



KOLBENSCHMIDT



PIERBURG



TRW

EngineComponents



turbo by INTEC

PRODUCT CATALOG

SPARE PARTS FOR
BLOCK-TYPE THERMAL POWER STATIONS (BTTPS)
AND GAS ENGINES

TAKING RESPONSIBILITY IN A CHANGING WORLD



RHEINMETALL

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CERTIFICATIONS

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Disclaimer

Names, descriptions and numbers of engines, vehicles, products, manufacturers, etc. are mentioned solely for the purpose of comparison. The parts contained in the catalogue are spare parts for the applications listed.



THE CONTENTS OF THE CATALOGUE ARE ALSO AVAILABLE IN OUR ONLINE CATALOGUE, IN OUR APP AND ON TECALLIANCE.

Further information:
catalog.ms-motorservice.com
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MOTORSERVICE GROUP

QUALITY AND SERVICE FROM A SINGLE SOURCE

The Motorservice Group is the sales organisation for the global aftermarket activities of Rheinmetall. It is a leading supplier of engine components for the independent aftermarket. With the premium brands Kolbenschmidt, Pierburg, TRW Engine Components and the brands BF and Turbo by Intec, Motorservice offers its trade and repair shop customers a wide and comprehensive range of top-quality products.

RHEINMETALL

TECHNOLOGY FOR FUTURE MOBILITY

As a global supplier to the automotive industry, Rheinmetall's expertise in air supply systems, emission control and pumps and in the development, manufacture and spare parts supply of pistons, engine blocks and engine bearings puts it right at the top of the markets. Product development is carried out in close cooperation with well-known automotive manufacturers.



ENGINE PARTS FOR BTTPS AND GAS ENGINES

PRODUCTS FROM THE EXPERT

PRODUCT RANGE FOR BTTPS AND GAS ENGINES

Engine parts for all gas types, applications and manufacturers

- Cylinder heads: oil lubricated/non-lubricated valve guide (Ex)
- Pistons, cylinder liners, kit sets: pistons with adapted compression, pistons without a bowl for free piston crown configuration, cylinder liners with fire ring
- Piston rings: with DC coating on request
- Plain bearings: 360° sputter bearings
- Valves: with valve seat armouring, plasma nitrided
- Valve guides: oil-cooled, with oil lubrication
- Valve seat inserts: made of Stellite, Tribaloy
- Connecting rods, crankcases and other products

MANUFACTURERS

- Doosan
- 2G Energy
- Liebherr
- MAN

- Mitsubishi
- MTU
- Scania
- Others on request

APPLICATIONS

- BTTPs
- Stationary engines
- Industrial engines
- Agricultural machinery
- Forestry machinery
- Construction machinery

GAS TYPES

- Biogas
- Wood gas
- Natural gas
- Mine gas
- Sewer gas



NOTE

For certain manufacturers or engine series, the products must be selected using the engine number to ensure that they are allocated correctly.



INDIVIDUAL SOLUTIONS

Custom-made products from the specialist

To meet your requirements, we manufacture custom-made products and special parts that are not available as standard.

Order information

A quote for your custom-made product is available on request. In order for us to provide a fair quote, please include a blueprint or sample of the part and provide us with the most accurate information possible concerning the engine type, part numbers, dimensions and the quantity of products required.

Custom-made products

- **Pistons** – minimum quantity: 300
- **Valves** – minimum quantity: 300
- **Valve guides** – minimum quantity: 100
- **Valve seat inserts** – minimum quantity: 500

Semi-finished products: pistons without a bowl

Pistons without a bowl for which the specialist company has carried out customised finishing are available on request.



PISTONS WITHOUT A BOWL – SUITABLE FOR GAS ENGINES

Gas engines require pistons that can handle the combustion process. Sometimes, standard pistons cannot meet specific requirements.

At Motorservice, you will receive Kolbenschmidt gas pistons without a bowl. The piston crown can be configured on these pistons as you see fit. The piston crown can therefore be machined to meet your requirements exactly.

 NOTE

The piston may not be installed without the piston crown having been machined. If required, we will machine the gas pistons to match your blueprint or sample, as per your requirements and specifications. Our sales team will be happy to give you a quote for machining.

Item no.	Engine	Piston design	Connecting rod support	Suitable for
40 822 600	E2676xxxxx	With cooling channel	Trapezoidal connecting rod	MAN
41 495 600	E2876xxxxx	Without cooling channel		
42 136 600	E083xxxxx			
41 499 600	E2842xxxxx E2848xxxxx		Parallel connecting rod	
42 139 600	MTU 400 MDE B/E 30xx	Without cooling channel	Trapezoidal connecting rod	MTU MDE

SCOPE OF SUPPLY

The pistons are supplied with the enclosed piston ring set, piston pins and circlips.



GAS PISTONS WITHOUT A BOWL – MACHINING INSTRUCTIONS

Before machining the piston

Reference sizes will make it possible to compare pre- and post-machining dimensions, so record all functionally relevant dimensions by measuring the piston at the specified measuring points D1 and D2 (see image). Measure the piston before and after machining at the same ambient conditions, e.g. the same temperature.

How to machine gas pistons without a bowl

- Use equipment that is suitable for cutting alloys with a silicon content of > 10%.
- Use suitable clamping equipment that does not have an adverse effect on the contour or surface coating of the piston.
- The component must be sufficiently cooled and lubricated when being machined.

After machining the piston but before installation

Clean the machined piston, including all oil channels.

