Revised August 2013

Serial Number:

BRIGGS IRRIGATION
Operators Manual
& Parts Manual
R40 Hosereel Mounted
Boom Irrigator

Briggs Irrigation
Boyle Road
CORBY
Northamptonshire
NN17 5XU
Tel: 00 44 (0)1536 260338
Fax: 00 44 (0)1536 263972
enquiries@briggsirrigation.co.uk
www.briggsirrigation.co.uk

EC DECLARATION OF CONFORMITY

MANUFACTURER

Briggs (UK) Limited
Boyle Road
Corby
Northamptonshire
NN17 5XU
England

Tel: + 44 (0) 1536 260338
Fax: + 44 (0) 1536 263972
Email: enquiries@briggsirrigation.co.uk
Web: www.briggsirrigation.co.uk

HOSE REEL BOOM MODEL: R40

This machine complies to

BS EN292
Part 2 1991
(89/392/EEC)

Signed on behalf of Briggs (UK) Ltd

CE

……

A M Colwill

Director

This manual covers all variations of the Briggs R40 Hose Reel mounted boom range.

INTRODUCTION

The Briggs R40 Booms have been designed, manufactured and tested for long life and trouble free operation. It is essential to read this manual before operating the Boom and follow the operation and maintenance schedules carefully.

SPECIFICATION

Regulated Pressure:
- 0.66 bar (10psi) ☐
- 1.00 bar (15psi) ☐
- 1.40 bar (20psi) ☐
- 2.00 bar (30psi) ☐

Minimum Requirements - Pressure Settings

15psi for 10psi regulated spray Boom

20psi for 15psi regulated spray Boom

25psi for 20psi regulated spray Boom

35psi for 30psi regulated spray Boom

Nozzle Specifications

	Nozzle Size	No of Nozzles	Flow per Nozzle	Total Flow
Nelson 3000 series 360º Sprayjets / Rotators				
Nelson 3000 series 180º Sprayjets / Rotators centre				
Nelson 3000 series 180º Sprayjets / Rotators end				

Total Flow – gpm…….

m^3/hr…….

TRANSPORT

It is the responsibility of all boom operators to check the regulations applicable in the country and area the machine is being used regarding width, height, and lights.

When transporting on public roads without a width exemption and escort, the second and third section pressure regulators must be removed. The boom sections must be tied together and have wide load safety triangles fitted.

Also care must be taken to allow for the Boom overhang when turning.

Important

Do not exceed 10 km/hr when towing. Excessive speed causes instability due to the Hose Reel rigid chassis design and high centre of gravity.

DIMENSIONS

TOTAL FOLDED LENGTH	5.5 metres
FOLDED WIDTH	3.3 metres
TRACK WIDTH	1.52 - 4.0 metres

ASSEMBLY & COMMISSIONING

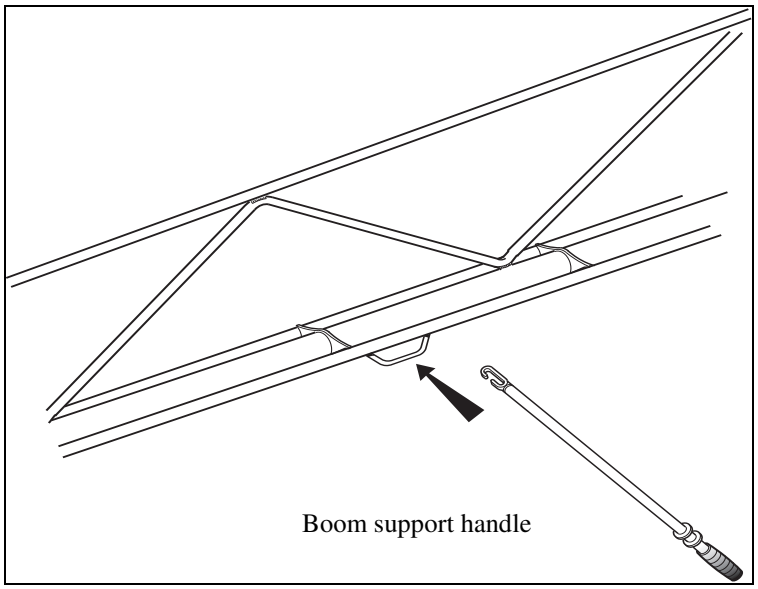
The R40 Hose Reel mounted boom has been fully flushed and pressure tested at the Briggs Irrigation Factory.

