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Tow Boom, 3-section 10' GY3000



Assembly, Parts and Operator's Manual

Version GY3000-1301

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DCSS Forward

The Drift Containment Spray System (DCSS) was developed to give the industry an environmentally friendly and reliable way to apply liquids to turf. This system, designed in a wind tunnel and proven by government tests, contains the spray in a shroud that is sealed to the turf's surface. Tests show the DCSS has better drift control in winds of 24 mph (40 kph) than an open boom in winds of 6 mph (10 kmh), which virtually eliminates the wind problem in spraying.

The airfoil on top of the shroud is the key. It eliminates the uplifting eddy from behind the DCSS that flips drops up into the air to become drift on non-airfoil covered booms.

The DCSS is the most environmentally friendly and safe liquid applicator available in the world today. By using it you join the leading professionals around-the-world and protect the environment.

Safety

Whenever pesticides are changed or before sprayer storage, clean sprayers thoroughly with a cleaning solution that neutralizes the chemical to prevent cross contamination. The solution used depends on the chemical to be removed from the sprayer. Check the chemical label for cleaning instructions.

Many people die or suffer serious injury in job related accidents every year due to carelessness. Know your machinery and be aware of potential hazards. Put safety first in all your operations.

Review all instructions and procedures outlined in this manual annually. Every operator must familiarize himself with the operating instructions of the sprayer.

Assembly Safety

- Clear large area to fold booms out in field position.
- A minimum of two people are required for the assembly of large equipment, especially when lifting or exertion is required.
- Always use clean tools of the proper size and specification to match the hardware and specific job.

Operational Safety

- Shut down sprayer and power unit then wait for all parts to stop before adjusting, cleaning, or lubricating the power unit or sprayer.
- Before spraying an area familiarize yourself with any rocks, debris, trees, traps, ditches, or gullies that may be potentially dangerous. Plan the spraying route to avoid these hazards. When spraying, use individual section controls to reduce the amount of double spraying.
- Keep sprayer boom width in mind at all times. When turning, exercise caution and avoid any obstacles or other persons. Remember the boom takes a wider swing going around corners.
- Spray only chemicals that unit was designed for, (ie turf application). Do not use products for which unit was not designed, (ie PAINT, sealants, cleaning fluids, dust inhibitors, ice surfaces).
- Any maintenance intervention, in particular welding, shall only be undertaken after the spray boom has been thoroughly rinsed.

Transport Safety

- Never transport sprayers faster than 10 mph (16km/h) with castor wheels on the ground.
- Reduce speed on rough terrain.
- For all sprayers ensure that booms are folded and/or locked securely for transport.
- If excessive buffeting of airfoil/curtains occurs reduce speed as damage may result.

Minimize Chemical Drift

The **Windfoil** sprayer has been designed in wind tunnels to control airflow around and behind the sprayer to minimize drift, allowing safe spraying in windy conditions. Drift can blow off a field after it has been sprayed, especially in high winds. Reasonable caution should be taken, in order to spray effectively and safely.

For maximum drift control, keep curtain in contact with the canopy to ensure a seal to it. Drift control is less effective when the wind blows the curtain off the turf canopy, breaking the seal between the curtain and the turf.

General Spraying Information

Application Tips

Always use clean filtered water in the sprayer tank.

Your DCSS is supplied with 80° insert tips. Calibrate frequently to confirm tip accuracy.

Check the flow rate from all nozzles using the capacity calibration technique; see the Calibration section for tables and instructions. Use only clear water with no trace of chemicals when performing all calibration tests. Adjust the sprayer pressure to get the proper flow rate. The flow meters are not accurate enough in absolute terms to be used as a flow meter. In relative terms they are very accurate.

Nozzles

Caution: The GY Series Windfoil covered boom was designed to use 80° tips. 110° tips are not recommended. It is not recommended to mixed or interchange tips, (ie use 2 different brands, sizes, styles of tips at the same time).

Despite being the most important component for accurate uniform spraying application, nozzles are often neglected and abused. Nozzle flow rate depends on effective orifice size and the pressure.

As pressure increases, average droplet size decreases. If droplets are too small, drift may be excessive with conventional sprayers but not with the DCSS. With conventional sprayers, large droplets that are used to control drift can roll off plants without sticking. The DCSS will contain small droplets and allow them to be deposited on target plants. Small droplets are beneficial in that they increase coverage and with the DCSS drift is not a problem.

The spray patterns must overlap for even coverage but should not interfere with one another. Nozzles are set at a 10° angle so that one edge of its pattern will be just behind the edge of its adjacent spray pattern, evading interference with each other. The curtain must be in contact with the turf at all times to seal the shroud to the turf surface and contain the drops inside.

Caution: When spraying next to a flowerbed do not spray over the turf edge, as the spray will go

Diaphragm Check Valve Nozzle Bodies

Diaphragm check valves close at 15 psi (1 bar) to prevent excessive dripping. Should the cap on the valve loosen or the check valve diaphragm become misaligned the body may leak. Stop the leak by tightening the check valve cap or remove the cap and inspect the seal for damage or improper assembly. To check for defective check valves when the spraying stop control has been actuated, the volume that drips from each nozzle should not exceed 2ml timed over a 5 minute period. The measuring is to start 8 seconds after the flow to the spray boom is shut off.

Nozzle caps are attached by engaging the cap and turning clockwise about a third of a turn. Self-aligning caps have a slot to align the tips. Ensure that the tips fit down into the slotted hole before installing caps on the diaphragm nozzle body assembly with the tip screen

Calibration

As a tip wears the spray pattern distorts, output volumes usually increase and the droplet characteristics change. Recalibration may correct for output changes but cannot correct for spray pattern changes or the drop size generated.

Use only clear water with no trace of chemicals when performing all calibration tests. Rotate the DSCC up to calibrate and operate the sprayer at the desired pressure. Collect the output from each nozzle for 60 seconds, using an accurate measuring cup. Record the output from each nozzle. Replace nozzles that are more than 5% above or below the average reading, or has a visibly distorted pattern.

Actual sprayer speed, as determined from the tables below, will differ from the sprayer speedometer readings because of wheel slippage. Run a speed test in the field to be sprayed, and have the sprayer tank half full. The sprayer must be at full speed before starting the test run. To determine the speed discrepancy, mark off a distance as found on one of the tables below. Run the power unit over this distance, carefully noting the speedometer reading and recording the time to cover the distance. The actual speed traveled can be found for the specific distance and time to travel, using the table.

After the nozzles have been individually checked and matched, the sprayer should be calibrated to determine the correct speed for the desired application volume. Refer to the application rate tables on the following page for typical application rates for different nozzles.

Note: Tip pressure is usually less than the pressure at the pump. Losses occur in valves, hoses, etc. Always check the flow by the above calibration method.

