

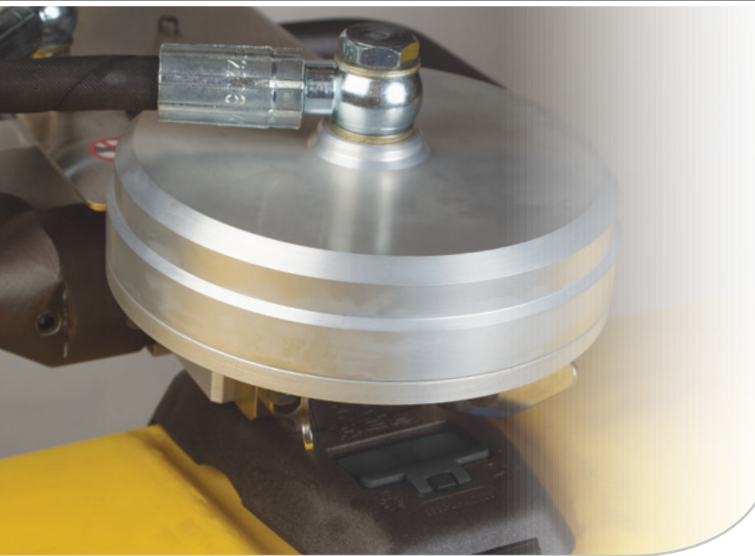


SM-FT-3000 Banding Tool – November 2018



*Operation, Parts & Safety Manual
Original Instructions*

INDEX



Tooling

Depending on set up, this tool is designed to assemble HCL Smart® Tie 20mm ($\frac{3}{4}$ "), Smart® Tie 32mm ($1\frac{1}{4}$ "), Smart® Band 19mm ($\frac{3}{4}$ ") or Smart® Band 32mm ($1\frac{1}{4}$ ") systems.

Follow the instructions described to achieve safe operation.



Health & Safety

- 1.1 Warning & Safety Instructions

Continuous Tightening Tool

- 2.1 Preparation
- 2.2 Tensioning Table
- 2.3 Operation

Maintenance

- 3.1 Servicing
- 3.2 Parts List
- 3.3 Troubleshooting

CE Marking

- 4.1 EC Declaration of Conformity

Warning & Safety Instructions



Read these instructions carefully:

Whilst Smart® Band and Smart® Tie are considered to be significantly safer than alternative metallic solutions, failure to follow these instructions can still result in personal injury.

General safety considerations:

1. STRAP BREAKAGE HAZARD

Smart® Band is free from sharp metallic edges however it is important to understand that improper operation of the tool or sharp corners on the load can result in strap breakage during tensioning that could result in the following:

- A sudden loss of balance causing you to fall
- Both tool and strap flying violently towards your face

Failure to place the strap properly around the load, an unstable or shifted load, could result in a sudden loss of strap tension during tensioning. This could result in a sudden loss of balance causing you to fall.

Positioning yourself in-line with the strap during tensioning, can result in personal injury from flying strap or tool. When tensioning, position yourself to one side of the strap and keep all bystanders away.

2. STRAP TENSION HAZARD

Smart® Band tools create very high tensions. Ensure body parts cannot be trapped during installation to prevent a crush injury.



3. EYE INJURY HAZARD

Failure to wear safety glasses with side shields can result in eye injury or blindness. Always wear safety glasses with side shields which conform to ANSI Standard Z87.1 or EN 166.



4. CUT HAZARD

Although the Smart® Band is not metallic and therefore significantly less likely to cause cuts to hands or fingers, it is still strongly recommended that the operator wear protective gloves.



5. NOISE HAZARD

When using the tool, ear protection must be worn.

At the operator's position:

- A-weighted sound pressure level, $L_{pA} = 80\text{dBA}$ (uncertainty, $K_{pA} = 4\text{ dBA}$)
- A-weighted sound power level, $L_{WA} = 91\text{ dBA}$ (uncertainty, $K_{WA} = 4\text{ dBA}$)
- Vibration level is less than 2.5 ms^{-2}

6. TOOL CARE (for further information see maintenance section)

- Always use an FRL (Filter, Regulator, Lubricator) Unit
- Inspect and clean the tool daily. Replace all worn or broken parts
- Lubricate all moving parts approximately every 5000 fitting cycles
- On air powered tools always disconnect the pneumatic connection to the tool when performing part removal and replacement procedures. NEVER connect a pneumatic source to a disassembled tool unless otherwise specified
- If used in a marine environment, wash off with fresh water after use, allow to dry then spray with light oil and wipe down.
- To avoid tool damage in prolonged use, set the tool up on a counter-balance.
- Never put away a wet or damp tool.

7. WORK AREA

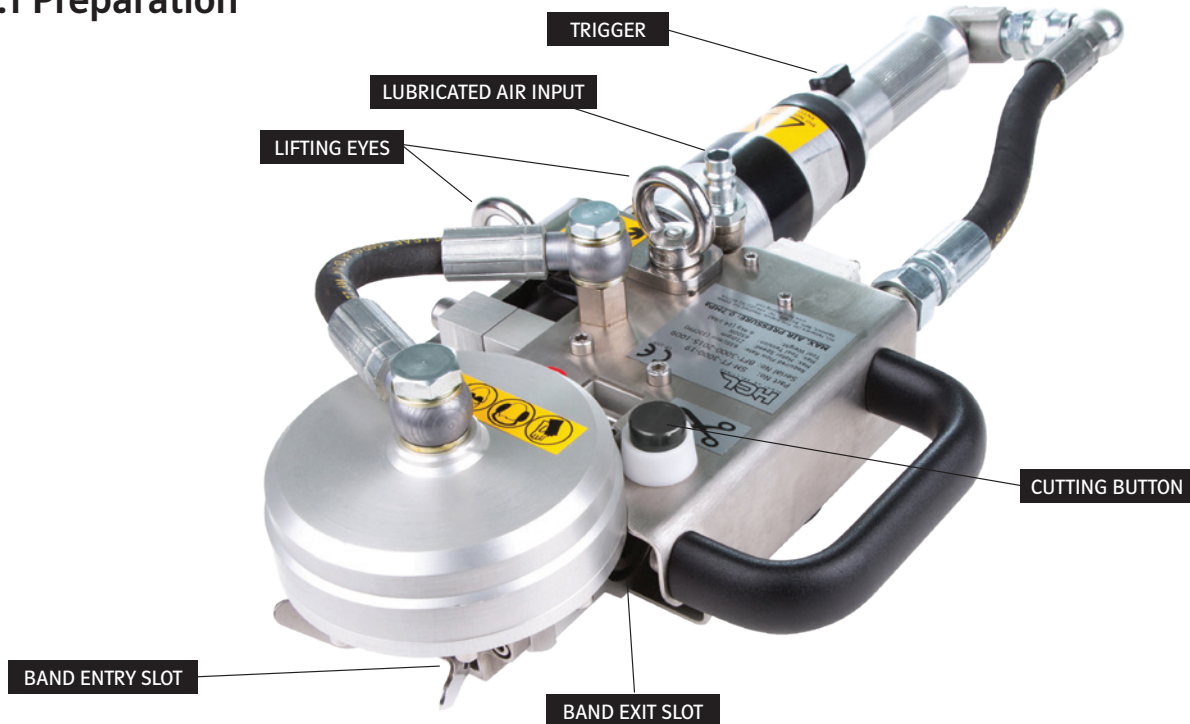
Keep work areas uncluttered and well lit. For prolonged use and to avoid unnecessary strain on your back, set the tool up on a counter-balance.

TOOL WEIGHTS

- Smart® Band 19mm ($\frac{3}{4}$ ") & Smart® Tie 20mm ($\frac{3}{4}$ ") tools
- **8.3kg**
- Smart® Band 32mm ($1\frac{1}{4}$ ")
- **7.5kg**
- Smart® Tie 32mm ($1\frac{1}{4}$ ")
- **9.1kg**

CONTINUOUS TIGHTENING TOOL

2.1 Preparation



Air Preparation

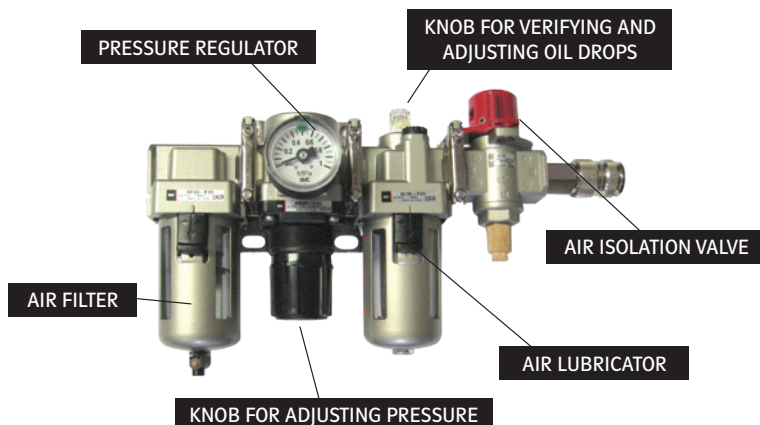
To perform correctly, this pneumatic tool requires a continuous flow of clean, dry and lubricated air at a suitable pressure.

