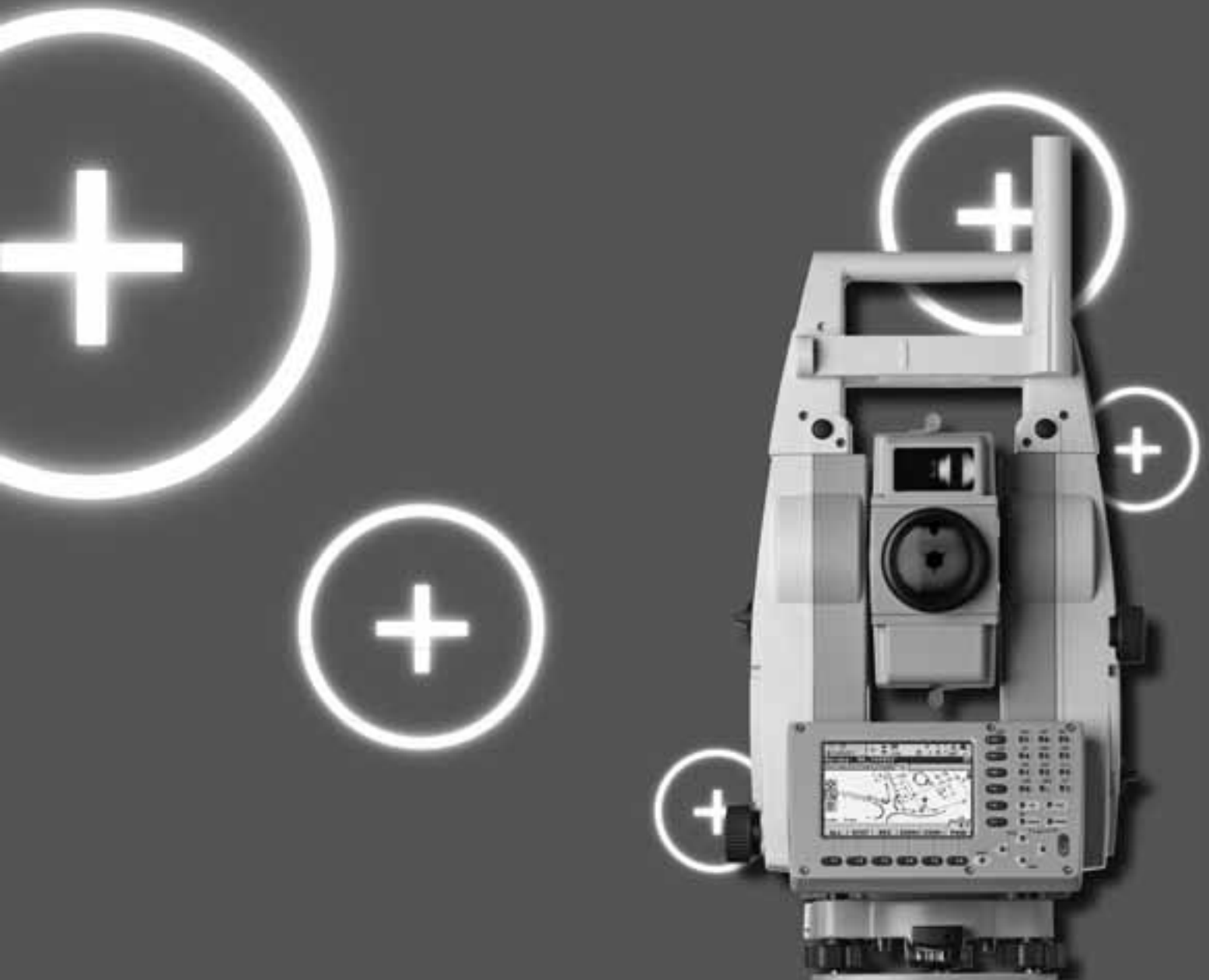


Leica TPS1200+ Series Equipment List



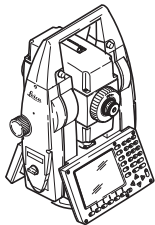
- when it has to be **right**

Leica
Geosystems

TPS1200+ Equipment List

1 Total stations

1.1 Models



Angle measurement
 Distance measurement (IR-Mode)
 Dist. meas. without reflector (RL-Mode)
 Motorized
 Automatic Target Recognition (ATR)
 PowerSearch (PS)
 Guide Light (EGL)
 Remote Control (RX1250T/Tc)
 Laser Guide GUS74
 SmartStation (ATX1230GG)