Table 5: Time (seconds) to travel a distance of:

km/h	10m	25m	50m	100m	200m
1	36.0	90.0	180.0	360.0	720.0
1.5	24.0	60.0	120.0	240.0	480.0
2	18.0	45.0	90.0	180.0	360.0
2.5	14.4	36.0	72.0	144.0	288.0
3	12.0	30.0	60.0	120.0	240.0
4	9.0	22.5	45.0	90.0	180.0
5	7.2	18.0	36.0	72.0	144.0
6	6.0	15.0	30.0	60.0	120.0

Table 6: Time (seconds) to travel a distance of:

mph	10ft	20ft	50ft	100ft	200ft
1	6.8	17.0	34.1	68.2	136.0
1.5	4.5	11.4	22.7	45.5	90.9
2	3.4	8.5	17.0	34.1	68.2
2.5	2.7	6.8	13.6	27.3	54.5
3	2.3	5.7	11.4	22.7	45.5
4	1.7	4.3	8.5	17.0	34.1
5	1.4	3.4	6.8	13.6	27.3
6	1.1	2.8	5.7	11.4	22.7

American Application Rates at 12" Nozzle Spacing

80 Deg. Tips

Rogers Part #	Tip Number	Tip Mfg	Press psi	Press bars	Cap. 1 Noz. gpm	U. S. GALLONS PER ACRE					U. S. GALLONS PER 1000 SQ. FT.				
						2.5	3	4	5	7	2.5	3	4	5	7
						mph	mph	mph	mph	mph	mph	mph	mph	mph	mph
05872	800067SS (200 mesh)	Teejet	30	2.07	0.058	11.5	9.6	7.2	5.7	4.1	0.26	0.22	0.16	0.13	0.09
			40	2.76	0.067	13.3	11.1	8.3	6.6	4.7	0.30	0.25	0.19	0.15	0.11
			50	3.45	0.075	14.8	12.4	9.3	7.4	5.3	0.34	0.28	0.21	0.17	0.12
			60	4.14	0.082	16.2	13.5	10.2	8.1	5.8	0.37	0.31	0.23	0.19	0.13
01369	8001VS (100 mesh)	Teejet	30	2.07	0.087	17.1	14.3	10.7	8.6	6.1	0.39	0.33	0.25	0.20	0.14
			40	2.76	0.100	19.8	16.5	12.4	9.9	7.1	0.45	0.38	0.28	0.23	0.16
			50	3.45	0.112	22.1	18.4	13.8	11.1	7.9	0.51	0.42	0.32	0.25	0.18
			60	4.14	0.122	24.2	20.2	15.2	12.1	8.7	0.56	0.46	0.35	0.28	0.20
00827 or 13351	80015VS or API-80015 (100 mesh)	Teejet	30	2.07	0.130	25.7	21.4	16.1	12.9	9.2	0.59	0.49	0.37	0.29	0.21
			40	2.76	0.150	29.7	24.8	18.6	14.9	10.6	0.68	0.57	0.43	0.34	0.24
		Albuz	50	3.45	0.168	33.2	27.7	20.8	16.6	11.9	0.76	0.63	0.48	0.38	0.27
			60	4.14	0.184	36.4	30.3	22.7	18.2	13.0	0.83	0.69	0.52	0.42	0.30
05876 or 14384	8002VS or AXI-8002 (50 mesh)	Teejet	30	2.07	0.173	34.3	28.6	21.4	17.1	12.2	0.79	0.65	0.49	0.39	0.28
			40	2.76	0.200	39.6	33.0	24.8	19.8	14.1	0.91	0.76	0.57	0.45	0.32
		Albuz	50	3.45	0.224	44.3	36.9	27.7	22.1	15.8	1.01	0.84	0.63	0.51	0.36
			60	4.14	0.245	48.5	40.4	30.3	24.2	17.3	1.11	0.93	0.69	0.56	0.40
05877 or 14385	8003VS or AXI-8003 (50 mesh)	Teejet	30	2.07	0.260	51.4	42.9	32.2	25.7	18.4	1.18	0.98	0.74	0.59	0.42
			40	2.76	0.300	59.4	49.5	37.1	29.7	21.2	1.36	1.13	0.85	0.68	0.49
		Albuz	50	3.45	0.335	66.4	55.3	41.5	33.2	23.7	1.52	1.27	0.95	0.76	0.54
			60	4.14	0.367	72.7	60.6	45.5	36.4	26.0	1.67	1.39	1.04	0.83	0.59
05878 or 14061	8004VS or AXI-8004 (50 mesh)	Teejet	30	2.07	0.346	68.6	57.2	42.9	34.3	24.5	1.57	1.31	0.98	0.79	0.56
			40	2.76	0.400	79.2	66.0	49.5	39.6	28.3	1.81	1.51	1.13	0.91	0.65
		Albuz	50	3.45	0.447	88.5	73.8	55.3	44.3	31.6	2.03	1.69	1.27	1.01	0.72
			60	4.14	0.490	97.0	80.8	60.6	48.5	34.6	2.22	1.85	1.39	1.11	0.79
05879 or 14386	8005VS or AXI-8005 (50 mesh)	Teejet	30	2.07	0.433	85.7	71.4	53.6	42.9	30.6	1.96	1.64	1.23	0.98	0.70
			40	2.76	0.500	99.0	82.5	61.9	49.5	35.4	2.27	1.89	1.42	1.13	0.81
		Albuz	50	3.45	0.559	110.7	92.2	69.2	55.3	39.5	2.53	2.11	1.58	1.27	0.91
			60	4.14	0.612	121.2	101.0	75.8	60.6	43.3	2.78	2.31	1.74	1.39	0.99
05880 or 14387	8006VS or AXI-8006 (50 mesh)	Teejet	30	2.07	0.520	102.9	85.7	64.3	51.4	36.7	2.36	1.96	1.47	1.18	0.84
			40	2.76	0.600	118.8	99.0	74.3	59.4	42.4	2.72	2.27	1.70	1.36	0.97
		Albuz	50	3.45	0.671	132.8	110.7	83.0	66.4	47.4	3.04	2.53	1.90	1.52	1.09
			60	4.14	0.735	145.5	121.2	90.9	72.7	52.0	3.33	2.78	2.08	1.67	1.19
05881 (50 mesh)	8008VS (50 mesh)	Teejet	30	2.07	0.693	137.2	114.3	85.7	68.6	49.0	3.14	2.62	1.96	1.57	1.12
			40	2.76	0.800	158.4	132.0	99.0	79.2	56.6	3.63	3.02	2.27	1.81	1.30
			50	3.45	0.894	177.1	147.6	110.7	88.5	63.2	4.05	3.38	2.53	2.03	1.45
			60	4.14	0.980	194.0	161.7	121.2	97.0	69.3	4.44	3.70	2.78	2.22	1.59
14414	XR8010SS	Teejet	30	2.07	0.866	171.5	142.9	107.2	85.7	61.2	3.93	3.27	2.45	1.96	1.40
			40	2.76	1.000	198.0	165.0	123.8	99.0	70.7	4.53	3.78	2.83	2.27	1.62
			50	3.45	1.118	221.4	184.5	138.4	110.7	79.1	5.07	4.22	3.17	2.53	1.81
			60	4.14	1.225	242.5	202.1	151.6	121.2	86.6	5.55	4.63	3.47	2.78	1.98
	80125		30	2.07	1.083	214.3	178.6	134.0	107.2	76.6	4.91	4.09	3.07	2.45	1.75
			40	2.76	1.250	247.5	206.3	154.7	123.8	88.4	5.67	4.72	3.54	2.83	2.02
			50	3.45	1.398	276.7	230.6	172.9	138.4	98.8	6.34	5.28	3.96	3.17	2.26
			60	4.14	1.531	303.1	252.6	189.5	151.6	108.3	6.94	5.78	4.34	3.47	2.48
	XR8015SS	Teejet	30	2.07	1.299	257.2	214.3	160.8	128.6	91.9	5.89	4.91	3.68	2.94	2.10
			40	2.76	1.500	297.0	247.5	185.6	148.5	106.1	6.80	5.67	4.25	3.40	2.43
			50	3.45	1.677	332.1	276.7	207.5	166.0	118.6	7.60	6.34	4.75	3.80	2.72
			60	4.14	1.837	363.7	303.1	227.3	181.9	129.9	8.33	6.94	5.21	4.16	2.97
	8020		30	2.07	1.732	342.9	285.8	214.3	171.5	122.5	7.85	6.54	4.91	3.93	2.80
			40	2.76	2.000	396.0	330.0	247.5	198.0	141.4	9.07	7.56	5.67	4.53	3.24
			50	3.45	2.236	442.7	369.0	276.7	221.4	158.1	10.14	8.45	6.34	5.07	3.62
			60	4.14	2.449	485.0	404.2	303.1	242.5	173.2	11.10	9.25	6.94	5.55	3.97

