	265	411	677
600/65R42	DW18L	481	130	433	558	236	366	602
650/65R42	DW20B	582	157	524	675	285	442	727

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
260/70R16	W8	33	9	30	38	16	25	41
280/70R16	W9	41	11	37	47	20	31	51
280/70R18	W9	44	12	40	52	22	33	55
300/70R20	W9	55	15	50	64	27	42	69
320/70R20	W10	70	19	63	81	34	53	88
360/70R20	W11	93	25	84	108	46	71	116
380/70R20	W12	113	30	102	131	55	86	141
320/70R24	W10	85	23	77	98	42	65	106
360/70R24	W11	100	27	90	116	49	76	125
380/70R24	W12	130	35	117	151	64	99	163
420/70R24	W13	166	44	149	193	81	126	208
480/70R24	W15L	213	58	192	247	104	162	266
480/70R26	W15L	231	71	208	273	113	176	289
320/70R28	W10	94	25	85	110	46	71	118
360/70R28	W11	122	33	110	141	60	93	153
380/70R28	W12	144	38	130	167	71	109	180
420/70R28	W13	185	50	167	215	91	141	231
480/70R28	W15L	225	60	203	261	110	171	281
600/70R28	DW18L	398	95	357	452	194	302	496
420/70R30	W13	196	53	176	228	96	149	245
480/70R30	W15L	256	69	230	296	125	195	320
520/70R30	W16L	320	86	288	371	157	243	400
600/70R30	DW18L	417	99	374	473	204	316	520
480/70R34	W15L	285	77	257	331	140	217	356
520/70R34	W16L	350	95	315	406	172	266	438
600/70R34	DW18L	455	109	409	518	222	345	567
480/70R38	W15L	310	84	279	360	152	236	388
520/70R38	W16L	380	103	342	441	186	289	475
580/70R38	W18L	498	134	448	578	244	378	623
710/70R38	DW23B	760	205	684	882	372	578	950
800/70R38	DW25B	1022	245	919	1164	500	776	1276
580/70R42	W18L	519	140	467	602	254	394	649
620/70R42	DW20B	589	159	530	683	289	448	736
710/70R42	DW23B	800	192	720	912	392	608	1000

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
620/75R26	DW20B	480	115	432	547	235	365	600
650/75R32	DW20B	596	143	536	679	292	453	745
710/75R32	DW23B	762	182	685	867	373	579	952
650/75R38	DW23B	698	167	628	795	342	530	872
710/75R42	DW23B	921	221	829	1068	451	700	1160

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
280/85R20	W10	66	18	60	77	32	50	83
320/85R20	W11	92	25	83	107	45	70	115
280/85R24	W10	75	20	68	87	37	57	94
320/85R24	W11	104	28	94	121	51	79	130
340/85R24	W12	121	33	109	141	59	92	152
380/85R24	W13	160	43	144	186	78	122	200
420/85R24	W15L	211	57	190	245	103	160	264
280/85R28	W10	85	23	76	98	41	64	106
320/85R28	W11	117	31	105	135	57	89	146
340/85R28	W12	136	37	122	157	67	103	170
380/85R28	W13	178	48	160	207	87	135	223
420/85R28	W15L	234	63	211	271	115	178	292
380/85R30	W13	188	51	169	218	92	143	234
420/85R30	W15L	241	65	217	280	118	183	301
460/85R30	W16L	299	81	269	347	147	227	374
380/85R34	W13	205	49	185	238	100	156	258
420/85R34	W15L	265	72	238	307	130	201	331
460/85R34	W16L	327	88	295	380	160	249	409
320/85R38	W11	152	36	137	176	74	116	192
340/85R38	W12	172	46	155	200	84	131	215
380/80R38	W12	197	47	176	223	96	149	245
380/85R38	W13	224	61	202	260	110	171	280
400/75R38	W14	205	49	184	233	100	155	255
420/85R38	W15L	288	78	259	334	141	219	360
460/85R38	W16L	355	96	319	411	174	270	443
520/85R38	W18L	484	131	435	561	237	367	604
650/85R38	DW23B	832	199	749	948	407	632	1039
520/85R42	W18L	523	141	471	607	256	398	654
480/80R42	W16B	389	93	350	451	191	296	490
480/80R46	W16B	416	100	374	483	204	316	524
520/85R46	DW18L	554	133	509	278	117	182	300
480/80R50	DW15B	451	108	406	523	221	344	602