Air Flow

Air motors inevitably need high flow requirements and this should be taken into consideration before set up.

Smart® Band 19mm (¾") & Smart® Tie 20mm (¾") tools – Requires a continuous air flow of 935 l/min (33 CFM).

Note: A pneumatic supply hose with internal bore of at least 10mm (¾") must be used to allow an adequate volume of compressed air to supply the tool.



All tools are supplied with a 5m supply hose.

Smart® Band 32mm (1¼") & Smart® Tie 32mm (1¼") tools – Requires a continuous air flow of 1,000 l/min (35 CFM).

Note: A pneumatic supply hose with internal bore of at least 10mm (¾") must be used to allow an adequate volume of compressed air to supply the tool.

IMPORTANT - THE TOOL WILL NOT OPERATE TO SPECIFICATION UNLESS THE MINIMUM AIRFLOW AND AIR REGULATION REQUIREMENTS HAVE BEEN MET.

Air Filter

For best results, use a 50 micron filter or better.

Pressure Regulator

A pressure regulator is essential for controlling the performance of the tool and should be mounted as close to the tool as possible, preferably within 5m (15ft). The maximum allowable static pressure (tool not running) for the tool is 0.7 MPa (7.0 bar). The recommended pressures (see section 2.2) are given as Dynamic pressures (when the tool is running).

Air Lubricator

IMPORTANT
 – Risk of seizure if not adhered to.

The tool should be lubricated with 6 to 8 drops of oil per minute of continuous use, in order to maintain the life of the air motor and prevent seizing. Lubricators should always be mounted as close to the tool as possible, preferably within 3m (10ft). Always mount the lubricator at least as high, or preferably higher than the tool. HCL recommend allowing 100ml/1000 strap fittings

FOR MORE INFORMATION REFER TO THE PNEUMATIC NUTRUNNER TOOL MANUAL

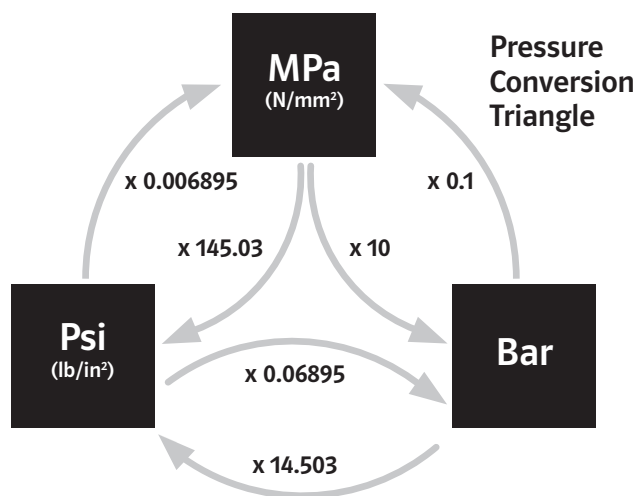
CONTINUOUS TIGHTENING TOOL

2.2 Tensioning

Tensioning Table



32mm and 19mm Hybrid Buckle



Recommended Pressure Settings

WARNING - Do not exceed the maximum pressure settings recommended for the system being applied

Smart® Tie		Diameter	Max Speed	Dynamic Pressure ¹	Max System Force (During Tightening)			Min Retention Force ² (After Tightening)		
Size	Material	mm		MPa	N	kgf	lbf	N	kgf	lbf
20mm (¾")	PA66 (Nylon 6.6)	100	310 rpm	0.60	3800	388	854	1800	184	405
	PA11 (Nylon 11)			0.50	3000	306	674	1400	143	315
	PA12 (Nylon 12)			0.50	3000	306	674	1400	143	315
	PPS (Polyphenylene Sulphide)			0.60	3000	306	674	1400	143	315
	PK (Polyketone)			0.60	3000	306	674	1500	153	337
32mm (1¼")	PA66 (Nylon 6.6)	200	66 rpm	TBC	TBC	TBC	TBC	TBC	TBC	TBC
	PA11 (Nylon 11)			0.55	6000	612	1349	2000	204	450
	PA12 (Nylon 12)			0.55	6000	612	1349	2000	204	450
	PPS (Polyphenylene Sulphide)			0.55	5500	561	1236	2000	204	450
	PK (Polyketone)			0.65	7000	714	1574	2000	204	450

Smart® Band Hybrid® and Compact		Diameter	Max Speed	Dynamic Pressure ¹	Max System Force (During Tightening)			Min Retention Force ² (After Tightening)		
Size	Material	mm		MPa	N	kgf	lbf	N	kgf	lbf
19mm (¾")	PA66 (Nylon 6.6)		290 rpm	0.45	6000	612	1349	3500	357	787
	PA11GF (Nylon 11 Glass-filled)			0.60	7000	714	1574	3500	357	787
	PA12GF (Nylon 12 Glass-filled)			0.60	7000	714	1574	3500	357	787
	POM (Acetal)			0.60	6500	663	1461	3500	357	787
32mm (1¼")	PA66 (Nylon 6.6)	600	210 rpm	0.50	14000	1428	3147	10000	1020	2248
	PA11GF (Nylon 11 Glass-filled)			0.55	16500	1683	3709	13500	1377	3035
	PA12GF (Nylon 12 Glass-filled)			0.50	14500	1479	3260	7500	765	1686
	POM (Acetal)			0.55	16500	1683	3709	9000	918	2023
				0.50	14500	1479	3260	7500	765	1686
				0.55	16500	1683	3709	9000	918	2023
				0.40	11500	1173	2585	6000	612	1349
				0.45	12500	1275	2810	7500	765	1686



Important Notes:

- Dynamic pressure means that the input pressure is set when the tool is running. The static pressure (when the tool is NOT running) will be higher than the dynamic pressure. The input pressure may need to be reduced depending on the aggressive nature of the application.
- The final retention force has been measured on a 600mm diameter steel pipe for Smart® Band and a 200mm diameter steel pipe for Smart® Ties. This figure may be lower for smaller diameters, or higher for larger diameters.

CONTINUOUS TIGHTENING TOOL

2.3 Operation

Operation

1

*Insert band into fixed end of the buckle**

**Does not apply to Smart® Band Compact*



2

*Pull back band to engage latch and push latch down onto band**

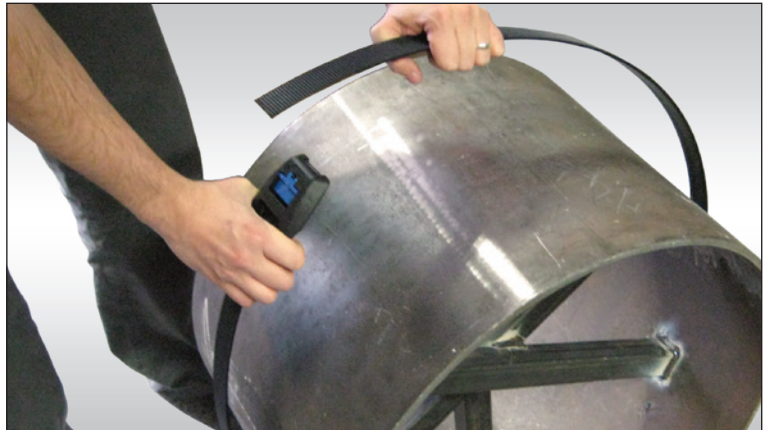
**Does not apply to Smart® Band Compact*



WARNING – Ensure latch is fully engaged with band before tightening. Latch not fully engaged could lead to premature failure of system when tightening

3

Wrap band around the application



4

Insert band into other end of buckle



CONTINUOUS TIGHTENING TOOL

Operation

5

Pull band tight by hand, making sure teeth are fully engaged with band



6

SM-FT-3000-32 tool with trigger operation shown for reference. All other tool variants have a button to operate the tool

Insert tool onto band, whilst holding down trigger – The tool will tighten the band and then stall



Keep trigger / button held down
SM-FT-3000-32 Shown for reference (Trigger)

WARNING – To avoid trapping of fingers, keep both hands on the tool while the strap is being tightened

7

Keep trigger / button held down
SM-FT-3000-32 Shown for reference (Trigger)

Press the cutting button for 2 seconds or until the blade has completely cut through the band



8

Keep trigger / button held down
SM-FT-3000-32 Shown for reference (Trigger)

Once the band is cut, release the Cutting Button – The tool will eject the excess length of band



Smart® Band assembly complete

MAINTENANCE

2.4 Maintenance

WARNING – Never service the tool whilst connected to a pressurised air line

1

Remove any blockages from Gripping wheel teeth.

To access all of the teeth, connect air line and press trigger to rotate Gripping wheel – ensure that the air line is removed before clearing any blockages.

2

Remove the M5 Capscrews (2x) and the Band guide.

