



INDUSTRIAL

Simple. *Multiplied.*

Groeneveld-BEKA introduces the Groeneveld® MultiLine SFi – multi-point automated lubrication, simplified. A self-fit, ready-to-install, automatic lubrication system delivered in a single kit, MultiLine SFi is a cost-effective solution for light industrial applications. Specifically designed to provide ease of installation, high performance automated lubrication and the flexibility to configure a DIY system with up to 36 lubrication points, the SFi helps to significantly increase service intervals and service life of conveyors, bearings, chains and gears.

Features

- Robust, flexible design
- Easily customized lubrication point configuration
- High quality, economic solution
- Built for optimum performance and reliability
- Versatile control
- Independently fed lines prevent system shutdown due to one damaged line

Benefits

- Helps increase service life
- Helps reduce repair and maintenance costs
- Helps improve plant uptime and productivity
- Helps protect your investment
- Up to 50% less lubricant consumption

Groeneveld® Self-Fit Lubrication System



MultiLine SFi

A smart investment in operational efficiency.

1

Cost Savings

Incorrect or lack of lubrication may lead to the failure of components. A fully automated lubrication system will dramatically reduce the need to replace worn components, minimize maintenance cycles and significantly decrease lubricant cost. MultiLine SFi Self-Fit kits provide significantly lower cost per point when compared to customized or multiple single-point lubrication systems.*

2

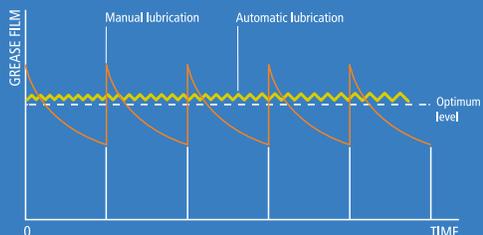
Automatic Lubrication

“Little and often” is the key to optimum lubrication. Automatic lubrication during operation assures that the correct amount of lubricant is applied at regular intervals. Continual lubrication minimizes the ingress of dirt and moisture while ensuring smooth operation and extended component life.

3

Reduce Plant Downtime

Decrease costly machine downtime through automated maintenance practices that ensure prolonged component lifetime.



*When lubricating 6-36 points.



Installation Example

Pre-Assembled Ready-to-Install Kit

- The pre-loomed kit contains all the necessary items: injectors, tubing, connectors and adapters for complete installation.
- The universal kit is easily adaptable to the required number of lubrication points by simply replacing the unnecessary injector with a spare blank plug supplied in the kit.
- With the timer pre-programmed to meet the typical timer settings on a wide variety of industrial machinery applications and processes, the MultiLine SFi system is the ultimate “plug and play” automatic lubrication system.
- By requesting the “Pre-Filled” option, the lines come filled and primed to quickly get your system fully operational.
- Compatible with both SAE 80/90 oil up to NLGI-2 grease – the oil system makes an ideal chain lubrication system with the addition of brushes.

Simple. *Multiplied.*

Includes all material, installation and system set-up instructions to easily install on a wide variety of industrial machines and processes including:



Water Treatment



Food and Beverage



Bakery



Recycling

Groeneveld MultiLine SFi Kit Selector

Kit Number	Reservoir	Points	Loom Type/Application	Voltage
MSFI-1012-E4-110V	1.0L	12	Empty - Oil	110 VAC
MSFI-1012-G4-110V	1.0L	12	Primed - Grease	110 VAC
MSFI-1012-F4-110V*	1.0L	12	Primed - Food Grade Grease	110 VAC
MSFI-2024-E4-110V	2.0L	24	Empty - Oil	110 VAC
MSFI-2024-G4-110V	2.0L	24	Primed - Grease	110 VAC
MSFI-2024-F4-110V*	2.0L	24	Primed - Food Grade Grease	110 VAC
MSFI-2036-E4-110V*	2.0L	36	Empty - Oil	110 VAC
MSFI-2036-G4-110V*	2.0L	36	Primed - Grease	110 VAC
MSFI-2036-F4-110V*	2.0L	36	Primed - Food Grade Grease	110 VAC
MSFI-1012-E4-220V*	1.0L	12	Empty - Oil	220 VAC
MSFI-1012-G4-220V*	1.0L	12	Primed - Grease	220 VAC
MSFI-1012-F4-220V*	1.0L	12	Primed - Food Grade Grease	220 VAC
MSFI-2024-E4-220V*	2.0L	24	Empty - Oil	220 VAC
MSFI-2024-G4-220V*	2.0L	24	Primed - Grease	220 VAC

