



## Pièces détachées pour ADI 2040

## 2.19 SPECIAL TOOLS FOR BASIC MAINTENANCE

In order to be able to perform adequate basic maintenance the following tools are required:

- *special ADI tools, delivered with the ADI 2040 Process analyzer (see also Spare parts and mounting materials):*



Wrench for M6 and M8 tubing connectors  
ADI Article number : V0R9900406



Special grease for piston/sleeve 30g  
ADI article number : V0M5000010



TUBE EXPANDER/PUMP ASSEMBLE TOOL  
ADI article number : V2MD004021



Torx Key TX10 for Sol.valve.PEEK.  
ADI article number : V0R9900200



Valve adjustment tool.  
ADI article number : V2KD000551

- *commercially available tools (not delivered with the ADI 2040 Process Analyzer, but available as spare part (see Spare parts and mounting materials)):*



PTFE-tape for (not flared) tubing connectors  
ADI article number : V0R9901001



Tube cutter  
ADI article number : V0R9901200



Grooving tool for 1/4" tubing  
ADI article number : V0M5218500

## CHAPTER 3

# RECOMMENDED SPARE PARTS

### 3.1. GENERAL

This chapter describes the various spare parts for the ADI 2040 Process analyzer, with a reference to the related Z-modules. Besides the spare parts for basic maintenance, also the service parts for corrective and preventive maintenance are listed, along with the most commonly used mounting materials. The starting point for making up this list of spare parts, is that the user doesn't need any special electro-mechanical skills to perform a concerning corrective measure as (partly) described in chapter 2.

For convenience an descriptive list of used abbreviations for synthetic materials is here included:

#### SYNTHETIC MATERIALS

ETFE	Ethylenetrafluorethylene
FEP	Perfluorethylenepropylene
FPM	Fluor rubber
PA	Polyamide
PCTFE	Polychlorotrifluorethylene
PE	Polyethylene
PEEK	Polyetheretherketone
PETP	Polyethyleneterephthalate
PFA	Perfluoralkoxy
PMP	Polymethylpentene
POM	Polyoxymethylene
PP	Polypropylene
PS	Polystyrene
PTFE	Polytetrafluor ethylene
PVC	Polyvinylchloride
PVDF	Polyvinylidenfluoride

RECOMMENDED SPARE PARTS

**3.2 ELECTRODES:**

- ZB62311000 ELECTROLYTE SOL. K2SO4 C= SAT.
- ZB62308020 ELECTROLYTE SOL. KCL C= 3 MOL/L
- ZB62308030 GELLED KCL SOL. (ADILYTE) 250 ML
- ZB62310000 ELECTROLYTE SOL. KNO3 C= SAT.
- ZB62311010 ELECTROLYTE SOL. KNO3 GELLED
- ZB62312000 ELECTROLYTE SOL. LICL C= SAT.
- ZB62309000 ELECTROLYTE SOL. LICLO4 C= SAT.



- ZCADI04000 ADI BUFFER PH4 1 LTR
- ZCADI07000 ADI BUFFER PH7 1 LTR
- ZCADI10000 ADI BUFFER PH10 1 LTR



- ZBNH3IF010 AMMONIA ELECTR.FILLING SOLUTION

Used for ZBNH315010



- ZBNH3MK050 AMMONIA MEMBRANE KIT 20PCS+O-RING

used for ZBNH315010



- ZB628020000 POLISHING SET FOR ISE

used for :

ZBAGS15010, ZBCL015010, ZBCN015010, ZBCU015010, ZBFO015010



**3.3 STIRRER / VESSEL HOLDER MODULE (ZB20401800)**

- VOM5217205 NORPRENE TUBING ID 1/4" OD 3/8"  
(Tube for overflow vessel)  
material: Norprene