3

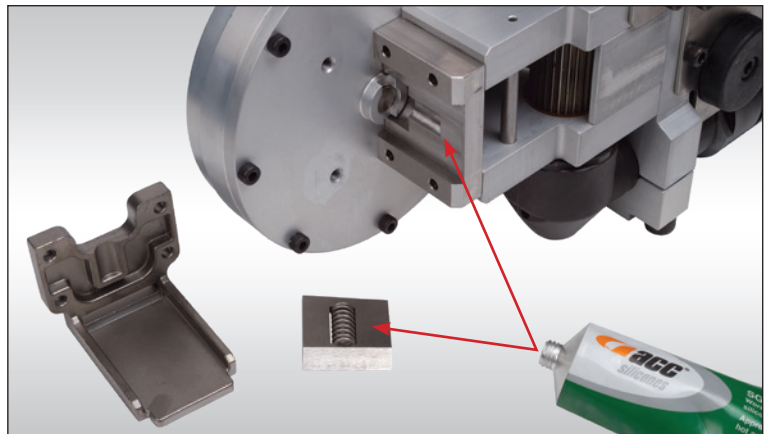
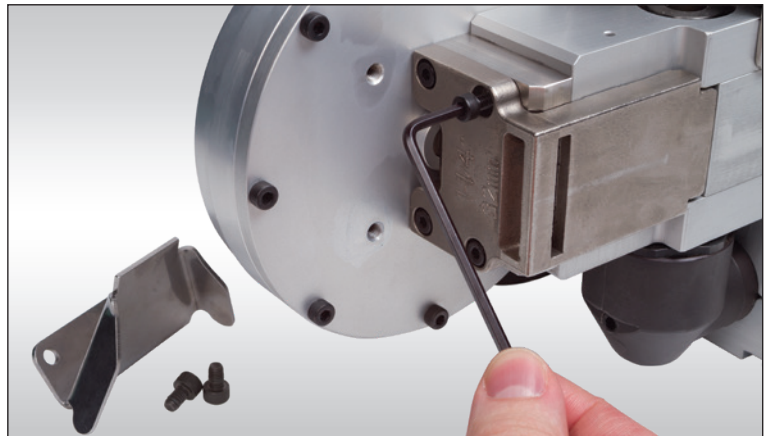
Remove the M4 Capscrews (4x) and the Blade housing.

4

Remove, clean and grease the Blade housing, Blade and Blade spring.

Reassemble tool as reverse of disassembly

Servicing – Gripping Wheel & Blade



MAINTENANCE

Servicing – Cutting Piston

WARNING – Never service the tool whilst connected to a pressurised air line

5

Remove the Banjo bolt and hose from the top of the Cutting piston.



6

Remove the M4 Capscrews (7x) and the Cutting cylinder.



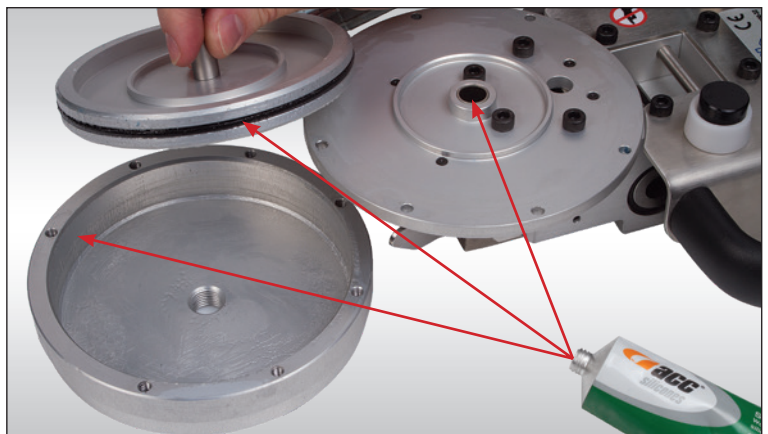
7

Remove the Piston assembly from the Cutting cylinder.



8

Clean and grease the Cutting piston, Piston shaft and DU bearing.