Some parts are removed to make transportation of the boom from factory to site both safe and legal. All parts which have been removed have been number matched and should be carefully reassembled on site ensuring the numbers are in the correct order.

For commissioning, position the Hose Reel and Boom for initial setting up as explained below:

POSITIONING THE R40 FOR OPERATION

1. Tow the Hose Reel into the position required to start the irrigation run.
2. Turn the hose drum on the turntable (if fitted) to line up with the centre of the irrigation run (see photograph on page 6).
3. Set the wheel track of the boom. This is done manually by loosening the locking bolts and sliding the wheel mounting legs out to the desired position. The locking bolts must be done up tightly to ensure there is no movement during the course of the run. The wheels can be set to span up to a width of 4m.
4. Lower the boom by operating the Hose Reel hydraulic leg/lift frame system.
5. Set Hose Reel for 'pull out position'.
6. Open Boom support bracket on Hose Reel, unfold the first Boom section only and lock securely in position. Note the sections should be supported as they are opened. This process can now be repeated for the opposite side - see page 7, actions 1 (right hand sections) & 2 (left hand sections). Use the boom support handle to open the sections (see below). This enables the operator to hold and support the sections throughout the opening process.



7. Connect the tractor to the towing out bar on the boom and pull out the hose at a constant speed not exceeding 3km/h.
8. Once pulled out, remove the tractor and move at least 6m to provide sufficient clearance for opening the boom sections.
9. Lower the boom support leg on the highest 1st section (see page 7 and follow actions 3 & 4 or 5 & 6).
10. Open the 1st section boom support bracket on this side and unfold the second section, locking it in place (action 7 for the RH side of the boom or 10 for the LH side). Again use the boom support handle to support the sections throughout the opening process. Repeat for the third (actions 8 or 10) and end sections (action 9 or 11).

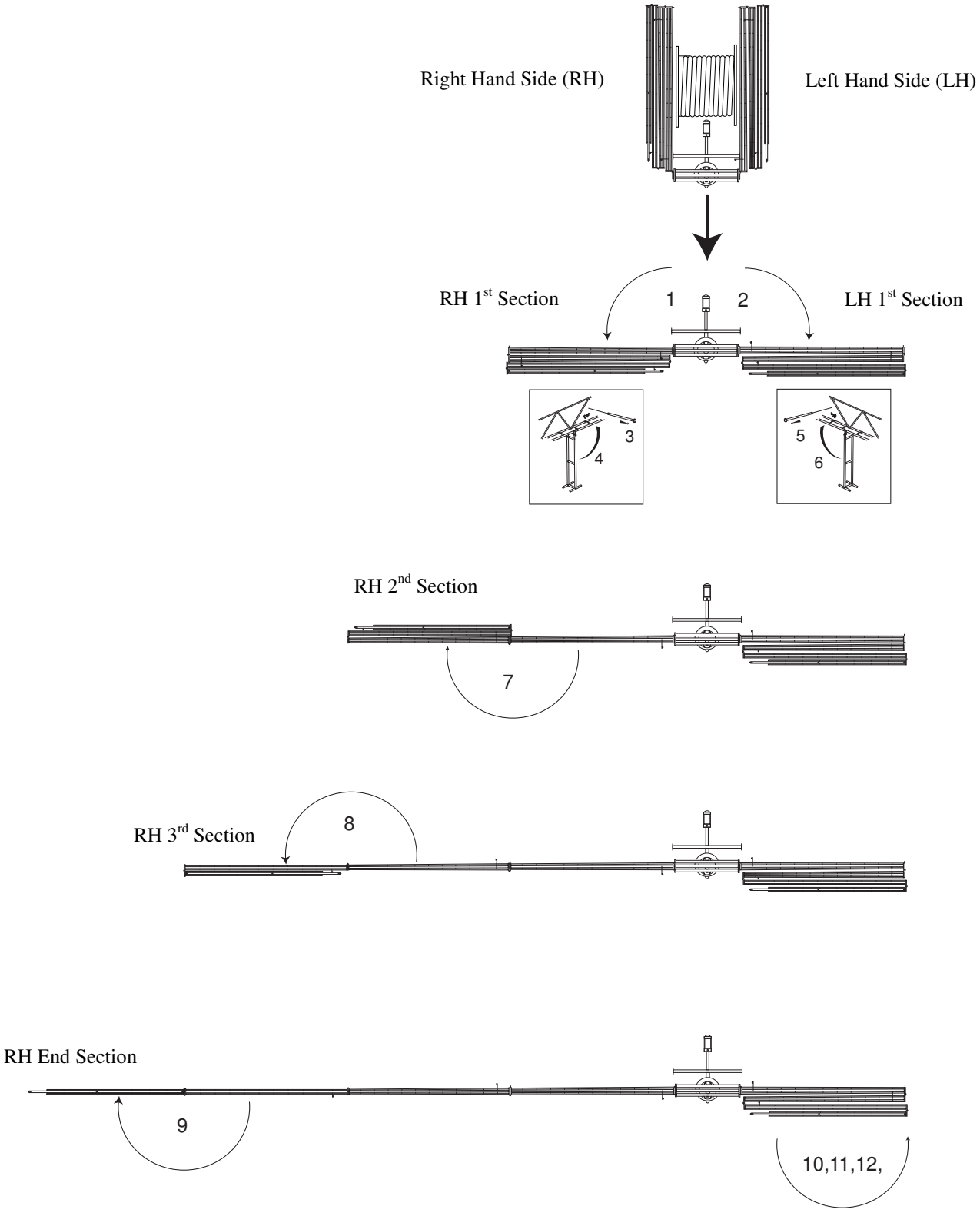
11. Repeat for the opposite side of the boom (actions 10, 11, 12 for the LH sections or 7, 8, 9 for the RH sections).
12. Raise the boom support leg and lock in place on the R40 1st section with the pin and spring clip provided.
13. The quadrant locking system allows the Boom to be set at any angle in relation to the direction of the run to suit angled headlands. If starting a run with the Boom angled to suit a headland, ensure that it is set to the finishing headland in good time so that an end section does not protrude over a road or a track. Note the position of the 180º spray jet on the centre section must face away from the Hose Reel to avoid watering in front of the Boom.