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
230/95R32	W7	69	19	62	80	34	52	86
270/95R32	W8	96	26	86	112	47	73	120
230/95R36	W7	77	21	69	89	38	59	96
270/95R38	W10	118	28	106	134	58	89	147
210/95R44	W7	75	20	68	87	37	57	94
230/95R44	W7	91	25	82	106	45	69	114
270/95R44	W8	125	34	113	145	61	95	156
300/95R46	W10	175	47	158	203	86	133	219
230/95R48	W7	91	25	82	105	45	69	114
270/95R48	W9	140	38	126	162	69	106	175
380/90R50	W12	290	70	261	337	142	221	387
300/95R52	W10	198	47	178	225	97	150	247
380/90R54	W12	310	74	279	360	152	237	413

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
500/60R22.5	AG16.00	203	49	183	235	99	154	256
560/60R22.5	AG16.00	247	67	222	287	121	188	309
580/65R22.5	AG16.00	301	81	271	349	147	229	376
600/50R22.5	AG20.00	240	58	221	278	117	182	300
600/55R26.5	AG20.00	320	77	288	371	157	243	403
680/55R26.5	AG20.00	385	104	347	447	189	293	481
710/50R26.5	AG24.00	380	91	342	433	187	289	476
750/60R30.5	AG24.00	675	162	608	783	331	513	851
650/65R30.5	AG20.00	533	128	480	618	261	405	672
850/50R30.5	AG28.00	702	168	632	814	344	534	885

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
12.4R36	W11	129	30	115	145	63	97	160
13.6R36	W12	176	42	158	200	86	134	220
7.50R20	5.50F	39	9	34	43	19	29	48
8.3R24	W7	39	9	34	43	18	29	47
9.5R20	W8	48	11	43	54	23	36	59
9.5R24	W8	55	13	49	62	26	41	67

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
340/80R18	11	91	21	81	102	44	68	112
400/70R18	13	114	27	102	129	55	86	141
400/70R20	13	122	29	110	139	59	93	152
400/70R24	DW13	139	33	125	158	68	105	173
440/80R24	DW14L	169	40	152	192	82	128	210
460/70R24	DW15L	195	46	175	221	95	148	243
500/70R24	DW16L	241	57	217	274	118	183	301
480/80R26	DW15L	280	67	252	319	137	212	349
440/80R28	DW15L	239	57	214	271	116	181	297

# Liquid ballasting (Cross-ply construction)

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°c)			Solution (up to -40°c)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
<b>Twin Tractor</b>								
400/55-17.5	AG11.75	85	20	77	99	42	65	106
600/55-26.5	AG20.00	315	76	284	365	154	239	394
500/60-26.5	AG16.00	220	53	198	255	108	167	275
600/55-30.5	AG20.00	345	83	311	400	169	262	431
600/60-30.5	AG20.00	380	91	342	441	186	289	475
750/45-30.5	AG24.00	410	98	369	476	201	312	513
800/55-30.5	AG28.00	740	178	666	858	363	562	925
900/60-32	DW27B	990	238	891	1148	485	752	1238
710/65-38	DW24B	695	167	626	806	341	528	869
850/50-38	DW28B	885	212	797	1027	434	673	1106
850/60-38	DW28B	1050	252	945	1218	515	798	1313
850/55-42	DW28B	955	229	860	1108	468	726	1194
<b>Twin Implement</b>								
280/60-15.5	AG8.00	45	11	41	52	22	34	56
400/45-15.5	AG13.00	57	13	51	64	27	43	70
400/60-15.5	AG13.00	92	22	82	104	45	69	114
420/55-17	13.00	93	22	83	105	45	70	115
400/55-17.5	AG11.75	85	20	77	99	42	65	106
400/55-22.5	AG11.75	110	26	99	128	54	84	138
500/45-22.5	AG16.00	140	34	126	162	69	106	175
500/60-22.5	AG16.00	225	54	203	261	110	171	281
560/45-22.5	AG16.00	180	43	162	209	88	137	225
560/60-22.5	AG16.00	270	65	243	313	132	205	338
600/50-22.5	AG20.00	265	64	239	307	130	201	331
710/40-22.5	AG24.00	305	73	275	354	149	232	381
400/60-26.5	AG13.00	160	38	144	186	78	122	200
500/60-26.5	AG16.00	265	64	239	307	130	201	331
710/45-26.5	AG24.00	370	89	333	429	181	281	463
800/40-26.5	AG28.00	455	109	410	528	223	346	569
600/60-30.5	AG20.00	380	91	342	441	186	289	475
650/65-30.5	AG20.00	516	123	464	587	253	392	645
710/50-30.5	AG24.00	460	110	414	534	225	350	575
750/60-30.5	AG24.00	702	168	631	799	343	533	876
800/45-30.5	AG28.00	540	130	486	616	265	410	675
850/50-30.5	AG28.00	773	185	695	880	378	587	965
<b>Twin AMPT</b>								
620/50B22.5	AG20.00	265	64	239	307	130	201	331
650/45B22.5	AG20.00	245	59	221	284	120	186	306
710/40B22.5	AG24.00	305	73	275	354	149	232	381
620/55B26.5	AG20.00	320	77	288	371	157	243	400
650/55B30.5	AG20.00	380	91	342	441	186	289	475
750/50B30.5	AG24.00	460	110	414	534	225	350	575
850/45B30.5	AG28.00	627	150	564	714	307	476	783
<b>Twin Garden Tractor</b>								
350/60-17.5	AG11.75	69	16	62	78	33	52	85
400/55-17.5	AG11.75	85	20	77	99	42	65	106
400/55-22.5	AG11.75	110	26	99	128	54	84	138
500/45-22.5	AG16.00	140	34	126	162	69	106	175
500/60-22.5	AG16.00	225	54	203	261	110	171	281

