Document Title: **Digging data**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Digging data

Digging data in metres (ft)		
Boom length	**7.6 (24.93)**	**ME 6.6 (21.65)**
Dipper arm length	**3.25 (10.66)**	**2.75 (9.02)**
Max. reach	13.3 (43.62)	11.7 (38.38)
Max. reach at ground level	13.1 (42.97)	11.4 (37.39)
Max. digging depth	8.4 (27.55)	7.2 (23.62)
Max. height, ground - tooth tip	13.3 (43.62)	11.5 (37.72)
Max. height, ground - bucket hinge	11.5 (37.72)	10.0 (32.8)
Max. dump height	9.3 (30.5)	7.8 (25.58)
Max. practical dump height	6.5 (21.32)	5.5 (18.04)
Practical digging depth when the material's angle of repose is 45°	6.9 (22.63)	5.9 (19.35)
Max. vertical digging depth	5.2 (17.06)	2.5 (8.2)
Min. front slew radius	4.8 (15.74)	4.7 (15.42)

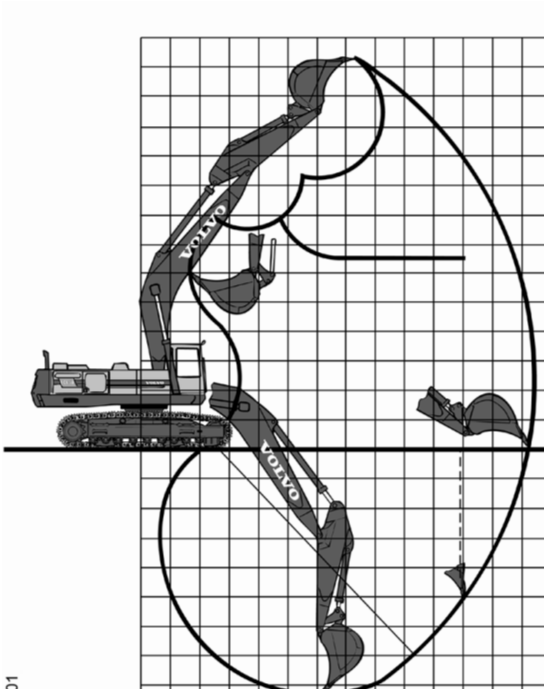


Figure 1
Digging diagram, EC650

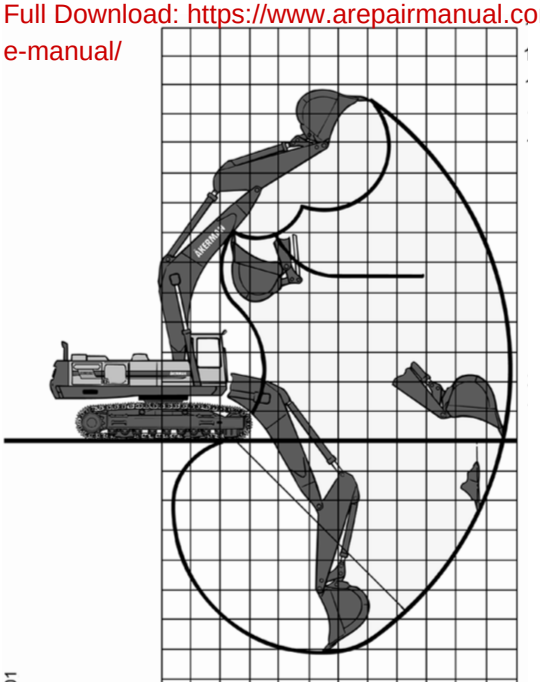
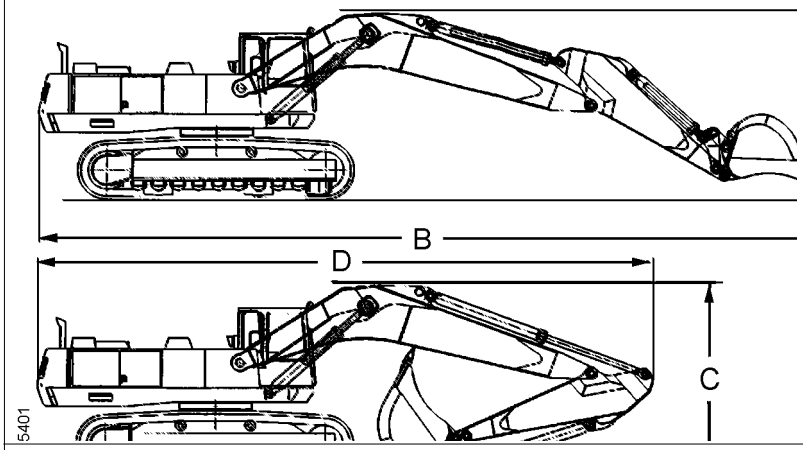


Figure 2
Digging diagram, EC650ME

Document Title: **Dimensions**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

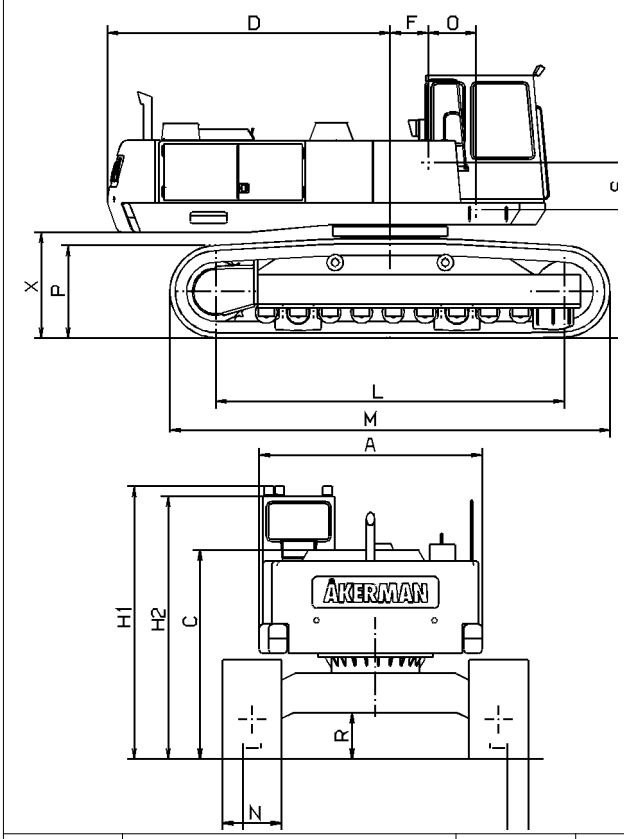
Dimensions

Transport data in metres (ft)



Boom length	**7.6 (24.93)**	**ME 6.6 (21.65)**
Dipper arm length	**3.25 (10.66)**	**2.75 (9.02)**
Min. transport length with retracted digging equipment (D)	13.28 (43.56)	12.49 (40.97)
Min. transport height with retracted digging equipment (C)	4.15 (13.61)	4.65 (15.25)
Total length with extended digging equipment (B)	16.95 (55.6)	15.29 (50.15)
Min. transport height with extended digging equipment (A)	4.10 (13.45)	4.44 (14.56)

Main dimensions in metres (ft)



A	3.03 (9.94)	H1	3.74 (12.27)	P	1.25 (4.10)
B	4.15 (13.61)	H2	3.60 (11.81)	R	0.63 (2.07)
C	2.85 (9.35)	I	4.73 (15.51)	S	0.64 (2.10)
D	3.84 (12.60)	M	5.98 (19.61)	U	3.59 (11.78)
F	0.52 (1.71)	N	0.80 (2.62)	X	1.44 (4.72)
G	2.39 (7.84)	O	0.65 (2.13)		

Document Title: **Lifting data**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Lifting data

Permitted load in kg based on ISO 10567 / SAE J1097 for stationary machines on firm, level supporting surface.

WARNING

Lifting data refers to loads attached to the end of the dipper arm. If equipment is fitted for lifting, its weight must be subtracted from the table values. A maximum load of 14 000 kg (30 800 lbs) may be attached to the bucket hook/ quickfit hook.