Reassemble tool as reverse of disassembly

For maintenance of Pneumatic Nutrunner, please refer to manufacturers manual

SM-FT-3000-32

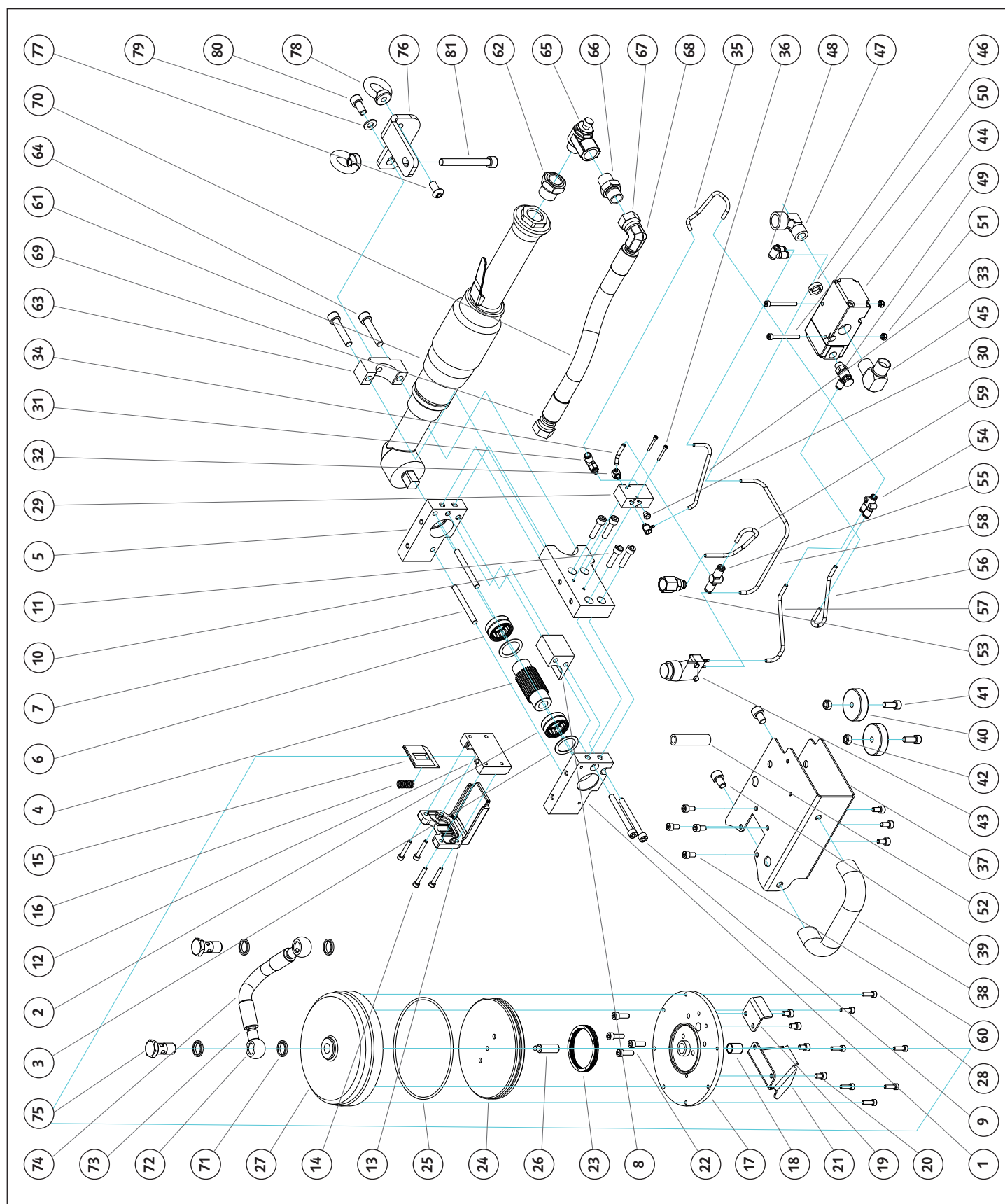
Parts List

ITEM	PART NUMBER	TITLE	QTY
1	PRT1129	PLATE, LEFT	1
2	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300Dx13LG (RNA 4903-2RS)	1
3	PRT1130	WASHER, THRUST	2
4	PRT1131	WHEEL, GRIPPING, 32mm	1
5	PRT1132	PLATE, RIGHT	1
6	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300Dx13LG (RNA 4903-2RS)	1
7	PRT11251	PIN, Ø6x60LG	2
8	PRT1141	PLATE, BAND DEFLECTION	1
9	CPS_M6X60_SS	CAPSCREW, SKT HD, M6x60LG, SS	2
10	PRT1133	PLATE, TORQUE REACTION	1
11	CPS_M6X25_SS	CAPSCREW, SKT HD, M6x25LG, SS	4
12	PRT1142	PLATE, BLADE SURROUND	1
13	PRT11295	FRONT END, CAST, 32mm, CHAMFERED SLOT	1
14	CPS_M4X25_SS	CAPSCREW, SKT HD, M4x25LG, SS	4
15	PRT1048	BLADE, CUTTING, 32mm	1
16	PRT1049	SPRING, COMPRESSION	1
17	PRT1143	BASE PLATE, CUTTING CYLINDER	1
18	DUB_010_012_015	BEARING, DU, 10IDx120Dx15LG	1
19	PRT1144	DEFLECTION PLATE, SHEET METAL	1
20	CPS_M5X8_SS	CAPSCREW, SKT HD, M5x8LG, SS	4
21	PRT1179	BAND GUIDE, SHEETMETAL	1
22	CPS_M5X16_SS	CAPSCREW, SKT HD, M5x16LG, SS	4
23	PRT1145	WAVE SPRING, CREST TO CREST	1
24	PRT1146	PISTON, CUTTING	1
25	ORG_10763X262_BS156_N70A	O-RING, BS156, 107.63IDx2.62CS, NITRILE 70A	1
26	PRT1147	SHAFT, CUTTING PISTON	1
27	PRT1148	CYLINDER, CUTTING	1
28	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	7
29	PRT1134	PNEUMATIC VALVE, 3/2, NORMALLY-CLOSED, M5 PORTS	1
30	PRT1135	SILENCER, M5	1
31	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 to 4mm ONE-TOUCH	1
32	PRT1137	BARB ELBOW, M5 to 4mm	2
33	PRT1138	PU TUBE, OD 4mm, 150mm LONG, BLACK	1
34	PRT1139	PU TUBE, OD 4mm, 20mm LONG, BLACK	1
35	PRT1140	PU TUBE, OD 4mm, 150mm LONG, BLACK	1
36	CPS_M2-5X20_SS	CAPSCREW, SKT HD, M2-5x20LG, SS	2
37	PRT1149	COVER, SHEETMETAL	1
38	PRT1150	HANDLE	1
39	CPS_M8X12_SS	CAPSCREW, SKT HD, M8x12LG, SS	2
40	PRT1151	FOOT, ANTI-VIBRATION	2
41	CPS_M6X16_SS	CAPSCREW, SKT HD, M6x16LG, SS	2
42	NUT_NYLOC_HEX_M6_SS	NUT, NYLOC, HEXAGON, M6, SS	2
43	PRT1152	PNEUMATIC VALVE, 3/2, 4mm BARB, BLACK PUSH BUTTON	1
44	PRT1153	PNEUMATIC VALVE, 3/2, 3/8" BSPT PORTS	1
45	PRT1154	ADAPTOR ELBOW, 3/8" BSPT MALE TO 3/8" 60° CONE	1
46	PRT11440	SILENCER, FLUSH, 3/8" BSPP	1
47	PRT1156	ELBOW, INPUT ADAPTOR	1
48	PRT1329	ADAPTOR, M5 TO DOUBLE 4mm ONE-TOUCH	1
49	PRT1160	FLOW CONTROLLER, METER-OUT, ELBOW, 1/8" BSPT to 4mm ONE-TOUCH	1
50	CPS_M4X40_SS	CAPSCREW, SKT HD, M4x40LG, SS	2
51	NUT_NYLOC_HEX_M4_SS	NUT, NYLOC, HEXAGON, M4, SS	2
52	PRT1158	SPACER	1
53	PRT1159	BULKHEAD ADAPTOR, 1/4" BSPP FEMALE TO 4mm ONE-TOUCH	1
54	PRT1161	CONNECTOR, YPIECE, EQUAL SIZE, 4mm ONE-TOUCH	1
55	PRT1162	QUICK EXHAUST VALVE, 4mm to 4mm ONE-TOUCH	1
56	PRT1163	PU TUBE, OD 4mm, 70mm LONG, BLACK	1
57	PRT1164	PU TUBE, OD 4mm, 75mm LONG, BLACK	1
58	PRT1165	PU TUBE, OD 4mm, 180mm LONG, BLACK	1
59	PRT1167	PU TUBE, OD 4mm, 135mm LONG, BLACK	1
60	CPS_M5X10_SS	CAPSCREW, SKT HD, M5x10LG, SS	7
61	PRT1168	NUTRUNNER, CLECO 55NL-2T-4	1
62	PRT11441	ADAPTOR, 1/2" NPT MALE TO 3/8" FEMALE	1
63	PRT1170	PLATE, REACTION CLAMP	1
64	CPS_M8X40_SS	CAPSCREW, SKT HD, M8x40LG, SS	2
65	PRT1334	FLOW CONTROLLER, METER-IN, ELBOW, 3/8" NPT	1
66	PRT1288	ADAPTOR, 3/8" NPT MALE TO 3/8" 60° CONE	1
67	PRT1171	HOSE TAIL, BLOCK 90°, 3/8" 60° FEMALE CONE	1
68	PRT1172	FERRULE, 3/8"	2
69	PRT1174	HOSE TAIL, STRAIGHT, 3/8" 60° FEMALE CONE	1
70	PRT1173	HOSE, 2-PLY STEEL BRAID, 3/8"	1
71	WAS_DOWTY_1-4	WASHER, DOWTY, 1/4"	4
72	PRT1175	HOSE TAIL, BANJO FITTING, 1/4"	2
73	PRT1177	FERRULE, 1/4"	2
74	PRT1178	HOSE, 1-PLY STEEL BRAID, 1/4"	1
75	PRT1176	BOLT, BANJO, 1/4"	2
76	PRT1298	BRACKET, LIFTING EYE	1
77	BHS_M8X16_SS	BUTTONHEAD SCREW, SKT HD, M8x16LG, SS	1
78	EYE_NUT_M8_SS	NUT, LIFTING EYE, M8x1.25, SS	2
79	WAS_FLAT_M8_SS	WASHER, FLAT, M8, SS	1
80	CPS_M8X16_SS	CAPSCREW, SKT HD, M8x16LG, SS	1
81	CPS_M8X70_SS	CAPSCREW, SKT HD, M8x70LG, SS	1

MAINTENANCE

SM-FT-3000-32

Parts List



MAINTENANCE

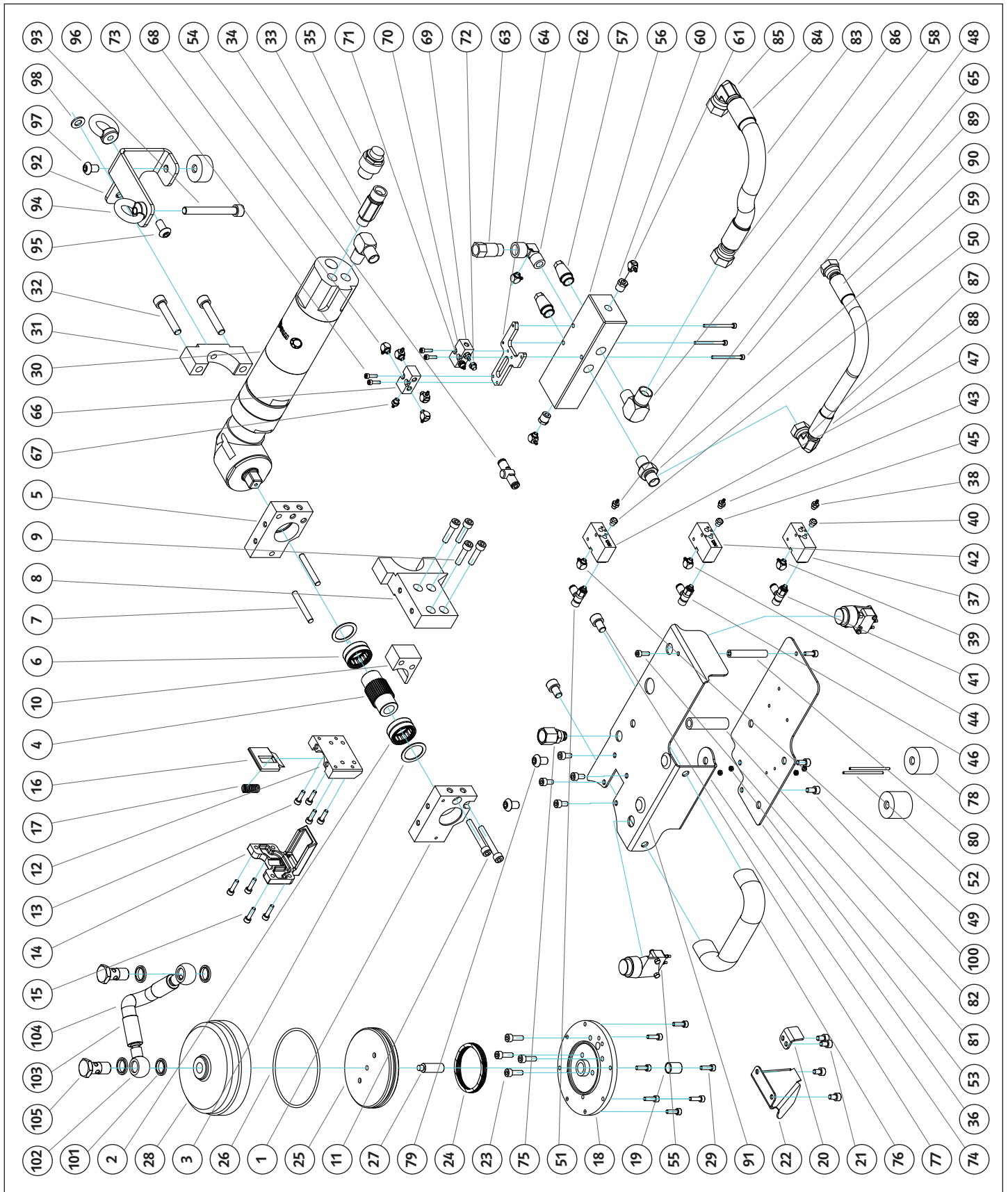
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Parts List