The boom is now ready for operation. Slowly open the hydrant, Hose Reel valves and start the pump. Engage the Hose Reel drive and set the wind in speed (see pages 13 and 14) for the Hose Reel wind in Speed charts.

Setting up for Work – Pulling Out

R40 Unfolded Ready for Operation

Unfolding and Folding Procedures for the R40



FOLDING THE R40

1. Lower the boom support legs on both first sections (Page 7, actions 3 to 6)
2. Fold the outer section (end section) on the lower side of the Boom (action 9 for the Right Hand side or 12 for Left Hand side) into the third section and lock in the boom support bracket. Note it is important to use the boom support handle to support the section during the folding operation. Repeat for the third (either 8 or 11) and second sections (either 7 or 10) on the same side of the boom.
3. Repeat this on the other side of the irrigator (actions 9, 8, 7 for the Right Hand sections or 12, 11, 10 for the Left).
4. Raise the boom support legs and lock into position on the 1st sections (actions 3 to 6).
5. If necessary, turn the hose drum on the Hose Reel turntable to line up with the centre of the boom.
6. Fold the first section around the Hose Reel and clamp into the Hose Reel Boom support bracket (action 2). Repeat for opposite side (action 1)
7. Raise the boom using the hydraulic system on the hosereel.
8. If you are moving to another irrigation run, the boom can be transported at 90 degrees to the direction of travel. If you are moving to another field you must rotate the drum so that the hosereel and boom are in the road transport position.

MAINTENANCE

1. Grease the turntable weekly.
2. Grease the rear wheel bearings weekly and repack / adjust annually.
3. Grease the front wheel acetyl bushes weekly on both sides, rotate wheel while greasing.
4. Grease front wheel steering king pin weekly.
5. Ensure Boom support brackets are holding the Boom centrally. Adjust if necessary.
6. Boom locking joint tension must be checked regularly and is adjusted by slackening the locking bolt and turning the offset catch cam. Keep regularly greased for ease of operation.

RISKS AND PRECAUTIONS

- Ensure all locking pins are fully closed on the boom support brackets when transporting or pulling out the boom.
- Always transport the boom with great caution both on the road and in the field.
- Always secure Booms together with ropes or straps, together with the turntable pin when moving on public roads.
- Watch out for turning clearance of the Boom section when manoeuvring around vehicles or any other objects.
- When operating with obstacles in the field (poles etc) ensure the operator is present to “rotate” the Boom around the obstacle.
- If starting a run with the Boom angled to suit a headland, ensure it is set to the finishing headland angle in good time so an end section does not protrude over a road or track.

