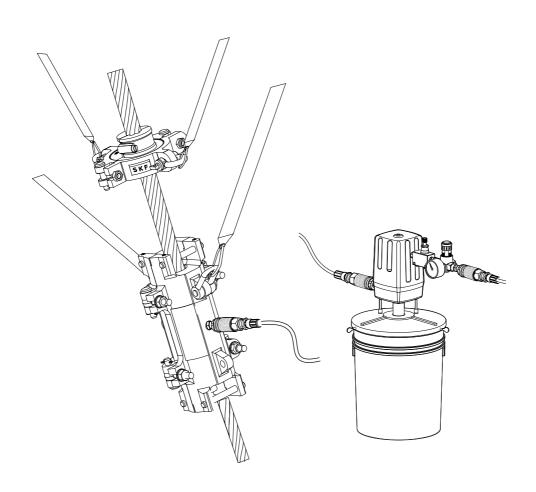


Wire rope lubrication system

Models 802175 and 802180



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Safety

Read and observe operating instructions before installing and operating equipment.

Equipment must only be installed, maintained, and repaired by persons familiar with instructions.

Do not attempt to install, use, or troubleshoot prior to fully understanding all safety and operational instructions.

NOTE

Follow all local safety regulations regarding installation, use and maintenance.

Explanation of signal words for safety

NOTE

Emphasizes useful hints and recommendations as well as information to prevent property damage and ensure efficient trouble-free operation.

△ CAUTION

Indicates a dangerous situation that can lead to light personal injury if precautionary measures are ignored.

⚠ WARNING

Indicates a dangerous situation that could lead to death or serious injury if precautionary measures are ignored.

△ DANGER

Indicates a dangerous situation that will lead to death or serious injury if precautionary measures are ignored.

Introduction

Wire rope lubrication system (WRL) is a versatile grease applicator that effectively applies grease lubricant to wire rope used in a variety of applications.

Groove cleaner and separating bushing are available to clean wire rope prior to applying new grease.

This manual assists in installation and operation of WRL.

Do not modify any part of assembly or sub-assemblies.

Failure to read and follow instructions will void warranty.

Description

Grease pump supplies grease to lubricator that is fastened to wire rope. Wire rope receives uniform coating of grease as it moves through lubricator, eliminating need for manual lubrication.

NOTE

WRL is intended for use with grease only.



WRL system layout

Fig. 1 represents general layout of typical WRL system. Pneumatic grease pump equipped with regulators for air flow and pressure, supplies grease to lubricator, that applies grease to moving wire rope.

Lubricator is fitted with rollers and seals sized appropriately for wire rope, ensuring uniform application.

Optional groove cleaner and support bushings are available to remove old grease from system and improve grease penetration.

See *Measuring wire rope size* on **page 5** for correct wire rope measurement and for body, seal, and roller selection.

	13 14 24		21 20 20 10 20
Item	Description	ltem	Description
1 9 10 13 14 20	Lubricator High pressure hose Quick coupler Air pressure regulator Air flow regulator Ratchet sling	21 23 24 25	Separating bushings support Groove cleaner Pneumatic pump with cover Bucket cap and follower

Pre-installation Prepare lubricator

There are two lubricator platforms, each designed with range of rollers and seals for handling different gauges of wire rope (→ Fig. 2).

- Lubricator model 802175: smaller platform for wire rope diameters ranging from 7/16 to 1 in (11 to 26 mm).
- Lubricator model 802180: larger platform for wire rope diameters ranging from 11/16 to 2 in (27 to 51 mm).

△ DANGER

Do not attempt to install equipment with wire rope in operation.

Failure to comply will result in death or serious injury.