Metric Application Rates at 12" Spacing (0.3 meters)

80 Deg. Tips

Rogers Part #	Tip Number	Tip Mfg	Liquid Press psi	Liquid Press bars	Cap. 1 Noz. gpm	U. S. GALLONS PER ACRE					Liters/Hectare				
						2.5	3	4	5	7	4	4.8	6.4	8	11.2
						mph	mph	mph	mph	mph	kph	kph	kph	kph	kph
05872	800067SS (200 mesh)	Teejet	30	2.07	0.058	11.5	9.6	7.2	5.7	4.1	107	90	67	54	38
			40	2.76	0.067	13.3	11.1	8.3	6.6	4.7	124	103	78	62	44
			50	3.45	0.075	14.8	12.4	9.3	7.4	5.3	139	116	87	69	50
			60	4.14	0.082	16.2	13.5	10.2	8.1	5.8	152	127	95	76	54
01369	8001VS (100 mesh)	Teejet	30	2.07	0.087	17.1	14.3	10.7	8.6	6.1	160	134	100	80	57
			40	2.76	0.100	19.8	16.5	12.4	9.9	7.1	185	154	116	93	66
			50	3.45	0.112	22.1	18.4	13.8	11.1	7.9	207	172	129	103	74
			60	4.14	0.122	24.2	20.2	15.2	12.1	8.7	227	189	142	113	81
00827 13351	80015VS or API-80015 (100 mesh)	Teejet	30	2.07	0.130	25.7	21.4	16.1	12.9	9.2	240	200	150	120	86
			40	2.76	0.150	29.7	24.8	18.6	14.9	10.6	278	231	174	139	99
		Albuz	50	3.45	0.168	33.2	27.7	20.8	16.6	11.9	310	259	194	155	111
			60	4.14	0.184	36.4	30.3	22.7	18.2	13.0	340	283	213	170	121
05876 14384	8002VS or AXI-8002 (50 mesh)	Teejet	30	2.07	0.173	34.3	28.6	21.4	17.1	12.2	321	267	200	160	115
			40	2.76	0.200	39.6	33.0	24.8	19.8	14.1	370	309	231	185	132
		Albuz	50	3.45	0.224	44.3	36.9	27.7	22.1	15.8	414	345	259	207	148
			60	4.14	0.245	48.5	40.4	30.3	24.2	17.3	453	378	283	227	162
05877 14385	8003VS or AXI-8003 (50 mesh)	Teejet	30	2.07	0.260	51.4	42.9	32.2	25.7	18.4	481	401	301	240	172
			40	2.76	0.300	59.4	49.5	37.1	29.7	21.2	555	463	347	278	198
		Albuz	50	3.45	0.335	66.4	55.3	41.5	33.2	23.7	621	517	388	310	222
			60	4.14	0.367	72.7	60.6	45.5	36.4	26.0	680	567	425	340	243
05878 14061	8004VS or AXI-8004 (50 mesh)	Teejet	30	2.07	0.346	68.6	57.2	42.9	34.3	24.5	641	534	401	321	229
			40	2.76	0.400	79.2	66.0	49.5	39.6	28.3	741	617	463	370	264
		Albuz	50	3.45	0.447	88.5	73.8	55.3	44.3	31.6	828	690	517	414	296
			60	4.14	0.490	97.0	80.8	60.6	48.5	34.6	907	756	567	453	324
05879 14386	8005VS or AXI-8005 (50 mesh)	Teejet	30	2.07	0.433	85.7	71.4	53.6	42.9	30.6	802	668	501	401	286
			40	2.76	0.500	99.0	82.5	61.9	49.5	35.4	926	771	579	463	331
		Albuz	50	3.45	0.559	110.7	92.2	69.2	55.3	39.5	1035	862	647	517	370
			60	4.14	0.612	121.2	101.0	75.8	60.6	43.3	1134	945	709	567	405
05880 14387	8006VS or AXI-8006 (50 mesh)	Teejet	30	2.07	0.520	102.9	85.7	64.3	51.4	36.7	962	802	601	481	344
			40	2.76	0.600	118.8	99.0	74.3	59.4	42.4	1111	926	694	555	397
		Albuz	50	3.45	0.671	132.8	110.7	83.0	66.4	47.4	1242	1035	776	621	444
			60	4.14	0.735	145.5	121.2	90.9	72.7	52.0	1360	1134	850	680	486
05881	8008VS (50 mesh)	Teejet	30	2.07	0.693	137.2	114.3	85.7	68.6	49.0	1283	1069	802	641	458
			40	2.76	0.800	158.4	132.0	99.0	79.2	56.6	1481	1234	926	741	529
			50	3.45	0.894	177.1	147.6	110.7	88.5	63.2	1656	1380	1035	828	591
			60	4.14	0.980	194.0	161.7	121.2	97.0	69.3	1814	1512	1134	907	648
14414	XR8010SS	Teejet	30	2.07	0.866	171.5	142.9	107.2	85.7	61.2	1603	1336	1002	802	573
			40	2.76	1.000	198.0	165.0	123.8	99.0	70.7	1851	1543	1157	926	661
			50	3.45	1.118	221.4	184.5	138.4	110.7	79.1	2070	1725	1294	1035	739
			60	4.14	1.225	242.5	202.1	151.6	121.2	86.6	2267	1889	1417	1134	810
	80125		30	2.07	1.083	214.3	178.6	134.0	107.2	76.6	2004	1670	1253	1002	716
			40	2.76	1.250	247.5	206.3	154.7	123.8	88.4	2314	1928	1446	1157	826
			50	3.45	1.398	276.7	230.6	172.9	138.4	98.8	2587	2156	1617	1294	924
			60	4.14	1.531	303.1	252.6	189.5	151.6	108.3	2834	2362	1771	1417	1012
14415	XR8015SS	Teejet	30	2.07	1.299	257.2	214.3	160.8	128.6	91.9	2405	2004	1503	1202	859
			40	2.76	1.500	297.0	247.5	185.6	148.5	106.1	2777	2314	1736	1388	992
			50	3.45	1.677	332.1	276.7	207.5	166.0	118.6	3105	2587	1940	1552	1109
			60	4.14	1.837	363.7	303.1	227.3	181.9	129.9	3401	2834	2126	1701	1215
	8020		30	2.07	1.732	342.9	285.8	214.3	171.5	122.5	3207	2672	2004	1603	1145
			40	2.76	2.000	396.0	330.0	247.5	198.0	141.4	3703	3086	2314	1851	1322
			50	3.45	2.236	442.7	369.0	276.7	221.4	158.1	4140	3450	2587	2070	1478
			60	4.14	2.449	485.0	404.2	303.1	242.5	173.2	4535	3779	2834	2267	1620

Assembly & Installation

Step 1 - Remove parts from box.

- Prepare a good sized area that is free from clutter/dirt to set out the parts.
- NOTE : Please reference Appendix #3 for the parts breakdown.

Step 2- Assemble frame.

- Bolt frame pieces together so the breakaway catches (see arrow on Fig 1) face outwards.
- Attach hitch to frame with four bolts.

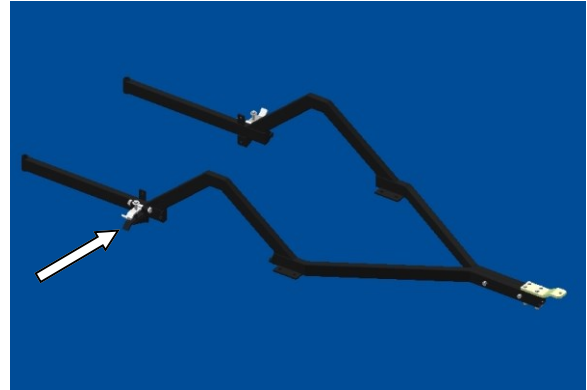


Fig 1 - GY3000 Frame

Step 3 - Attach HD wheels to front axle, attach axle to frame.