- V2MD000131 TOP PLATE STIRRER MODULE  
material: PTFE



- V2MD000151 STOPPER FOR ELECTRODE  
material: PTFE



- V2MD000161 FASTENER FOR ELECTRODE  
material: PP



- V2MD000171 CENTER FASTENER FOR ELECTRODE  
material: PP



- ZB20401850 BLIND STOPPER VESSEL ENTRY 1/4"  
material: PTFE



- ZB20401860 BLIND STOPPER VESSEL ENTRY 3/8"  
material: PTFE



- ZB20401870 BLIND STOPPER VESSEL ENTRY 12MM  
material: PTFE



## RECOMMENDED SPARE PARTS

- V2LD001781 ASSEMBLY KNURLED BOLT



- V2LD001791 SEAL PACKAGE FOR STIRRER MODULE

material: FEP / EPDM



- V0M5026070 STIRRER BAR D=4MM X L=12MM

- V0M5026075 STIRRER BAR D=4MM X L=16MM

- V0M5026080 STIRRER BAR D=5MM X L=25MM

material: PTFE



- V2KD001911 REACTION VESSEL TRANSP. 5-70 ML

material: GLASS



- V2KD001931 REACTION VESSEL TRANSP. 20-90 ML

material: GLASS



- V2KD001951 REACTION VESSEL TRANSP. 40-150 ML

material: GLASS



- V0M5004051 CONNECTOR CYLINDER-TUBING M8

material: PCTFE



- V0W8002011 TITRATION VESSEL 10-90 ML TRANSP.

material: GLASS



- V0W8002013 TITRATION VESSEL 20-90 ML TRANSP.

material: GLASS



- V0W8002015 TITRATION VESSEL 50-150 ML TRANSP.

material: GLASS



### **3.4 SAMPLING PIPETTE MODULE (ZB20401410 / 1420 / 1430 / 1440 / 1450 / 1460)**

- V2KD001411 SAMPLE PIPETTE 2.5 ML FEP

material: FEP



- V0M5008022 BURETTE TIP L-151MM ID=2 OD=2.9

material: FEP/ETFE



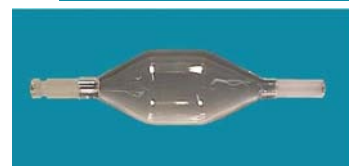
- V2MD001421 SAMPLING PIPETTE TUBE 5-50 ML

material: FEP



- V2MD001431 SAMPLING PIPETTE 5 ML
- V2MD001441 SAMPLING PIPETTE 10 ML
- V2MD001451 SAMPLING PIPETTE 20 ML
- V2MD001461 SAMPLING PIPETTE 50 ML

material: Glass



- V2MD001491 SAMPLING PIPETTE CONNECTOR 5-50 ML

material: PTFE



- V0M5004050 CONNECTOR CYLINDER-TUBING M6

material: PCTFE/EPDM



## RECOMMENDED SPARE PARTS

**3.5 MACRO PIPETTE MODULE (ZB20402201/11/31/51)**

- V0M5219010      TEFLON TUBING 1/4 "FEP MTR

material: FEP



- V2MD002721      MACRO SAMPLING PIPETTE 6ML
- V2MD002731      MACRO SAMPLING PIPETTE 10ML
- V2MD002741      MACRO SAMPLING PIPETTE 20ML
- V2MD002751      MACRO SAMPLING PIPETTE 50ML

material: Glass



- V2MC120451      ANTI-DROP GLASS ROD    ADI201X

material: Glass



- V2MD002711      MOUNTING PLATE MACRO PIPETTE

material: SS



- V0M5004051      CONNECTOR CYLINDER-TUBING M8

material: PCTFE



- V0M5217205      NORPRENE TUBING ID 1/4" OD 3/8"

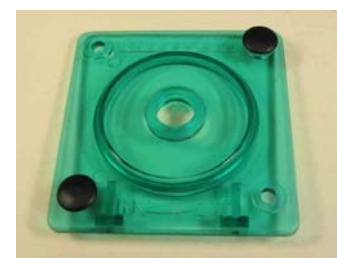
material: Norprene





### 3.6 TUBING PUMP MODULE ( ZB20401501 /1521 / 1561)

- V2KD003161 PUMP TUBING ID 1.6MM  
material: norprene ®  
(Used in ZB20401521 pump 5 ml/min)
- V2KD003171 PUMP TUBING ID 4.8MM  
material: norprene ®  
(Used in ZB20401501 pump 320 ml/min and ZB20401561 pump 120 ml/min)
- V2MD002801 PUMP ADAPT. M6(F)-HOSE ID1.6MM PP  
material: PP  
(Used in ZB20401521 pump 5 ml/min)
- V2MD002871 PUMP ADAPT. M8(F)-HOSE ID4.8MM PP  
material: PP  
(Used in ZB20401501 pump 320 ml/min and ZB20401561 pump 120 ml/min)
- V0M5224222 2-ROLLER CARRIER POM/SS/NYLON GF  
material: POM (rollers)
- V0N0415010 M4X10 NYLON KNURLED SCREW  
material: NYLON
- V0M5224221 COVER TUBING PUMP, GREEN PA  
material: PA