- Measure the piston at the specified measuring points D1 and D2 (see image) at the same ambient conditions as before machining. Compare the measurements with the values obtained prior to machining the piston.
- Check the protrusion of the piston after installing it. Follow the manufacturer's instructions concerning the maximum piston protrusion (standard application).
- The general instructions on how to install pistons correctly must be followed. These instructions are available in Motorservice's "Pistons and Components" catalogue (item no. 50 003 945).
- Follow the engine manufacturer's instructions.



VALVE SEAT INSERTS – USAGE RECOMMENDATIONS

Material	Characteristic	Type of fuel/combustion	Cylinder head materials	Engines
HT*	Very high temperature and wear resistance	CNG, LPG, flex fuel, propane	Aluminium, grey cast iron	Gas applications such as LPG, CNG, propane, flex fuel
HCR	Very high temperature and wear resistance, high corrosion resistance	CNG, LPG, flex fuel, propane	Aluminium, grey cast iron	Gas applications such as LPG, CNG, propane, flex fuel
G7	high wear and corrosion resistance	Petrol (lead-free), diesel, CNG, LPG, flex fuel	Aluminium, grey cast iron	Heavy-duty engines, performance-enhanced engines, gas applications such as LPG, CNG, flex fuel
HWR	Improved temperature and wear resistance, reduced friction	CNG, LPG, flex fuel, propane	Aluminium, grey cast iron	Gas applications such as LPG, CNG, propane, flex fuel
G4	High temperature and wear resistance, high oxidation resistance	Petrol (lead-free), diesel, CNG, LPG, flex fuel	Aluminium, grey cast iron	Heavy-duty engines, performance-enhanced engines, gas applications such as LPG, CNG, flex fuel
G5, G6	High temperature and wear resistance, high deformation resistance	Petrol (lead-free), diesel, CNG, LPG, flex fuel	Aluminium, grey cast iron	Heavy-duty engines, performance-enhanced engines, gas applications such as LPG, CNG, flex fuel

VALVE SEAT INSERTS – FITTING INSTRUCTIONS

CAUTION

Extreme operating conditions as well as high loads on the respective engines must be taken into account and are the responsibility of the engine reconditioner. The specification of engine parts must be carefully selected by the engine reconditioner.

CAUTION

Take the valve specification into account when converting.

NOTE

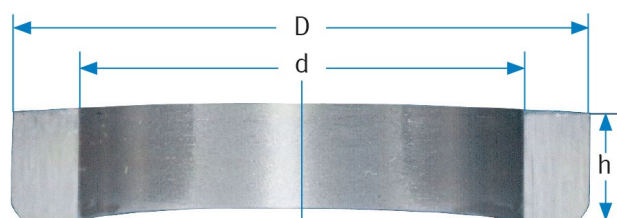
Replacing valve seat inserts and valves as part of a gas conversion is always considered to have an impact on the original engine specifications. Whether the new material combinations will operate harmoniously and whether the desired results will be achieved under the changed conditions can only be estimated in advance. Extreme operating conditions and specific engine loads must be taken into account. These are the sole responsibility of the engine converter.

FITTING INSTRUCTIONS

Kolbenschmidt and TRW Engine Components valve seat inserts have a ground finish on the outer diameter. The dimension for the locating hole in the cylinder head can be identified from the pressfit table below. For sintered metal valve seat inserts, the valve seat angle must be machined after insertion. The cast iron seat rings have been finished.

Fitting the sintered metal valve seat inserts

Make sure that the seating ring to be inserted is always fitted with the radius side facing down. Due to the radius and the "spring effect" of the sintered material, the Kolbenschmidt sintered metal valve seat insert does not require liquid nitrogen to cool the seating rings and does not require the cylinder head to be heated in order to press the valve seat inserts into the cylinder head. The seating rings are pressed into place at room temperature using a suitable tool.



Main dimensions of a valve seat insert

D = outside diameter, d = inside diameter, h = height

Kolbenschmidt and TRW Engine Components recommends the following pressfits/press fittings

Valve seat insert outside diameter		Cast iron cylinder head		Aluminium cylinder head	
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
20–30	0.7874–1.1811	0.06	0.0024	0.08	0.0031
30–40	1.1811–1.5748	0.08	0.0031	0.10	0.0040
40–50	1.5748–1.9685	0.10	0.0040	0.12	0.0047
50–60	1.9685–2.3622	0.12	0.0047	0.14	0.0055
60–70	2.3622–2.7559	0.14	0.0055	0.16	0.0063

VALVE SEAT INSERTS – ARTICLES AND DIMENSIONS

Item no.	Outside diameter Ø D (mm)	Inside diameter Ø d (mm)	Height h (mm)	Material
50 009 500	35.500	28.000	10.000	HT*
50 009 501	37.500	30.000	10.000	HT*
50 009 503	38.230	31.000	8.000	HT*
50 009 504	38.500	31.000	10.000	HT*
50 009 506	40.000	32.000	10.000	HT*
50 009 507	40.500	32.000	10.000	HT*
50 009 508	41.000	30.000	10.000	HT*
50 009 510	42.000	31.000	10.000	HT*
50 009 511	42.000	34.000	10.000	HT*
50 009 512	43.000	32.000	10.000	HT*
50 009 513	43.000	35.000	10.000	HT*
50 009 514	44.130	36.000	9.000	HT*
50 009 515	44.500	30.000	10.000	HT*
50 009 516	44.500	36.000	10.000	HT*
50 009 517	44.500	36.000	11.000	HT*
50 009 518	46.000	34.000	12.000	HT*
50 009 519	48.000	37.000	12.000	HT*
50 009 520	54.200	43.000	10.000	HT*
50 009 522	55.100	43.000	10.000	HT*
50 009 623	31.000	18.000	7.500	HT*
50 009 650	24.000	18.000	8.000	HT*
50 009 651	25.000	19.000	8.000	HT*
50 009 652	28.000	22.000	10.000	HT*
50 009 653	28.500	22.000	10.000	HT*
50 009 654	29.000	23.000	10.000	HT*
50 009 655	29.500	23.000	10.000	HT*
50 009 656	30.000	23.000	10.000	HT*
50 009 657	30.000	20.000	10.000	HT*
50 009 658	30.190	24.100	8.100	HT*
50 009 659	30.500	23.000	10.000	HT*
50 009 660	31.000	24.000	10.000	HT*
50 009 661	31.000	21.000	10.000	HT*
50 009 662	31.500	24.000	10.000	HT*
50 009 663	32.000	24.000	9.000	HT*
50 009 664	32.000	25.000	10.000	HT*
50 009 665	32.000	22.000	10.000	HT*
50 009 666	32.500	25.000	10.000	HT*
50 009 667	33.000	26.000	10.000	HT*
50 009 668	33.000	23.000	10.000	HT*
50 009 669	33.500	26.000	10.000	HT*
50 009 670	34.000	27.000	10.000	HT*
50 009 671	34.000	24.000	10.000	HT*
50 009 672	34.500	27.000	10.000	HT*
50 009 673	35.000	28.000	10.000	HT*