Lubricator platforms Lubricator model 802175 small platform

Wire rope diameter (nominal)

7/16 in (11,1 mm) 1/2 in (12,7 mm) 9/16 in (14,3 mm)

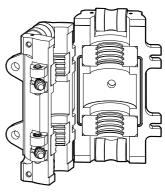
5/8 in (15,8 mm) 11/16 in (17,5 mm) 3/4 in (19 mm)

13/16 in (20,6 mm) 7/8 in (22,2 mm) 15/16 in (23,8 mm)

1 in (25,4 mm)



Fig. 2



Lubricator model 802180 large platform

Wire rope diameter (nominal)

1 ¹ / ₁₆ in (27 mm) 1 ¹ / ₈ in (28,6 mm) 1 ³ / ₁₆ in (30 mm)	17/16 in (36,5 mm) 11/2 in (38,1 mm) 19/16 in (39,7 mm)	1 ¹³ / ₁₆ in (46 mm) 1 ⁷ / ₈ in (47,6 mm) 1 ¹⁵ / ₁₆ in (49,2 mm)
1 1/4 in (31,8 mm) 1 5/16 in (33,3 mm) 1 3/8 in (34,9 mm)	1 5/8 in (41,3 mm) 1 ¹¹ /16 in (42,9 mm)	2 in (50,8 mm)



Measuring wire rope size

Diameter of wire rope is determined by imaginary circle that would enclose all wire rope strands (\rightarrow Fig. 3).

Tools required: caliper or micrometer

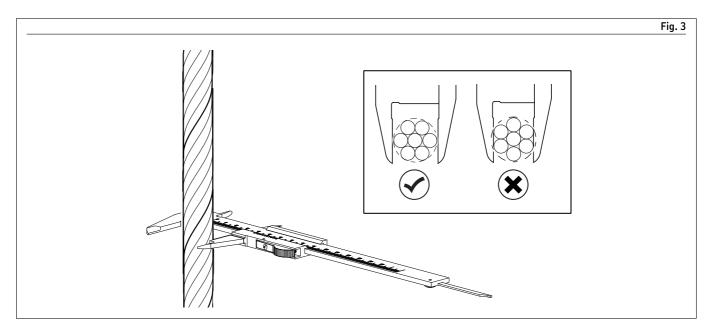
Using caliper, measure wire rope at top of one of its wire strands to top of strand directly opposite.

NOTE

For changing rollers/seals, see Roller/seal replacement, Fig. 4, page 6.

Select lubricator body, seals, and rollers

- 1 Measure diameter of wire rope (→ Fig. 3).
- 2 Select lubricator platform according to wire rope diameter (→ Fig. 2, page 4).
- 3 Select seals and rollers according to wire rope diameter (→ Table 1 and Table 2, page 6).



Seal/roller kits-small l	ubricator (802175)			
Seal (nominal size)	Wire rope dimension ran Minimum	ge (measured diameter) ¹⁾ Maximum	Seal	Seal/roller kit
⁷ /16 in (11,1 mm)	0.437 in (11,1 mm)	0.496 in (12,6 mm)	802270	802185
¹ /2 in (12,7 mm)	0.500 in (12,7 mm)	0.559 in (14,2 mm)	802271	802188
⁹ /16 in (14,3 mm)	0.562 in (14,3 mm)	0.621 in (15,8 mm)	802272	802191
⁵ /8 in (15,8 mm)	0.624 in (15,9 mm)	0.683 in (17,4 mm)	802273	802194
¹¹ /16 in (17,5 mm)	0.687 in (17,5 mm)	0.785 in (19,4 mm)	802274	802197
³ /4 in (19 mm)	0.749 in (19 mm)	0.796 in (20,2 mm)	802275	802200
¹³ / ₁₆ in (20,6 mm)	0.812 in (20,6 mm)	0.871 in (<i>22,1 mm</i>)	802276	802203
⁷ / ₈ in (22,2 mm)	0.874 in (22,2 mm)	0.933 in (<i>23,7 mm</i>)	802277	802206
¹⁵ / ₁₆ in (23,8 mm)	0.937 in (23,8 mm)	0.996 in (<i>25,3 mm</i>)	802278	802249
1 in (25,4 mm)	1 (25,4 mm)	1.059 in (26,9 mm)	802279	802209