Lifting data for EC650 with followin equipment:

- Counterweight 12 000 kg (26 400 lbs)
- Track 800 mm (31.5 in)
- Boom 7.6 m (24.9 ft)
- Dipper arm 3.25 m (10.66 ft)
- Shock pressure 40 MPa (5800 psi)
- Working pressure 34 MPa (4930 psi)

A = Bucket hinge height, m (ft)
B = Outreach, m (ft)

B	6.0 (19.7)		8.0 (26.2)		10.0 (32.8)		Max. load, kg (lbs)/ Max. outreach, m (ft)	
A	J0721100	J0721000	J0721100	J0721000	J0721100	J0721000	J0721100	J0721000
8.0 (26.2)	-	-	11 320* (24 904*)	11 320* (24 904*)	-	-	11 190* / 9.5 (24 618*/31.2)	11 190* / 9.5 (24 618*/31.2)
6.0 (19.7)	14 820* (32 604*)	14 820* (32 604*)	12 180* (26 796*)	12 180* (26 796*)	10 990* (24 178*)	10 940 (24 178)	10 920* / 10.5 (24 024*/34.4)	10 090* / 10.5 (22 198*/34.4)
4.0 (13.1)	18 400* (40 480*)	18 400* (40 480*)	13 640* (30 008*)	13 640* (30 008*)	11 460* (25 212*)	10 560 (23 232)	10 860* / 11.0 (23 892*/36.08)	9 130* / 11.0 (20 086*/36.08)
2.0 (6,5)	21 130* (46 486*)	20 520 (45 144)	14 990* (32 978*)	13 820 (30 404)	12 010* (26 433*)	10 170 (22 374)	10 920* / 11.1 (24 024*/36.4)	8 780* / 11.1 (19 316*/36.4)
0.0 (0)	21 640* (47 608*)	19 940 (43 868)	15 610* (33 352*)	13 340 (29 348)	12 180* (26 796*)	9 900 (21 780)	11 070* / 10.8 (24 354*/35.42)	8 960* / 10.8 (19 712*/35.42)
-2.0 (-6.5)	20 440* (44 968*)	19 830 (43 626)	15 130* (33 286*)	13 170 (28 974)	11 360* (24 992*)	9 870 (21 714)	10 920* / 10.2 (24 024*/33.46)	9 650* / 10.2 (21 230*/33.46)

*) Load limited by hydraulic capacity (other values limited by machine stability).

Lifting data for EC650i with following equipment:

- Counterweight 12 000 kg (26 400 lbs)
- Track 800 mm (31.5 in)
- Boom 10.3 m (33.78 ft)
- Dipper arm 8.1 m (26.57 ft)
- Shock pressure 40 MPa (5800 psi)
- Working pressure 30 MPa (4350 psi)

A = Bucket hinge height, m (ft)
B = Outreach, m (ft)

B	8.0 (26.2)	10.0 (32.8)	12.0 (39.4)	14.0 (45.9)	16.0 (52.5)	Max. load, kg (lbs) / Max.

						outreach,m (ft)
A						
16.0 (52.5)	10 060* (22 132*)	8 720* (19 184*)	6 210* (13 662*)	-	-	6 210* / 12.0 (13 662*/39.4)
12.0 (39.4)	-	10 400* (22 880*)	9 230* (20 306*)	7 590 (16 698)	-	5 350* / 15.5 (11 770*/50.8)
8.0 (26.2)	11 830* (26 026*)	10 980* (24 156*)	9 450* (20 790*)	7 440 (16 368)	5 960 (13 112)	5 150 / 17.4 (11 330/57.07)
4.0 (13.1)	14 950* (32 890*)	11 450 (25 190)	8 800 (19 360)	7 010 (15 422)	5 720 (12 584)	4 630 / 18.3 (10 186/60.02)
0.0 (0)	13 780 (30 316)	10 280 (22 616)	8 070 (17 754)	6 550 (14 410)	5 440 (11 968)	4 460* / 18.2 (9 812*/59.7)
-4.0 (-13.1)	11 780* (25 916*)	9 570* (21 054*)	7 680 (16 896)	6 080* (13 376')	4 370* (9 614*)	4 220* / 16.2 (9 284*/53.1)
*) Load limited by hydraulic capacity (other values limited by machine stability).						

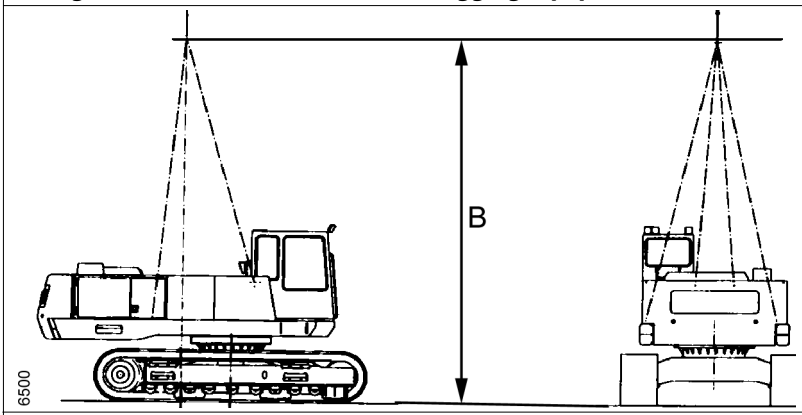
Document Title:	Function Group:	Information Type:	Date:
Lifting instructions	**030**	**Service Information**	**3/18/2026**
Profile:			

Lifting instructions

NOTE!

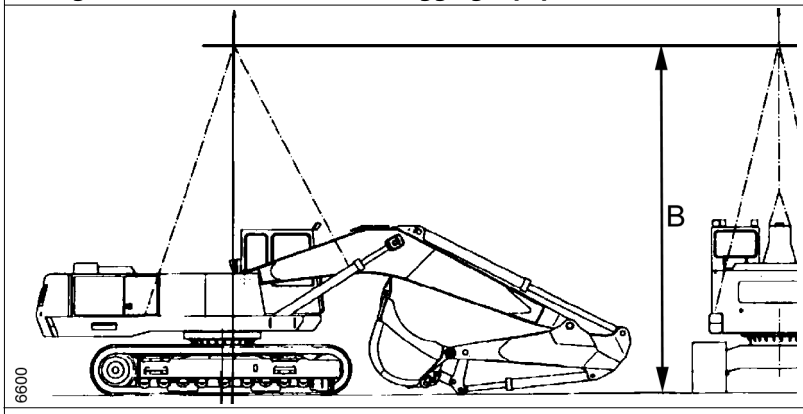
The designated lifting eyes must be used when the machine is lifted.

Lifting instructions, machine without digging equipment



	A	B
Basic machine	0.98 m 3.21 ft	10.0 m 32.8 ft
Basic machine without counterweight	0.27 m 0.89 ft	10.0 m 32.8 ft
Basic machine without cab and counterweight	0.28 m 0.92 ft	10.0 m 32.8 ft

Lifting instructions, machine with digging equipment



	A	B
EC650	0.16 m 0.52 ft	10.0 m 32.8 ft
EC650ME	0.12 m 0.39 ft	10.0 m 32.8 ft

Document Title: **Product and component marking**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Product and component marking

Undercarriage

The article and modification numbers of the undercarriage are stamped in front of the slew ring.

Figure 1

Undercarriage: article and modification numbers

Superstructure

The article and modification numbers of the superstructure and the serial number of the machine are stamped on the right-hand boom attachment.

Figure 2

Superstructure: article and modification numbers

Engine

The type designation, product and serial numbers are stamped on the left-hand side of the engine on the top edge of the engine block.

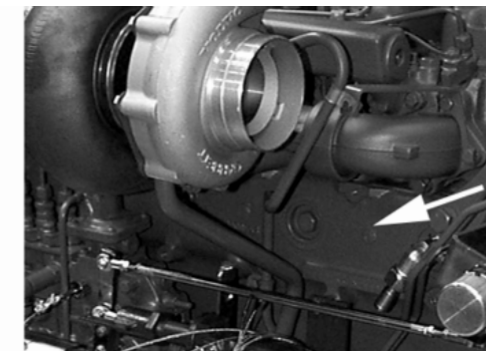


Figure 3
Engine: product and serial numbers

Product plate
The product plate with model designation and Product Identification Number (PIN) is located on the outside of the cab under the left rear side window.

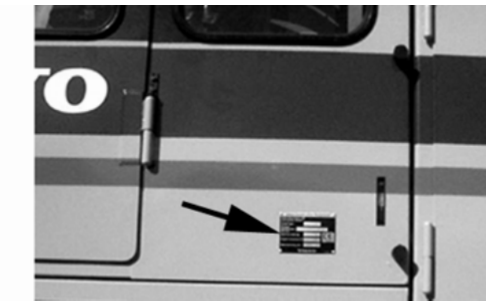


Figure 4
PIN plate location

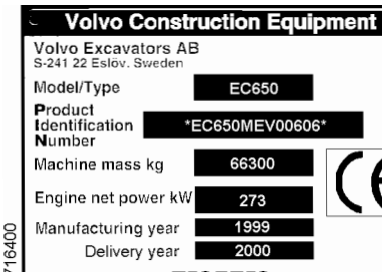


Figure 5
PIN plate

Hydraulic cylinders
The article and modification numbers of hydraulic cylinders are stamped on the cylinder barrel.