ITEM	PART NUMBER	TITLE	QTY
1	PRT1262	PLATE, LEFT	1
2	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300DX13LG (RNA_4903-2RS)	1
3	PRT130	WASHER, THRUST	2
4	PRT1263	WHEEL GRIPPING, 19mm	1
5	PRT1264	PLATE, RIGHT	1
6	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300DX13LG (RNA_4903-2RS)	1
7	PRT1266	PIN, Ø6x45LG	2
8	PRT1414	PLATE, TORQUE REACTION	1
9	CPS_M6x25_SS	CAPSCREW, SKT HD, M6x25LG, SS	4
10	PRT1267	PLATE, BAND DEFLECTION	1
11	CPS_M6x45_SS	CAPSCREW, SKT HD, M6x45LG, SS	2
12	PRT1268	PLATE, BLADE SURROUND	1
13	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	4
14	PRT1377	FRONT END, CAST, 19mm, CHAMFERED SLOT	1
15	CPS_M4X16_SS	CAPSCREW, SKT HD, M4x16LG, SS	4
16	PRT1057	BLADE, CUTTING, 19mm	1
17	PRT1049	SPRING, COMPRESSION	1
18	PRT1269	BASE PLATE, CUTTING CYLINDER	1
19	DUB_010_012_015	BEARING, DU, 10IDx120DX15LG	1
20	PRT1270	DEFLECTION PLATE, SHEETMETAL	1
21	CPS_M5X8_SS	CAPSCREW, SKT HD, M5x8LG, SS	4
22	PRT1271	BAND GUIDE, SHEETMETAL	1
23	CPS_M5X16_SS	CAPSCREW, SKT HD, M5x16LG, SS	4
24	PRT1145	WAVE SPRING, CREST TO CREST	1
25	PRT1272	PISTON, CUTTING	1
26	ORG_08380X262_BS643_N70A	O-RING, BS643, 83.80IDx262X2.62CS, NITRILE 70A	1
27	PRT1147	SHAFT, CUTTING PISTON	1
28	PRT1273	CYLINDER, CUTTING	1
29	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	7
30	PRT1413	NUTRUNNER, MODEC, MR08RV0073AFCA1C	1
31	PRT1411	PLATE, REACTION CLAMP	1
32	CPS_M8X45_SS	CAPSCREW, SKT HD, M8x45LG, SS	2
33	PRT1382	HYDRAULIC ADAPTOR, G1/4" MALE TO G3/8" 60° CONE	1
34	PRT1397	ADAPTOR ELBOW, 1/4" BSPT MALE TO 1/4" 60° CONE	1
35	PRT1430	SILENCER, FLOW CONTROLLER, G3/8"	1
36	PRT1416	LOWER COVER PLATE	1
37	PRT1334	PNEUMATIC VALVE, 3/2, NORMALLY-CLOSED, M5 PORTS	1
38	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
39	PRT1137	BARB ELBOW, M5 TO 4mm	1
40	PRT1135	SILENCER, M5	1
41	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
42	PRT1386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
43	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
44	PRT1137	BARB ELBOW, M5 TO 4mm	1
45	PRT1135	SILENCER, M5	1
46	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
47	PRT1386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
48	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
49	PRT1137	BARB ELBOW, M5 TO 4mm	1
50	PRT1135	SILENCER, M5	1
51	PRT1385	FLOW CONTROLLER, METER-OUT, ELBOW, M5 TO 4mm ONE-TOUCH	1
52	PRT1404	M2.5, STUDDING	2
53	NUT_NYLOC_HEX_M2.5_SS	NUT, NYLOC, HEXAGON, M2-5, SS	4
54	PRT1162	QUICK EXHAUST VALVE, 4mm TO 4mm ONE-TOUCH	1
55	PRT1152	PNEUMATIC VALVE, 3/2, 4mm BARB, BLACK PUSH BUTTON	2
56	PRT1387	PNEUMATIC VALVE, 5/3, G1/4" PORTS	1
57	PRT1399	SILENCER, 1/4" BSP	2
58	PRT1279	ADAPTOR ELBOW, 1/4" BSPT MALE TO 3/8" 60° CONE	1
59	PRT1401	1/4" NIPPLE	1
60	PRT1157	BUSH, REDUCER, 1/8" BSPT TO M5	2
61	PRT1137	BARB ELBOW, M5 TO 4mm	3
62	PRT1281	ELBOW, INPUT ADAPTOR	1
63	PRT1400	1/4" BSP MALE TO 1/4" BSP FEMALE, STRAIGHT ADAPTOR	1
64	PRT1405	FIXING SUB PLATE	1
65	CPS_M3X40_SS	CAPSCREW, SKT HD, M3x40LG, SS	3
66	PRT1381	MANIFOLD, PNEUMATIC	1
67	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
68	PRT1137	BARB ELBOW, M5 TO 4mm	4
69	PRT1381	MANIFOLD, PNEUMATIC	1
70	PRT1137	BARB ELBOW, M5 TO 4mm	1
71	PRT1384	BARB STRAIGHT, M5 TO 4mm	3
72	PRT1383	PLUG, M5	1
73	CPS_M3X12_SS	CAPSCREW, SKT HD, M3x12LG, SS	4
74	PRT1415	TOP COVER PLATE	1
75	PRT1159	BULKHEAD ADAPTOR, 1/4" BSPP FEMALE TO 4mm ONE-TOUCH	1
76	PRT1150	HANDLE	1
77	CPS_M8X12_SS	CAPSCREW, SKT HD, M8x12LG, SS	2
78	PRT1370	FOOT, ANTI-VIBRATION	2
79	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	2
80	PRT1398	SPACER	1
81	CPS_M4X12_SS	CAPSCREW, SKT HD, M4x12LG, SS	2
82	PRT1158	SPACER	1
83	PRT1353	HOSE, 2-PLY STEEL BRAID, 3/8"	1
84	PRT1172	FERRULE, 3/8"	2
85	PRT1171	HOSE TAIL, BLOCK 90°, 3/8" 60° FEMALE CONE	1
86	PRT1174	HOSE TAIL, STRAIGHT, 3/8" 60° FEMALE CONE	1
87	PRT1407	HOSE TAIL, BLOCK 90°, 1/4" 60° FEMALE CONE	1
88	PRT1408	FERRULE, 1/4"	2
89	PRT1409	HOSE TAIL, STRAIGHT, 1/4" 60° FEMALE CONE	1
90	PRT1406	HOSE, 2-PLY STEEL BRAID, 1/4"	1
91	PRT1412	BLANKING PLUG	2
92	PRT1410	BRACKET, LIFTING EYE	1
93	CPS_M8X70_SS	CAPSCREW, SKT HD, M8x70LG, SS	1
94	EYE_NUT_M8_SS	NUT, LIFTING EYE, M8x1.25, SS	2
95	BHS_M8X16_SS	BUTTONHEAD SCREW, SKT HD, M8x16LG, SS	1
96	PRT1371	FOOT, ANTI-VIBRATION	1
97	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	1
98	WAS_FLAT_M8_SS	WASHER, FLAT, M8, SS	1
99	CPS_M8X16_SS	CAPSCREW, SKT HD, M8x16LG, SS	1
100	CPS_M5X10_SS	CAPSCREW, SKT HD, M5x10LG, SS	6
101	WAS_DOWTY_1-4	WASHER, DOWTY, 1/4"	4
102	PRT1175	HOSE TAIL, BANJO FITTING, 1/4"	2
103	PRT1177	FERRULE, 1/4"	2
104	PRT1293	HOSE, 1-PLY STEEL BRAID, 1/4"	1
105	PRT1176	BOLT, BANJO, 1/4"	2