				1	Table
Seal/roller kits-large lu	bricator (802180)				
Seal (nominal size)	Wire rope dimension rar Minimum	nge (measured diameter) ¹⁾ Maximum	Seal	Seal/roller kit	
1 ¹ /16 in (27 mm)	1.063 in <i>(27 mm)</i>	1.122 in (28,5 mm)	802280	802251	
1 ¹ /8 in (28,6 mm)	1.124 in (28,6 mm)	1.183 in (30,1 mm)	802281	802221	
1 ³ /16 in (30 mm)	1.187 in <i>(30,2 mm)</i>	1.246 in (31,7 mm)	802282	802253	
1 ¹ /4 in (31,8 mm)	1.249 in (31,8 mm)	1.309 in (33,3 mm)	802283	802212	
1 ⁵ /16 in (33,3 mm)	1.313 in (33,3 mm)	1.372 in (34,8 mm)	802284	802255	
1 ³ /8 in (34,9 mm)	1.374 in (34,9 mm)	1.433 in (36,4 mm)	802285	802224	
1 7/16 in (36,5 mm)	1.437 in (36,5 mm)	1.496 in (38 mm)	802286	802257	
1 1/2 in (38,1 mm)	1.499 in (38,1 mm)	1.559 in (39,6 mm)	802287	802227	
1 9/16 in (39,7 mm)	1.562 in (39,7 mm)	1.621 in (41,2 mm)	802288	802259	
1 5/8 in (41,3 <i>mm</i>)	1.625 in (41,3 mm)	1.684 in (42,8 mm)	802289	802230	
1 ¹¹ /16 in (42,9 <i>mm</i>)	1.687 in (42,9 mm)	1.746 in (44,4 mm)	802290	802261	
1 ³ /4 in (44,5 mm)	1.750 in (44,5 mm)	1.809 in (46 mm)	802291	802233	
1 ¹³ /16 in (46 <i>mm)</i>	1.813 in (46 <i>mm</i>)	1.872 in (47,5 mm)	802292	802263	
1 ⁷ /8 in (47,6 <i>mm)</i>	1.874 in (47,6 mm)	1.933 in (49,1 mm)	802293	802215	
1 ¹⁵ /16 in (49,2 <i>mm</i>)	1.937 in (49,2 <i>mm</i>)	1.996 in (50,7 mm)	802294	802265	
2 in (50,8 mm)	2 in (50,8 mm)	2.059 in (52,3 mm)	802295	802218	

Roller/seal replacement

- 1 Loosen eye bolts (7) on lubricator (1) (→ Fig. 4).
- 2 Open lubricator (1).
- 3 Using hex key, loosen hex screws (4).
- **4** Tap out pin (**5**) using hammer and steel punch or similar tool.
- 5 Remove roller (3).
- 6 Remove seal (2) from seal cavity.

NOTE

Seals (2) (→ Fig. 4) are designed for contact with wire rope to ensure lubricant penetration.

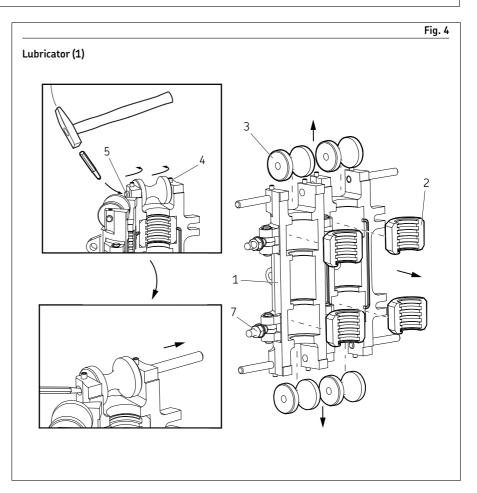
lubricant penetration.

Before lubrication, test seal contact by attaching lubricator (1) to wire rope. If lubricator does not firmly grip wire rope, replace seal (2).

NOTE

Before operating lubricator (1), verify seals (2) are positioned properly within seal cavity and not loose.

If loose, apply small amount of grease to cavity to hold seals in correct position during installation.