Kit Number	Reservoir	Points	Loom Type/Application	Voltage
MSFI-2024-F4-220V*	2.0L	24	Primed - Food Grade Grease	220 VAC
MSFI-2036-E4-220V*	2.0L	36	Empty - Oil	220 VAC
MSFI-2036-G4-220V*	2.0L	36	Primed - Grease	220 VAC
MSFI-2036-F4-220V*	2.0L	36	Primed - Food Grade Grease	220 VAC
MSFI-1012-E4-24DC	1.0L	12	Empty - Oil	24DC
MSFI-1012-G4-24DC	1.0L	12	Primed - Grease	24DC
MSFI-1012-F4-24DC*	1.0L	12	Primed - Food Grade Grease	24DC
MSFI-2024-E4-24DC	2.0L	24	Empty - Oil	24DC
MSFI-2024-G4-24DC	2.0L	24	Primed - Grease	24DC
MSFI-2024-F4-24DC*	2.0L	24	Primed - Food Grade Grease	24DC
MSFI-2036-E4-24DC*	2.0L	36	Empty - Oil	24DC
MSFI-2036-G4-24DC*	2.0L	36	Primed - Grease	24DC
MSFI-2036-F4-24DC*	2.0L	36	Primed - Food Grade Grease	24DC

* Made to order kits (MTO) | Note: 12VDC kits available upon request

MultiLine SFi Electrical Compatibility

Wire Harness:	110/220 KITS	23ft (7m) Lead
	12/24DC KITS	5ft (1.5m) + 30ft (9.1m) Mating Harness
Voltage:	110VAC	Standard
	24VDC	
	220VAC	Available Upon Request (MTO)
	12VDC	
Max Current Draw:	40mA	
Fuse Rating:	1-AMP	
IP Rating:	IP66	

MultiLine SFi Competitive Comparison

Attribute	MultiLine SFi	Competitor
Delivery Method	Multiline technology	Progressive technology
Installation Time	Shorter	Longer
IP Rating	IP66	IP67
Reservoir Sizes	1.0 Liter, 2.0 Liter	1.0 Liter
Voltage Options	3 (24VDC, 110/220VAC)	3 (24VDC, 110/220VAC)
Max Lubrication Points	12, 24, 36	8, 18
Max Pumping Distance	~35 feet in any direction	16 feet
Lubricant Compatibility	SAE80/90 Oils; NLGI #000 to #2	NLGI #2 to NLGI #3
Primed Lube Lines	Yes (grease and food grade kits only)	No
Operating Temperatures	-40 to 149°F	-13 to 160°F
Line Blockage Result	Line blockage only affects the line that is blocked. All other lines continue to lubricate.	Complete system shutdown. All lubrication ceased.

MultiLine SFi Lubricant Compatibility

Maximum Working Pressure:	1740psi (120bar)	
Maximum Operation Temperature:	149°F (65C)	
Minimum Operation Temperature:*	NLGI #2	14°F (-10C)
	NLGI #1	9°F (-13C)
	NLGI #0	2°F (-17C)
	NLGI #00	-8°F (-22C)
	NLGI #000	-29°F (-34C)
	Oils SAE 80/90	-40°F (-40C)

*Tests based on standard lithium complex EP greases.

Lubricants should be suitable for use with automatic lubrication systems. Lubricants containing esters can attack the seals, so are not recommended. Lubricants containing solid additives such as PTFE (Teflon), graphite, molybdenum disulphide (MoS2) or bentone/bentonite (clay) based greases can cause blockages in the system and should not be used.

Note: Temperatures with use of non-Groeneveld greases cannot be guaranteed.