- Bolt the heavy duty wheels to the front axle assembly.
- Attach front axle assembly to the frame.

NOTE : There are only two heavy duty wheels in the box. They can be identified by their bushings and weight.

NOTE : Ensure jam nut is tightened against the frame but allows the wheel to spin.



Fig 2 - Front Axle

Step 4 - Attach Rear Frame Bar.

- Attach rear bar to rear of the frame. Orient the red scalping wheels towards the rear of the machine.

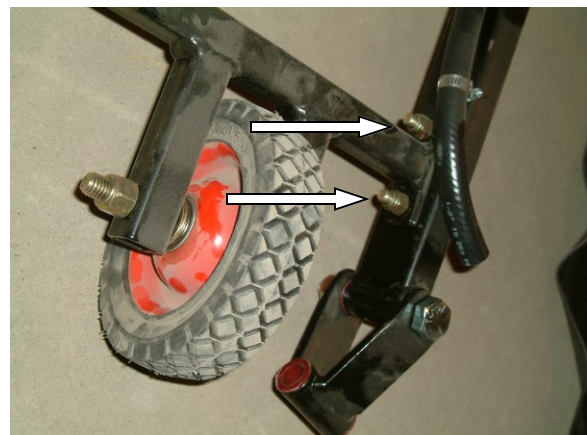


Fig 3 - Rear Frame Bar

Step 5 - Install the front shroud and airfoil.

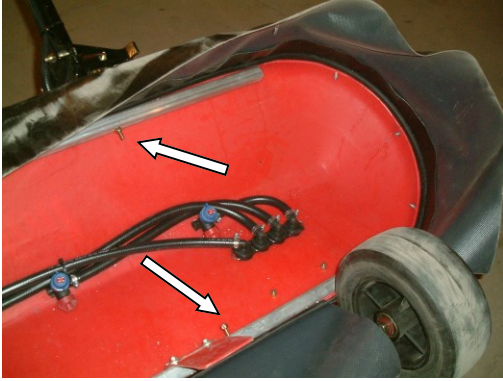


Fig 4 - Underside center shroud



Fig 5 - Airfoil Standoffs

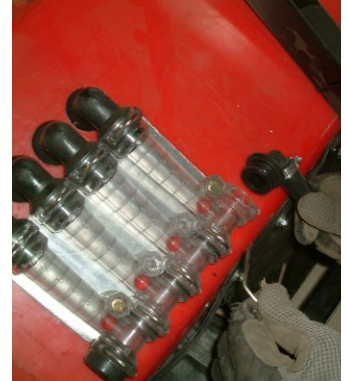


Fig 6 - Flow Indicator Hook-up

- Turn entire frame upside down (sawhorses are helpful)
- Place longest shroud in behind front wheels so that the flow monitor faces towards the hitch.
- Insert four bolts into shroud through the outside and secure with nuts. (Fig 4 - arrows)
- Turn frame over. Attach airfoil to top of shroud with cut edge towards the front of the sprayer. Use longer bolts and longer white airfoil standoffs for all 6 holes, front and back. Use washers on top of the airfoil, and between the shroud and nut. (Fig 5)
- Attach hose to flow monitors. Plug in, then insert bent clip to secure hose. (Fig 6)

Step 6 - Attach the vertical uprights.

- Attach two bolts to each upright. Secure nuts to the inside of the frame.



Fig 7 - Vertical uprights

Step 7 - Assemble the Wing Shrouds

Step 7a - Attach wheels

- Bolt in wheels to left and right wing sections. Adjust jam nut so the wheels spin freely.



Fig 8 - Wheel install

Step 7b - Attach Airfoil

- Longer bolts, longer airfoil standoffs and notched end of airfoil are all orientated towards the front of the sprayer. Use shorter bolts for the rear.

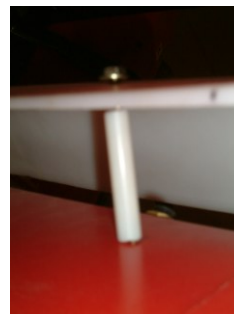


Fig 9 - Airfoil Standoffs



Fig 10 - Breakaway catch



Fig 11 - Hose connection

Step 7c - Connect Wings to Frame

- Use existing bolts to attach wings to the pivots on the main frame. Then put the other end into the breakaway catch. This may require some force.

Step 7d - Connect Hoses

- Make sure the hoses on the wings are connected to the frame.

Testing After Assembly

After assembling the spray boom, check for field readiness. Points to consider are:

- a) Remove the nozzle body caps with the spray tips and the tip screens. Flush the entire system with clear water. Install the tip screens and nozzle caps with spray tips. Check for proper alignment of the nozzle caps. Pressure test all the booms inspecting hose connections, nozzle caps, spray pattern and diaphragm nozzle bodies.
- b) Move all hinge or swivel joints through the full arc of movement. Check for interference, ease of movement.
- c) Check all fasteners to see that they are tightened firmly, or allowed to pivot if required.
- d) Calibrate the sprayer.

Last Check

- ⇒ Recheck all assembled parts for completeness and secure connections.
- ⇒ Your sprayer is now ready for a wet test, to ensure complete operation.

Operation

Due to the number of different systems available, pump, tank and valve operation will vary. Please consult the manufacturer's guide for support in running these systems.

The GY3000 has three hoses that can be connected to the spraying system. They can be configured to either supply each boom individually or by purchasing an adaptor, run all three hoses to one feed.

Vertical Wing Uprights

The GY3000 is equipped with vertical wing uprights that reduce the width of the sprayer. Simply lift the wing up and secure it with the supplied D-clips.

Breakaway Operation

Should the wing hit a large or fairly heavy object on the field, the wing will pivot back out of the way. Stop and shut off the sprayer immediately. Reset the boom manually after such an incident. Swing the boom forward and the catch mechanism will lock the boom in place.

NOTE - Be aware of all pinch points while the boom is being reset.

NOTE - Always check for any damage to the boom in case of an accident/breakaway.

Maintenance

- Check regularly that all fasteners are tight and secure.
- See the General Spraying Information section of this manual.
- Check wheel bearings every 10 hours and adjust if required. Check more often in rougher situations.
- It is recommended that any maintenance intervention, in particular welding, shall only be undertaken after the spray boom has been thoroughly rinsed. For center and wing frame cases the frame should be removed from the shroud to eliminate possible burning of the plastic.

General Maintenance

Cleaning

Sprayers need to be cleaned to prevent corrosion and cross contamination of chemicals. Trace amounts of one chemical can react with another or carry over to the next spraying and cause crop damage, especially with pesticides. Long exposures with even small amounts of some chemicals can damage sprayer components either by corrosion or gum deposits. If you spray crops that are very susceptible to injury from the last chemical used (ie vegetables, turf, and ornamentals) clean the unit especially well.

Always try to end the day with an empty tank; avoid contamination of water supplies and injury to plants or animals. Do not make puddles that might be accessible to children, pets, farm animals, or wildlife. Flush with clean water preferably after each day's operation. If you plan to use the same material over several days most chemicals may be kept in the tank overnight, labels on the chemical usually indicates which may not. Rinse the outside of the sprayer. Surfactants combined with chemicals, when they are compatible, will provide some cleaning action in the sprayer.

Some chemical combinations (especially if oil is used) may produce a putty type paste (buttering out) in the sprayer tank and components; flushing with water after each load may prevent an accumulation. If water alone does not dissolve and remove the buildup, add solvent, kerosene, or other low flammable solvent; allow paste to dissolve, then agitate and flush. Next, flush with detergent and finally with clean water. Check with your chemical agent.

Whenever pesticides are changed, or before sprayer storage, clean sprayers thoroughly with a cleaning solution. The solution used depends on the chemical to be removed from the sprayer. Check the chemical label for cleaning instructions.