Air/grease supply

Four WRL pump and accessory packages are available for different grease container sizes (\rightarrow **Table 3**). Each package includes:

- Lincoln series 20 grease pump
- Air filter
- Regulator with gauge
- Flow control
- Lubricator slings/ratchets
- Grease quick disconnects
- Adapter fittings

Individual accessories are also available (→ Fig. IPB 2, page 13).

		Table 3						
Pump and accessory packages								
Model	Capacity	Manual number						
802330 802238 802239	55 lb (25 kg) 35 lb (16 kg) 120 lb (54 kg)	403404, 404216 404216J, 403404 403460, 403510						
802240	400 lb (180 kg)	404246, 403321						

NOTE

For complete pump instructions, refer to owner's manual included with pump.

NOTE

Followers and covers are included with pump packages.

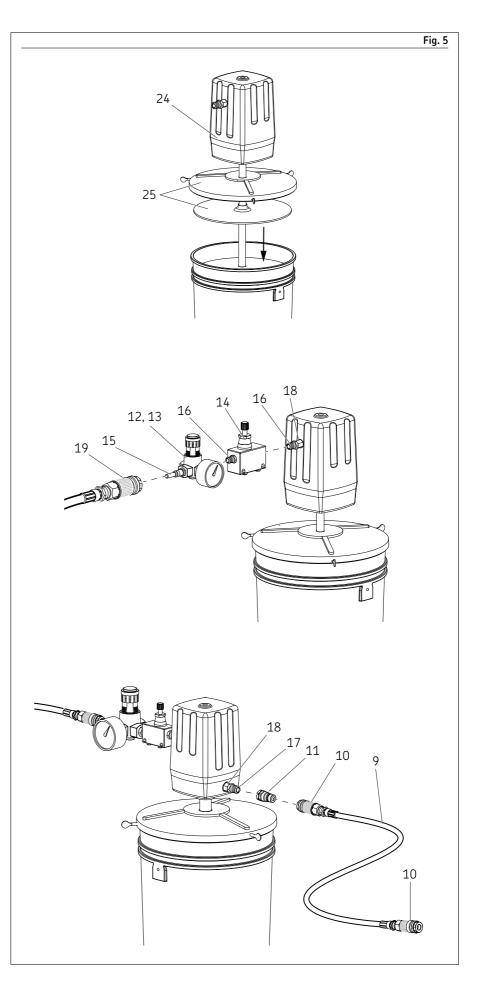


Air/grease supply installation

- 1 Install grease pump (24) with cap and follower (25) over grease container (→ Fig. 5).
- 2 Assemble air coupler (19), air nipple (15), air flow regulator (13) and gauge (12), nipple (16) and air pressure regulator (14) as shown.
- 3 Attach nipple (16) and outlet adapter (18) to pump inlet.
- **4** Connect air flow/pressure regulator assembly to nipple (**16**) at pump inlet.
- **5** Attach outlet adapter **(18)** and nipple **(17)** to pump outlet.
- 6 Attach coupler (internal) (11) to nipple (17).
- 7 Assemble high pressure grease hose (9) with couplers (external) (10).
- **8** Connect grease hose assembly to coupler (internal) (**11**) at pump outlet.

NOTE

Remove any air between follower plate (25) and grease (→ Fig. 5).





Install lubricator

△ DANGER

Do not use slings if carabiner does not close completely when attached to lubricator lifting point.

Replace slings immediately if carabiner is damaged and/or does not close around lifting point of lubricator.

Failure to comply will result in death or serious injury.

Inspect ratchet slings for:

- Good working condition.
- Overall condition before operating lubricator.
- Length that allows lubricator to move freely with the full range of wire rope movement.
- Correct orientation and do not interfere with the wire rope during lubrication.

⚠ DANGER

Stop, lock out and tag out wire rope spool before starting any installation or maintenance procedure.

Failure to comply will result in death or serious injury.