TC	TCR	TCRM	TCA	TCP	TCRA	TCRP
●	●	●	●	●	●	●
●	●	●	●	●	●	●
	●	●			●	●
		●	●	●	●	●
			●	●	●	●
				●	●	●
○	○	○	●	●	●	●
○	○	○	○	○	○	○
			○		○	
○	○	○	○	○	○	○

● Standard ○ Optional

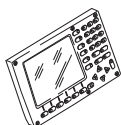
1.2 Angular Accuracies

		1205+ (5")	1203+ (3")	1202+ (2")	1201+ (1")
TC		759 463	759 464	759 465	759 466
TCR	PinPoint R400	759 467	759 468	759 469	759 470
	PinPoint R1000	759 471	759 472	759 473	759 474
TCRM	PinPoint R400	759 680	759 681	759 684	759 685
	PinPoint R1000	759 475	759 476	759 477	759 479
TCA		754 303	754 304	754 305	754 306
	Laser Guide GUS74	756 449	756 450	756 451	756 452
TCP		754 307	754 308	754 309	754 310
TCRA	PinPoint R400	754 311	754 312	754 313	754 314
	PinPoint R1000	754 315	754 316	754 317	754 318
	PinPoint R400 / Laser Guide GUS74	756 453	756 454	756 455	756 456
	PinPoint R1000 / Laser Guide GUS74	756 457	756 458	756 459	756 460
TCRP	PinPoint R400	754 319	754 320	754 321	754 322
	PinPoint R1000	754 323	754 324	754 325	754 326

All TPS1200+ models are delivered with one keyboard with touch screen, standard applications, user manual, and container GVP625.

2 Additional Options

2.1 Touch Screen / Second Keyboard



759 033 GTS23, 2nd keyboard with touch screen and colour display, for TPS1200+ instruments, for telescope position 2, fitted.

2.2 Communication Side Cover

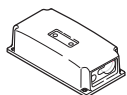


- | | |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 741 963 | GSD02, communication side cover, including bluetooth, for non-motorized TPS1200+ instruments (TC, TCR models). Required for SmartAntenna Adapter and RadioHandle. |
| 755 538 | GSD03, communication side cover, including bluetooth, for motorized TPS1200+ instruments. Required for SmartAntenna Adapter and RadioHandle. (Can be order only together with a new instrument). |

2.3 Internal Memory

- | | |
|---------|------------------------------------|
| 738 407 | Internal memory 64 MB for TPS1200+ |
|---------|------------------------------------|

2.4 Guide Light (EGL)



- | | |
|---------|-----------------------------------------------------------|
| 762 692 | EGL5, electronic guide light, for instruments without ATR |
|---------|-----------------------------------------------------------|

2.5 Producer Certificates



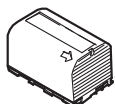
- | | |
|---------|--------------------------------------------------------------------------------------------------|
| 366 358 | Producer Certificate O |
| 559 655 | Producer Inspection Certificate M, angle |
| 663 177 | Producer Inspection Certificate M, distance with reflector EDM |
| 366 359 | Producer Inspection Certificate M, angle and distance with reflector EDM |
| 723 945 | Producer Inspection Certificate M, distances with both reflector and reflectorless EDM |
| 723 946 | Producer Inspection Certificate M, angle and distances with both reflector and reflectorless EDM |

3 Accessory Set

- | | |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 734 963 | TPS1200+ Accessory Set, consisting of: GDF121 tribrach, 2 GEB221 Batteries, GKL221 Charger with 2 GDI221 charging adapters, MCF64 CompactFlash card 64MB, GEV189 Data transfer cable Lemo 0/USB. |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

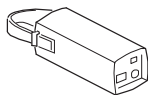
4 Power Supply

4.1 Internal Battery



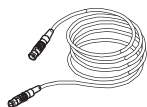
- | | |
|---------|------------------------------------------------------------------------------------------------|
| 733 270 | GEB221, Lithium-Ion battery, 7.4V / 4.4Ah, rechargeable. To be used with TPS1200+ and GPS1200. |
|---------|------------------------------------------------------------------------------------------------|