Item no.	Outside diameter Ø D (mm)	Inside diameter Ø d (mm)	Height h (mm)	Material
50 009 674	35.000	25.000	10.000	HT*
50 009 675	36.000	29.000	10.000	HT*
50 009 676	36.000	26.000	10.000	HT*
50 009 677	36.500	29.000	10.000	HT*
50 009 678	37.000	30.000	10.000	HT*
50 009 679	38.000	31.000	10.000	HT*
50 009 680	38.000	28.000	10.000	HT*
50 009 681	39.000	32.000	10.000	HT*
50 009 682	40.000	29.000	10.000	HT*
50 009 683	41.000	33.000	10.000	HT*
50 009 684	41.500	33.000	10.000	HT*
50 009 685	44.000	33.000	10.000	HT*
50 009 686	45.000	37.000	12.000	HT*
50 009 687	45.000	34.000	12.000	HT*
50 009 688	47.000	36.000	12.000	HT*
50 009 689	54.200	43.000	8.600	HT*
50 009 690	53.200	43.000	7.000	HT*
50 009 691	53.700	43.000	10.000	HT*
50 009 692	54.650	43.690	10.000	HT*
50 009 693	27.000	20.000	8.000	HT*
50 009 694	40.140	33.000	8.000	HT*
50 009 695	42.140	33.000	8.000	HT*
50 009 696	26.700	20.000	5.700	HT*
50 009 697	29.000	18.000	10.000	HT*
50 009 698	31.830	27.400	8.500	HT*
50 009 699	33.700	27.000	8.000	HT*

CYLINDER HEADS FOR GAS ENGINES – SUITABLE FOR MAN, MTU, MDE

Motorservice has optimised the geometries of all cylinder head variants and thereby assists users of the gas engines to achieve the legal emission requirements. The optimisations have a positive effect on the exhaust gas temperature. In addition, the cooling of all valve train components and the area around the spark plugs will be improved.

Motorservice offers the cylinder head in different variants depending on the requirements and application.

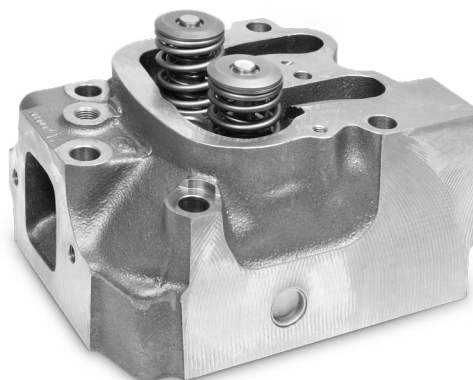
Overview of variants

Design	Lubrication	Application
Complete, M18	Exhaust valve guide lubricated with oil	Biogas engines
Complete, M14	Exhaust valve guide lubricated with oil	Biogas engines
Complete, M14	Exhaust valve guide unlubricated	Natural gas engines
Complete, M18	Oil-cooled exhaust valve guide	Start stop engines



BENEFITS

- Optimised wear and exhaust gas behaviour
- Can be used for engines from several engine manufacturers and in different versions
- Possible to mount knock sensors
- Parts such as valve seat inserts, valve guides are available from Motorservice
- Individual temperature monitoring is possible
- Additional variants to meet your requirements are available on request



SHAFT PROTECTION SLEEVES – FITTING INSTRUCTIONS

Repair shaft sliding surfaces quickly and easily

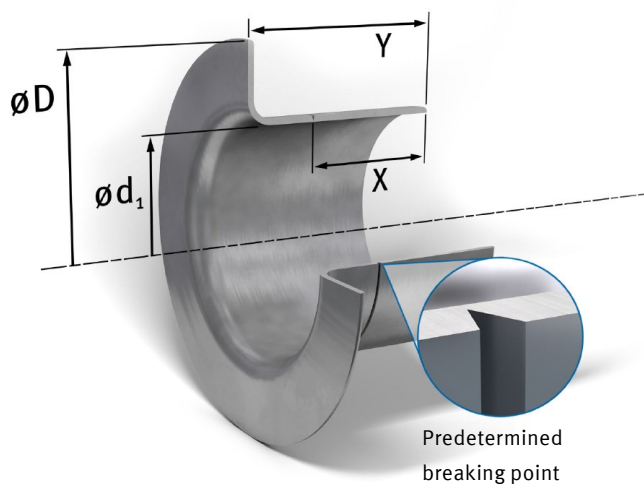
Shaft protection sleeves are a cost-effective alternative to replacing or extensively reworking the run-in or worn shaft. The shaft protection sleeve is simply pushed over the worn sliding surface of the shaft. This is often possible while the shaft is still fitted. After repair, radial oil seals with the original dimensions can be used.