First flush with water, then add the cleaning solution to the tank and thoroughly agitate before flushing. Always flush with clean water to remove the cleaning solution. Remove nozzle tips and screens; clean them in a strong detergent solution or kerosene, using a soft brush such as an old toothbrush. Never use a metal probe to clean the orifice of a spray tip!

Follow the same safety precautions during cleaning as for applications. Use a respirator, rubber gloves, or other protective gear as may be directed by label instructions.

If a nozzle becomes blocked, turn the sprayer off. Note that the spray lines could still be pressurized therefore prior to removing the cap on the nozzle body, proper safety equipment should be worn, (ie gloves, eye protection, etc).

Sunshine

Many plastic sprayer parts are degraded by ultra violet light, especially the nozzle flow indicators. Store the sprayer in the shade to extend the length of service.

Winterizing

After the sprayer is thoroughly cleaned, put 2-5 gallons (7-19 liters) of rust inhibitor or antifreeze in the tank prior to the final flushing to help prevent corrosion. As the water is pumped from the sprayer, the antifreeze will leave a protective coating on the inside of the tank, pump, and plumbing. Remove nozzle tips, screens and no-drip valves (if used) and store them in a can of light oil such as diesel fuel or kerosene to prevent corrosion. Close nozzle openings with tape to prevent dirt, insects, mice, or other contaminants from entering.

During the final cleaning, completely check the sprayer. Look at the hoses, clamps, connections, nozzle tips, and screens for needed replacements. Store the sprayer in a reasonably clean and dry building.

Trouble Shooting

Leaking Nozzles

If 1 or 2 tips drip until the line is empty, check:

For deteriorated diaphragms

- ⇒ For material under the diaphragm
- ⇒ For a weak spring
- ⇒ For a deterioration of the diaphragm sealing surface

If all tips spray for more than 3 seconds after shut off, check:

- ⇒ To see if the sprayer shut off valve is leaking

If all tips spray for less than 3 seconds after shut off, check:

- ⇒ For air accumulation in the line
- ⇒ For swelling of the feed hoses

If the diaphragm leaks out the diaphragm spring body, check:

- ⇒ For loose spring body
- ⇒ For ruptured diaphragms
- ⇒ For misaligned diaphragm
- ⇒ For broken diaphragm body

Wheel Bearing Failure

Check wheel bearings daily. If excessive wear is found, replace bearings. If bearings are too tight load will reduce their life, if too loose, hammering will reduce life.

Wing Breaks Away Too Easily

Adjust the bolt on the top of the spring, tightening the bolt adds tension making it more difficult to breakaway.

Spray Hitting End of Boom/Curtain

The spray booms are designed for true 80° spray tips. If spray is dripping off the end of the curtains, 110° tips may be incorrectly installed. Remove these and install true 80° tips such as AXI80° tips.

Tracking

The weight of the prime mover and in extreme situations, the wing wheels, will modify the turf and cause it to absorb more fertilizer or chemical. Some fertilizers and fungicides are very susceptible while others are not. The track will disappear within a few days.

Stripping

At end of Shroud – check:

- ⇒ If tips are spraying at a greater angle than 80°.
- ⇒ High tip pressure, over 40psi (2.8 Bar), will cause a wider spray pattern by extending the spray pattern angle.

Between Tips – check:

- ⇒ Low tip pressure will cause a narrower pattern. Actual tip pressure should be as close to 40 psi (1.7 - 2.8 bar) as possible.
- ⇒ Check tip screens to see if they are plugged.

Blocked Nozzles

If a nozzle becomes blocked, turn the sprayer off and completely fold up the spray boom (ie fold into transport position). Note that the spray lines could still be pressurized. Therefore prior to removing the cap on the nozzle body, proper safety equipment should be worn, (ie gloves, eye protection, etc).

Frame Assembly

Parts List

IT	QT	PART#	DESCRIPTION
1	24	00956	NUT, NYLOCK 3/8NC, PLD
2	2	00957	WASHER, FLAT, 3/8" PLD
3	4	00963	NUT, NYLOCK, 1/2NC, PLD
4	8	00966	BOLT, 1/4NCx2.5, PLD
5	28	00968	NUT, NYLOCK 1/4" PLD
6	4	00976	WASHER FLAT 1/2 PLD
7	2	01051	NUT, NYLOCK, 5/8NC, PLD
8	6	01070	BOLT, 1/4NCx2, PLD
9	29	01157	WASHER FLAT, 1/4"
10	4	01313	NUT, 5/8"NC, PLD
11	2	01319	PIN STL SQ. LCK 1/4x2-1/2
12	2	01504	FLEXSHIELD HANGER 117"
13	2	04925	WHEEL LAWN/GARDEN 6"
14	2	05398	BOLT, 1/2"x3.5", PLD
15	2	05401	BOLT, 1/2"x4.5", PLD
16	8	05431	BOLT, 3/8"x1", PLD
17	8	05435	BOLT, 3/8"x2", PLD
18	2	05436	BOLT, 3/8"x2.5", PLD
19	4	05437	BOLT, 3/8"x3", PLD
20	2	05438	BOLT, 3/8"x3.5", PLD
21	4	05456	BOLT, 5/8"x4", PLD
22	2	05460	BOLT, 5/8"x6", PLD
23	4	12387	BOLT, 5/8"x5", PLD
24	2	13553	PIVOT BUSHING
25	4	13709	NUT, JAM 5/8NC, PLD
26	4	13801	SPACER WHEEL 3/4" BRG
27	4	14099	BUSHING IG, .75x.625x1" w/flg
28	16	14127	BUSHING, IG, 3/4x5/8x1/2
29	2	14475	WHEEL POLY LD
30	2	14477	WHEEL POLY ASSY 3/4ID
31	1	14786	AXLE ASSEMBLY GY3000
32	1	14803	MAIN FRAME GY LEFT
33	1	14804	MAIN FRAME GY3000 RIGHT
34	2	14807	BREAKAWAY ASSEMBLY
35	2	14810	WING PIVOT ASSEMBLY
36	1	14814	R BRACE WHEELS
37	2	14815	WING BRACE UPRIGHT
38	2	14818	WING BRACE ASSEMBLY
39	1	14823	WING FRAME GY3000 L
40	1	14824	WING FRAME GY3000 R
41	1	14825	HITCH PLATE