NOTE

Positioning of lubricator (1) on wire rope is important for effective operation (→ Fig. 6). Position lubricator (1) at a location on wire rope having very little range of overall movement.

NOTE

Attach ratchet slings (20) to secure fixtures (at 90° angles) to line of movement of wire rope during spooling (> Fig. 6).

Fasten lubricator (1) to wire rope within ratchet sling range for easy attachment.

NOTE

When adjusting ratchet slings (20), adjust length where they will move full extent of wire rope spooling range (→ Fig. 6).

Lubricator and ratchet sling installation

- **1** Attach ratchet slings (**20**) to fixed mounts (→ **Fig. 6**).
- **2** Check that ratchet sling length is long enough to fasten to lubricator (1).
- **3** Clasp lubricator (1) onto wire rope.
- **4** Position eyebolts (**7**) into slots on body (**1**).
- **5** Tighten nuts onto eyebolts (**7**) using wrench until secure.
- **6** Attach ratchet slings **(20)** to buckles **(6)** on lubricator **(1)**.
- **7** Adjust ratchet sling length to remove slack.

Fig. 6

NOTE

Close air flow regulator completely before connecting air supply.

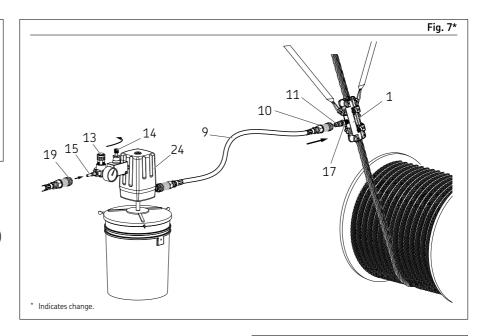
Operation

- Connect air coupler (19) to air nipple (15)(→ Fig. 7).
- 2 Connect grease hose (9) to lubricator (1).
- 3 Open air pressure regulator (13).
- 4 Gradually open air flow regulator (14) to begin operating pump (24).

NOTE

Lubricator grease chamber (1) is full when grease appears between lubricator (1) and wire rope (\rightarrow Fig. 7).

- Keep air flow regulator open until lubricator grease chamber (1) is full.
- 6 Close air flow regulator (14).



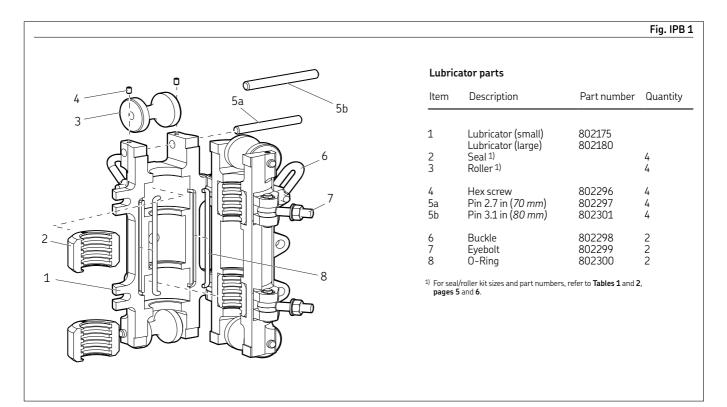
- 7 Start wire rope movement while gradually opening air flow regulator (14), adjusting regulator to reduce or increase lubricant amount, until desired lubrication is achieved.
- 8 Shut off air flow regulator (14).
- **9** Shut off air pressure regulator (**13**).
- **10** Remove lubricator **(1)** from wire rope.

NOTE

Remove lubricator (1) after lubrication is complete (\rightarrow Fig. 7).

Lubricator (1) is a maintenance tool and must be attached to wire rope only during lubrication process.

Leaving lubricator fixed to wire rope can damage seals (2) (\rightarrow Fig. 4, page 6).