MultiLine Output Selector: 24VDC Systems

Bearing ID (Inches)	Single Row Bearings							Double Row Bearings						
	Timer 0	Timer 1	Timer 2	Timer 3	Timer 4	Timer 5	Timer 6	Timer 0	Timer 1	Timer 2	Timer 3	Timer 4	Timer 5	Timer 6
	Cont. Cycle	9 min	12 min	15 min	30 min	45 min	60 min	Cont. Cycle	9 min	12 min	15 min	30 min	45 min	60 min
0.25														
0.5						Red	Red					Red	Green	Yellow
0.75					Red	Green	Green				Red	Green	Yellow	Blue
1					Red	Green	Yellow				Red	Green	Yellow	Blue
1.25				Red	Green	Yellow	Blue				Red	Green	Yellow	Blue
1.5				Red	Green	Yellow	Blue				Red	Green	Yellow	Blue
1.75			Red	Red	Yellow	Blue	Blue				Red	Green	Yellow	Blue
2			Red	Red	Yellow	Blue	Blue				Red	Green	Yellow	Blue
2.25		Red	Red	Green	Blue	Blue	Blue				Red	Green	Yellow	Blue
2.5		Red	Red	Green	Blue	Blue	Blue				Red	Green	Yellow	Blue
2.75		Red	Red	Green	Blue	Blue	Blue				Red	Green	Yellow	Blue
3		Red	Green	Green	Blue	Blue	Blue				Red	Green	Yellow	Blue
3.25		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
3.5		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
3.75		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
4		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
4.25		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
4.5		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
4.75		Red	Green	Yellow	Blue	Blue	Blue				Red	Green	Yellow	Blue
5	Red	Green	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
5.25	Red	Green	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
5.5	Red	Green	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
5.75	Red	Green	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
6	Red	Green	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
6.25	Red	Yellow	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
6.5	Red	Yellow	Yellow	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
6.75	Red	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
7	Red	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
7.25	Red	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
7.5	Red	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
7.75	Red	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
8	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
8.25	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
8.5	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
8.75	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
9	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
9.25	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
9.5	Green	Yellow	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
9.75	Green	Blue	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue
10	Green	Blue	Blue	Blue	Blue	Blue	Blue				Red	Green	Yellow	Blue

Output Selection Instructions: 24VDC Systems

1	Gather list of all lubrication points based on the respective bearing's ID in inches and number of rows.
2	Determine the largest bearing.
3	Locate closest bearing ID in Bearing ID column.
4	Start in "Timer 4" column (Factory default for 24VDC Systems).
5	IF there are any blank for any of the machines bearing ID's, adjust timer setting to appropriate Timer column to ensure no bearing points are blank.
6	<p>IF by adjusting the timer setting there are still blanks present, contact Groeneveld-BEKA.</p> <ul style="list-style-type: none"> Multiple Timer settings cannot be selected at once. All SFi systems come standard with blue pumping elements. For 24VDC systems the easiest way to decrease/increase output is to change the timer setting. Alternatively, you can achieve desired lubrication amount by replacing blue pumping elements with the recommended color on the chart.

- Pumping element recommendation based on factory timer setting and NLGI# 2 grease (non-moly). Recommendations are based on the minimum amount of grease (cc's) that are needed to lubricate the bearing based on the ID (or shaft diameter) and number of rows (single or double).
- A lighter shade of color represents minimum amount of lubrication needed whereas the darker shade of color represents more lubrication.
- All SFi systems are assembled with blue pumping elements (0.040cc/stroke)

MultiLine SFi: Pumping Elements (sold in packs of 3)		
	MSF-P-R010	Red Pumping Element (0.010cc/stroke)
	MSF-P-G015	Green Pumping Element (0.015cc/stroke)
	MSF-P-Y025	Yellow Pumping Element (0.025cc/stroke)
	MSF-P-B040	Blue Pumping Element (0.040cc/stroke)
	MSF-P-G060	Gray Pumping Element (0.060cc/stroke)
	MSF-P-B100	Black Pumping Element (0.100cc/stroke)
Contact your Groeneveld-Beka Sales Representative		

Examples

1

SFi 24VDC Systems

Bearing #1 ID: 9.5"

Number of Rows: 1
Timer Column: #4
Pumping Element: Blank

Bearing #2 ID: 6"

Number of Rows: 1
Timer Column: #4
Pumping Element: Black

Recommended Action:

- Change timer setting to #3
- Use existing blue pumping elements for the 6" bearing
- Order gray pumping elements (MSF-P-G060) for the 9.5" bearing

2

SFi 24VDC Systems

Bearing #1 ID: 4"

Number of Rows: 2
Timer Column: #4
Pumping Element: Black

Bearing #2 ID: 3.5"

Number of Rows: 1
Timer Column: #4
Pumping Element: Blue

Recommended Action:

- Use existing Blue pumping elements for the 4" bearing
- Order black pumping elements (MSF-P-B100) for the 3.5" bearings

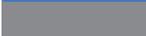
MultiLine Output Selector: 110/220VAC Systems