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Parts List



SM-FT-3000-20ST

Parts List

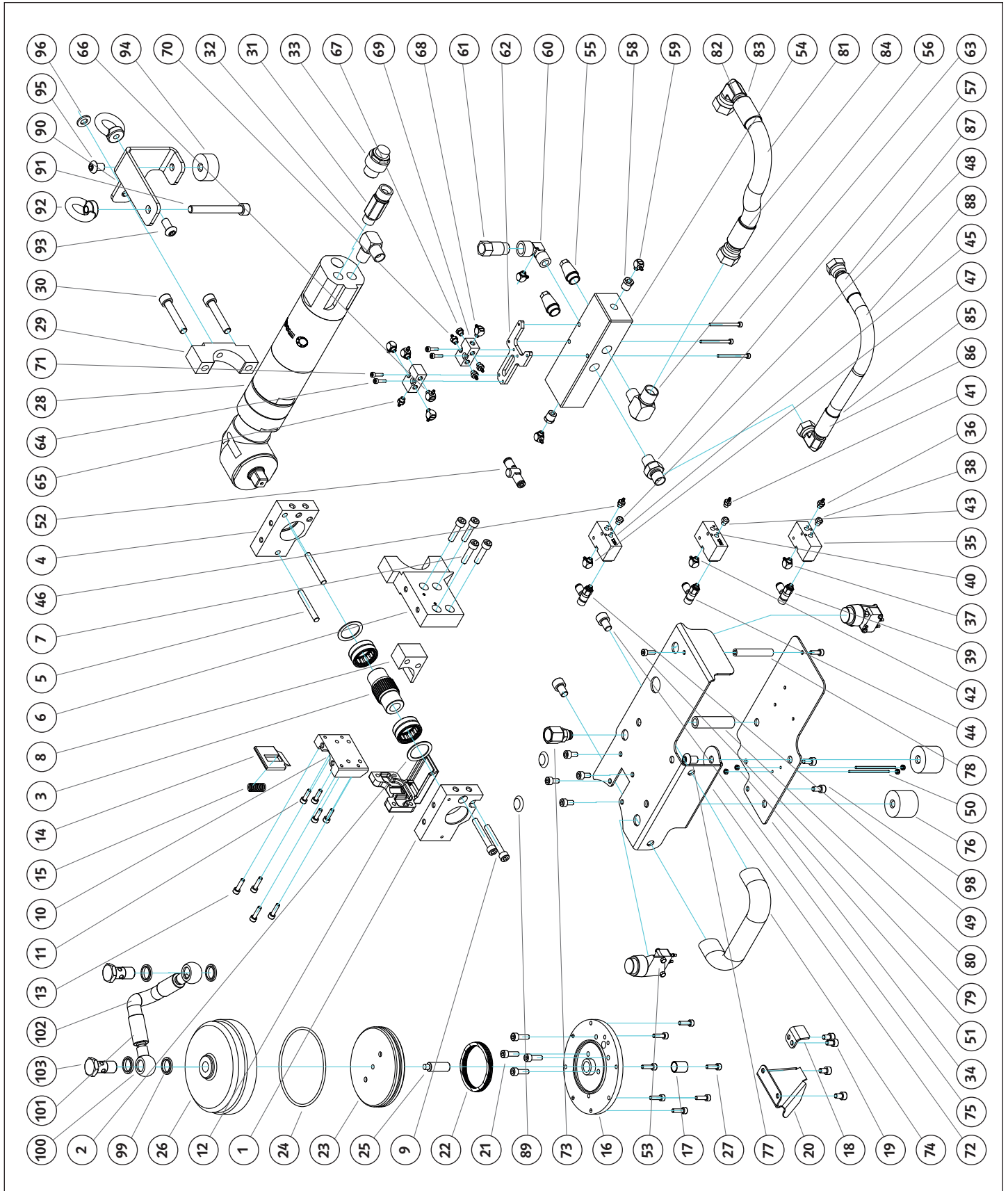
ITEM	PART NUMBER	TITLE	QTY
53	PRT1152	PNEUMATIC VALVE, 3/2, 4mm BARB, BLACK PUSH BUTTON	2
54	PRT1387	PNEUMATIC VALVE, 5/3, G1/4" PORTS	1
55	PRT1399	SILENCER, 1/4" BSP	2
56	PRT1279	ADAPTOR ELBOW, 1/4" BSP TO MALE TO 3/8" 60° CONE	1
57	PRT1401	1/4" NIPPLE	1
58	PRT1157	BUSH, REDUCER, 1/8" BSP TO M5	2
59	PRT1137	BARB ELBOW, M5 TO 4mm	3
60	PRT1281	ELBOW, INPUT ADAPTOR	1
61	PRT1400	1/4" BSP MALE TO 1/4" BSP FEMALE, STRAIGHT ADAPTOR	1
62	PRT1405	FIXING SUB PLATE	1
63	CPS_M3X40_SS	CAPSCREW, SKT HD, M3x40LG, SS	3
64	PRT1381	MANIFOLD, PNEUMATIC	1
65	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
66	PRT1137	BARB ELBOW, M5 TO 4mm	4
67	PRT1381	MANIFOLD, PNEUMATIC	1
68	PRT1137	BARB ELBOW, M5 TO 4mm	1
69	PRT1384	BARB STRAIGHT, M5 TO 4mm	3
70	PRT1383	PLUG, M5	1
71	CPS_M3X12_SS	CAPSCREW, SKT HD, M3x12LG, SS	4
72	PRT1415	TOP COVER PLATE	1
73	PRT1159	BULKHEAD ADAPTOR, 1/4" BSP FEMALE TO 4mm ONE-TOUCH	1
74	PRT1150	HANDLE	1
75	CPS_M8X12_SS	CAPSCREW, SKT HD, M8x12LG, SS	2
76	PRT1370	FOOT, ANTI-VIBRATION	2
77	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	2
78	PRT1998	SPACER	1
79	CPS_M4X12_SS	CAPSCREW, SKT HD, M4x12LG, SS	2
80	PRT1158	SPACER	1
81	PRT1353	HOSE, 2-PLY STEEL BRAID, 3/8"	1
82	PRT1172	FERRULE, 3/8"	2
83	PRT1171	HOSE TAIL, BLOCK 90°, 3/8" 60° FEMALE CONE	1
84	PRT1174	HOSE TAIL, STRAIGHT, 3/8" 60° FEMALE CONE	1
85	PRT1407	HOSE TAIL, BLOCK 90°, 1/4" 60° FEMALE CONE	1
86	PRT1408	FERRULE, 1/4"	2
87	PRT1409	HOSE TAIL, STRAIGHT, 1/4" 60° FEMALE CONE	1
88	PRT1406	HOSE, 2-PLY STEEL BRAID, 1/4"	1
89	PRT1412	BLANKING PLUG	2
90	PRT1410	BRACKET, LIFTING EYE	1
91	CPS_M8X70_SS	CAPSCREW, SKT HD, M8x70LG, SS	1
92	EYE_NUT_M8_SS	NUT, LIFTING EYE, M8x1.25, SS	2
93	BHS_M8X16_SS	BUTTONHEAD SCREW, SKT HD, M8x16LG, SS	1
94	PRT1371	FOOT, ANTI-VIBRATION	1
95	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	1
96	WAS_FLAT_M8_SS	WASHER, FLAT, M8, SS	1
97	CPS_M8X16_SS	CAPSCREW, SKT HD, M8x16LG, SS	1
98	CPS_M5X10_SS	CAPSCREW, SKT HD, M5x10LG, SS	6
99	WAS_DOWTY_14	WASHER, DOWTY, 1/4"	4
100	PRT1175	HOSE TAIL, BANJO FITTING, 1/4"	2
101	PRT1177	FERRULE, 1/4"	2
102	PRT1293	HOSE, 1-PLY STEEL BRAID, 1/4"	1
103	PRT1176	BOLT, BANJO, 1/4"	2

ITEM	PART NUMBER	TITLE	QTY
1	ASM1063	LEFT PLATE BEARING ASSEMBLY	1
2	PRT130	WASHER, THRUST	2
3	PRT1249	WHEEL GRIPPING, 20mm SMART TIE	1
4	ASM1064	RIGHT PLATE BEARING ASSEMBLY	1
5	PRT1266	PIN, Ø6x45LG	2
6	PRT1265	PLATE, TORQUE REACTION	1
7	CPS_M6X25_SS	CAPSCREW, SKT HD, M6x25LG, SS	4
8	PRT1267	PLATE, BAND DEFLECTION	1
9	CPS_M6X45_SS	CAPSCREW, SKT HD, M6x45LG, SS	2
10	PRT1268	PLATE, BLADE SURROUND	1
11	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	4
12	PRT1377	FRONT END, CAST, 19mm, CHAMFERED SLOT	1
13	CPS_M4X16_SS	CAPSCREW, SKT HD, M4x16LG, SS	4
14	PRT1057	BLADE, CUTTING, 19mm	1
15	PRT1049	SPRING, COMPRESSION	1
16	PRT1269	BASE PLATE, CUTTING CYLINDER	1
17	DUB_010_012_015	BEARING, DU, 10IDx12ODx15LG	1
18	PRT1270	DEFLECTION PLATE, SHEETMETAL	1
19	CPS_M5X8_SS	CAPSCREW, SKT HD, M5x8LG, SS	4
20	PRT1271	BAND GUIDE, SHEETMETAL	1
21	CPS_M5X16_SS	CAPSCREW, SKT HD, M5x16LG, SS	4
22	PRT1145	WAVE SPRING, CREST TO CREST	1
23	PRT1272	PISTON, CUTTING	1
24	ORG_08380X262_BS643_N70A	O-RING, BS643, 83.80IDx2.62CS, NITRILE 70A	1
25	PRT1147	SHAFT, CUTTING PISTON	1
26	PRT1273	CYLINDER, CUTTING	1
27	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	7
28	PRT1376	NUTRUNNER, MODEC	1
29	PRT1411	PLATE, REACTION CLAMP	1
30	CPS_M8X45_SS	CAPSCREW, SKT HD, M8x45LG, SS	2
31	PRT1382	HYDRAULIC ADAPTOR, G1/4" MALE TO G3/8" 60° CONE	1
32	PRT1397	ADAPTOR ELBOW, 1/4" BSP MALE TO 1/4" 60° CONE	1
33	PRT1430	SILENCER, FLOW CONTROLLER, G3/8"	1
34	PRT1416	LOWER COVER PLATE	1
35	PRT1134	PNEUMATIC VALVE, 3/2, NORMALLY-CLOSED, M5 PORTS	1
36	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
37	PRT1137	BARB ELBOW, M5 TO 4mm	1
38	PRT1135	SILENCER, M5	1
39	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
40	PRT1386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
41	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
42	PRT1137	BARB ELBOW, M5 TO 4mm	1
43	PRT1135	SILENCER, M5	1
44	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
45	PRT1386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
46	PRT1384	BARB STRAIGHT, M5 TO 4mm	1
47	PRT1137	BARB ELBOW, M5 TO 4mm	1
48	PRT1135	SILENCER, M5	1
49	PRT1385	FLOW CONTROLLER, METER-OUT, ELBOW, M5 TO 4mm ONE-TOUCH	1
50	PRT1404	M2.5 STUDDING	2
51	NUT_NYLOC_HEX_M2.5_SS	NUT, NYLOC, HEXAGON, M2.5, SS	4
52	PRT1162	QUICK EXHAUST VALVE, 4mm TO 4mm ONE-TOUCH	1