The shaft protection sleeve can be mounted easily and quickly using the supplied assembly sleeve and the detachable mounting flange.

Before mounting

- Clean and inspect the sliding surface for the radial oil seal on the shaft.
- Fill any wear marks, notches, scoring or large rough spots using a suitable filling compound. Due to the thin wall thickness of the shaft protection sleeve, any unevenness of the shaft will remain perceptible and will negatively influence the sealing effect.
- Determine the sleeve size.
- To select the shaft protection sleeve, measure the shaft diameter at three different locations near the worn area.

Shaft protection sleeves are available in diameters between 12 mm and 200 mm.



Mounting the shaft protection sleeve



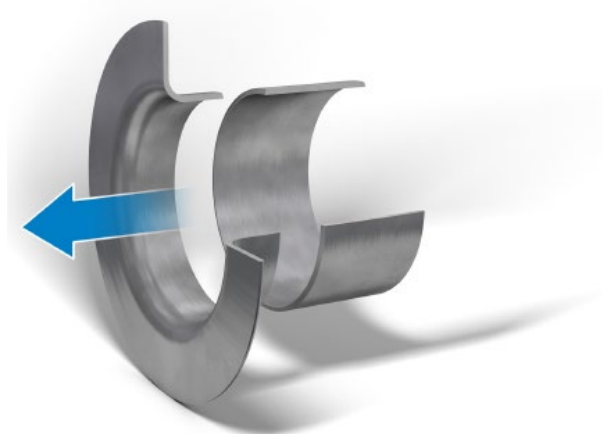
CAUTION

Shaft protection sleeves must not be placed over grooves, recesses or thread ends in the shaft.



CAUTION

Carefully install the shaft protection sleeve onto the shaft without tilting. Damage caused during mounting reduces the runnability and sealing properties of the radial oil seal.



Removable mounting flange



- Lightly grease the surface of the shaft before installation.
- Place the shaft protection sleeve with the flange side on the shaft.



- Slide the assembly sleeve over the shaft protection sleeve.
- If the assembly sleeve is too short, a tube can be used as the assembly sleeve.
- Slide the shaft protection sleeve with the assembly sleeve over the worn area.



- Using a side cutter, cut the mounting flange on the shaft protection sleeve at the predetermined breaking point and separate the flange at the pre-machined groove.
- Check the shaft surface again for burrs after mounting.

Dismantling the shaft protection sleeve

You can remove the shaft protection sleeves from the shaft in several ways:

- Heating will thermally expand the shaft protection sleeve, allowing you to easily remove it from the shaft without damaging the shaft.
- Controlled hammer blows with the peen across the sleeve width widens the shaft protection sleeve, allowing it to be easily removed.
- Tear off the shaft protection sleeve using a side cutter.
- Split the shaft protection sleeve using a chisel.



CAUTION

Shaft protection sleeves cannot be reused.

SHAFT PROTECTION SLEEVES – ARTICLES AND DIMENSIONS

Item no.	Shaft diameter Ø d1 (mm)	Shaft diameter Ø min. (mm)	Shaft diameter Ø max. (mm)	Width X (mm)	Total width Y (mm)	Flange diameter Ø D (mm)
50 008 394	76.020	75.950	76.100	14.300	17.500	85.300
50 008 395	117.500	117.380	117.580	25.400	31.800	128.600
50 008 396	120.650	120.550	120.750	12.700	19.100	127.000
50 008 397	145.000	144.750	145.000	19.100	22.200	154.900
50 008 398	171.450	171.320	171.580	20.600	27.000	181.000
50 008 393	71.450	71.350	71.500	15.100	17.500	81.000
50 008 392	65.100	65.020	65.180	19.800	23.800	73.400
50 008 391	59.130	59.100	59.260	19.100	22.200	69.800
50 008 390	50.300	50.220	50.370	14.300	17.900	58.800
50 008 389	41.000	40.840	41.000	12.700	15.900	49.200
50 008 399	184.860	184.740	185.000	32.000	38.000	197.100
50 008 400	200.030	199.870	200.130	34.500	38.100	212.700
50 008 388	38.100	38.020	38.180	9.500	12.700	45.200
50 008 350	129.900	129.790	130.000	19.100	23.800	139.500
50 008 351	29.850	29.800	29.920	8.000	11.100	35.600
50 008 352	43.660	43.560	43.710	14.300	17.500	51.600
50 008 353	95.000	95.000	95.150	11.900	15.100	102.500
50 008 354	95.000	95.000	95.150	8.700	12.700	102.400
50 008 355	160.000	159.740	160.000	25.400	31.800	171.400
50 008 361	17.930	17.880	18.010	8.000	11.000	24.400
50 008 362	24.000	23.880	24.000	8.000	11.100	28.700
50 008 364	44.170	44.090	44.250	9.500	12.700	52.400
50 008 365	53.980	53.920	54.050	12.700	19.100	61.500
50 008 367	69.850	69.850	70.000	28.600	31.800	79.400
50 008 368	125.000	124.890	125.100	10.000	14.000	137.200
50 008 369	150.000	149.750	150.010	26.000	30.000	159.000
50 008 370	180.010	179.750	180.010	33.000	38.000	190.500
50 008 372	22.000	21.870	22.000	6.600	9.100	30.200
50 008 373	22.000	21.870	22.000	8.000	12.000	30.200
50 008 374	33.350	33.270	33.430	12.700	15.900	40.500
50 008 375	36.000	35.840	36.000	13.000	17.000	45.200
50 008 376	42.880	42.770	42.930	14.300	17.500	48.400
50 008 377	69.850	69.720	69.880	19.800	23.790	79.400
50 008 378	79.380	79.250	79.400	17.500	20.600	89.700
50 008 380	125.000	124.890	125.100	26.000	32.000	137.200
50 008 381	177.800	177.670	177.930	25.400	31.800	189.900
50 008 382	190.500	190.370	190.630	20.600	25.400	200.000
50 008 383	15.000	14.960	15.060	5.000	9.000	19.100
50 008 384	19.050	19.000	19.100	8.000	11.100	24.000
50 008 385	25.400	25.350	25.450	8.000	11.100	31.000
50 008 386	30.180	30.100	30.230	8.000	11.100	35.600
50 008 387	29.360	29.310	29.410	9.500	12.700	34.300
50 008 449	104.780			20.600	25.400	113.500
50 008 445	53.980			19.800	23.800	61.500