Clean wire rope grooves

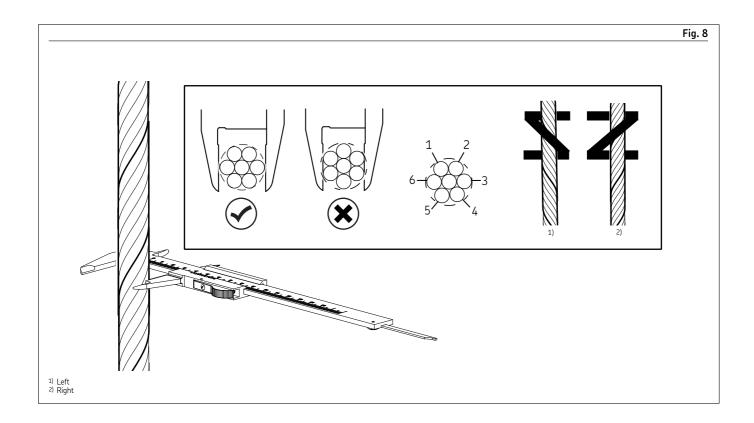
Select lubricator groove cleaner and separating bushing size

- **1** Measure diameter of wire rope as shown in **Fig. 8**.
- 2 Determine right or left lay rope strands.
- 3 Refer to **Tables 5, 6 and 7, pages 14** and **15,** and locate code for groove cleaner and bushing according to wire rope specification.

NOTE

Groove cleaner is designed and manufactured in accordance with exact size of wire rope. When ordering, groove cleaner specification of wire rope must be provided.

Tables 5, 6 and 7, pages 14 and 15, provide codes for size of cleaner and separating bushing.

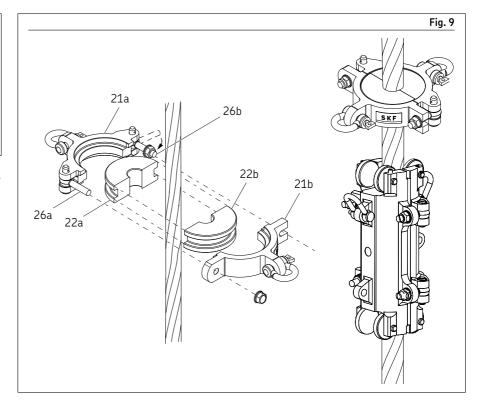


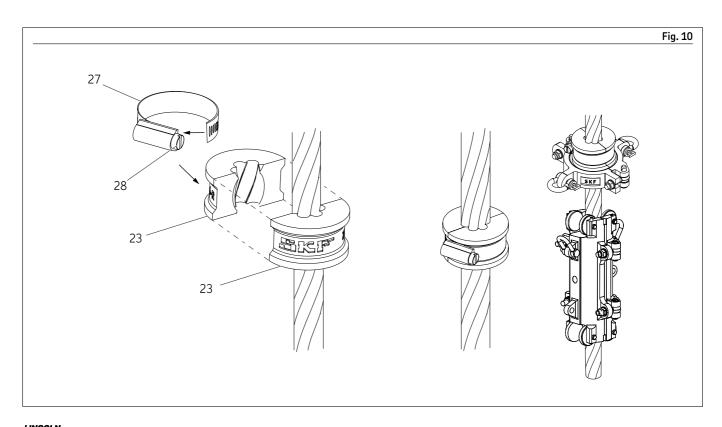
NOTE

Separating bushing is made of two subassemblies. When installing separating bushing a thin film of grease will assist in holding bushing (22) in groove of bushing support (21).