MAINTENANCE

SM-FT-3000-20ST

Parts List



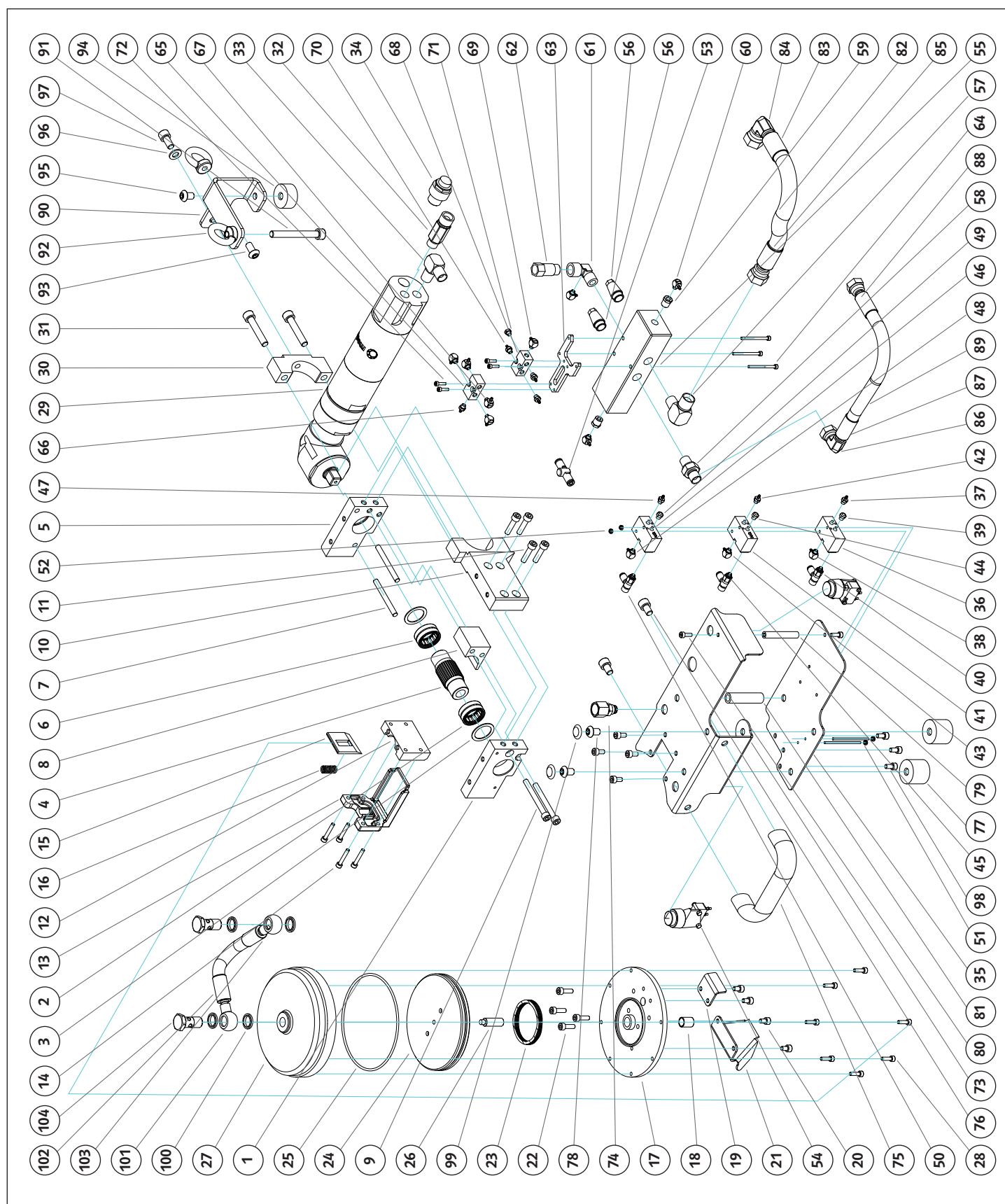
SM-FT-3000-32ST

Parts List

ITEM	PART NUMBER	TITLE	QTY
1	PRT1129	PLATE, LEFT	1
2	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300DX13LG (RNA_4903-2RS)	1
3	PRT1130	WASHER, THRUST	2
4	PRT11352	WHEEL GRIPPING, 32mm SMART TIE	1
5	PRT1132	PLATE, RIGHT	1
6	NRB_22_30_13	BEARING, NEEDLE ROLLER, 22IDx300DX13LG (RNA_4903-2RS)	1
7	PRT11251	PIN, Ø6x60LG	2
8	PRT1141	PLATE, BAND DEFLECTION	1
9	CPS_M6X60_SS	CAPSCREW, SKT HD, M6x60LG, SS	2
10	PRT11396	PLATE, TORQUE REACTION	1
11	CPS_M6X25_SS	CAPSCREW, SKT HD, M6x25LG, SS	4
12	PRT1142	PLATE, BLADE SURROUND	1
13	PRT11295	FRONT END, CAST, 32mm, CHAMFERED SLOT	1
14	CPS_M4X25_SS	CAPSCREW, SKT HD, M4x25LG, SS	4
15	PRT1048	BLADE, CUTTING, 32mm	1
16	PRT1049	SPRING, COMPRESSION	1
17	PRT1143	BASE PLATE, CUTTING CYLINDER	1
18	DUB_010_012_015	BEARING, DU, 10ID x120D x15LG	1
19	PRT1144	DEFLECTION PLATE, SHEET METAL	1
20	CPS_M5X8_SS	CAPSCREW, SKT HD, M5x8LG, SS	4
21	PRT1179	BAND GUIDE, SHEETMETAL	1
22	CPS_M5X16_SS	CAPSCREW, SKT HD, M5x16LG, SS	4
23	PRT1145	WAVE SPRING, CREST TO CREST	1
24	PRT1146	PISTON, CUTTING	1
25	ORG_10763X262_BS156_N70A	O-RING, BS156, 107.63IDx2.62CS, NITRILE 70A	1
26	PRT1147	SHAFT, CUTTING PISTON	1
27	PRT1148	CYLINDER, CUTTING	1
28	CPS_M4X14_SS	CAPSCREW, SKT HD, M4x14LG, SS	7
29	PRT11395	NUTRUNNER, MODEC	1
30	PRT11411	PLATE, REACTION CLAMP	1
31	CPS_M8X45_SS	CAPSCREW, SKT HD, M8x45LG, SS	2
32	PRT11382	HYDRAULIC ADAPTOR, G1/4" MALE TO G3/8" 60° CONE	1
33	PRT11397	ADAPTOR ELBOW, 1/4" BSPT MALE TO 3/8" 60° CONE	1
34	PRT11430	SILENCER, FLOW CONTROLLER, G3/8"	1
35	PRT11403	LOWER COVER PLATE	1
36	PRT1134	PNEUMATIC VALVE, 3/2, NORMALLY-CLOSED, M5 PORTS	1
37	PRT11384	BARB STRAIGHT, M5 TO 4mm	1
38	PRT1137	BARB ELBOW, M5 TO 4mm	1
39	PRT1135	SILENCER, M5	1
40	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
41	PRT11386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
42	PRT11384	BARB STRAIGHT, M5 TO 4mm	1
43	PRT1137	BARB ELBOW, M5 TO 4mm	1
44	PRT1135	SILENCER, M5	1
45	PRT1136	FLOW CONTROLLER, METER-IN, ELBOW, M5 TO 4mm ONE-TOUCH	1
46	PRT11386	PNEUMATIC VALVE, 3/2, NORMALLY-OPEN, M5 PORTS	1
47	PRT11384	BARB STRAIGHT, M5 TO 4mm	1
48	PRT1137	BARB ELBOW, M5 TO 4mm	1
49	PRT1135	SILENCER, M5	1
50	PRT11385	FLOW CONTROLLER, METER-OUT, ELBOW, M5 TO 4mm ONE-TOUCH	1
51	PRT11404	M2.5, STUDDING	2
52	NUT_NYLOC_HEX_M2-5_SS	NUT, NYLOC, HEXAGON, M2-5, SS	4
53	PRT1162	QUICK EXHAUST VALVE, 4mm TO 4mm ONE-TOUCH	1
54	PRT1152	PNEUMATIC VALVE, 3/2, 4mm BARB, BLACK PUSH BUTTON	2
55	PRT11387	PNEUMATIC VALVE, 5/3, G1/4" PORTS	1
56	PRT11399	SILENCER, 1/4" BSP	2
57	PRT11279	ADAPTOR ELBOW, 1/4" BSPT MALE TO 3/8" 60° CONE	1
58	PRT11401	1/4" NIPPLE	1
59	PRT11157	BUSH, REDUCER, 1/8" BSPT TO M5	2
60	PRT11137	BARB ELBOW, M5 TO 4mm	3
61	PRT11281	ELBOW, INPUT ADAPTOR	1
62	PRT11400	1/4" BSP MALE TO 1/4" BSP FEMALE, STRAIGHT ADAPTOR	1
63	PRT11405	FIXING SUB PLATE	1
64	CPS_M3X40_SS	CAPSCREW, SKT HD, M3x40LG, SS	3
65	PRT11381	MANIFOLD, PNEUMATIC	1
66	PRT11384	BARB STRAIGHT, M5 TO 4mm	1
67	PRT11137	BARB ELBOW, M5 TO 4mm	4
68	PRT11381	MANIFOLD, PNEUMATIC	1
69	PRT11137	BARB ELBOW, M5 TO 4mm	1
70	PRT11384	BARB STRAIGHT, M5 TO 4mm	3
71	PRT11383	PLUG, M5	1
72	CPS_M3X12_SS	CAPSCREW, SKT HD, M3x12LG, SS	4
73	PRT11402	TOP COVER PLATE	1
74	PRT11159	BULKHEAD ADAPTOR, 1/4" BSPP FEMALE TO 4mm ONE-TOUCH	1
75	PRT11150	HANDLE	1
76	CPS_M8X12_SS	CAPSCREW, SKT HD, M8x12LG, SS	2
77	PRT11370	FOOT, ANTI-VIBRATION	2
78	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	2
79	PRT11398	SPACER	1
80	CPS_M4X12_SS	CAPSCREW, SKT HD, M4x12LG, SS	2
81	PRT11158	SPACER	1
82	PRT11353	HOSE, 2-PLY STEEL BRAID, 3/8"	1
83	PRT11172	FERRULE, 3/8"	2
84	PRT11171	HOSE TAIL, BLOCK 90°, 3/8" 60° FEMALE CONE	1
85	PRT11174	HOSE TAIL, STRAIGHT, 3/8" 60° FEMALE CONE	1
86	PRT11407	HOSE TAIL, BLOCK 90°, 1/4" 60° FEMALE CONE	1
87	PRT11408	FERRULE, 1/4"	2
88	PRT11409	HOSE TAIL, STRAIGHT, 1/4" 60° FEMALE CONE	1
89	PRT11406	HOSE, 2-PLY STEEL BRAID, 1/4"	1
90	PRT11410	BRACKET, LIFTING EYE	1
91	CPS_M8X70_SS	CAPSCREW, SKT HD, M8x70LG, SS	1
92	EYE_NUT_M8_SS	NUT, LIFTING EYE, M8x1.25, SS	2
93	BHS_M8X16_SS	BUTTONHEAD SCREW, SKT HD, M8x16LG, SS	1
94	PRT11371	FOOT, ANTI-VIBRATION	1
95	BHS_M8X12_SS	BUTTONHEAD SCREW, SKT HD, M8x12LG, SS	1
96	WAS_FLAT_M8_SS	WASHER, FLAT, M8, SS	1
97	CPS_M8X16_SS	CAPSCREW, SKT HD, M8x16LG, SS	1
98	CPS_M5X10_SS	CAPSCREW, SKT HD, M5x10LG, SS	7
99	PRT11412	BLANKING PLUG	2
100	WAS_DOWTY_1-4	WASHER, DOWTY, 1/4"	4
101	PRT11175	HOSE TAIL, BANJO FITTING, 1/4"	2
102	PRT11177	FERRULE, 1/4"	2
103	PRT11178	HOSE, 1-PLY STEEL BRAID, 1/4"	1
104	PRT11176	BOLT, BANJO, 1/4"	2