SHAFT PROTECTION SLEEVES – ARTICLES AND DIMENSIONS

Item no.	Shaft diameter Ø d1 (mm)	Shaft diameter Ø min. (mm)	Shaft diameter Ø max. (mm)	Width X (mm)	Total width Y (mm)	Flange diameter Ø D (mm)
50 008 441	38.680			11.100	14.300	47.200
50 008 440	38.100			14.300	17.500	45.200
50 008 437	55.580			19.800	23.800	63.500
50 008 428	44.450			13.500	15.900	52.400
50 008 427	44.450			9.500	12.700	52.200
50 008 425	43.000			12.700	15.900	48.400
50 008 424	41.280			14.300	17.500	47.600
50 008 422	36.530			9.500	12.700	45.200
50 008 421	15.880			8.000	10.300	19.100
50 008 458	152.400			25.400	31.800	161.900
50 008 453	95.250			17.500	22.200	102.100
50 008 434	61.920			19.800	23.800	71.800
50 008 432	47.630			14.300	17.500	56.000
50 008 419	34.930			8.000	11.100	41.600
50 008 417	33.350			6.300	9.500	40.600
50 008 416	27.000			8.000	11.100	33.500
50 008 415	31.500			8.000	11.100	39.100
50 008 413	27.660			8.000	11.100	35.700
50 008 412	21.820			6.300	9.500	29.300
50 008 408	19.840			8.700	11.100	23.800
50 008 459	154.860			26.000	30.000	167.000
50 008 452	94.740			19.800	23.000	102.200
50 008 451	88.900			20.600	25.400	97.600
50 008 450	120.000			8.000	11.000	129.800
50 008 431	47.450			22.600	26.000	55.600
50 008 454	95.250			14.300	17.500	102.200
50 008 435	63.500			19.800	23.800	71.600
50 008 433	49.230			14.300	17.500	56.400
50 008 426	44.450			19.100	22.200	52.400
50 008 423	28.580			9.500	12.700	38.100
50 008 414	28.580			8.000	11.100	38.100
50 008 411	24.600			15.900	18.300	28.700
50 008 410	24.600			8.000	11.100	28.700
50 008 409	22.230			8.000	11.100	27.800
50 008 407	17.370			8.000	11.100	22.700
50 008 406	14.300			6.300	9.900	19.100
50 008 420	14.000			6.300	9.900	19.100
50 008 418	34.010			12.700	15.900	41.300
50 008 448	61.930			12.700	15.900	71.800
50 008 447	57.150			19.800	23.800	64.300
50 008 446	56.000			12.700	15.900	64.300
50 008 444	92.080			20.600	25.400	102.400

SHAFT PROTECTION SLEEVES – ARTICLES AND DIMENSIONS

Item no.	Shaft diameter Ø d1 (mm)	Shaft diameter Ø min. (mm)	Shaft diameter Ø max. (mm)	Width X (mm)	Total width Y (mm)	Flange diameter Ø D (mm)
50 008 443	44.450			14.300	17.500	52.400
50 008 442	39.700			14.300	17.500	47.200
50 008 439	82.550			20.600	25.400	91.300
50 008 438	74.630			19.800	23.800	84.900
50 008 436	63.910			19.800	23.000	71.800
50 008 462	189.310			20.600	25.400	199.600
50 008 461	169.880			31.800	38.000	182.600
50 008 460	175.010			28.000	32.000	187.000
50 008 457	127.000			17.500	22.200	137.200
50 008 456	165.100			25.400	31.800	177.800
50 008 455	134.950			20.500	25.400	145.700
50 008 430	47.220			14.300	17.500	54.800
50 008 323	100.000	99.950	100.110	20.600	25.400	109.500
50 008 324	75.000	74.930	75.080	15.100	17.500	83.100
50 008 325	120.000	119.890	120.090	20.000	25.000	129.800
50 008 326	105.000	104.900	105.100	20.000	23.200	113.500
50 008 327	25.000	24.940	25.040	8.000	11.000	33.000
50 008 328	31.800	31.670	31.830	8.000	11.100	38.100
50 008 329	41.900	41.830	42.000	11.300	14.500	53.000
50 008 330	70.000	69.930	70.080	20.000	24.000	79.400
50 008 331	80.000	79.910	80.090	21.000	24.000	90.000
50 008 332	130.180	129.970	130.180	22.000	25.300	139.500
50 008 333	84.070	84.000	84.150	20.600	25.400	93.700
50 008 334	28.000	27.940	28.040	9.500	12.700	34.900
50 008 335	48.030	47.930	48.090	14.000	17.000	56.000
50 008 336	62.000	61.820	62.000	12.700	15.900	71.800
50 008 337	72.000	71.830	72.000	19.100	22.200	81.900
50 008 338	75.000	74.930	75.080	22.000	26.000	84.000
50 008 339	90.000	89.910	90.070	18.000	23.000	101.600
50 008 340	90.000	89.910	90.070	23.000	28.000	101.600
50 008 341	17.000	16.940	17.040	8.000	11.000	22.200
50 008 342	38.000	37.850	38.000	13.000	17.000	45.200
50 008 343	140.000	139.900	140.110	20.500	25.400	151.000
50 008 344	34.930	34.820	34.980	12.700	15.900	41.600
50 008 345	41.900	41.830	42.000	14.300	17.500	53.000
50 008 346	68.000	67.820	68.000	19.100	22.200	79.400
50 008 347	69.850	69.850	70.000	19.800	23.800	79.400
50 008 348	46.050	45.950	46.100	14.300	17.500	53.100
50 008 349	60.330	60.300	60.450	13.400	17.400	69.800
50 008 322	95.000	94.920	95.080	21.000	24.000	102.200
50 008 429	45.240			16.900	20.300	54.000
50 008 405	52.000			12.700	15.900	62.700
50 008 404	66.000			19.800	23.800	76.000
50 008 403	110.000	109.779	109.982	11.400	15.000	125.000