4.2 External Batteries



- | | |
|---------|------------------------------------------------------------------|
| 727 367 | GEB171, External universal battery, NiMH, 12V/9Ah, rechargeable. |
| 749 279 | GEV208 External power supply unit |

4.3 Battery Cables



- | | |
|---------|-----------------------------------------------------------------------------------------|
| 409 678 | GEV52, cable, connects TPS or DNA to external battery. |
| 439 038 | GEV71, Car battery cable 4m, to connect 12V car battery. |
| 734 698 | GEV187, Y-cable, connects TPS1200+ to PC (9-pin RS232 serial) and external battery, 2m. |

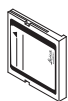
4.4 Battery Chargers



- | | |
|---------|----------------------------------------------------------------------------------------------------------------------------|
| 733 271 | GKL221, Charger PRO. To be used with up to two charging adapters GDI221 or GDI222, Charger cable and net adapter included. |
| 733 323 | GDI221, Adapter for GKL221 for charging 2 Li-Ion batteries GEB221, GEB211. |
| 734 389 | GDC221, Car adapter for the GKL221 charger. Allows the use of the GKL221 with a cigarette lighter; 12V24V DC/DC Converter. |
| 734 752 | GKL211, Charger BASIC, for Li-Ion batteries GEB221 and GEB211, car adapter cable and net adapter included. |

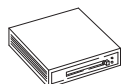
5 Data Storage and Data Transfer

5.1 CompactFlash Card



734 275	MCF64 CompactFlash card 64MB
733 257	MCF256, CompactFlash card 256MB

5.2 Card reader / Adapter



733 259	MCR5, Card reader for CompactFlash card
733 258	MCFAD1, CompactFlash PC Card adapter

5.3 Data Transfer Cables



734 700	GEV189, Data transfer cable, Lemo to USB connector (incl. USB electronics), 2.0m. Connects TPS/DNA to PC for data transfer. PC driver and user manual included on CD.
563 625	GEV102, data transfer cable, connects TPS1200+ to PC (9-pin RS232 serial), 2m.
734 698	GEV187, Y-cable, connects TPS1200+ to PC (9-pin RS232 serial) and external battery, 2m.
756 367	GEV217, Data transfer cable, connects RX1250 to TPS1200+, 1.8m.

6 Application Programs & Software Options

6.1 Standard Applications

Setup includes	Stakeout
– Get station coordinates from GPS, from job or enter manually	COGO includes
– Orientation by Known Azimuth	– Inverse
– Orientation by Known Backsight	– Traverse
– Orientation & Height Transfer to up to 10 target points	– Intersections
– Resection to up to 10 target points	– Line Calculations
– Resection Helmert	– Arc Calculations
– Local Resection	– Shift, Rotate & Scale (Manual)
Survey includes	– Shift, Rotate & Scale (Match Pts)
– AutoPoint recording	– Area Division (option)
– Remote Heights	Determine Coordinate System
– Target Offset calculations	GPS Survey

6.2 Optional Applications

for TPS1200+	for RX1250	
734 167	745 592	Reference Line
734 181	745 597	Reference Plane
742 442	754 745	Hidden Point
734 168	754 742	Sets of Angles
744 701	754 743	Monitoring (requires Sets of Angles)
734 170	754 744	Traverse
734 169	745 596	DTM Stakeout (requires Stakeout)
748 188	748 838	Area Division (requires COGO)
748 187	748 837	Volume Calculation
748 186	748 836	Cross Section
734 182	745 598	RoadRunner
746 388	753 663	RoadRunner Rail
744 866	757 295	Athletics
742 591	-	Road Runner Tunnel
752 691	752 732	DXF Import (free)
737 844	745 599	Alignment Tool Kit (free)
760 346	760 366	DXF Exporter

6.3 Software Options

734 754	GeoCOM Robotics License
754 746	Smart Pole License
752 656	GPS Raw Data logging License
752 873	GLONASS Option for TPS1200+

6.4 Software Options for RX1250

747 322	RX1250 GPS Survey functionality
756 625	RX1250 extended OWI/LB2 remote control

7 Optical Accessories

7.1 Eyepiece



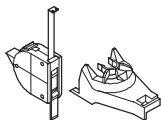
377 802	Eyepiece FOK53, additional eyepiece (modification in a workshop necessary)
734 514	GFZ3 Diagonal eyepiece for telescope.
376 236	Eyepiece for steep sights GOK6, with joint allowing variable sighting angle.