10psi Spray Head Performance Chart IMP GPM (*M³/hr)*

3TN Nozzle Sizes (Revised 29/04/99)

Base psi	**#24**	**#25**	**#26**	**#27**	**#28**	**#29**	**#30**	**#31**	**#32**	**#33**	**#34**
Colour	red	red	white	white	blue	blue	dark brown	dark brown	orange	orange	dark green
10	2.64 (0.72)	2.86 (0.78)	3.1 (0.85)	3.34 (0.91)	3.58 (0.98)	3.84 (1.05)	4.11 (1.12)	4.38 (1.2)	4.66 (1.27)	4.96 (1.35)	5.25 (1.43)
Base psi	**#35**	**#36**	**#37**	**#38**	**#40**	**#42**	**#44**	**#46**	**#48**	**#50**	
Colour	dark green	purple	purple	black	dark turquoise	mustard	maroon	cream	dark blue	copper	
10	5.56 (1.52)	5.88 (1.61)	6.2 (1.7)	6.53 (1.78)	7.23 (1.97)	7.93 (2.17)	8.7 (2.4)	9.4 (2.57)	10.3 (2.81)	11.12 (3.04)	

20psi Spray Head Performance Chart IMP GPM (*M³/hr)*

3TN Nozzle Sizes (Revised 29/04/99)

Base psi	**#24**	**#25**	**#26**	**#27**	**#28**	**#29**	**#30**	**#31**	**#32**	**#33**	**#34**
Colour	red	red	white	white	blue	blue	dark brown	dark brown	orange	orange	dark green
20	3.7 *(1.01)*	4.0 *(1.1)*	4.4 *(1.19)*	4.7 *(1.28)*	5.1 *(1.39)*	5.4 *(1.48)*	5.8 *(1.59)*	6.2 *(1.83)*	6.6 *(1.81)*	7.1 *(1.93)*	7.5 *(2.05)*
Base psi	**#35**	**#36**	**#37**	**#38**	**#40**	**#42**	**#44**	**#46**	**#48**	**#50**	
Colour	dark green	purple	purple	black	dark turquoise	mustard	maroon	cream	dark blue	copper	
20	7.9 *(2.16)*	8.3 *(2.27)*	8.9 *(2.42)*	9.4 *(2.56)*	10.4 *(2.84)*	11.6 *(3.15)*	12.7 *(3.45)*	13.9 *(3.78)*	15.2 *(4.13)*	16.4 *(4.74)*	

30 PSi Spray Head Performance Chart IMP GPM (*M³/hr)*

3TN Nozzle Sizes (Revised 29/04/99)

Base psi	**#24**	**#25**	**#26**	**#27**	**#28**	**#29**	**#30**	**#31**	**#32**	**#33**	**#34**
Colour	red	red	white	white	blue	blue	dark brown	dark brown	orange	orange	dark green
30	4.6 *(1.24)*	4.9 *(1.34)*	5.3 *(1.46)*	5.7 *(1.56)*	6.2 *(1.7)*	6.7 *(1.82)*	7.1 *(1.94)*	7.6 *(2.06)*	8.1 *(2.22)*	8.7 *(2.36)*	9.2 *(2.51)*
Base psi	**#35**	**#36**	**#37**	**#38**	**#40**	**#42**	**#44**	**#46**	**#48**	**#50**	
Colour	dark green	purple	purple	black	dark turquoise	mustard	maroon	cream	dark blue	copper	
30	9.7 *(2.65)*	10.2 *(2.78)*	10.9 *(2.97)*	11.5 *(3.14)*	12.8 *(3.49)*	14.2 *(3.86)*	15.5 *(4.23)*	17.0 *(4.63)*	18.6 *(5.06)*	20.1 *(5.47)*	

3000 SERIES PIVOT PRODUCTS

S3000 Spinner

Gentle, rain-like droplets - ideal for sensitive soils and crops.

- Very low pressure operation
- Excellent uniformity
- Good wind-fighting capability

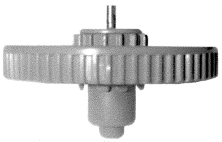
3/4" adapter

3TN Nozzle

Spinner Body

Spinner Plates

Spinner Cap Assembly

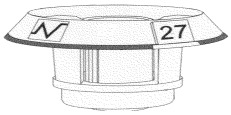


FASTER, EASIER NOZZLE CLEANING AND CHANGING:
A quick change adapter allows removal of the sprinkler for easy cleaning of a plugged nozzle without tools and without shutting down the system

NEW "USER FRIENDLY" PACKAGING SYSTEM:

Nelson 3000 Series sprinklers and 3TN nozzles are packaged for faster, easier and more accurate installation in the field.