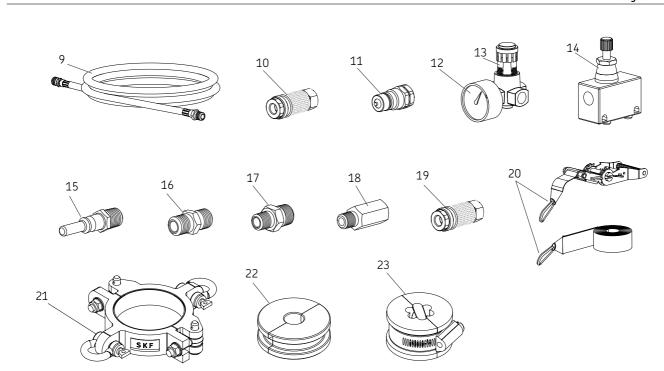
Install groove cleaner

- 1 Install wire rope lubricator (1) (→ Fig. IPB 1, page 10).
- 2 Place one half of bushing (22a) inside one half of support (21a) and set flush against wire (→ Fig. 9).
- **3** Move screw **(26b)** to open position.
- 4 Place remaining half of bushing (22b) inside remaining half of support (21b).
- **5** Press two halves together around wire so that screw (**26a**) is inserted into support (**21b**).
- **6** Move screw (**26b**) to closed position and tighten to lock support (**21**) onto wire.
- 7 Install groove cleaner (23) below support (21) by placing together two halves around wire (→ Fig. 10).
- 8 Wrap clamp (27) around groove cleaner (23) and insert end under screw (28) until tight.
- 9 Tighten screw (28) to hold in place.









Service parts

Item	Description	Part number	Quantity	
9	High pressure hose-10 ft (3/8 in ID)	802241	1	
10	Coupler	802269	2	
11	Coupler	802268	2	
12	Gauge	247843	1	
13	Air pressure regulator	602003	1	
14	Air flow regulator	802243	1	
15	Air nipple	238394	1	
16	Nipple ($^{1/4} \times ^{1/4} NPTF$)	10462	2	
17	Nipple ($^{1/4} \times ^{3/8} NPTF$)	10773	2	
18	Outlet adapter	11348	2	
19	Air coupler	238208	1	
20	Ratchet sling	802267	4	
21	Separating bushings support	See Table 4, page 14	1	
22	Separating bushings	See Table 5, page 14	1	
23	Groove cleaner	See Table 6, page 15	1	
¹⁾ For seal/ro	ller kit sizes and part numbers, refer to Tables 1 and 2, pages 5 and 6 .			

						Table 4
Separating bus	shing support					
Part number Code Nominal wire rope dia minimum m			e diame maxir		Description	
	_	in	mm	in	mm —	
802341 802342	F - 19/32 - 2 in F - 19/32 - 2 in	19/ ₃₂ 19/ ₃₂	15,1 15,1	2 2	50,8 50,8	For wire rope diameters $19/32 - 2$ in without 13 ft $(4 m)$ ratchet sling For wire rope diameters $19/32 - 2$ in with 13 ft $(4 m)$ ratchet sling

							Table !
Separating bus	shing						
Part number Code	Code	Nominal wire rope dian				Description	
		in	mm	in	mm		
802332	S - 19/32 - 3/4 in	19/32	15,1	3/4	19	For wire rope diameters 19/32 - 3/4 in	
802333 802334	S - 3/4 - 29/32 in S - 29/32 - 1 1/16 in	3/4 29/32	19,1 23,1	29/ ₃₂ 1 1/ ₁₆	23 27	For wire rope diameters 3/4 - 29/32 in For wire rope diameters 29/32 - 1 1/16 in	
802335	S - 11/16 - 17/32 in	1 1/16	27,1	1 7/32	31	For wire rope diameters 11/16 - 17/32 in	
802336 802337	S - 1 7/32 - 1 3/8 in S - 1 3/8 - 1 17/32 in	1 7/32 1 3/8	31,1 35,1	1 3/8 1 17/32	35 39	For wire rope diameters $17/32 - 13/8$ in For wire rope diameters $13/8 - 117/32$ in	
802338	S - 1 17/32 - 1 11/16 in		39,1	1 11/16	43	For wire rope diameters 1 17/32 - 1 11/16 in	
802339 802340	S - 1 11/16 - 1 27/32 in S - 1 27/32 - 2 in		43,1 47,1	1 ²⁷ / ₃₂ 2	47 51	For wire rope diameters 1 11/16 - 1 27/32 in For wire rope diameters 1 27/32 - 2 in	