RECOMMENDED SPARE PARTS

**3.7 BURETTE MODULE (ZB20401210/1220/1230/1240)**

- V0W8002036 CYLINDER HEAD NUT 2ML BURETTE
  - V0W8002037 CYLINDER HEAD NUT 10ML BURETTE
  - V0W8002038 CYLINDER HEAD NUT 50ML BURETTE
- Head nut for 20 ml burette is equal to 10 ml burette.

Material: PP

- V0W8002039 PISTON FOR 2 ML BURETTE
- V0W8002040 PISTON FOR 10 ML BURETTE
- V0W8002041 PISTON FOR 50 ML BURETTE
- V0W8002082 PISTON FOR 20 ML BURETTE

material: PTFE

- V0W8002045 GLASS CYLINDER 2 ML BURETTE
- V0W8002046 GLASS CYLINDER 10 ML BURETTE
- V0W8002047 GLASS CYLINDER 50 ML BURETTE
- V0W8002060 GLASS CYLINDER 20 ML BURETTE

material: Glass

- V2KD001211 CYLINDER HEAD 2 ML BURETTE
- V2KD001221 CYLINDER HEAD 10 ML BURETTE
- V2KD001231 CYLINDER HEAD 50 ML BURETTE
- V2KD001241 CYLINDER HEAD 20 ML BURETTE

material: Carbon filled PTFE

TOP SIDE

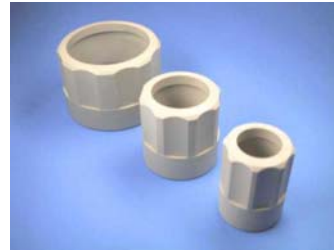
BOTTOM SIDE

- V0W8002081 ANTIDIFFUSION VALVE FOR BURET.TIP

material: ETFE/KALREZ

- V0M5008021 BURETTE TIP L=145

material: FEP/ETFE/KALREZ



- V0M5000010 SPEC.GREASE FOR PISTON/SLEEVE 30G



### 3.8 MULTIWAY VALVES (ZB20401610 / ZB20401710 / ZB20402010+2030 / ZB20401730)

- V2LD001611 BURETTE VALVE UNIT

material: PCTFE (head), PTFE (slider)



- V2MD000331 RETURN TUBE FOR BUR./CONT.CONN

material: FEP



- V2MD000341 REDUCER BURETTE/CONTAINER CONN.

material: PP



- V2LD001731 BURETTE SELECTOR VALVE UNIT

material: PCTFE (head), PTFE (slider)



- V2LD001711 6-WAY SELECTOR VALVE UNIT

material: PCTFE (head), PTFE (slider)



- V2LD002011 SAMPLING SYSTEM LOOP UNIT
- V2LD122031 SAMPLING SYSTEM LOOP MODULE 2-WAY

material: PCTFE (head), PTFE (slider)



- V1S5ARP028 O-RING ID- 28.30X1.78

material: EPDM



## RECOMMENDED SPARE PARTS

---

- ZB20402110 0.2 ML LOOP FOR SAMPLING SYSTEM

material: PTFE



- ZB20402120 0.5 ML LOOP FOR SAMPLING SYSTEM
- ZB20402123 1 ML LOOP FOR SAMPLING SYSTEM
- ZB20402124 2 ML LOOP FOR SAMPLING SYSTEM
- ZB20402125 5 ML LOOP FOR SAMPLING SYSTEM

material: FEP



### 3.9 SAMPLE FLOW DETECTOR (ZB20402100)

- V0W0030001 BULKHEAD MALE D 1/4 "- 1/8" NPT PP

material: PP



- V2MD121161 ADAPTER G1/8 " MALE- M6

material: Carbon filled PTFE



- V2MD000281 MOUNTING PLATE FLOW SWITCH



### 3.10 SAMPLE FLOW CELL (ZB20402500)

- V0W0130001 ELBOW 1/4 "G MALE 1/4 " TUBE PP

material: PP



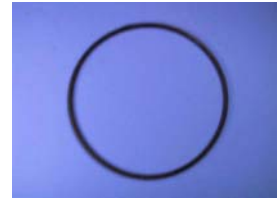
- V0W0130002 ELBOW 1/4 "G MALE 3/8 " TUBE PP