Bearing ID (Inches)	Single Row Bearings				Double Row Bearings			
	Timer 1	Timer 2	Timer 3	Timer 4	Timer 1	Timer 2	Timer 3	Timer 4
	12 min	21 min	36 min	66 min	12 min	21 min	36 min	66 min
0.25				Red			Red	Green
0.5			Red	Green		Red	Green	Blue
0.75			Green	Yellow		Green	Yellow	Blue
1		Red	Green	Blue		Green	Blue	Grey
1.25		Red	Yellow	Blue	Red	Yellow	Blue	Black
1.5		Red	Yellow	Blue	Red	Yellow	Blue	Black
1.75		Green	Yellow	Blue	Red	Yellow	Blue	Black
2		Green	Blue	Grey	Red	Blue	Grey	Black
2.25		Green	Blue	Grey	Green	Blue	Grey	
2.5	Red	Yellow	Blue	Black	Green	Blue	Black	
2.75	Red	Yellow	Blue	Black	Green	Blue	Black	
3	Red	Yellow	Blue	Black	Green	Blue	Black	
3.25	Red	Yellow	Blue	Black	Yellow	Blue	Black	
3.5	Red	Yellow	Blue	Black	Yellow	Blue	Black	
3.75	Red	Blue	Grey	Black	Yellow	Blue	Black	
4	Red	Blue	Grey	Black	Yellow	Blue	Black	
4.25	Green	Blue	Grey		Yellow	Blue	Black	
4.5	Green	Blue	Grey		Yellow	Blue	Black	
4.75	Green	Blue	Grey		Yellow	Blue	Black	
5	Green	Blue	Black		Blue	Black		
5.25	Green	Blue	Black		Blue	Black		
5.5	Green	Blue	Black		Blue	Black		
5.75	Green	Blue	Black		Blue	Black		
6	Green	Blue	Black		Blue	Black		
6.25	Yellow	Blue	Black		Blue	Black		
6.5	Yellow	Blue	Black		Blue	Black		
6.75	Yellow	Blue	Black		Blue	Black		
7	Yellow	Blue	Black		Blue	Black		
7.25	Yellow	Grey	Black		Blue	Black		
7.5	Yellow	Grey	Black		Blue	Black		
7.75	Yellow	Grey	Black		Blue	Black		
8	Yellow	Grey	Black		Blue	Black		
8.25	Yellow	Grey			Blue			
8.5	Yellow	Grey			Blue			
8.75	Yellow	Grey			Blue			
9	Yellow	Grey			Blue			
9.25	Yellow	Grey			Blue			
9.5	Blue	Black			Blue			
9.75	Blue	Black			Blue			
10	Blue	Black			Blue			

Output Selection Instructions: 110/220VAC Systems

1	Gather list of all lubrication points based on the respective bearing's ID in inches and number of rows.
2	Determine the largest bearing.
3	Locate closest bearing ID in Bearing ID column.
4	Start in "Timer 3" column (Factory default for 110/220VAC Systems).
5	IF there are any blank for any of the machines bearing ID's, adjust timer setting to appropriate Timer column to ensure no bearing points are blank.
6	<p>IF by adjusting the timer setting there are still blanks present, contact Groeneveld-BEKA.</p> <ul style="list-style-type: none"> Multiple Timer settings cannot be selected at once. All SFi systems come standard with blue pumping elements. For 110/220VAC systems the easiest way to decrease/increase output is to change pumping elements. Alternatively, you can achieve desired lubrication amount by adjusting the timer settings via dip switches. See SFi Manual.

- Pumping element recommendation based on factory timer setting and NLGI# 2 (non-moly) grease. Recommendations are based on the minimum amount of grease (cc's) that are needed to lubricate the bearing based on the ID (or shaft diameter) and number of rows (single or double).
- A lighter shade of color represents minimum amount of lubrication needed whereas the darker shade of color represents more lubrication.
- All SFi systems are assembled with blue pumping elements (0.040cc/stroke)

MultiLine SFi: Pumping Elements (sold in packs of 3)		
	MSF-P-R010	Red Pumping Element (0.010cc/stroke)
	MSF-P-G015	Green Pumping Element (0.015cc/stroke)
	MSF-P-Y025	Yellow Pumping Element (0.025cc/stroke)
	MSF-P-B040	Blue Pumping Element (0.040cc/stroke)
	MSF-P-G060	Gray Pumping Element (0.060cc/stroke)
	MSF-P-B100	Black Pumping Element (0.100cc/stroke)
Contact your Groeneveld-Beka Sales Representative		