7.2 Objective



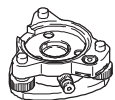
743 504	GVO13 Objective solar filter for TPS.
---------	---------------------------------------

8 Instrument Height Meter



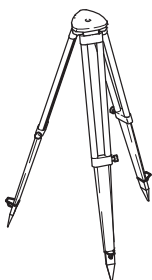
667 718	GHM007 Instrument height meter.
722 045	GHT196 Distance holder for height meter.

9 Tribrachs



667 304	GDF121 Tribrach, without optical plummet, pale green.
667 307	GDF122 Tribrach, with optical plummet, pale green.
748 888	GDF111-1 BASIC tribrach, without optical plummet, pale green
667 308	GDF112 Tribrach, with optical plummet, pale green/red.

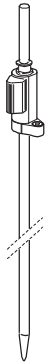
10 Tripods



296 632	Tripod GST20, telescopic, with accessories.
394 752	Tripod GST20-9, telescopic, with accessories, without pouch
667 301	Tripod GST120-9, telescopic, selfclosing, with accessories, without pouch.
332 200	Tripod-star GST4, for setting up tripods on hard and slippery surfaces.

11 Reflector Poles

11.1 Standard poles

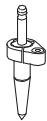


385 500	Reflector pole GLS11, telescopic, with circular bubble, cm and ft graduation, extends to 2,15m
555 720	Dual strut support GSR2 for GLS11/GLS11K plumbing pole
403 428	GZW412 Extension 1m long, for reflector pole GLS11 and carriers
667 309	GLS111 Reflector pole, with bull's-eye bubble, cm/ft graduation, extends to 2.60m, with red/white 0.20m graduations.
667 310	GLS112 Reflector pole, with bull's-eye bubble, cm/ft graduation, extends to 3.65m, with red/white 0.20m graduations.
667 319	Dual-strut support GSR111, for all GLS
745 391	GLS12, Reflector pole, telescopic to 2.00m with circular bubble, cm graduations.
754 389	GLS12F, Reflector pole, telescopic to 2.00m with circular bubble, ft graduations

11.2 Hidden Point Pole

742 329	GMP112, Hidden Point pole extension for GMP111. Includes miniprism with holder and 30cm adapter pole.
744 495	GMP112-0, Hidden Point pole extension for GMP111-0. Includes one miniprism and one 30cm adapter pole.

11.3 Mini pole



403 427	Mini reflector pole GLS14, (prism/target 20cm over point), with circular bubble.
---------	----------------------------------------------------------------------------------

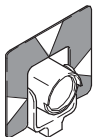
12 Reflector Carriers



667 313	GRT144 Carrier with stub, pale green.
667 316	SNLL121 Precision carrier, with plate level and zenith-nadir laser plummet.
428 340	GZR3 Precision carrier, with plate level and optical plummet.
725 566	GZR103 Carrier, with plate level and optical plummet, for reflectors and GPS antenna, pale green.

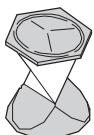
13 Reflectors

13.1 Circular Reflectors



641 617	Circular prism GPR121 PRO, with holder and target plate
641 618	Circular prism GPR111 BASIC, with holder and target plate
362 830	Circular prism GPR1, in container
362 820	Single-prism holder GPH1
362 823	Target plate GZT4, for GPH1
400 080	Three-prism holder GPH3
753 492	Circular prism GPR113 BASIC, with red holder

13.2 360° Reflectors



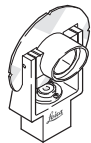
639 985	GRZ4 360° Reflector
754 384	GRZ122 360° Reflector with 5/8" thread adapter for mounting of GPS antenna
644 327	GRZ101, 360° Mini Prism with 1/4" thread fitting.
742 006	GAD103, Adapter for attaching GRZ101 to all poles.

13.3 Precision Reflectors



555 631 Single-prism precision reflector GPH1P

13.4 Mini Reflectors



641 662 Mini prism GMP101, incl. bubble, target plate and spike, in bag, also suitable for GLS11 and GRT44 (same height as GPH1, additive constant +17.5mm)

641 762 Mini prism GMP104, with L-bar, for fixed installations.