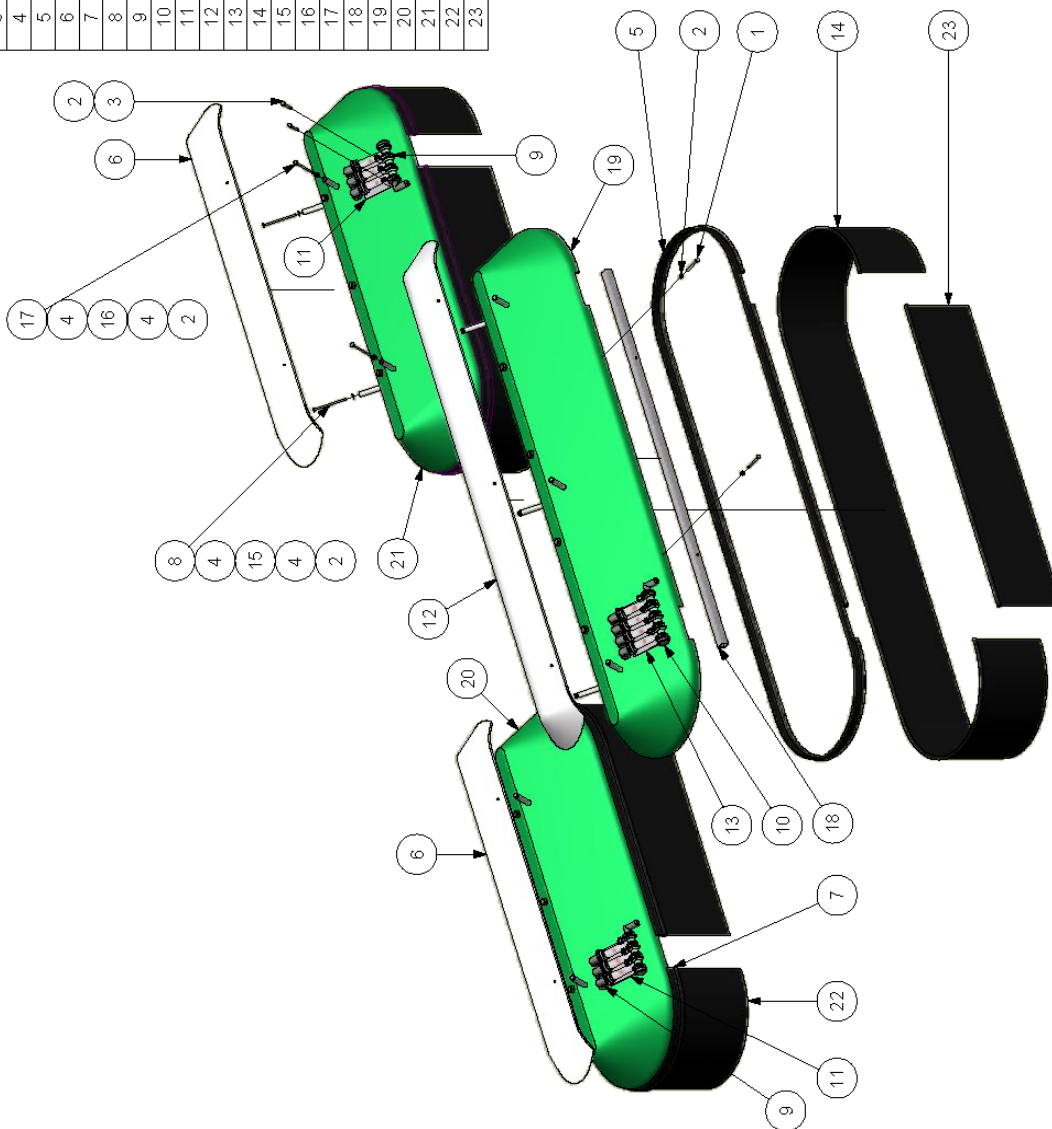
Exploded view diagram of the Frame Assembly. The diagram shows the main frame structure, including the main frame left (32) and main frame right (33). It also shows the wheels (29, 30), axles (31), and various connecting components like bolts (21, 22, 23, 24, 25, 26, 27, 28), nuts (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41), and washers (11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41). The diagram is a technical drawing showing the assembly of the frame.

Rogers Sprayers

DATE	12/06/2009
PROJECT	GY3000
REVISION #	
TITLE	GY3000 Frame
DWG NO	
SCALE	
MATERIAL	
SIZE	A

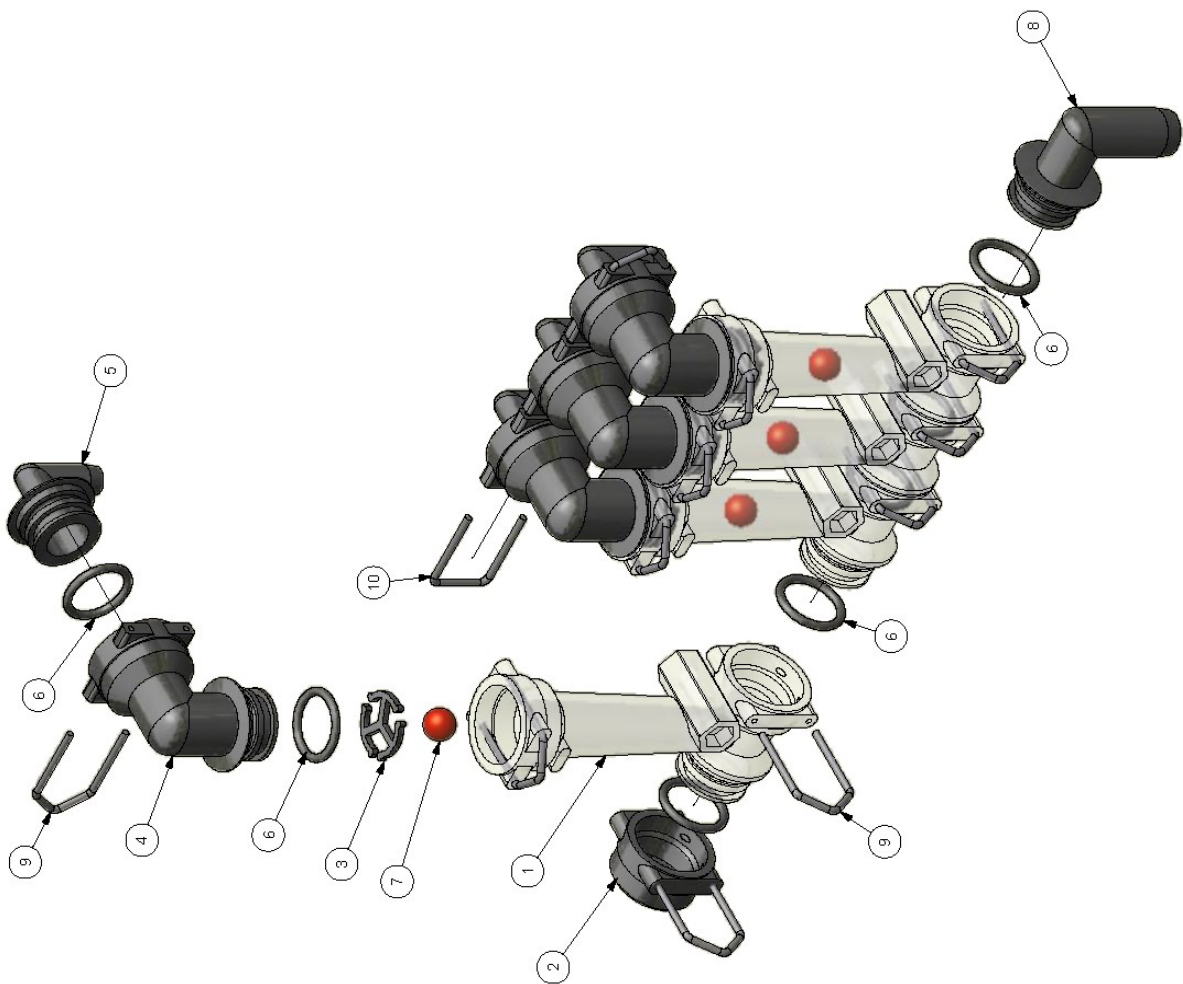
Shroud Assembly

Parts List			
ITEM	QTY	PART#	DESCRIPTION
1	8	00966	BOLT, 1/4NCx2.5, PLD
2	28	00968	NUT, NYLOCK 1/4" PLD
3	6	01070	BOLT, 1/4NCx2, PLD
4	29	01157	WASHER FLAT, 1/4"
5	1	01395	FLEXISHIELD HANGER, 163"
6	2	01500	AIRFOIL 48" w/holes
7	2	01504	FLEXISHIELD HANGER 117"
8	7	05415	BOLT, 1/4NCx4, PLD
9	2	11977	FLOW INDICATOR 3 COLUMN
10	1	11978	FLOWMONITOR ASSY HP CTR 4 COL
11	2	13402	PLATE BACK FLOWMONITOR WING
12	1	13483	AIRFOIL, 68"
13	1	14053	PLATE, BACKING 4 COLUMN FLOWMETER
14	1	14275	FLEXISHIELD 9.625" x 11"
15	7	14843	AIRFOIL STANDOFF BACK CPVC
16	7	14844	AIRFOIL STANDOFF FRONT CPVC
17	7	14845	BOLT, 1/4NCx4.5, PLD
18	2	14974	FRAME CENTER SHROUD GY
19	1	15067	SHROUD LP 60 GRN GY3000
20	1	15068	SHROUD LP 40 GRN GY3000 L
21	1	15069	SHROUD LP 40 GRN GY3000 R
22	2	15072	FLEXISHIELD 9.625" x 11"
23	1	15074	FLEXISHIELD 9.625" x 42"