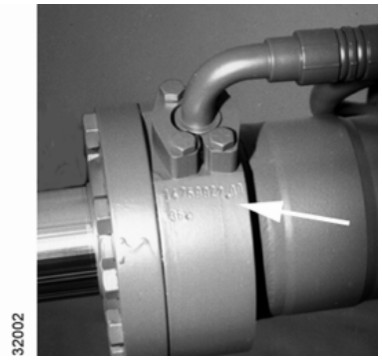


Figure 6
Hydraulic cylinder marking

Piston rods
The article and modification numbers of piston rods are stamped on the end surface of the piston rods.

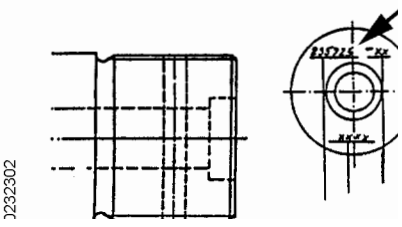


Figure 7
Piston rod marking

Buckets

The bucket plate with article number, weight and volume is located on the top of the bucket.

Figure 8
Bucket

Document Title: **Tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Tightening torques

Injector nozzle

Injector nozzle	
	Torque (Nm)
Nut for adjusting screw	50 (37 lbf ft)

Track shoes

Bolts for track shoes	
Thread	**Tightening torque (Nm)**
1 – 14 UNF	400 (295 lbf ft) + tightening through a further 120° or 1400 ±115 (1033 ± 84.8 lbf ft)

Cylinder head

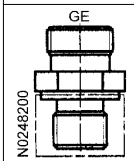
Cylinder head	
Cylinder	**Torque, Nm (lbf ft)**
Boom cylinder	650 (479.5)
Dipper arm cylinder	650 (479.5)
Bucket cylinder	650 (479.5)

Hydraulic connections, general

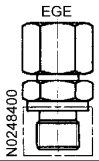
Before fitting pipe couplings, plugs and hoses:

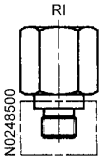
- Make sure that the sealing surfaces are clean and free from pores and scratches, and have the prescribed surface structure.
- Check elastic sealing rings for defects.
- Oil in threads, fittings (cones), and sealing and contact surfaces.

Valve connections

Valve connections, GE type pipe couplings									
	**Thread (inch/mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque *) (Nm)**	**(lbf ft)**
14 012 413	G 1/4	31.5	4567.5	8	0.31	19	0.75	40	29.5
957 030	G 1/4	31.5	4567.5	10	0.39	19	0.75	40	29.5
14 012 423	G 1/2	31.5	4567.5	15	0.59	27	1.06	90	66.4
14 012 431	G 3/4	31.5	4567.5	22	0.87	32	1.26	180	132.7
14 216 010	G 1/4	40	5800	8	0.31	19	0.75	54	39.8
14 012 428	G 3/4	40	5800	20	0.79	32	1.26	180	132.7
14 012 432	G 1	40	5800	25	0.98	41	1.61	315	232.3
14 012 433	G 1 1/4	40	5800	30	1.18	50	1.97	450	331.9
14 012 436	G 1 1/2	40	5800	38	1.5	55	2.17	540	398.3

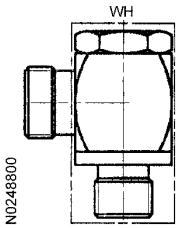
14 025 136	M 12x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
14 100 430	M 14x1.5	31.5	4567.5	10	0.39	19	0.75	45	33.2
14 213 266	M 16x1.5	31.5	4567.5	12	0.47	22	0.87	54	39.9
14 012 424	M 18x1.5	31.5	4567.5	15	0.59	24	0.94	80	59.01
14 012 430	M 26x1.5	31.5	4567.5	22	0.87	32	1.26	180	132.7
14 012 416	M 14x1.5	40	5800	8	0.31	19	0.75	54	39.9
14 211 561	M 16x1.5	40	5800	10	0.39	22	0.87	72	53.1
14 266 715	M 22x1.5	40	5800	16	0.63	27	1.06	135	99.6
14 211 250	M 27x2.0	40	5800	20	0.79	32	1.26	180	132.7
14 025 324	M 33x2.0	40	5800	25	0.98	41	1.61	315	232.3
14 012 433	M 42x2.0	40	5800	30	1.18	50	1.97	450	331.9
–	M 48x2.0	40	5800	38	1.5	55	2.17	540	398.3
∗) Conditions: Oiled thread and contact surface.									

Valve connections, EGE type pipe couplings									
	**Thread (inch/mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque ∗) (Nm)**	**(lbf ft)**
14 023 056	G 1/4	31.5	4567.5	8	0.31	19	0.75	40	29.5
14 023 611	G 1/4	31.5	4567.5	10	0.39	19	0.75	40	29.5
14 012 381	G 1/2	31.5	4567.5	15	0.59	27	1.06	90	66.4
–	G 3/4	31.5	4567.5	22	0.87	32	1.26	180	132.7
–	G 1/4	40	5800	8	0.31	19	0.75	54	39.8
14 211 062	G 3/4	40	5800	20	0.79	32	1.26	180	132.7
14 012 382	G 1	40	5800	25	0.98	41	1.61	315	232.3
14 042 775	G 1 1/4	40	5800	30	1.18	50	1.97	450	331.9
14 023 190	G 1 1/2	40	5800	38	1.5	55	2.17	540	398.3
–	M 12x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
14 341 573	M 14x1.5	31.5	4567.5	10	0.39	19	0.75	45	33.2
14 340 537	M 16x1.5	31.5	4567.5	12	0.47	22	0.87	54	39.9
–	M 18x1.5	31.5	4567.5	15	0.59	24	0.94	80	59.01
–	M 26x1.5	31.5	4567.5	22	0.87	32	1.26	180	132.7
–	M 14x1.5	40	5800	8	0.31	19	0.75	54	39.9
–	M 16x1.5	40	5800	10	0.39	22	0.87	72	53.1
–	M 22x1.5	40	5800	16	0.63	27	1.06	135	99.6
14 211 244	M 27x2.0	40	5800	20	0.79	32	1.26	180	132.7
	M 33x2.0	40	5800	25	0.98	41	1.61	315	232.3
14 016 813	M 42x2.0	40	5800	30	1.18	50	1.97	450	331.9
–	M 48x2.0	40	5800	38	1.5	55	2.17	540	398.3
∗) Conditions: Oiled thread and contact surface.									

Valve connections, RI type reduction couplings									
	**Thread (inch/mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque ∗∗) (Nm)**	**(lbf ft)**

*)	G 1/4	31.5	4567.5	8	0.31	19	0.75	40	29.5
*)	G 1/4	31.5	4567.5	10	0.39	19	0.75	40	29.5
*)	G 1/2	31.5	4567.5	15	0.59	27	1.06	90	66.4
*)	G 3/4	31.5	4567.5	22	0.87	32	1.26	180	132.7
–	G 1/4	40	5800	8	0.31	19	0.75	54	39.8
*)	G 3/4	40	5800	20	0.79	32	1.26	180	132.7
*)	G 1	40	5800	25	0.98	41	1.61	315	232.3
*)	G 1 1/4	40	5800	30	1.18	50	1.97	450	331.9
*)	G 1 1/2	40	5800	38	1.5	55	2.17	540	398.3
*)	M 12x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
*)	M 14x1.5	31.5	4567.5	10	0.39	19	0.75	45	33.2
*)	M 16x1.5	31.5	4567.5	12	0.47	22	0.87	54	39.9
*)	M 18x1.5	31.5	4567.5	15	0.59	24	0.94	80	59.01
*)	M 26x1.5	31.5	4567.5	22	0.87	32	1.26	180	132.7
*)	M 14x1.5	40	5800	8	0.31	19	0.75	54	39.9
*)	M 16x1.5	40	5800	10	0.39	22	0.87	72	53.1
*)	M 22x1.5	40	5800	16	0.63	27	1.06	135	99.6
*)	M 27x2.0	40	5800	20	0.79	32	1.26	180	132.7
*)	M 33x2.0	40	5800	25	0.98	41	1.61	315	232.3
*)	M 42x2.0	40	5800	30	1.18	50	1.97	450	331.9
*)	M 48x2.0	40	5800	38	1.5	55	2.17	540	398.3
*) There are several different art. nos. and across-flats widths for each connection diameter. **) Conditions: Oiled thread and contact surface.									