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
<b>Twin Garden Tractor</b>								
560/45-22.5	AG16.00	180	43	162	209	88	137	225
560/60-22.5	AG16.00	270	65	243	313	132	205	338
23.1-26	DW20B	495	119	446	574	243	376	619
600/60-30.5	AG20.00	380	91	342	441	186	289	475
<b>Agroforest</b>								
320/85-24	W11	105	25	94	119	51	80	131
380/85-24	W12	155	37	139	176	76	61	137
380/85-28	W12	170	40	153	193	83	129	212
420/85-28	W15L	225	54	202	256	110	171	282
420/85-30	W15L	235	56	211	267	115	178	293
460/85-30	W16L	310	74	279	353	152	235	387
420/85-34	W15L	265	63	238	301	130	201	331
460/85-34	W16L	335	80	301	381	164	254	418
420/85-38	W15L	275	66	247	313	134	209	343
460/85-38	W16L	345	82	310	392	169	262	431
520/85-38	DW16L	470	112	423	535	230	357	587

# Liquid ballasting (Forestry)

Size	Rim	Litres of solution or total water (Kg) (at Valve Level= 75%)	Solution (up to -20°C)			Solution (up to -40°C)		
			Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)	Quantity CaCl. (Kg)	Volume of Water ( l )	Total Mass (Kg)
<b>Twin Forestry (* )</b>								
400/60-15.5	AG13.00	71	17,0	78,9	95,9	34,8	66,3	101,1
500/45-22.5	AG16.00	94 / 140	23 / 34	85 / 126	109 / 162	46 / 69	71 / 106	118 / 175
500/60-22.5	AG16.00	150 / 225	36 / 54	135 / 202	174 / 261	73 / 110	114 / 171	188 / 281
600/50-22.5	AG20.00	233	55,8	209,3	265,1	113,9	176,7	290,6
650/45-22.5	AG20.00	244	58,5	219,4	277,9	19,4	185,3	304,7
710/40-22.5	AG24.00	202 / 304	48 / 73	182 / 274	234 / 353	99 / 149	153 / 231	253 / 380
710/40-24.5	AG24.00	285	68,4	256,5	324,9	139,7	216,6	356,3
600/55-26.5	AG20.00	311	74,7	280,1	354,8	152,5	236,6	389,1
710/45-26.5	AG24.00	245 / 370	59 / 89	221 / 333	284 / 429	120 / 181	186 / 281	306 / 463
750/50-26.5	AG24.00	320 / 475	77 / 114	288 / 427	371 / 551	157 / 233	243 / 361	400 / 594
600/60-30.5	AG20.00	255 / 380	61 / 91	230 / 342	296 / 441	125 / 186	194 / 289	319 / 475
710/50-30.5	AG24.00	315 / 470	75 / 113	285 / 425	367 / 548	155 / 232	241 / 359	396 / 590
750/45-30.5	AG24.00	300 / 450	72 / 108	270 / 405	348 / 522	147 / 221	228 / 342	375 / 563
600/65-34	DW20B	304 / 455	73 / 109	274 / 409	353 / 528	149 / 223	231 / 346	380 / 569
710/55-34	DW24B	377 / 565	90 / 136	339 / 508	437 / 655	185 / 277	286 / 429	471 / 706
750/65-34	DW24B	487 / 731	117 / 175	438 / 658	565 / 848	239 / 358	370 / 556	609 / 914

(\*): Max 50% filling volume for tire operating in heavy terrain