641 615 Mini prism GMP111 BASIC, incl. bubble, with GLS115 pole set.

642 534 Mini prism 0-Constant GMP111-0 BASIC, incl. bubble, with GLS115 pole set.

743 503 GAD105 Adapter for GMP111 to all poles.

13.5 Reflector Tapes



635 317 RETROTARGET S, Retro targets, 20x20mm, 20 pieces, 2-40m.

635 318 RETROTARGET M, Retro targets, 40x40mm, 20 pieces, 20-100m.

635 319 RETROTARGET L, Retro targets, 60x60mm, 20 pieces, 60-180m.

733 327 GZM28 Reflective tape for IR, 60x60mm.

14 Additional Containers

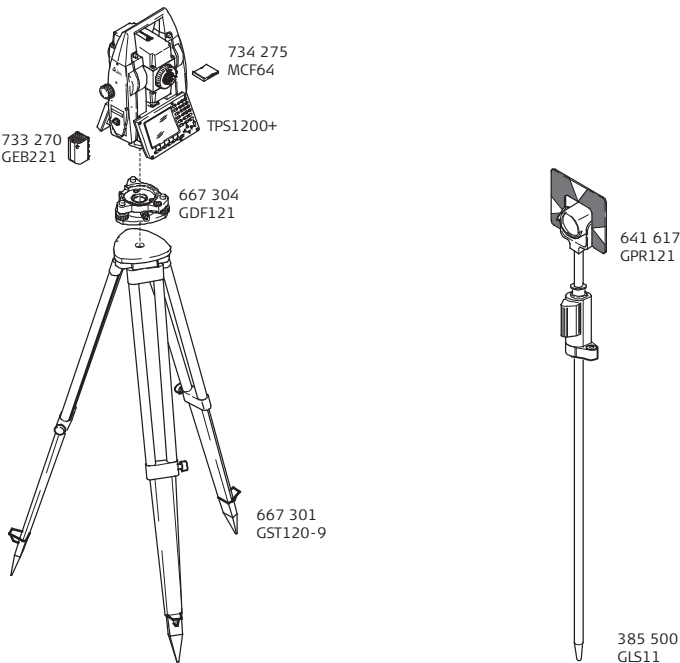
754 598 GVP640, Hard container for System1200 SmartRover, SmartPole, RX1250 and SmartStation.

744 501 GDZ66 Backstraps (2) for container.

667 451 Container GVP609, for 2 Circular prisms GPH111/ 121, 2 Laser plummet and 2 tribrachs.

727 589 CTC102, Soft bag with shoulder strap, for prism station, consist of tribrach, prism carrier or laser plummet and prism.

14.1 Conventional Surveying - Suggested Equipment



15 Remote Control RX1250T, RX1250Tc

15.1 Remote Control Sets

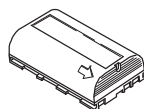
- 6000495 Advanced RX1250Tc Set for TPS1200+, consisting of: RX1250Tc Controller with integrated radio modem, GHT39 pole holder with GHT52 clamp, RH1200 RadioHandle, 2 GEB211 Batteries.

15.2 RX1250T/Tc Controller



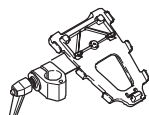
- 752 848 RX1250 Tc, WinCE System 1200 Controller with integrated radio modem, battery compartment, CF card slot, touch screen, colour display, alpha keyboard, 2 x stylus for touch screen, user manual and container. Can be used as TPS1200+ remote control.
- 747 816 RX1250 T, WinCE System 1200 Controller with integrated radio modem, battery compartment, CF card slot, touch screen, black/white display, alpha keyboard, 2 x stylus for touch screen, user manual and container. Can be used as TPS1200+ remote control.

15.3 Internal Battery



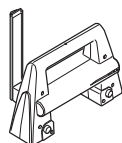
- 733 269 GEB211, Lithium-Ion battery, 7.4V / 2.2Ah, rechargeable. To be used with RX1250T/Tc.