Examples

1

SFi 110/220VAC Systems

Bearing #1 ID: 5"

Number of Rows: 1

Timer Column: #3

Pumping Element: Black

Bearing #2 ID: 3.5"

Number of Rows: 1

Timer Column: #3

Pumping Element: Blue

Recommended Action:

- Order black pumping elements (MSF-P-B100) for the 5" bearing
- Use existing blue pumping elements (MSF-P-B040) for the 3.5" bearings

2

SFi 110/220VAC Systems

Bearing #1 ID: 2.5"

Number of Rows: 1

Timer Column: #3

Pumping Element: Blue

Bearing #2 ID: 2"

Number of Rows: 1

Timer Column: #3

Pumping Element: Blue

Recommended Action:

- Use existing blue pumping elements for both the 2" and 2.5" bearings

Groeneveld MultiLine SFi Kit Contents

	110 VAC Kits									220 VAC Kits									24 VDC									
	MSFI-1012-E4-110V	MSFI-1012-G4-110V	MSFI-1012-F4-110V	MSFI-2024-E4-110V	MSFI-2024-G4-110V	MSFI-2024-F4-110V	MSFI-2036-E4-110V	MSFI-2036-G4-110V	MSFI-2036-F4-110V	MSFI-1012-E4-220V	MSFI-1012-G4-220V	MSFI-1012-F4-220V	MSFI-2024-E4-220V	MSFI-2024-G4-220V	MSFI-2024-F4-220V	MSFI-2036-E4-220V	MSFI-2036-G4-220V	MSFI-2036-F4-220V	MSFI-1012-E4-24DC	MSFI-1012-G4-24DC	MSFI-1012-F4-24DC	MSFI-2024-E4-24DC	MSFI-2024-G4-24DC	MSFI-2024-F4-24DC	MSFI-2036-E4-24DC	MSFI-2036-G4-24DC	MSFI-2036-F4-24DC	
AX1 1.25L 110VAC 12-Point Pump Assembly	1	1	1																									
AX2 2L 110VAC 24-Point Pump Assembly				1	1	1																						
AX2 2L 110VAC 36-Point Pump Assembly							1	1	1																			
AX1 1.25L 220VAC 12-Point Pump Assembly										1	1	1																
AX2 2L 220VAC 24-Point Pump Assembly													1	1	1													
AX2 2L 220VAC 36-Point Pump Assembly																1	1	1										
AC15 1.25L 24VDC 12-Point Pump Assembly																			1	1	1							
AC25 2L 24VDC 24-Point Pump Assembly																						1	1	1				
AC25 2L 24VDC 36-Point Pump Assembly																									1	1	1	
Blue Pump Elements (0.040cc/stroke)	12	12	12	24	24	24	36	36	36	12	12	12	24	24	24	36	36	36	12	12	12	24	24	24	36	36	36	
Empty Lube Harness	X			X			X			X		X			X			X	X		X			X				
Primed Lube Harness (Grease)		X			X			X			X			X			X			X			X			X		
Primed Lube Harness (Food Grade Grease)			X			X			X			X			X			X			X			X			X	
Numbered Sleeves #1-12	X	X	X							X	X	X							X	X	X							
Numbered Sleeves #1-24				X	X	X						X	X	X							X	X	X					
Numbered Sleeves #1-36							X	X	X							X	X	X							X	X	X	
Manifold Blanking Plugs	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
4mm OD Tubing – Empty 164ft/roll	1			2			3			1			2			3			1			2			3			
4mm OD Tubing – Primed (Grease) 164ft/roll		1			2			3			1			2			3			1			2			3		
4mm OD Tubing – Primed (Food Grade Grease) – 164ft/roll			1			2			3			1			2			3			1			2			3	
4mm OD x 1/8NPT Straight Fitting – Push Lock	12	12	12	24	24	24	36	36	36	12	12	12	24	24	24	36	36	36	12	12	12	24	24	24	36	36	36	
Hardware Kit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zip Ties (100pcs)	1	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2
Tube Cutter	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MultiLine SFi Manual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
110\220VAC Quick Install Guide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1										
12/24VDC Quick Install Guide																			1	1	1	1	1	1	1	1	1	1

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Groeneveld-BEKA systems and services reduce operational costs for customers, while increasing equipment uptime, productivity, efficiency and safety: this is what it is all about at Groeneveld-BEKA.

www.groeneveld-beka.com/us