material: PP



- V1S5500X15 O-RING ID- 50.00X1.50 EPDM

material: EPDM



### 3.11 CUVETTE MODULE (ZB20407200-80)

- V2MD000891 CUVETTE 20 ML

Material: borosilicate glass



- V0W704000 STIRRER BAR D=3mm X L=13 mm

Material: PTFE



- V2MD000881 CUVETTE LID 6X M6, 1X 1/4" TUBE

Material: PTFE



- V2LD090181 EXCHANGE TUBING PACKAGE CUV. LID

Material: tubes: PTFE, O-ring: EPDM



- V2MD000901 PLUG FOR SIGHT HOLE CUVETTE

Material: PETP



- V0N0415020 KNURLED SCREW



**3.12 KARL FISHER PACKAGE (ZB20401900)**

- V0M5021040 MOLECULAR SIEVE 250GR.BEAD 2MM



- V0M5021045 DRYING FLASK FOR MOLECULAR SIEVE

material: Glass



- V0W0430005 MALE RUN TEE 1/4"-1/4"-G3/8" PP

material: PP



- V1M1103036 SILIC.RUBBER SEAL.RING 29X18 GL32

material: Silicon



- V2KD000311 MOD. GL32 SCREW CAP + G 3/8"



- V2MD000281 MOUNTING PLATE FLOW SWITCH



### 3.13 REFLUX COOLER ASSEMBLY (ZB20405050)

- V0W0040002  
FEMALE CONNECTOR PVDF GL14-DN4/6  
material: PVDF

- V0W4670003  
COOLER FOR DESTR.T.JOINT B/D 19/9  
material: Glass

- V0W4600001  
FORK CLAMP BALL/DISC JOINT 19/9

- V0M5004050  
CONNECTOR CYLINDER-TUBING M6  
material: PCTFE/EDPM

- V0W4670002  
CAP FOR DESTR.TUBE NS34 - B/D 19/9  
material: Glass

- V0W8004920  
FLANGED TUB. ID2/OD2.9 L=250 FEP  
material: FEP

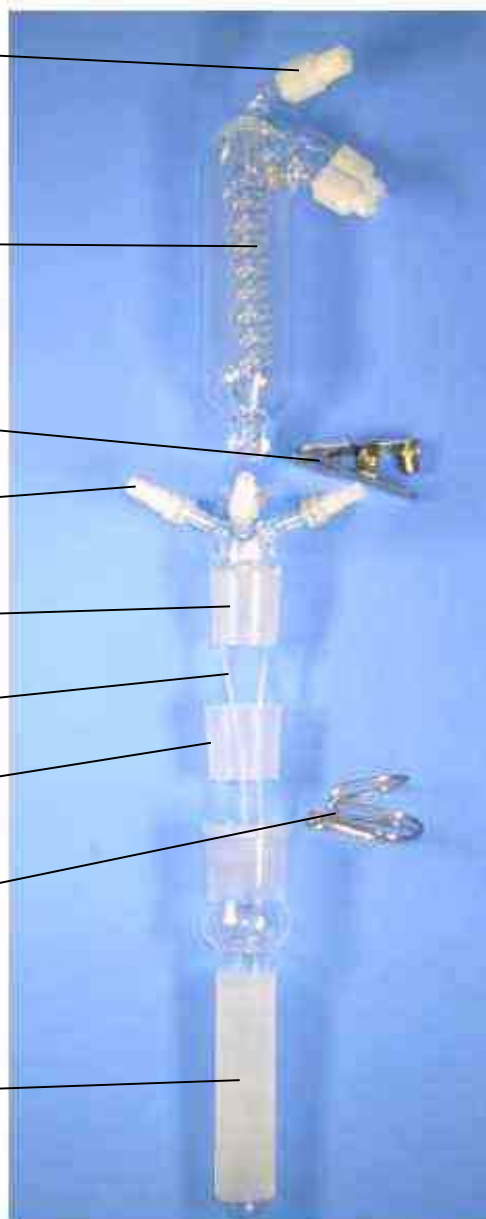
- V0W4640001  
PTFE SLEEVE FOR NS34 JOINT  
material: PTFE