15.4 RX1200 Accessories



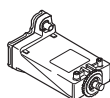
- 733 264 GHT39, Holder for attaching RX1200 Series Controller.
- 742 007 GHT52, Clamp arrangement for attaching the GHT39 to all poles (except mini poles).
- 733 266 GHT41, Hand strap for RX1200 Series Controller with utility hook for attaching to belt or tripod.

15.5 RH1200 RadioHandle



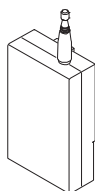
- 741 964 RH1200, RadioHandle with integrated radio modem, with antenna, user manual. Used as radio modem for TPS1200+ together with RX1250T/Tc or TCPS27 (frequency range 2400-2483 MHz). Requires communication side cover.

15.6 GFU23 Radio Modem



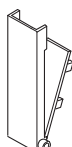
- 747 097 GFU23, TPS1200+ Radio modem for GHT56 (frequency range 2400 - 2483 MHz).
- 747 815 GAT15, Radio antenna for GFU23, (frequency range 2400 - 2483 MHz).

15.7 TCPS27 Radio Modem



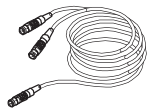
- 734 161 TCPS27 B, radio modem (base), with antenna, user manual. Used as radio modem for TPS1200+ (frequency range 2400 - 2483 Mhz).
- 734 162 TCPS27 R, radio modem (remote), with antenna, user manual. Used as external radio for RX1210 controller (frequency range 2400 - 2483 MHz).

15.8 TCPS27 Accessories



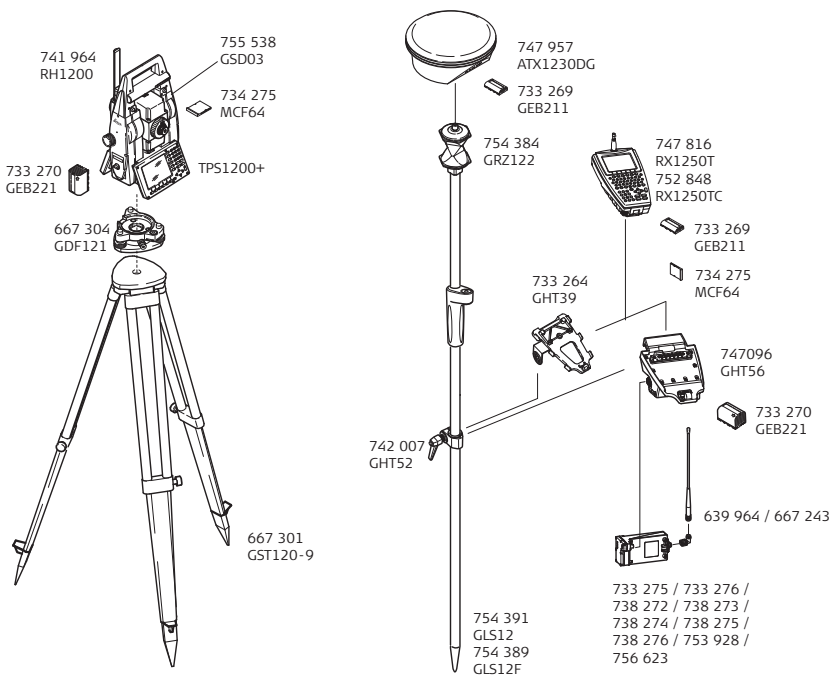
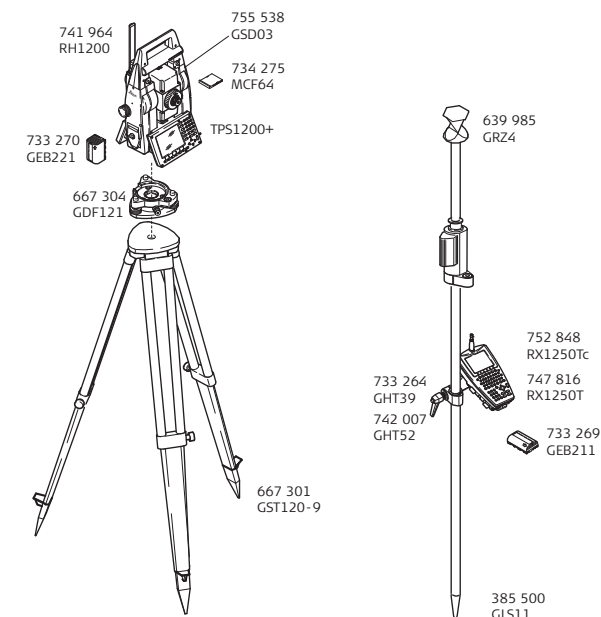
- 734 163 GHT43, Adapter for mounting TCPS26/27 on GST20/GST120 tripod.