Groove clean For rope stran	er element with b	reeze T-bolt	clamp		For rope str	and with right lay			Table
Part number	•	ode Wire rope N		Number of rope strands	·	For rope strand with right lay Part number Code			Number of rope strands
		in	mm	<u>·</u>			in	mm	<u> </u>
802343	GC-16x6-L	0.63	16	6	802344	GC-16x6-R	0.63	16	6
802345	GC-16x8-L	0.63	16	8	802346	GC-16x8-R	0.63	16	8
802347	GC-18x6-L	0.71	18	6	802348	GC-18x6-R	0.71	18	6
802349	GC-18x8-L	0.71	18	8	802350	GC-18x8-R	0.71	18	8
802351	GC-20x6-L	0.79	20	6	802352	GC-20x6-R	0.79	20	6
802353	GC-20x8-L	0.79	20	8	802354	GC-20x8-R	0.79	20	8
802355	GC-22x6-L	0.86	22	6	802356	GC-22x6-R	0.86	22	6
802357	GC-22x8-L	0.86	22	8	802358	GC-22x8-R	0.86	22	8
802359	GC-24x6-L	0.94	24	6	802360	GC-24x6-R	0.94	24	6
802361	GC-24x8-L	0.94	24	8	802363	GC-24x8-R	0.94	24	8
802363	GC-26x6-L	1.02	26	6	802364	GC-26x6-R	1.02	26	6
802365	GC-26x8-L	1.02	26	8	802366	GC-26x8-R	1.02	26	8
802367	GC-28x6-L	1.10	28	6	802638	GC-28x6-R	1.10	28	6
802369	GC-28x8-L	1.10	28	8	802370	GC-28x8-R	1.10	28	8
802371	GC-30x6-L	1.18	30	6	802372	GC-30x6-R	1.18	30	6
802373	GC-30x8-L	1.18	30	8	802374	GC-30x8-R	1.18	30	8
802375	GC-32x6-L	1.26	32	6	802376	GC-32x6-R	1.26	32	6
802377	GC-32x8-L	1.26	32	8	802378	GC-32x8-R	1.26	32	8
802379	GC-34x6-L	1.34	34	6	802380	GC-34x6-R	1.34	34	6
802381	GC-34x8-L	1.34	34	8	802382	GC-34x8-R	1.34	34	8
802383	GC-36x6-L	1.41	36	6	802384	GC-36x6-R	1.41	36	6
802385	GC-36x8-L	1.41	36	8	802386	GC-36x8-R	1.41	36	8
802387	GC-38x6-L	1.49	38	6	802388	GC-38x6-R	1.49	38	6
802389	GC-38x8-L	1.49	38	8	802390	GC-38x8-R	1.49	38	8
802391	GC-40x6-L	1.57	40	6	802392	GC-40x6-R	1.57	40	6
802393	GC-40x8-L	1.57	40	8	802394	GC-40x8-R	1.57	40	8
802395	GC-42x6-L	1.65	42	6	802396	GC-42x6-R	1.65	42	6
802397	GC-42x8-L	1.65	42	8	802398	GC-42x8-R	1.65	42	8
802399	GC-44x6-L	1.73	44	6	802400	GC-44x6-R	1.73	44	6
802401	GC-44x8-L	1.73	44	8	802402	GC-44x8-R	1.73	44	8
802403	GC-46x6-L	1.81	46	6	802404	GC-46x6-R	1.81	46	6
802413	GC-46x8-L	1.81	46	8	802414	GC-46x8-R	1.81	46	8
802405	GC-48x6-L	1.89	48	6	802406	GC-48x6-R	1.89	48	6
802407	GC-48x8-L	1.89	48	8	802408	GC-48x8-R	1.89	48	8
802409	GC-50x6-L	1.97	50	6	802410	GC-50x6-R	1.97	50	6
802411	GC-50x8-L	1.97	50	8	802412	GC-50x8-R	1.97	50	8

Warranty

The instructions do not contain any information on the warranty. This can be found in the General Conditions of Sales, which are available at: www.lincolnindustrial.com/technicalservice or www.skf.com/lubrication.

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