NOZZLE SIZE (128th inch increments)
(eg 27/128th inch orifice size)



COLOUR STRIPE
(odd numbered nozzles have a colour stripe of the next size)

NELSON

NELSON BLUE TOP PRESSURE REGULATORS

Precision Accuracy in tough field environments

FEATURES:

PATENTED DAMPING SYSTEM
The patented O-Ring Dampening System of all Nelson Pressure Regulators handles severe pressure surges, without creating flow restrictions under working pressures.

EXTENDED FLOW RANGE
The Nelson Lo-Flo Pressure Regulator extends to 10 gpm, providing economical precision.

EXTENDED ACCURACY
Precision components coupled with an internally lubricated o-ring minimize frictional drag and hysteresis.

PLUG RESISTANT DESIGN
An open seat design prevents hair-pinning, debris hangup and plugging of the pressure regulator.

PRECISION MANUFACTURED
Made of the toughest chemically resistant Materials. 100% water tested for accuracy.

BLUE TOP
Colour-Coded Identification

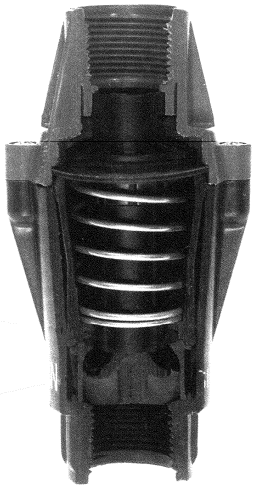
Patented Internal
Dampening System
- Retards Vibration
- Withstands
- Water Hammer

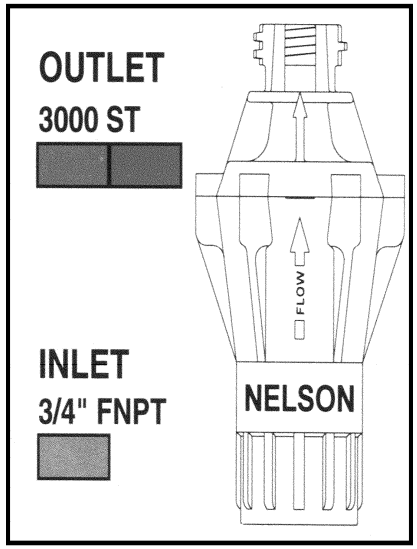
Vented for Below Ground Use

Chemically Resistant Materials

Internally Lubricated O-Ring for Precision Accuracy

Plug Resistant Seat Design





Application Notes

Performance Tables.
Contact the Nelson factory for detailed Performance information.

Statement of Expected Performance.
Nelson Pressure Regulators are accurate to 6% due to variance of coefficient in manufacturing.

Design Considerations
Maintain a 3 psi threshold above the normal spray rated pressure.

CAUTION!
Pressure regulators should be installed downstream from all shut off valves.

HI FLO			
PSI	BAR	GPM	M^3/HR
6	.41	4-16	.91-3.63
10	.70	4-16	.91-3.63
15	1.0	2-20	.45-4.54
20	1.4	2-20	.45-4.54
25	1.7	2-20	.45-4.54
30	2.0	2-20	.45-4.54
40	2.8	2-20	.45-4.54
50	3.4	2-20	.45-4.54

Hose Reel wind in Speed Charts for Application rate range.