SHAFT PROTECTION SLEEVES – ARTICLES AND DIMENSIONS

Item no.	Shaft diameter Ø d1 (mm)	Shaft diameter Ø min. (mm)	Shaft diameter Ø max. (mm)	Width X (mm)	Total width Y (mm)	Flange diameter Ø D (mm)
50 008 402	78.000			19.100	22.200	88.000
50 008 401	133.350			20.600	25.400	141.200
50 008 300	32.000	31.920	32.080	8.000	11.100	38.100
50 008 301	80.000	79.910	80.090	11.000	15.000	90.000
50 008 302	109.930	109.910	110.110	12.900	16.500	125.000
50 008 303	34.930	34.930	35.080	13.000	16.000	41.600
50 008 304	65.000	64.920	65.080	20.000	23.000	72.400
50 008 306	115.000	114.890	115.090	20.600	23.800	127.000
50 008 307	45.000	44.930	45.090	14.000	17.000	53.000
50 008 308	85.000	84.790	85.000	10.100	12.700	90.900
50 008 309	40.080	39.930	40.080	13.000	16.000	47.000
50 008 310	50.000	49.910	50.060	14.000	17.000	57.000
50 008 311	30.000	29.950	30.070	8.000	11.000	35.600
50 008 312	26.010	25.880	26.010	8.000	12.000	33.400
50 008 313	84.890	84.760	85.010	17.000	21.000	94.000
50 008 314	20.000	19.940	20.040	8.000	11.000	23.600
50 008 315	55.000	54.910	55.070	20.000	23.000	62.000
50 008 316	90.000	89.910	90.070	13.400	16.900	101.600
50 008 317	60.000	59.920	60.070	9.400	11.400	70.700
50 008 318	69.850	69.850	70.000	10.300	14.300	79.400
50 008 319	60.000	59.920	60.070	20.000	23.000	70.700
50 008 320	79.910	79.810	80.010	19.100	22.500	89.900
50 008 379	101.600	101.550	101.750	20.600	25.400	111.100
50 008 371	12.000	11.910	12.070	6.000	8.400	15.500
50 008 366	57.150	57.120	57.280	8.000	11.100	64.300
50 008 363	40.000	39.850	40.000	9.900	12.900	46.900
50 008 360	50.800	50.720	50.880	14.300	17.500	61.100
50 008 359	44.860	44.730	44.880	14.300	17.500	52.400
50 008 358	42.060	41.990	42.140	14.000	17.500	53.000
50 008 357	39.420	39.340	39.500	11.100	14.300	47.200
50 008 356	16.000	15.900	16.000	8.000	11.100	18.200
50 008 321	84.890	84.760	85.010	21.000	25.000	94.000
50 008 305	90.000	89.910	90.070	11.100	13.700	101.600

D

1



132


BFG 6 M 1015 C

G A 6 11910 cm³ 2V 142 kW 193 PS ϵ 10:1 145

94 728 600


Cylinder diameter: 132; KH: 86.8; MT: -26.6; MØ: 92.9; GL: 133.8; piston pin: 52x110; number of piston rings: 3
 RTK
 T15 3.5 CR G6
 M 2.45 CR G6
 DSF 4 CR



D


89 443 110

N - Wet cylinder liner; finished; A=147 C=158 L=268.5 H+F=9+1.2


20 0505 10156

fly wheel flange diameter: 115


22210

EX; 42 x 8 x 133 x RA/S - Cr - 45° - 22 - III


81-22111

IN/EX; 15.03/ x 8.03 x 66 G2

22321

IN; 46 x 8 x 133 x A/S - Cr - 30° - VS - 22 - III


20 0105 10150

mechanical; Outer Ø: 35; inner Ø: 25; length: 77

2



132


BFG 8 M 1015 C

G A 8 15870 cm³ 2V 190 kW 258 PS ϵ 10:1 145

94 728 600


Cylinder diameter: 132; KH: 86.8; MT: -26.6; MØ: 92.9; GL: 133.8; piston pin: 52x110; number of piston rings: 3
 RTK
 T15 3.5 CR G6
 M 2.45 CR G6
 DSF 4 CR