SM-FT-3000-32ST

Parts List



3.3 Troubleshooting

Troubleshooting

Symptom 1: Smart® Band or Smart® Tie failure during fitting

Failure Mode & Possible Cause	Solution
1. Band/Buckle breaks due to incorrect input pressure	Set correct input pressure (Refer to Section 2.3, Tensioning Table)
2. Buckle breaks due to incorrect tool positioning during fitting	Ensure tool is correctly positioned in buckle. Do not lift tool away from application during tightening (Refer to Section 2.2, step 6)
3. Band breaks due to repeated relaxing and re-tightening	Only tighten the band once
4. Band pulls out of fixed end of buckle	Ensure that latch is fully engaged with band before tensioning (Refer to Section 2.2, step 2)
5. Buckle breaks due to being positioned in mid-air or around too small a radius	Position Buckle on suitable radius (Refer to Banding Products Technical Booklet; Section 2.2 Technical – Installation Design), or reduce pressure to an acceptable level
6. Band breaks due to being positioned around too small a radius	Position Band on suitable radius (Refer to Banding Products Technical Booklet; Section 2.2 Technical – Installation Design)

Symptom 2: Inadequate Smart® Band or Smart® Tie tension

Possible Cause	Solution
1. Input pressure incorrect	Check supply pressure. Set regulator to correct pressure.
2. Tool requires servicing	Service fitting tool (Refer to Section 3.1, Servicing)
3. Incorrect supply hose diameter	Use supply hose of at least 10mm (3/8") for 19mm version or 13mm (1/2") for 32mm version
4. No lubrication in FRL unit	Add appropriate lubricant or fit lubricator unit
5. Regulator at limit of travel	Insufficient supply pressure. Increase

Symptom 3: Tool does not grip Smart® Band or Smart® Tie

Possible Cause	Solution
1. Excess band tail from buckle too short	Remove band and replace with a longer length
2. Gripping wheel teeth dirty or clogged	Clean Gripping wheel teeth (Refer to Section 3.1, Servicing)

Symptom 4: Smart® Band or Smart® Tie does not feed through tool

Possible Cause	Solution
1. Blockage in tool, e.g. band	Remove Blade housing then clear blockage (Refer to Section 3.1, Servicing)
2. Blade stuck down	Remove, clean and grease the Blade housing, Blade and Blade spring. Remove, clean and grease Cutting Piston if required (Refer to Section 3.1, Servicing)

Symptom 5: Tool does not cut

Possible Cause	Solution
1. Blockage in tool, e.g. band	Remove Blade housing then clear blockage (Refer to Section 3.1, Servicing)
2. Blade worn or damaged	Replace or re-sharpen blade (Refer to Section 3.1, Servicing)
3. Incorrect input pressure	Set correct input pressure (Refer to Section 2.3, Tensioning Table)
4. Incorrect supply hose diameter	Use supply hose of at least 10mm (3/8") for 19mm version or 13mm (1/2") for 32mm version
5. No lubrication in FRL unit	Add appropriate lubricant or fit lubricator unit
6. Regulator at limit of travel	Insufficient supply pressure. Increase

EC Declaration of Conformity

In accordance with EN ISO 17050-1:2004



Document reference
No. CE-1000

Name of manufacturer: HCL Fasteners Ltd
Address of manufacturer: First Avenue, Westfield Industrial Estate, Radstock, Bath, BA3 4BS, UK
Telephone: +44 (0)1761 417714
Email: sales@hcl-clamping.co.uk

We hereby declare that the following machinery is in conformity with the Machinery Directive 2006/42/EC:

Machinery description: Banding Tool
Part No: SM-FT-3000-
 20ST: Smart* Tie Tool 20mm (3/4")
 32ST: Smart* Tie Tool 32mm (1 1/4")
 19: Smart* Band 19mm (3/4")
 32: Smart* Band 32mm (1 1/4")

Serial No: BFT-3000- -
 Year of manufacture Consecutive number

Applied Harmonised Standards:

Ref. No.	Title	Edition
BS EN 12100	Safety of machinery. General principles for design. Risk assessment and risk reduction	2010
BS EN ISO 4414	Pneumatic fluid power. General rules and safety requirements for systems and their components	2010

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications and is in accordance with the requirements of the Directive.

Name: David Coles
Position: Managing Director
Address: First Avenue, Westfield Industrial Estate, Radstock, Bath, BA3 4BS, UK
Date: 1st January 2015

The technical documentation for the machinery is available from the above address.

Your attention is drawn to the following:

HCL warrants that a new HCL banding tool will operate per functional specifications for a period of sixty (60) days after the date of shipment to the owners place of business. Normal wearing parts, as outlined in the Operations, Parts & Safety manual, are also covered by a sixty (60) day warranty unless, in HCL's judgement, these parts have been subjected to abnormal or extreme usage. HCL's sole liability hereunder will be to repair or replace, without charge, F.O.B. HCL, Bath UK, any tool which proves to not operate per functional specifications within the stated period. HCL reserves the right to replace any tool which proves not to operate per functional specifications with a new or like-new tool of the same model, if in HCL's judgement such replacement is appropriate. Any new replacement or like new replacement tool provided to an owner will carry a full sixty (60) day warranty. Any warranty repaired tool will carry a warranty for the balance of time remaining on the initial sixty (60) day warranty. This warranty will be extended to compensate for the time the tool is in HCL's possession for warranty repairs.

This warranty is void as to any tool which has been:

- a) subjected to mis-use, misapplication, accident damage, or repaired with other than genuine HCL replacement parts.
- b) improperly maintained, or adjusted, or damaged in transit or handling.
- c) used with improperly filtered, regulated, unlubricated air.
- d) in HCL's opinion, altered in a way that affects or detracts from the performance of the tool.

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Considerable effort has been made to ensure that this product conforms to our high quality standards. However, should you experience any difficulties, please contact your Sales representative providing samples and the serial code specified on the tool.



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