- V0W4600002  
FORK CLAMP CONICAL JOINT NS34

- V2MD001121 (Not depicted)  
HOLDING PLATE FOR COOLER  
material: PP

(ZB20405030 DIGESTER TUBE 30 ML)

(ZB20405040 DIGESTER TUBE 60 ML)





## RECOMMENDED SPARE PARTS

---

### 3.14 MISCELLANEOUS

- V0R1520400 BATTERY LITHIUM FOR PC 3.6V 1.9AH

(For ADI2040 CCB)



- V0R1813205 BULB NEON GREEN 115 V
- V0R1813206 BULB NEON GREEN 230 V

(For Power On indicator)

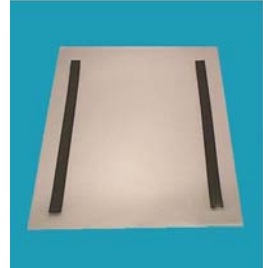


- V0R1814005 PEARL PYGMY LAMP 24V/25W E14

(Inside Cabinet ADI2040)



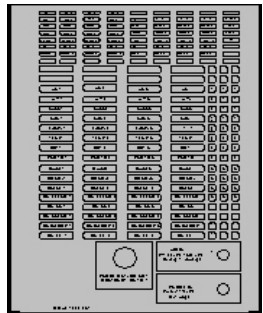
- V2LD000071 MAGNETIC DOCUMENT BAG TRANSP. A4



- V2LD000401 INTERNAL SERIAL CONNECTOR



- V2MD000611 STICKER FOR ADI 2040



- ZB20404000 FLASH MEMORY CARD  
(empty)



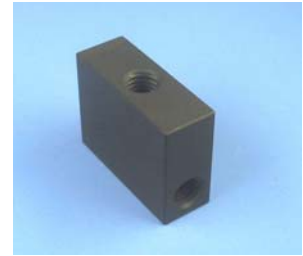
- V2LD090301 ADI2040 BASIC SOFTWARE  
(Flash memory card with software)
-



### 3.15 MOUNTING MATERIALS

- V2MD000991 TEE UNION M6 TUBING

material: Carbon filled PTFE



- V0M5008029 SCREW NIPPLE FOR M6

material: PVDF

(Can be used together with V2MD000961 as blind stopper)



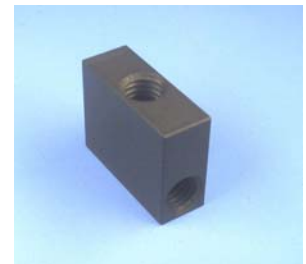
- V2MD000961 PLUG FOR SCREW NIPPLE M6

material: PTFE



- V2MD000981 TEE UNION M8 TUBING

material: Carbon filled PTFE



- V0W0040000 SCREW NIPPLE FOR M8

material: PVDF

(Can be together with V2MD000951 as blind stopper)



- V2MD000951 PLUG FOR SCREW NIPPLE M8

material: PTFE



- V2KD003121 UNION M8 MALE FEP

material: FEP



## RECOMMENDED SPARE PARTS

- V2LA123322 ADAPTER M6- 6MM TUBE PP  
material: PP
- V2LD090201 ADAPTER M6- 6MM TUBE PCTFE  
material: PCTFE  
(incl.nut)  
(Can be used in ZB20402010 / 2030 , ZB20401521)
- V2LD090191 ADAPTER M8- 6MM TUBE PP  
material: PP
- V2LD090051 ADAPTER M8- 6MM TUBE PCTFE  
material: PCTFE  
(incl.nut)  
(Can be used in ZB20401151, ZB20401501 / 1561)
  
- V0M5210010 NUT FOR 6MM TUBING CONNECTOR PVDF  
material: PDVF
- V0M5221200 NUT FOR 1/4" TUBING CONNECTOR PP  
material: PP
  
- V0M5209010 CONN. 1/4 " NPT- 1/4 " TUBE  
  
material: PFA  
  
(Can be used in ZB20401120)
  
- V0M5222010 MALE ELBOW 1/4 " NPT- 1/4 " TUBE  
  
material: PFA  
  
(Can be used in ZB20401180 / 1190)
  