89 443 110

N - Wet cylinder liner; finished; A=147 C=158 L=268.5 H+F=9+1.2


22210

EX; 42 x 8 x 133 x RA/S - Cr - 45° - 22 - III


81-22111

IN/EX; 15.03/ x 8.03 x 66 G2

22321

IN; 46 x 8 x 133 x A/S - Cr - 30° - VS - 22 - III


20 0105 10150

mechanical; Outer Ø: 35; inner Ø: 25; length: 77

					Comp. Ratio ε				
		Cyl.	mm	cm³			kW	PS	Pos
GV158TI	G	8	128 x 142	14618	2	10,5:1	313	426	1
GV180TI	G	10	128 x 142	18273	2	10,5:1	340	462	2
GV222TI	G	12	128 x 142	21915	2	10,5:1	358	486	3
P222LE-II	G	12	128 x 142	21915	2	14,9:1	652	886	4

D

1 **128****GV158TI**

G

8

14618 cm³

2V

313 kW

426 PS

£ 10,5:1

142

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / **78 693 620** 0,50 / **78 693 630** 0,75 / **78 693 640** 1,00**78 694 604**

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / **78 694 624** 0,50 / **78 694 634** 0,75 / **78 694 644** 1,00**78 897 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 610 0,25 / **78 897 620** 0,50 / **78 897 630** 0,75 / **78 897 640** 1,00, The upper shell is marked with 'SPUTTER'.**79 443 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 348 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 385 694

[Set] NW-L SEMI Ø 69.940 / 76.000 / 35.000 / St/B; NW-L SEMI Ø 69.940 / 75.000 / 28.000 / St/W

87 401 604

[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

87 401 614 0,25 / **87 401 624** 0,50 / **87 401 634** 0,75 / **87 401 644** 1,00**25311**

EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

25310

IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

**81-25102**

EX; 18/ x 12.02 x 56 G2

81-25101

IN; 18/ x 12.02 x 59.5 G2

**92-25004**

EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25018

EX; 53.11 x 43 x 9.5; HWR

92-25005

IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25019

IN; 61.11 x 49 x 8.8; HWR

81-2536

IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.

**20 1402 28000****2** **128****GV180TI**

G

10

18273 cm³

2V

340 kW

462 PS

£ 10,5:1

142

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / **78 693 620** 0,50 / **78 693 630** 0,75 / **78 693 640** 1,00**78 694 604**

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / **78 694 624** 0,50 / **78 694 634** 0,75 / **78 694 644** 1,00**78 897 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 610 0,25 / **78 897 620** 0,50 / **78 897 630** 0,75 / **78 897 640** 1,00, The upper shell is marked with 'SPUTTER'.**79 443 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 347 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 399 604

[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

87 399 614 0,25 / **87 399 624** 0,50 / **87 399 634** 0,75**25311**

EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

25310

IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

**81-25102**

EX; 18/ x 12.02 x 56 G2

81-25101

IN; 18/ x 12.02 x 59.5 G2

**92-25004**

EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25018

EX; 53.11 x 43 x 9.5; HWR

92-25005

IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25019

IN; 61.11 x 49 x 8.8; HWR

81-2536

IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.

3 **128****GV222TI**

G

12

21915 cm³

2V

358 kW

486 PS

£ 10,5:1

142

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / **78 693 620** 0,50 / **78 693 630** 0,75 / **78 693 640** 1,00**78 694 604**

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / **78 694 624** 0,50 / **78 694 634** 0,75 / **78 694 644** 1,00**78 897 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 610 0,25 / **78 897 620** 0,50 / **78 897 630** 0,75 / **78 897 640** 1,00, The upper shell is marked with 'SPUTTER'.

cont...

79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application								
87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B								
87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50								
 25311 25310	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III	 81-25102 81-25101 81-2536	EX; 18/ x 12.02 x 56 G2 IN; 18/ x 12.02 x 59.5 G2 IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.						
 92-25004 92-25018 92-25005 92-25019	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas EX; 53.11 x 43 x 9.5; HWR IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas IN; 61.11 x 49 x 8.8; HWR								
4	 128								
 P222LE-II	G	12	21915 cm³	2V	652 kW	886 PS	ε14,9:1	 142	
 89 092 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 891.								
 78 693 600 78 694 604 78 897 600 79 443 600 87 346 690 87 397 604	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00 [Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00 [Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'. [Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application [Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B [Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50								
 81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.	 92-25003 92-25002	EX; 53.11 x 43 x 9.9; G1; 45° IN; 61.11 x 49 x 8.8; G1; 30°						

		Cyl.			mm	cm ³		Comp. Ratio ε	kW	PS	Pos
E2842E312	G	12		128 x 142	21915	4			240	326	6
E2842LE322	G (LA)	12		128 x 142	21915	4			370	503	7
E2842LE322	G (LA)	12		128 x 142	21915	4			400	544	8
E2848LE322	G (LA)	8		128 x 142	14618	4			250	340	9
E2876E312	G	6		128 x 166	12816	4	12,0:1		140	190	10
E2876LE302	G (LA)	6		128 x 166	12816	4			190	258	11
E2876LE302	G (LA)	6		128 x 166	12816	4			200	272	12
206 BG	G	1		128 x 166	12816	4	14,8:1		220	299	1
206 EG	G	1		128 x 166	12816	4	13,5:1		231	314	2
208	G	1		128 x 142	14618	4	14,8:1		265	360	3
212	G	1		128 x 142	21915	4	14,8:1		400	544	4
306 BG	G	1		128 x 166	12816	4	14,8:1		250	340	5
312	G	1		128 x 142	21915	4	14,8:1		450	612	4