DRAWN: Peter Frederiksen	Rogers Sprayers	
DATE:	TITLE	
02/06/2009	G\3000 Stroud Assy	
PROJECT:	DWG NO	
G\3000		
REVISION #		
	SCALE	MATERIAL SIZE

Center Flow Indicator #11978



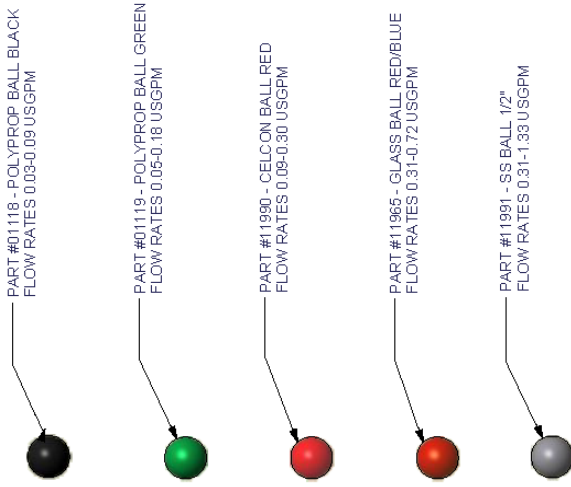
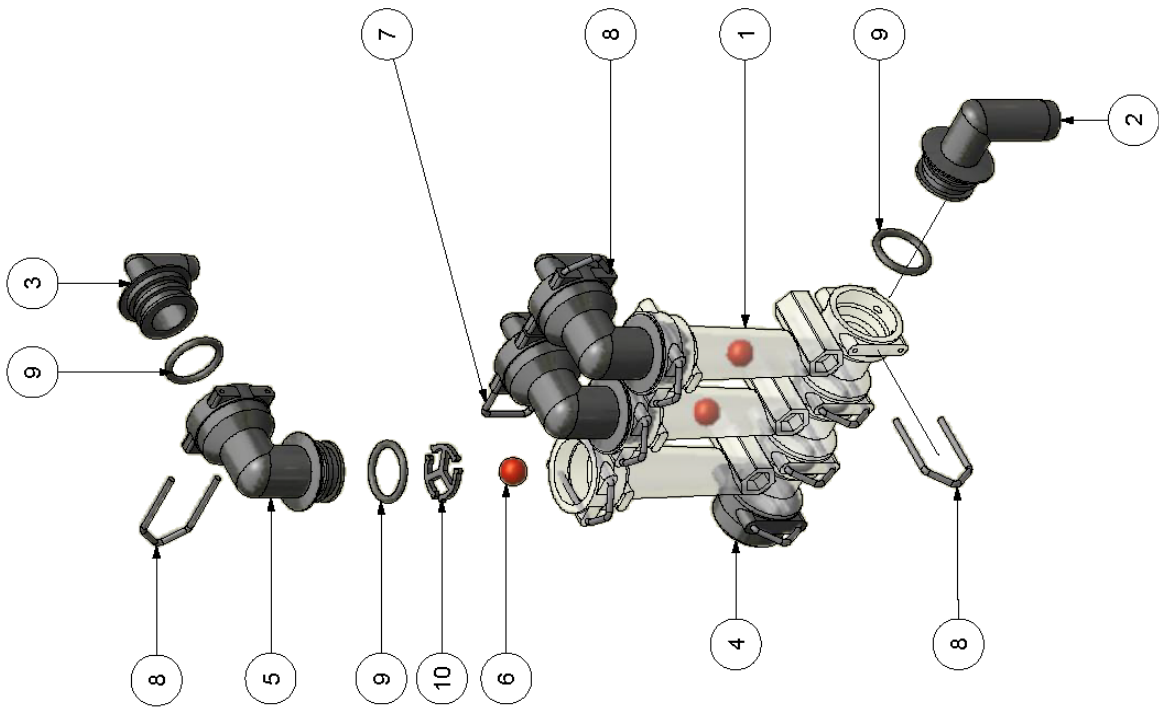
Parts List		
ITEM	QTY	DESCRIPTION
1	4	FLOWMONITOR ORC BODY
2	1	FTG POLY ORC CAP
3	4	ORC BALL RETAINER
4	4	FTG POLY ELB ST MORC x FORC
5	4	FTG POLY ELB MORC x 1/2HB
6	13	O-RING ORC
7	4	BALL FI GLASS 0.31-0.72 USGPM
8	1	FTG POLY ELB MORC x 3/4HB
9	11	ORC CLIP A STYLE
10	2	ORC CLIP FLAT

ROGERS SPRAYERS INC.		
DRAWN: J. BELINSKI	TITLE: FLOWMONITOR HP CTR 4 COL.	
DATE: 10/05/2004	DWG NO: 11978	
LOCATION: PLUMBING	SCALE: BEST FIT	
REVISION #	MATERIAL: A	SIZE: A

Wing Flow Indicators #11977

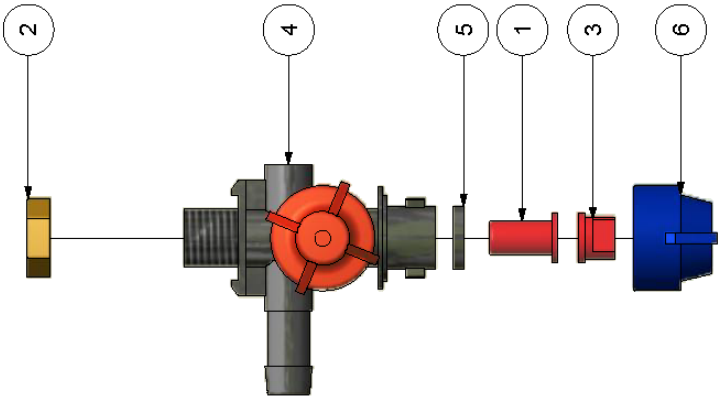
Parts List

ITEM	QTY	PART#	DESCRIPTION
1	3	00889	FLOWMONITOR ORC BODY
2	1	00905	FTG POLY ELB. MORC x 3/4HB
3	3	00906	FTG POLY ELB MORC x 1/2HB
4	1	00909	FTG POLY ORC CAP
5	3	01115	FTG POLY ELB ST MORC x FORC
6	3	11965	BALL FI GLASS 0.31-0.72 USGPM
7	1	11976	ORC CLIP FLAT
8	9	11976a	ORC CLIP A STYLE
9	10	11984	O-RING ORC
10	3	11989	ORC BALL RETAINER



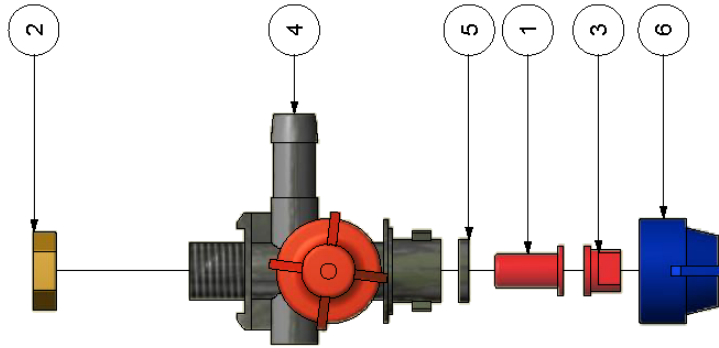
DRAWN: J. BELINSKI		Rogers Sprayers	
DATE:	22032006	TITLE:	FLOW INDICATOR 3 COLUMN
PROJECT:	PLUMBING	DWG NO:	11977
REVISION #		SCALE:	1/8
		MATERIAL:	SIZE: A