Valve connections, type WH banjo connections

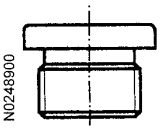


	Thread (inch/mm)	Pressure class (MPa)	(psi)	Pipe o.d. (in) (mm)		Wrench size, width across flats (mm)	(in)	Torque *) (Nm)	(lbf ft)
14 026 430	G 1/4	31.5	4567.5	8	0.31	19	0.75	50	36.9
14 026 431	G 1/4	31.5	4567.5	10	0.39	19	0.75	50	36.9
14 026 152	G 1/2	31.5	4567.5	15	0.59	30	1.18	130	95.9
14 214 142	G 1/4	40	5800	8	0.31	19	0.75	50	36.9
14 211 073	G 3/4	40	5800	20	0.79	36	1.42	250	184.4
14 213 319	M 12x1.5	31.5	4567.5	8	0.31	19	0.75	50	36.9
14 213 320	M 14x1.5	31.5	4567.5	10	0.39	19	0.75	60	44.3
14 213 321	M 16x1.5	31.5	4567.5	12	0.47	24	0.94	90	66.4
14 026 454	M 18x1.5	31.5	4567.5	15	0.59	27	1.06	110	82.1
14 215 499	M 22x1.5	31.5	4567.5	18	0.71	30	1.18	150	110.6

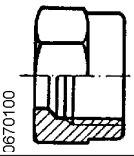
*) Conditions: Oiled thread and contact surface.

Blanking plugs

VS/VSTI type blanking plugs with ED seal	

 N0248900	Thread (inch/mm)	Pressure class (MPa)	(psi)	Hex socket dim (mm)	(in)	Torque ∗) (Nm)	(lbf ft)
14 023 406	G 1/8	40	5800	5	0.20	13	9.6
14 023 407	G 1/4	40	5800	6	0.24	30	22.1
14 023 408	G 3/8	40	5800	8	0.31	60	44.2
14 023 409	G 1/2	40	5800	10	0.39	80	59.01
14 023 410	G 3/4	40	5800	12	0.47	140	103.3
14 023 411	G 1	40	5800	17	0.67	200	147.5
14 215 723	G 1 1/4	40	5800	22	0.87	450	331.9
14 023 412	G 1 1/4	31.5	4567.5	22	0.87	400	295.04
14 023 413	G 1 1/2	31.5	4567.5	24	0.94	450	331.9
14 024 363	M 10x1.0	40	5800	5	0.20	12	8.8
14 211 624	M 12x1.5	40	5800	6	0.24	25	18.4
14 211 623	M 14x1.5	40	5800	6	0.24	35	25.8
14 211 625	M 16x1.5	40	5800	8	0.31	55	40.6
14 024 814	M 18x1.5	40	5800	8	0.31	65	47.9
14 024 233	M 22x1.5	40	5800	10	0.39	90	66.4
14 340 607	M 26x1.5	40	5800	12	0.47	100	73.7
14 266 484	M 27x2.0	40	5800	12	0.47	140	103.3
14 267 223	M 33x2.0	40	5800	17	0.67	230	169.7
14 212 167	M 42x2.0	31.5	4567.5	22	0.87	360	265.5
∗) Conditions: Oiled thread and contact surface.							

Pipe nuts

Pipe nuts								
 D670100								
Thread (mm)	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size (width across flats) (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
M12x1.5	31.5	4567.5	6	0.24	14	0.55	25	18.4
M14x1.5	31.5	4567.5	8	0.31	17	0.67	35	25.8
M16x1.5	31.5	4567.5	10	0.39	19	0.75	45	33.2
M18x1.5	31.5	4567.5	12	0.47	22	0.87	75	55.3
M22x1.5	31.5	4567.5	15	0.59	27	1.06	110	81.1
M26x1.5	31.5	4567.5	18	0.71	32	1.26	180	132.7
M30x2.0	31.5	4567.5	22	0.87	36	1.42	280	206.5
M36x2.0	31.5	4567.5	28	1.10	41	1. 61	300	221.3
M45x2.0	31.5	4567.5	35	1.38	50	1 .97	450	331.9
M52x2.0	31.5	4567.5	42	1.65	60	2. 36	680	501.6
M14x1.5	40	5800	6	0.24	17	0.67	45	33.2
M16x1.5	40	5800	8	0.31	19	0.75	65	47.9
M18x1.5	40	5800	10	0.39	22	0. 87	80	59

M20x1.5	40	5800	12	0.47	24	0.94	100	73.7
M22x1.5	40	5800	14	0.55	27	1.06	140	103.3
M24x1.5	40	5800	16	0.63	30	1.18	160	118
M30x2.0	40	5800	20	0.79	36	1.42	350	258.2
M36x2.0	40	5800	25	0.98	46	1.81	450	331.9
M42x2.0	40	5800	30	1.18	50	1.97	650	479.4
M52x2.0	40	5800	38	1.50	60	2.36	800	590

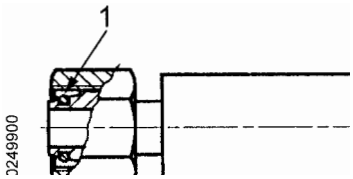
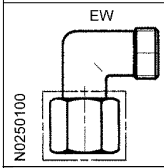


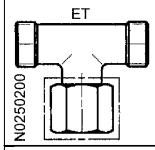
Figure 1
DKO connection

1. O-ring

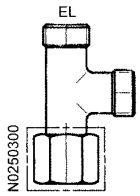
DKO-connections

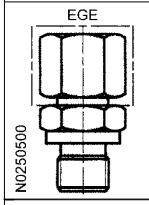
Tighten DKO connections with an open-ended torque wrench.

DKO connections, EW type pipe couplings									
	**DKO thread (mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
14 012 391	M14x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
14 012 393	M16x1.5	31.5	4567.5	10	0.39	19	0.75	40	29.5
14 012 395	M22x1.5	31.5	4567.5	15	0.59	27	1.06	75	55.3
14 012 397	M30x2.0	31.5	4567.5	22	0.87	36	1.42	110	81.1
14 012 392	M16x1.5	40	5800	8	0.31	19	0.75	40	29.5
14 310 009	M18x1.5	40	5800	10	0.39	22	0.87	50	36.8
14 214 854	M24x1.5	40	5800	16	0.63	30	1.18	80	59
14 012 396	M30x2.0	40	5800	20	0.79	36	1.42	120	88.5
14 012 398	M36x2.0	40	5800	25	0.98	46	1.81	170	125.4
–	M36x2.0	40	5800	25	0.98	41	1.61	170	125.4
14 012 399	M42x2.0	40	5800	30	1.18	50	1.97	250	184.4
14 016 972	M52x2.0	40	5800	38	1.50	60	2.36	350	258.2

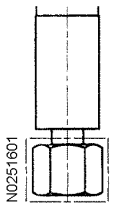
DKO connections, ET type pipe couplings									
	**DKO thread (mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
14 012 387	M14x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
14 012 388	M16x1.5	31.5	4567.5	10	0.39	19	0.75	40	29.5
14 012 389	M22x1.5	31.5	4567.5	15	0.59	27	1.06	75	55.3
14 043 552	M30x2.0	31.5	4567.5	22	0.87	36	1.42	110	81.1
–	M16x1.5	40	5800	8	0.31	19	0.75	40	29.5
–	M18x1.5	40	5800	10	0.39	22	0.87	50	36.8
–	M24x1.5	40	5800	16	0.63	30	1.18	80	59

14 211 064	M30x2.0	40	5800	20	0.79	36	1.42	120	88.5
14 024 423	M36x2.0	40	5800	25	0.98	46	1.81	170	125.4
–	M36x2.0	40	5800	25	0.98	41	1.61	170	125.4
14 012 390	M42x2.0	40	5800	30	1.18	50	1.97	250	184.4
–	M52x2.0	40	5800	38	1.50	60	2.36	350	258.2

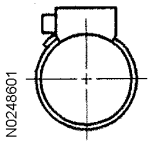
DKO connections, EL type pipe couplings									
	**DKO thread (mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
14 012 383	M14x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
14 052 740	M16x1.5	31.5	4567.5	10	0.39	19	0.75	40	29.5
14 012 384	M22x1.5	31.5	4567.5	15	0.59	27	1.06	75	55.3
14 043 547	M30x2.0	31.5	4567.5	22	0.87	36	1.42	110	81.1
14 215 487	M16x1.5	40	5800	8	0.31	19	0.75	40	29.5
–	M18x1.5	40	5800	10	0.39	22	0.87	50	36.8
14 341 816	M24x1.5	40	5800	16	0.63	30	1.18	80	59
14 211 065	M30x2.0	40	5800	20	0.79	36	1.42	120	88.5
14 012 385	M36x2.0	40	5800	25	0.98	46	1.81	170	125.4
–	M36x2.0	40	5800	25	0.98	41	1.61	170	125.4
14 012 386	M42x2.0	40	5800	30	1.18	50	1.97	250	184.4
14 016 554	M52x2.0	40	5800	38	1.50	60	2.36	350	258.2