15.9 TCPS27 Cables



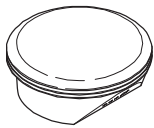
734 697 GEV186, Y-cable, connects TCPS27 to TPS1200+ and external battery, 1.8m.
707 525 GK1 Lemo Canon converter 30°, for PC

15.10 Robotic Surveying - Suggested Equipment



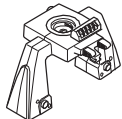
16 SmartStation (ATX1230 GG)

16.1 ATX1230 GG SmartAntenna



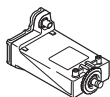
- 747 957 ATX1230 GG, GPS/GLONASS Dual Frequency Antenna with L2C and extended multipath mitigation option for RX1250. Can also be used with TPS1200+ instruments for SmartStation. Bluetooth capable. Note, GLONASS is only enabled each Wednesday. For full GLONASS use, the option 751 186 must also be ordered for the RX1250 and/or TPS1200+ – see section 14.

16.2 SmartAntenna Adapter



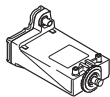
- 741 965 GAD104, SmartAntenna Adapter. Required to attach SmartAntenna and/or radio modem in GFU14 housing onto TPS1200+. Requires communication side cover.

16.3 Satellite Radio Modems



- 733 275 GFU14-0, Satellite 3AS radio modem (433.525 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 733 276 GFU14-1, Satellite 3AS radio modem (406.425 MHz, 25.0 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 738 272 GFU14-2, Satellite 3AS radio modem (445.000 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 738 273 GFU14-3, Satellite 3AS radio modem (443.000 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 738 274 GFU14-4, Satellite 3AS radio modem (440.550 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 738 275 GFU14-5, Satellite 3AS radio modem (458.150 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 738 276 GFU14-6, Satellite 3AS radio modem (439.8625 MHz, 12.5 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver. (User manual and CE-Declaration of Conformity included).
- 753 928 GFU14-7, Satellite 3AS radio modem (464.5000 MHz, 25.0 kHz channel spacing, 1.0 W) already intergrated into housing, fits on side of GPS Receiver.
- 756 623 GFU14-8, Satellite 3AS radio modem (458.6000 MHz, 25.0 kHz channel spacing, 0.5 W) already intergrated into housing, fits on side of GPS Receiver.
- 733 297 GEV171, 1.8m cable to program the Satellite 3AS radio modem inside the GFU14 housing.

16.4 Pacific Crest Radio Modems

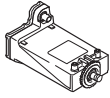


Pacific Crest Radio Modems must be ordered directly from your local Pacific Crest Office or Representative.

PDL receive only modems built into the Leica GFU radio housing with 12.5 or 25kHz channel spacing within the following frequency bands are available:

410 - 430MHz
430 - 450MHz
450 - 470MHz
223 - 235MHz

16.5 Mobile Phones



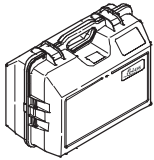
- | | |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 750 242 | GFU24, Housing with Siemens MC75 GSM/GPRS Module (Quad-Band GSM 850/900/1800/1900 MHz), fits on side of GX1200 Receiver or GHT56 for the SmartRover. |
| 750 243 | GFU25, CDMA cellular phone for Canada, Multitech MTMMC-C-N12 for Bell Mobility network, integrated into housing, fits on side of GX1200 Receiver or GHT56 for the SmartRover. |
| 744 754 | GFU19, US CDMA cellular phone Multitech MTMMC-C; intergrated into housing, fits on side of GPS1200 receiver. |
| 760 557 | GFU26, US CDMA cellular phone Multitech MTMMC-C-N14 for Alltel network, integrated into housing, fits on tside of GX1200 receiver or GHT56 for the SmartRover. |