Nozzle Bodies Left & Right (#14299) (#14298)



PART # 14299

Parts List		
ITEM	QTY	DESCRIPTION
1	1	04720 SCREEN, TIP 50 MESH
2	1	12362 NUT BRASS, 11/16"
3	1	14061 TIP, AXI8004, RED
4	1	14282 NOZZLE BODY, TJ15L
5	1	14284 SEAL NOZZLE CAP, TJ
6	1	14288 CAP TJ-NB BLUE

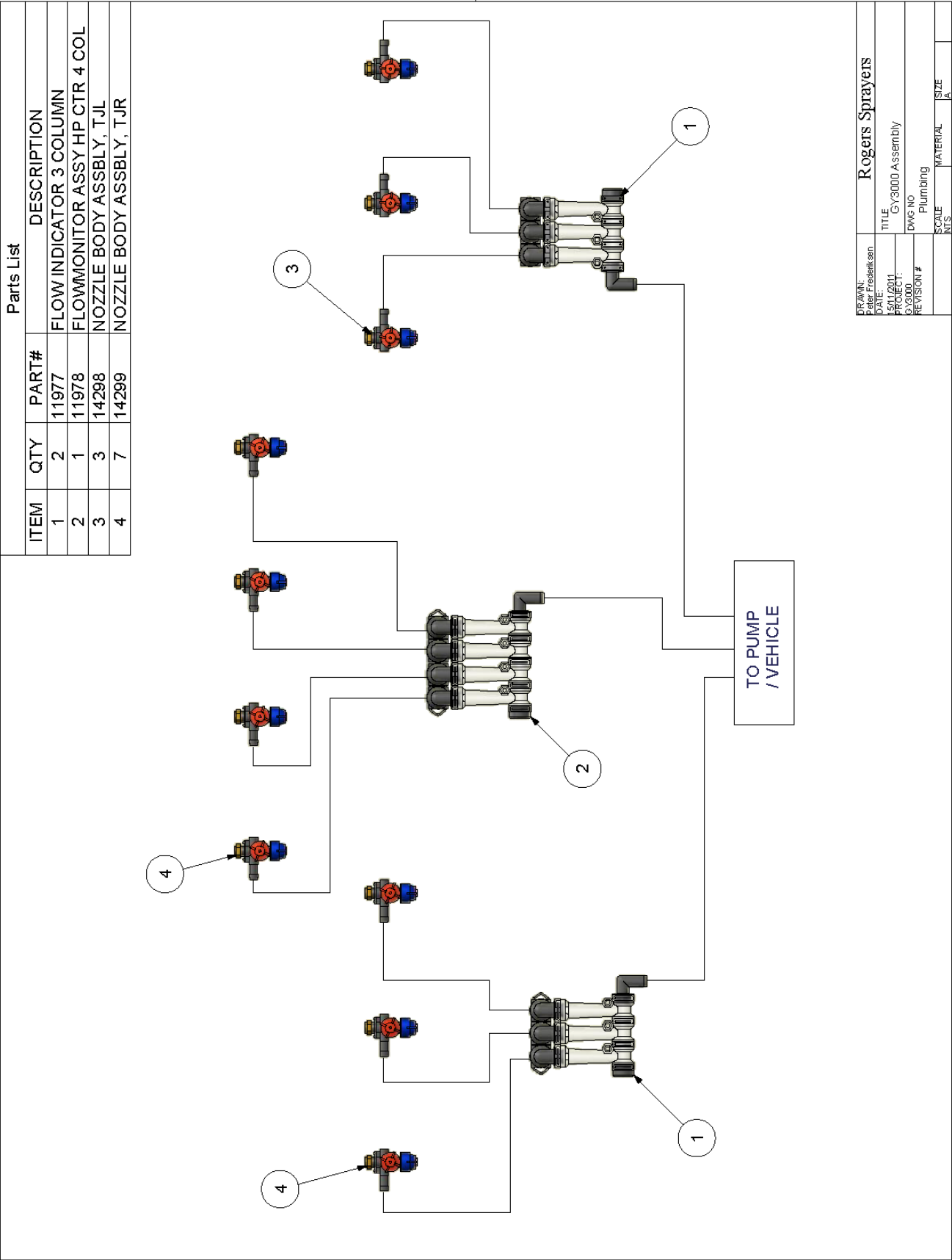


PART #14298

Parts List		
ITE	QTY	DESCRIPTION
1	1	04720 SCREEN, TIP 50 MESH
2	1	12362 NUT BRASS, 11/16"
3	1	14061 TIP, AXI8004, RED
4	1	14281 NOZZLE BODY, TJ15R
5	1	14284 SEAL NOZZLE CAP, TJ
6	1	14288 CAP TJ-NB BLUE

DRAWN: J. BILINSKI		Rogers Sprayers	
DATE:	02/11/2005	TITLE	NOZZLE BODY ASSY
PROJECT:	PLUMBING	DWG NO	
REVISION #		SCALE	1/2"
		MATERIAL	SIZE

Plumbing Assembly



DRAWN: J. G. Fedtke		Rogers Sprayers	
DATE: 15/11/2011	TITLE: GY3000 Assembly		
PROJECT: GY3000	DWG NO:		
REVISION #	Plumbing		
SCALE: NTS	MATERIAL:	SIZE: A	

Rogers Sprayers Inc. (RSI)
141 - 105th Street East
Saskatoon, SK S7N 1Z2 Canada



Tel.: (306) 975-0500 or (888) 975-8294
Fax: (306) 975-0499
Email: info@rogerssprayers.com

ROGERS SPRAYERS INC OWNER WARRANTY AGREEMENT

Windfoil Drift Containment Spray Systems (DCSS) are warranted to be free of factory defects under normal and intended use for a period of one (1) year from date of purchase to the original purchaser. Equipment must be setup in accordance with factory instructions and operated, maintained and used in accordance with the operator's manual. Equipment used for rental has a warranty period of forty five (45) days. Any customization or modifications to the original equipment voids warranty immediately.

RSI reserves the right not to warranty any items that are not directly manufactured by RSI. Such components need to be returned to the factory for inspection and tested by either RSI or the original manufacturer for defects. Examples of these parts include actuators, engines, pumps and electrical systems.

All warranty Claims must be pre-authorized by the factory!

To obtain warranty, all defective parts must be returned to the factory; in some cases, location of part might require only photo of defective part. RSI must be contacted to determine which route is required. RSI through its designated dealer or factory appointed representative will repair or replace, at its option, any or all parts that are proven to be defective free of charge.

RSI DOES NOT pay or reimburse for any travel time or investigation time to determine the defective part. Warranty labor will be based on the time required for RSI to replace only the part. Warranty labor rates and replacement times will be assessed yearly and will be included in a labor replacement sheet.

This warranty does not apply to damage caused by misuse, accident, acts of god, and/or operation without proper servicing. RSI will not be responsible for consequential damages; its liability is limited to replacement of parts.

Standard wear components (see list) such as belts, nozzles, screens, bearings, wheels, flow indicator bodies or flow indicator parts are only warranted for 30 days after original purchase.

RSI makes no other expressed, implied or statutory warranty; nor is anyone authorized to make any on our behalf.

Complete your Warranty Registration online at www.rogerssprayers.com

The warranty registration is found on the Contact page of our website. The warranty registration **MUST** be filled out completely and submitted to RSI to activate the warranty. If you would prefer, a printable copy is also available online.

It is our intention to manufacture durable, user-friendly products. Any suggestions you have as to how we may improve our equipment are greatly appreciated.



ROGERS SPRAYERS INC.

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Saskatoon, SK S7N 1Z2
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