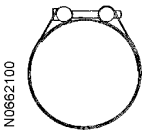
DKO connections, EGE type pipe couplings									
	**DKO thread (mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
*)	M14x1.5	31.5	4567.5	8	0.31	17	0.67	30	22.1
*)	M16x1.5	31.5	4567.5	10	0.39	19	0.75	40	29.5
*)	M22x1.5	31.5	4567.5	15	0.59	27	1.06	75	55.3
–	M30x2.0	31.5	4567.5	22	0.87	36	1.42	110	81.1
–	M16x1.5	40	5800	8	0.31	19	0.75	40	29.5
–	M18x1.5	40	5800	10	0.39	22	0.87	50	36.8
–	M24x1.5	40	5800	16	0.63	30	1.18	80	59
*)	M30x2.0	40	5800	20	0.79	36	1.42	120	88.5
*)	M36x2.0	40	5800	25	0.98	46	1.81	170	125.4
–	M36x2.0	40	5800	25	0.98	41	1.61	170	125.4
*)	M42x2.0	40	5800	30	1.18	50	1.97	250	184.4
*)	M52x2.0	40	5800	38	1.50	60	2.36	350	258.2
*) There are several different art. nos. for each connection thread.									

DKO connections, Parker series 46 type hydraulic hoses	

	**DKO thread (mm)**	**Pressure class (MPa)**	**(psi)**	**Pipe o.d. (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
1)	M14x1.5	31.5	4567.5	8	0.31	17	0.67	30 2)	22.1
1)	M16x1.5	31.5	4567.5	10	0.39	19	0.75	40 3)	29.5
1)	M22x1.5	31.5	4567.5	15	0.59	27	1.06	75 4)	55.3
1)	M30x2.0	31.5	4567.5	22	0.87	36	1.42	110	81.1
1)	M16x1.5	40	5800	8	0.31	19	0.75	40	29.5
–	M18x1.5	40	5800	10	0.39	22	0.87	50	36.8
–	M24x1.5	40	5800	16	0.63	30	1.18	80	59
1)	M30x2.0	40	5800	20	0.79	36	1.42	120	88.5
–	M36x2.0	40	5800	25	0.98	46	1.81	170	125.4
1)	M36x2.0	40	5800	25	0.98	41	1.61	170	125.4
1)	M42x2.0	40	5800	30	1.18	50	1.97	250	184.4
1)	M52x2.0	40	5800	38	1.50	60	2.36	350	258.2
1) There are several different art. nos. for each connection thread. 2) Old hoses of Parker series 43 type should be tightened to 15 Nm (11 lbf ft). 3) Old hoses of Parker series 43 type should be tightened to 25 Nm (18.4 lbf ft). 4) Old hoses of Parker series 43 type should be tightened to 45 Nm (33.2 lbf ft).									

Hose clips

Hose clips with worm screws, PA-RI type						
	**For outside diameter (mm)**	**(in)**	**Wrench size, width across flats (mm)**	**(in)**	**Torque (Nm)**	**(lbf ft)**
943 469	10 – 13	0.39 – 0.51	7	0.28	2.5	1.9
943 470	(13) – 16	(0.51) – 0.63	7	0.28	2.5	1.9
–	(16) – 19	(0.63) – 0.75	7	0.28	2.5	1.9
13 943 472	(19) – 23	(0.75) – 0.91	7	0.28	3.5	2.6
943 473	(23) – 27	(0.91) – 1.06	7	0.28	3.5	2.6
13 943 474	(27) – 30	(1.06) – 1.18	7	0.28	3.5	2.6
943 475	(30) – 36	(1.18) – 1.42	7	0.28	4.5	3.3
943 476	(36) – 43	(1.42) – 1.69	7	0.28	4.5	3.3
943 477	(43) – 49	(1.69) – 1.93	7	0.28	4.5	3.3
943 478	(49) – 54	(1.93) – 2.13	7	0.28	5.5	4
943 479	(54) – 64	(2.13) – 2.52	7	0.28	5.5	4
943 480	(64) – 73	(2.52) – 2.87	7	0.28	5.5	4
943 481	(73) – 83	(2.87) – 3.27	7	0.28	5.5	4
943 482	(83) – 93	(3.27) – 3.66	7	0.28	5.5	4
943 483	(93) – 110	(3.66) – 4.33	7	0.28	5.5	4
943 484	(110) – 136	(4.33) – 5.35	7	0.28	5.5	4
943 485	(136) – 163	(5.35) – 6.42	7	0.28	5.5	4
968 941	(163) – 180	(6.42) – 7.09	7	0.28	5.5	4
14 042 985	(205) – 231	(8.07) – 9.09	7	0.28	5.5	4

 N0662100						
4 786 255	(39) – 45	(1.54) – 1.77	5 (hex socket)	0.2	5	3.7
14 261 828	(49) – 55	(1.93) – 2.17	5 (hex socket)	0.2	5	3.7
4 786 573	(61) – 67	(2.4) – 2.64	5 (hex socket)	0.2	5	3.7
11 063 268	(73) – 79	(2.87) – 3.11	5 (hex socket)	0.2	5	3.7

Nuts and bolts

The pretensioning force achieved at a given tightening torque depends mainly on the coefficient of friction of the bolted joint.

The coefficient of friction in turn depends on the surface texture, surface treatment and lubrication, etc. The values are calculated assuming a coefficient of friction of 0.2 for a dry chromated flange bolt and 0.15 for a lubricated chromated flange bolt. Hex socket bolts and traditional hex bolts do not require as high tightening torques as flange bolts since bolt head diameters are smaller and moments of frictional force are correspondingly lower.

The following abbreviations for surface treatment are used in the tables:

- Fe/Zn-Fe = Black chromated zinc - iron
- FZB = Blank chromated

NOTE!

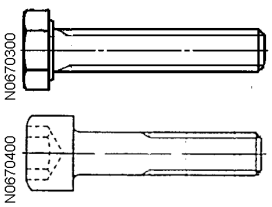
Some body parts have weld bolts, the strength of which is much lower than normal bolts of the same dimension.

NOTE!

When using a Nordloc washer, increase the torque by 20%.

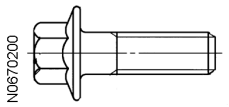
NOTE!

Tighten bolts with liquid or micro-encapsulated thread lock or thread seal to the same torque as lubricated bolts of the same type.

Hex bolts and hex socket bolts							
 N0670300 N0670400							**Blind rivet nut**
	Wrench size (width across flats)		**Torque, Nm, (lbf ft)**				**Torque, Nm, (lbf ft)**
Thread (mm/inch)	**Hex bolt (mm/inch)**	**Hex socket bolt (mm/ inch)**	**8.8 FZB & Fe/Zn-Fe Dry**	**8.8 FZB & Fe/Zn-Fe Lubricated**	**10.9 Phosphated Lubricated**	**12.9 Untreated Lubricated**	**Dry**
M5	8	4	6 (4.4)	5 (3.7)			6 (4.4)
M6	10	5	10 (7.4)	9 (6.6)		20 (14.7)	10 (7.4)
M8	13	6	25 (18.4)	22 (16.2)		40 (29.5)	24 (17.7)
M10	16	8	50 (36.8)	44 (32.4)	60 (44.3)	80 (59)	48 (35.4)
M12	18	10	90 (66.4)	75 (55.3)	105 (77.4)	140 (103)	82 (60.5)
M14	21	12	140 (103.3)	125 (92.2)	175 (129)	220 (162.3)	
M16	24	14	220 (162.3)	190 (140.1)	275 (202.8)	340 (250.8)	
M20	30	17	450 (331.9)	380 (280.3)	540 (398.3)	650 (479.4)	
M24	36	19	770 (567.9)	660 (486.8)	900 (663.8)	1120 (826.1)	
M27	41	–	1100 (811.4)	940 (693.3)	1350 (995.7)	1620 (1194.9)	