16.6 Antennas für Radios and Mobile Phones



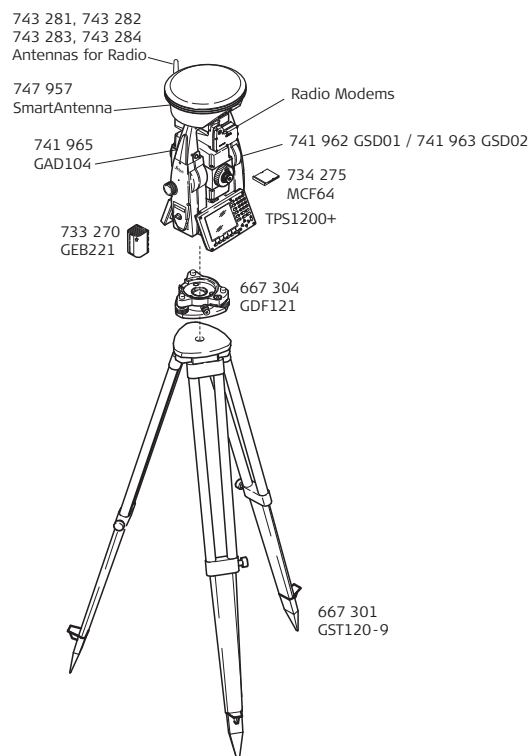
- 743 281 GAT1201, Antenna for Radio Modem for use with SmartStation (400-435MHz).
743 282 GAT1202, Antenna for Radio Modem for use with SmartStation (435-470MHz).
743 283 GAT1203, Antenna for 900/1800MHz mobile network for use with SmartStation.
743 284 GAT1204, Antenna for US mobile network (800/1900MHz) for use with SmartStation.

16.7 Container for ATX1230 GG SmartAntenna and SmartStation Accessories



- 754 598 GVP640, Hard container for System1200 SmartRover, SmartPole, RX1250 and SmartStation.

16.8 SmartStation - Suggested Equipment



17 Leica Geo Office

17.1 Leica Geo Office Software

734 711 Leica Geo Office Software on CD-ROM, not protected.

17.2 Software Protection Keys for additional options

734 712 Software protection key (parallel) for single user licence.
734 713 Software protection key (USB) for single user licence.
734 714 Software protection key for network licence for 5 users.
734 715 Software protection key for network licence for 10 users.
734 716 Software protection key for network licence for 25 users.
734 717 Software protection key for network licence for 50 users.

17.3 GPS Options

734 718 L1 data-processing for GPS, for code and phase, protected option.
734 719 L1/L2 data-processing for GPS, for code and phase, protected option.
752 697 GLONASS data-processing for LGO, protected option.
Can only be ordered in addition to L1/L2 data-processing for GPS (734719)
734 720 RINEX Import for GPS, protected option.
734 721 Upgrade from GPS L1 to GPS L1/L2 data-processing

17.4 Level Options

734 722 Level data processing and analysis, protected option.
734 723 Design & Adjustment 1D for level data, protected option.

17.5 General Options

734 724 Datum & Map transformation, protected option.
734 725 Design & Adjustment 3D, protected option.
734 726 GIS/CAD Export, protected option.
734 727 Upgrade from Design & Adjustment 1D to 3D
756 941 Surfaces & Volumes, protected option

17.6 Upgrades to LEICA Geo Office

734 728 Upgrade from LevelPak-Pro to LEICA Geo Office.
734 729 Upgrade from SKI-Pro including protected options to LEICA Geo Office.

18 Customer Care Packages



A wide selection of comprehensive Customer Care Packages (CCPs) is available bundling Hardware Maintenance, Software Maintenance, Customer Support and Extended Warranty.
For more information about the CCP offering in your country please contact your local Leica Geosystems organization or distribution partner.

Whether you want to survey a parcel of land or a construction site, a facade or indoors to create as-built plans or carry out high-precision measurements of bridge and tunnel constructions – Leica Geosystems' surveying instruments provide the right solution for all measuring tasks.

The System 1200 Series instruments as well as the software are designed to meet the daily challenges of modern surveying. They all have outstanding, easy to read and user-friendly interfaces. Their straightforward menu structures, their clearly outlined scope of functions and high technology perfectly mate GPS and TPS applications in the field. Whether you use the advantages of both technologies combined or each separately – due to the exceptional flexibility of Leica Geosystems instruments, reliable and productive surveying is assured.

When it has to be right.

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