Chart Showing Wind In Speeds For Required Application Rate (metres per hour)																
R40 Boom Water Flow - imperial gpm + m³/hr Lane Spacing – 40m																
	imperial gpm	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
	M³/hr	**14**	**16**	**19**	**22**	**25**	**27**	**30**	**33**	**36**	**38**	**41**	**44**	**47**	**49**
APPLICATION RATE	**5 mm**	68	82	95	109	123	136	150	164	177	191	205	218	232	245
	7.5 mm	45	55	64	73	82	91	100	109	118	127	136	145	155	164
	10 mm	34	41	48	55	61	68	75	82	89	95	102	109	116	123
	12.5 mm	27	33	38	44	49	55	60	65	71	76	82	87	93	98
	15 mm	23	27	32	36	41	45	50	55	59	64	68	73	77	82
	17.5 mm	19	23	27	31	35	39	43	47	51	55	58	62	66	70
	20 mm	17	20	24	27	31	34	37	41	44	48	51	55	58	61
	22.5 mm	15	18	21	24	27	30	33	36	39	42	45	48	52	55
	25 mm	14	16	19	22	25	27	30	33	35	38	41	44	46	49
	27.5 mm	12	15	17	20	22	25	27	30	32	35	37	40	42	45
	30 mm	11	14	16	18	20	23	25	27	30	32	34	36	39	41
	32.5 mm	10	13	15	17	19	21	23	25	27	29	31	34	36	38
	35 mm	10	12	14	16	18	19	21	23	25	27	29	31	33	35
	37.5 mm	9	11	13	15	16	18	20	22	24	25	27	29	31	33
	40 mm	9	10	12	14	15	17	19	20	22	24	26	27	29	31

Chart Showing Wind In Speeds For Required Application Rate (metres per hour)																
R40 Boom Water Flow - imperial gpm + m³/hr Lane Spacing – 44m																
	imperial gpm	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
	M³/hr	**14**	**16**	**19**	**22**	**25**	**27**	**30**	**33**	**36**	**38**	**41**	**44**	**47**	**49**
APPLICATION RATE	**5 mm**	62	74	87	99	112	124	136	149	161	174	186	198	211	223
	7.5 mm	41	50	58	66	74	83	91	99	107	116	124	132	140	149
	10 mm	31	37	43	50	56	62	68	74	81	87	93	99	105	112
	12.5 mm	25	30	35	40	45	50	55	59	64	69	74	79	84	89
	15 mm	21	25	29	33	37	41	45	50	54	58	62	66	70	74
	17.5 mm	18	21	25	28	32	35	39	42	46	50	53	57	60	64
	20 mm	15	19	22	25	28	31	34	37	40	43	46	50	53	56
	22.5 mm	14	17	19	22	25	28	30	33	36	39	41	44	47	50
	25 mm	12	15	17	20	22	25	27	30	32	35	37	40	42	45
	27.5 mm	11	14	16	18	20	23	25	27	29	32	34	36	38	41
	30 mm	10	12	14	17	19	21	23	25	27	29	31	33	35	37
	32.5 mm	10	11	13	15	17	19	21	23	25	27	29	31	32	34
	35 mm	9	11	12	14	16	18	19	21	23	25	27	28	30	32
	37.5 mm	8	10	12	13	15	17	18	20	21	23	25	26	28	30
	40 mm	8	9	11	12	14	15	17	19	20	22	23	25	26	28

Hose Reel wind in Speed Charts for Application rate range. (cont.)

Chart Showing Wind In Speeds For Required Application Rate (metres per hour)																
R40 Boom Water Flow - imperial gpm + m³/hr Lane Spacing - 48m																
	imperial gpm	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
	M³/hr	**14**	**16**	**19**	**22**	**25**	**27**	**30**	**33**	**36**	**38**	**41**	**44**	**47**	**49**
APPLICATION RATE	**5 mm**	57	68	80	91	102	114	125	136	148	159	170	182	193	205
	7.5 mm	38	45	53	61	68	76	83	91	98	106	114	121	129	136
	10 mm	28	34	40	45	51	57	62	68	74	80	85	91	97	102
	12.5 mm	23	27	32	36	41	45	50	55	59	64	68	73	77	82
	15 mm	19	23	27	30	34	38	42	45	49	53	57	61	64	68
	17.5 mm	16	19	23	26	29	32	36	39	42	45	49	52	55	58
	20 mm	14	17	20	23	26	28	31	34	37	40	43	45	48	51
	22.5 mm	13	15	18	20	23	25	28	30	33	35	38	40	43	45
	25 mm	11	14	16	18	20	23	25	27	30	32	34	36	39	41
	27.5 mm	10	12	14	17	19	21	23	25	27	29	31	33	35	37
	30 mm	9	11	13	15	17	19	21	23	25	27	28	30	32	34
	32.5 mm	9	10	12	14	16	17	19	21	23	24	26	28	30	31
	35 mm	8	10	11	13	15	16	18	19	21	23	24	26	28	29
	37.5 mm	8	9	11	12	14	15	17	18	20	21	23	24	26	27
	40 mm	7	9	10	11	13	14	16	17	18	20	21	23	24	26