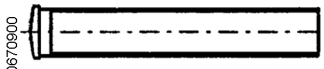
M30	46	22	1500 (1106.4)	1280 (944.1)	1840 (1357.2)	2210 (1630.1)	
M36	55		2500 (1844)	2300 (1696.5)	3210 (2367.7)	3850 (2839.7)	
1/4 UNC	7/16	3/16	12 (8.8)	10 (7.4)	15 (11)	20 (14.7)	
5/16 UNC	1/2	1/4	25 (18.4)	21 (15.5)	30 (22.1)	40 (29.5)	
3/8 UNC	9/16	5/16	45 (33.2)	38 (28)	55 (40.6)	70 (51.6)	
7/16 UNC	5/8		65 (47.9)	55 (40.6)	90 (66.4)		
1/2 UNC	3/4	3/8	100 (73.7)	85 (62.7)	130 (95.9)	170 (125.4)	
9/16 UNC	13/16		145 (106.9)	123 (90.7)	190 (140.1)		

Flange bolts



Thread (mm)	**Wrench size, width across flats (mm)**	**Torque, Nm (lbf ft)**				**Blind rivet nut**
		8.8 Fe/Zn-Fe Dry	**8.8 Fe/Zn-Fe Lubricated**	**10.9 Phosphated**	**10.9 Phosphated Lubricated**	**Torque, Nm (lbf ft)**
						Dry
M5	8	7 (5.2)	6 (4.4)			6 (4.4)
M6	10	12 (8.8)	10 (7.4)			10 (7.4)
M8	12	28 (20.6)	24 (17.7)			24 (17.7)
M10	14	56 (41.3)	48 (35.4)	70 (51.6)	60 (44.3)	48 (35.4)
M12	17	100 (73.7)	85 (62.7)	125 (92.2)	105 (77.4)	82 (60.5)
M14	18	160 (118)	140 (103.3)	200 (147.5)	175 (129)	
M16	21	250 (184.4)	220 (162.3)	320 (263)	275 (202.8)	

Nuts and weld bolts (material: S235JRG2-EN 10025)



Thread	**Torque (Nm)**
M6	5 (3.7 lbf ft)
M8	12 (8.8 lbf ft)

Tolerances

Modern, high quality torque wrenches normally give a variation of ± 5% of the indicated value. This, together with variations in the coefficient of friction, give a range of pretensioning forces of approximately ± 16% for lubricated bolted joints and ± 29% for dry bolted joints.

Document Title: **Volumes**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Volumes

Volumes		**US gal**
Fuel tank	770 l	203.3
Hydraulically driven fuel filling pump, capacity	approx. 90 l/min	23.8/min
Cooling system (incl. glycol)	72 l	19.01
Hydraulic system, total	840 l	221.8
Hydraulic oil tank	530 l	139.9
Engine	29 l	7.7
Pump gear	2.3 l	0.61
Slew gear	50 l	13.2
Slew ring	25 l	6.6
Travel gearboxes	12.5 l x 2	3.3 x 2

Document Title: **Weights**	Function Group: **030**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

Weights

Weights (kg)		**lbs**
Basic machine equipped with 800 mm (31.5 in) tracks, 7.6 m (24.6 ft) boom and 3.25 m (10.6 ft) dipper arm	66 300	145 860
Superstructure including counterweight and engine	26 100	57 420
Engine including pump gearbox and pumps	1 775	3 905
Counterweight	12 000	26 400
Boom 7.6 m (24.9 ft)	6 500	14 300
Dipper arm 3.25 m (10.66 ft)	3 700	8 140
Boom cylinder	410	902
Dipper arm cylinder	545	1 199
Bucket cylinder	375	825
Pump gearbox (without pumps)	172	378.4
Hydraulic pump	60	132
Hydraulic oil cooler	33	72.6
Slew gearbox (without slew brake and slew motor)	315	693
Slew motor	36	79.2
Slew brake	56	123.2
Slew pinion shaft	214	470.8
Slew ring	633	139.3
Centre passage, complete	78	171.6
Centre passage housing	36	79.2
Rotor shaft for centre passage	18	39.6
Travel gear	640	1 408
Travel motor	55	121
Valve block (without valves and installation components)	415	913
Directional valve (8 per valve block)	39	85.8
Cab	335	737
Fuel tank	250	550
Hydraulic oil tank	455	1 001
Track, 600 mm (23.6 in)	1 988	4 373.6
Track, 800 mm (31.5 in)	2 342	5152.4
Drive sprocket	170	374
Top roller	47	103.4
Bottom roller	144	316.8

Ground pressure
The ground pressures specified are for complete machines equipped with 7.6 m (24.9 ft) boom, 3.25 m (10.6 ft) dipper arm and 3 300 l (871.2 US gal) bucket.

Ground pressure		
Track gauge	**Operating weight**	**Ground pressure**

800 mm 31.5 in	66 300 kg 145 860 lbs	78.6 kPa (0.786 kp/cm²) 11.4 (psi) (1.72 lbf/in²)
600 mm 23.6 in	64 900 kg 142 780 lbs	102.6 kPa (0.786 kp/cm²) 14.8 (psi) (1.72 lbf/in²)

Document Title: **E-tool, Net 00002 Disassembly tool**	Function Group: **080**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

E-tool, Net 00002 Disassembly tool

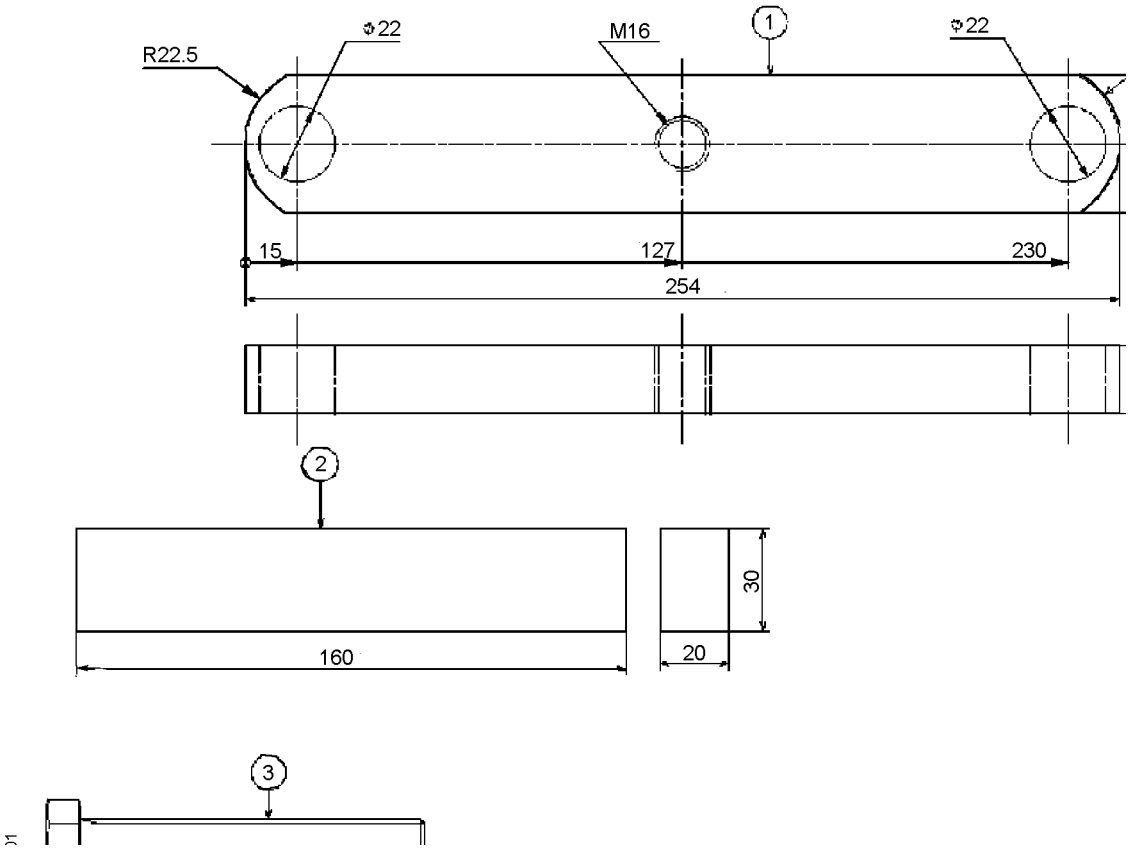


Figure 1
Disassembly tool

1. Flat bar 40x20, steel EN 10025-S235JRG2, (1)
2. Flat bar 30x20, steel EN 10025-S235JRG2, (1)
3. Hex bolt M16-8.8, (1)

Document Title:	Function Group:	Information Type:	Date:
E-tool, NET 00005 Guide pin for travel motor	**080**	**Service Information**	**3/18/2026**
Profile:			