- V0M5214010 TEE UNION 1/4 " TUBE  
  
material: PFA
  
- V0M5221070 DISTRIBUTER 1/4 " TUBE PP
- V0M5221071 DISTRIBUTER 6 MM TUBE PP  
  
material: PP
  
- V0M5228000 UNION M6-M6  
  
material: ETFE



- V2MD001921 MALE RUN TEE FOR DRAIN CONN.R 1/4 "

material: PTFE

(Present in ZB20401910 / 1930 / 1950)



- V2MD000971 ADAPTER M8 MALE M6 FEM

material: Carbon filled PTFE

(Can be used in ZB20401151)



- V0M5042240 ADAPTER M6 MALE M8 FEMALE PCTFE

material: PCTFE



- V0M5207073 BLINDSTOPPER PE DIA.7.3

material: PE

(Present in ZB20401151)



- V2MD000361 ADAPTER O.D. 6MM-M6 PP

material: PP

(Present in ZB20403010-3040 )



- V0W0530014 ADAPTER DN4/6MM-OD 6MM PP  
(Incl.nut)

material: PP

(Present in ZB20403010-3040 )



- ZA55226000 FEMALE M6/OD 6-OD6.35MM ADAPTER  
(Incl.nut)

material: PVDF



## RECOMMENDED SPARE PARTS

- V0M5219010 TUBING 1/4 " FEP MTR
- V0M5219000 TUBING ID4/OD 6 MM FEP MTR  
material: FEP



- V0P5217000 TUBING FOR AIR 6.2MM CL
- V0W7203004 TUBING ID4/OD 6 MM PE  
material: PE



- V0W8004010-4250 FEP TUB.2X M6 ID 2MM

V0W8004010 L= 130MM  
 V0W8004020 L= 520MM  
 V0W8004030 L=1500MM  
 V0W8004040 L= 90MM  
 V0W8004050 L= 180MM  
 V0W8004060 L= 600MM  
 V0W8004070 L= 105MM  
 V0W8004080 L= 250MM  
 V0W8004090 L= 310MM  
 V0W8004100 L= 400MM  
 V0W8004110 L= 800MM  
 V0W8004120 L=1000MM  
 V0W8004130 L=1200MM  
 V0W8004180 L= 160MM  
 V0W8004190 L= 110MM  
 V0W8004250 L=2500MM



material: FEP

- V0W8004001 PTFE-TUB 2X M8 L=250MM ID=3.0MM
- V0W8004002 PTFE-TUB 2X M8 L=170MM ID=3.0MM
- V0W8004005 PTFE-TUB 2X M8 L=330MM ID=3.0MM
- V0M5042160 PTFE-TUB 2X M8 L=500MM ID=3.0MM  
material: PTFE



- V2KD001891 RINSE TUBING FOR DRAIN VALVE CONN  
material: PTFE

(Present in ZB20401910 / 1930 / 1950)



- V2KD001901 DRAIN TUBING FOR REACTION VESSEL  
material: PTFE

(Present in ZB20401910 / 1930 / 1950)



- V0W7226001 NORPRENE TUBING ID 5/16" OD 7/16"

- V0M5217205 NORPRENE TUBING ID 1/4" OD 3/8"  
(Present in ZB20401800; overflow analysis vessel)  
(Present in ZB2040222201/11/31/51; overflow pipette)  
material: Norprene



- V0N0232008 M2X 8-SS-A4 CR.REC.RAIS.HD.SCREW  
(Present in ZB20400620 /0640 / 0650 / 0660 / 1030)



- V0N0432035 M4X 35-SS-A4 CR.REC.RAIS.HD.SCREW



- V0R1317308 SHIELD TERMINAL SH.OD 0- 8 MM



- V0R1317314 SHIELD TERMINAL SH.OD 8- 14 MM



- V0R9901001 PTFE-TAPE (ROLL)



**3.16 TOOLS**

- V0M5218500 GROOVING TOOL FOR 1/4 " TUBING



- V0R9901200 TUBE CUTTER



- V0W4070005 KEY FOR DOOR LOCK DOUBLE BIT 5MM



- V2MD004022 TUBE EXPANDER/PUMP ASSEMBLY



- V0R9900406 WRENCH FOR M6 TUBING CONNECTOR



- V0R9900200 TORX KEY TX10



- V2KD000551 VALVE ADJUSTMENT TOOL