E-tool, NET 00005 Guide pin for travel motor

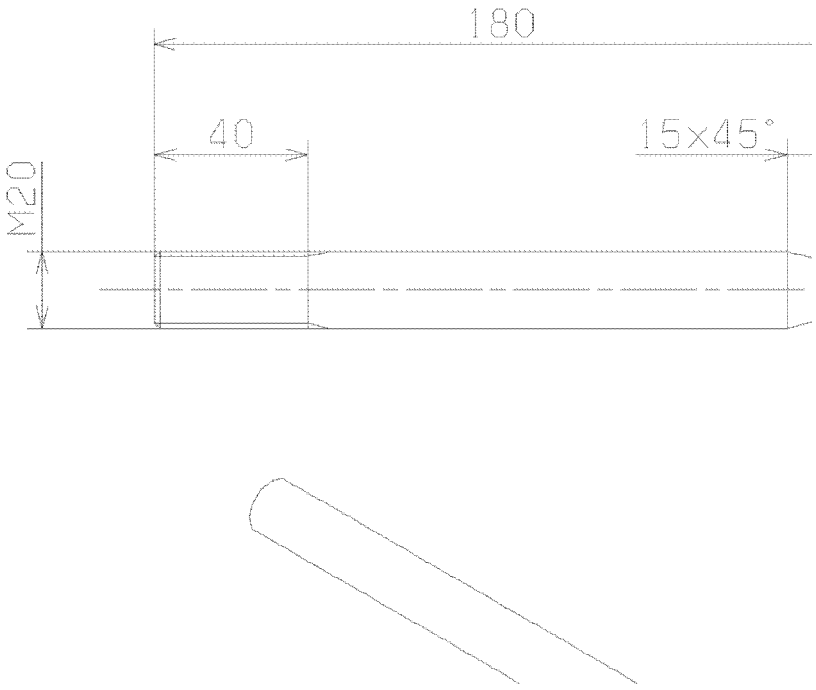


Figure 1
Guide pin

Round bar Ø 20, steel EN 10025-S355JR, (2)

Document Title:	Function Group:	Information Type:	Date:
E-tool, NET 00010 Track brake puller	**080**	**Service Information**	**3/18/2026**
Profile:			

E-tool, NET 00010 Track brake puller

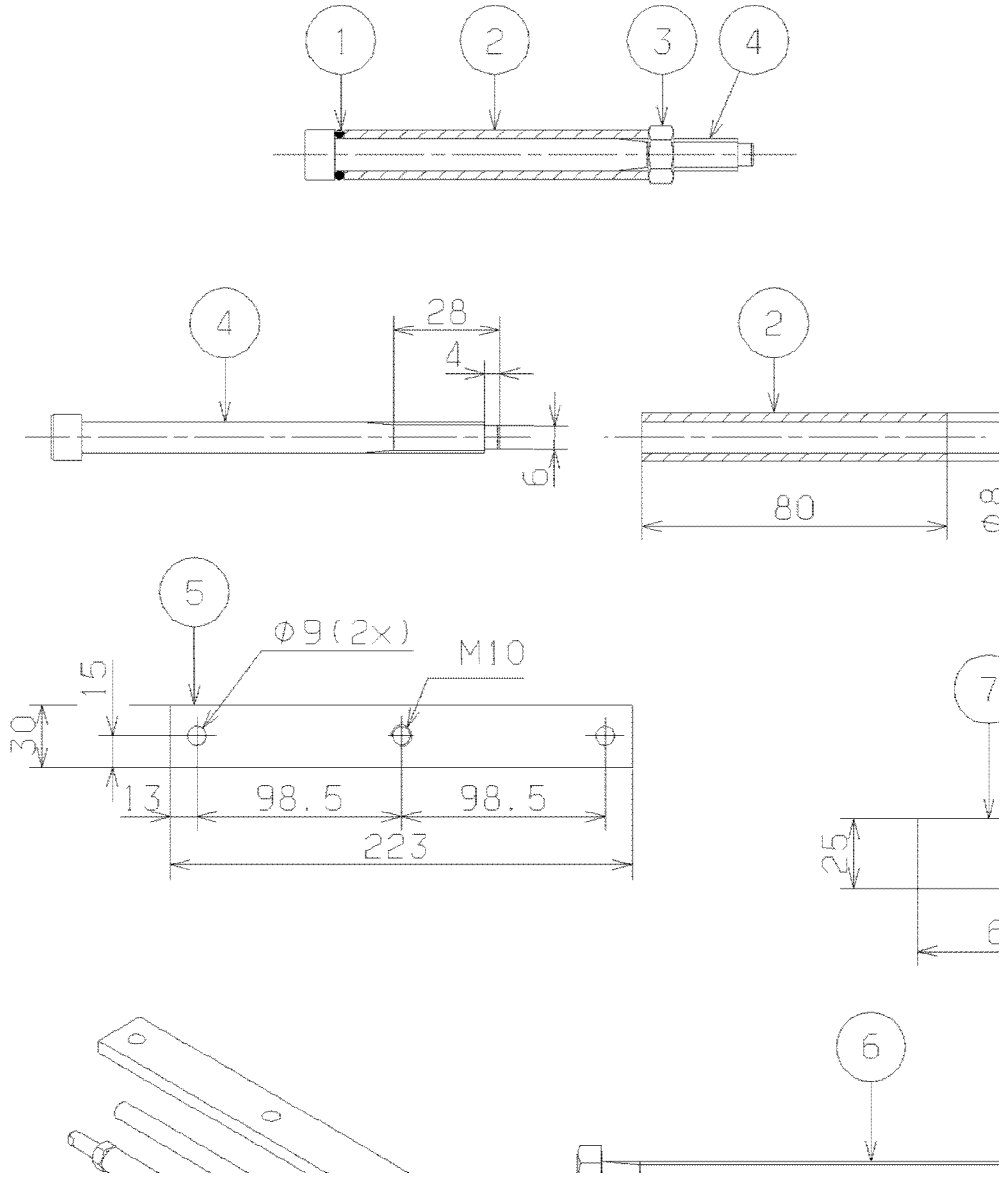


Figure 1
Puller

1. O-ring 13.1x2.4 NBR 70 IRH, (2)
2. Round bar Ø 16, steel EN 10025-S355JR, (2)
3. Nut M8-8, (4)
4. Hex socket bolt M8x110-8.8, (2)
5. Flat bar 30x8, steel EN 10025-S235JRG2, (1)
6. Hex bolt M10x130-8.8, (1)
7. Flat bar 25x5, steel EN 10025-S235JRG2, (1)

Document Title:	Function Group:	Information Type:	Date:
E-tool, NET 00011 Track and slew brake puller	**080**	**Service Information**	**3/18/2026**
Profile:			

E-tool, NET 00011 Track and

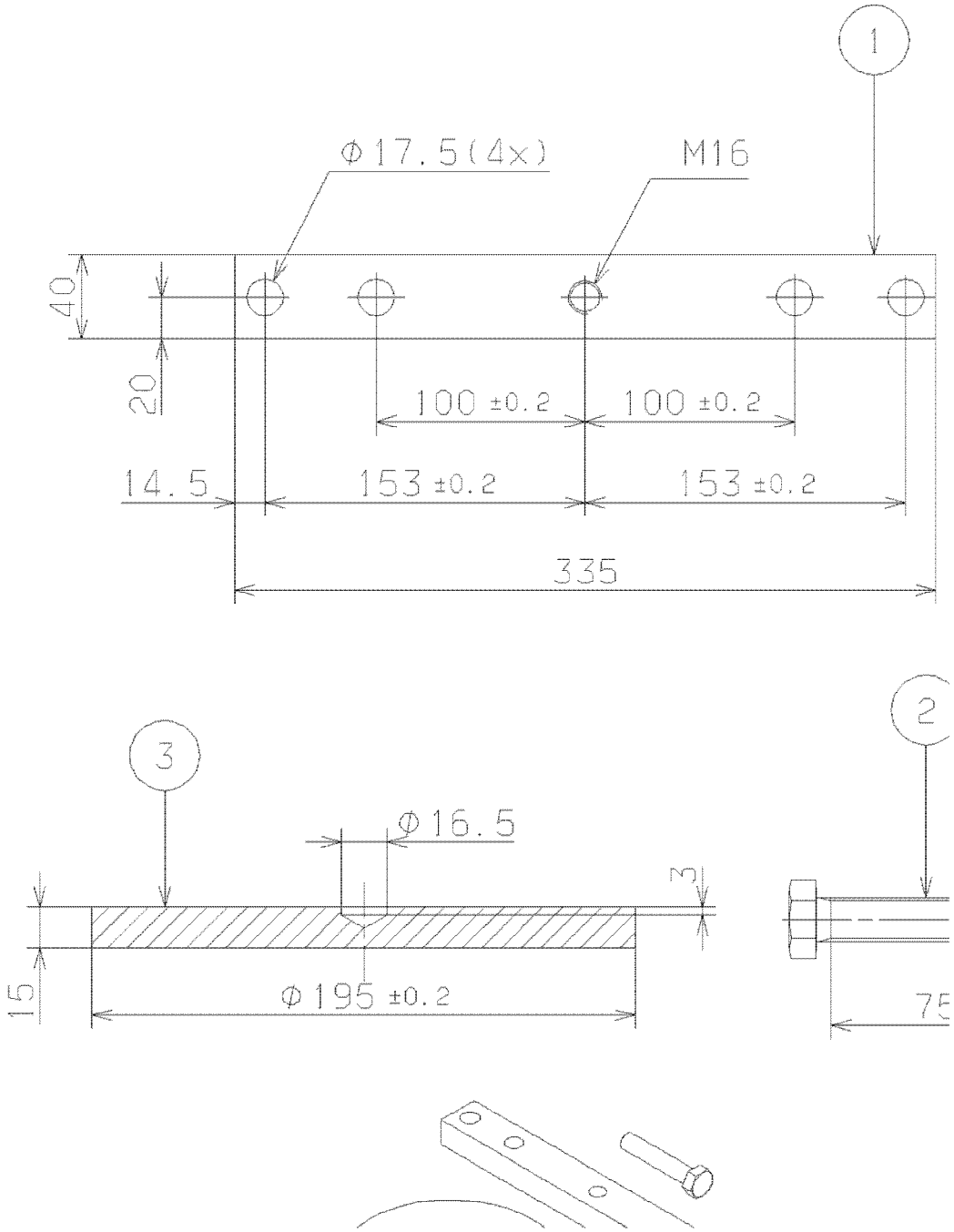


Figure 1
Puller

1. Flat bar 40x25, steel EN 10025-S235JRG2, (1)

2. Hex bolt M16x80-8.8, (1)
3. Washer Ø 200, steel EN 10025-S355JR, (1)

Document Title: **E-tool, NET 00013 Press tool**	Function Group: **080**	Information Type: **Service Information**	Date: **3/18/2026**
Profile:			

E-tool, NET 00013 Press tool

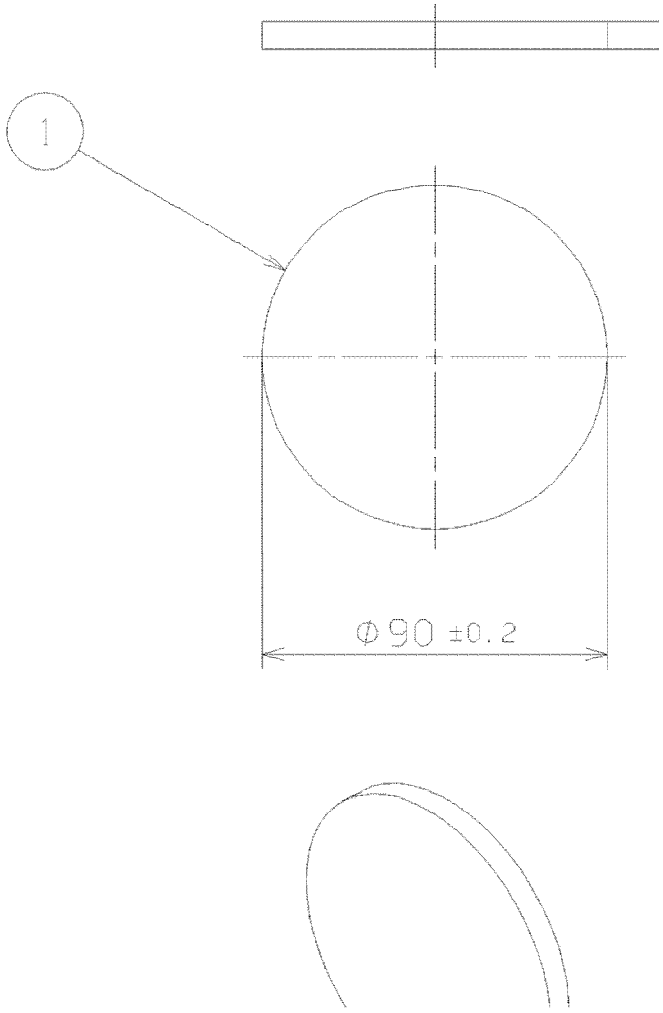


Figure 1
Press tool

1. Washer Ø 100, steel EN 10025-S355JR, (1)

Document Title:	Function Group:	Information Type:	Date:
E-tool, NET 00014 Washer	**080**	**Service Information**	**3/18/2026**
Profile:			

E-tool, NET 00014 Washer

NOTE!

This drawing should be used together with **items 1** and **2** in **NET 00011 Track and slew brake puller**.

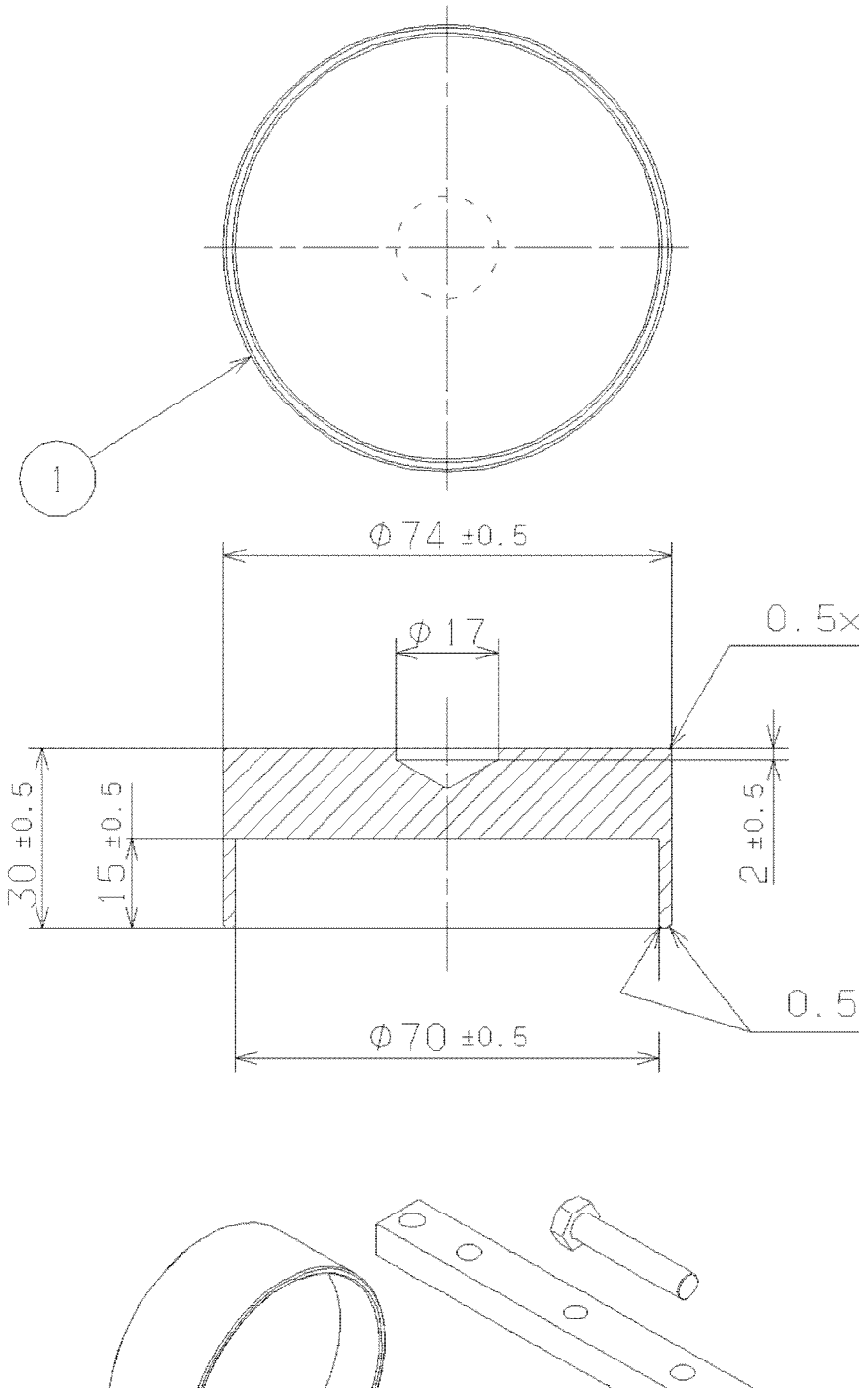


Figure 1
Washer

1. Washer Ø 75, steel EN 10025-S355JR, (1)