E

1  128									
 206 BG	G	1	12816 cm ³	4V	220 kW	299 PS	£ 14,8:1	 166	
 AGENITOR									
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]							
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]							
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1							
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application							
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked							
	20 0502 28760	fly wheel flange diameter: 113							
	20 0302 28661	exclusive cylinder liner							
	20 0802 G2828	- V - G - S - - - - ; ready-to-install, Recommended for biogas; use for M18 spark plug							
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III				81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!Identification is not possible according to the engine number.		
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III				81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove		
	92-25018	EX; 53.11 x 43 x 9.5; HWR				81-25101	IN; 18/ x 12.02 x 59.5 G2		
	92-25019	IN; 61.11 x 49 x 8.8; HWR				81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.		
	20 1002 G2866								

2  128									
 206 EG	G	1	12816 cm ³	4V	231 kW	314 PS	£ 13,5:1	 166	
 AGENITOR									
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]							
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]							
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1							

3  128									
 208	G	1	14618 cm ³	4V	265 kW	360 PS	£ 14,8:1	 142	
 AGENITOR									
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]							
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1							
	89 389 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.							
	89 389 810	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.							

cont...

	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00			
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00			
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application			
	87 385 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A			
	87 401 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 401 614 0,25 / 87 401 624 0,50 / 87 401 634 0,75 / 87 401 644 1,00			
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked			
	20 0302 25380	exclusive cylinder liner			
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug			
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!!identification is not possible according to the engine number.		92-25018	EX; 53.11 x 43 x 9.5; HWR
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove		92-25019	IN; 61.11 x 49 x 8.8; HWR
	81-25101	IN; 18/ x 12.02 x 59.5 G2			
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.			
	20 1403 44400				

4



128



212

G

1

21915 cm³

4V

400 kW

544 PS

€ 14,8:1

142

312

G

1

21915 cm³

4V

450 kW

612 PS

€ 14,8:1

142



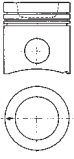
AGENITOR

	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00			
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00			
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application			
	87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A			
	87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50			
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked			
	20 0302 28420	exclusive cylinder liner			
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug			
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!Identification is not possible according to the engine number.		92-25018	EX; 53.11 x 43 x 9.5; HWR
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove		92-25019	IN; 61.11 x 49 x 8.8; HWR
	81-25101	IN; 18/ x 12.02 x 59.5 G2			
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.			

5		 128										
		306 BG		G	1	12816 cm³	4V	250 kW	340 PS	£ 14,8:1	 166	
		AGENITOR										
		80 00717 1 0 000		Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]								
		80 01100 1 0 000		Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]								
		89 186 120		N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1								
		89 914 110		N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 891., Plasma-coated water jacket								
		89 390 120		N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=9.92+1								
		79 444 600		[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application								
		20 0602 G2876		length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked								
		20 0502 28760		fly wheel flange diameter: 113								
		20 0302 28661		exclusive cylinder liner								
		20 0802 G2828		- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug								
		25311		EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III						81-25103		EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!Identification is not possible according to the engine number.
		25310		IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III						81-25113		EX; 18/ x 12.01 x 70 G2, Long outer oil groove
		92-25018		EX; 53.11 x 43 x 9.5; HWR						81-25101		IN; 18/ x 12.02 x 59.5 G2
		92-25019		IN; 61.11 x 49 x 8.8; HWR						81-2536		IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
		20 1002 G2866										

6				128											
		E2842E312		G	12	21915 cm ³	4V	240 kW	326 PS		142				
		PATRUUS													
		40 208 600		Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3											
				RTK											
				T15 3.5 CR G6											
				M 3											
				DSF 5 CR											
				→ 80 00155 1 0 ...											
				Compression 11 : 1											
		42 043 600		Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3											
				RTK											
				T15 3.5 CR G6											
				M 3											
				DSF 5 CR											
				→ 80 00155 1 0 ...											

cont...

	94 942 600	Cylinder diameter: 128; KH: 80.7; MT: -29; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3 FBo, RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ... Compression 10:1
	94 943 600	Cylinder diameter: 128; KH: 80.7; MT: -22; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3 FBo, RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ...
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]
	42 043 960	piston: 42043600; cylinder liner: 89092120
	94 943 960	piston: 94943600; cylinder liner: 89092120
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
	87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
	20 0302 28420	exclusive cylinder liner
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	20 1403 44300	
7	128	
	E2842LE322	G LA 12 21915 cm ³ 4V 370 kW 503 PS 142
	PATRUUS	
	40 208 600	Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3 RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ... Compression 11 : 1

cont...

	41 000 600	Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3 RTK
		T15 4 CK G6 M 3 CR G3 DSF 4 CR
	42 043 600	Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3 RTK
		T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ...
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]
	41 000 960	piston: 41000600; cylinder liner: 89092120
	42 043 960	piston: 42043600; cylinder liner: 89092120
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
	87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
	20 0302 28420	exclusive cylinder liner
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	20 1403 44300	
8  128  E2842LE322		
G LA 12 21915 cm³ 4V 400 kW 544 PS  142		

**40 208 600**

Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3
 RTK
 T15 3.5 CR G6
 M 3
 DSF 5 CR
 → **80 00155 1 0 ...**
 Compression 11 : 1

41 000 600

Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3
 RTK
 T15 4 CK G6
 M 3 CR G3
 DSF 4 CR
 → **80 01100 1 0 ...**

**80 00155 1 0 000**

Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]

80 00717 1 0 000

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]

80 01100 1 0 000

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1
78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00

78 694 604

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G
78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00

78 897 600

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1
78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.

79 443 600

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 346 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 366 600

[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A

87 397 604

[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G
87 397 614 0,25 / 87 397 624 0,50

**20 0302 28420**

exclusive cylinder liner

**20 0802 G2840**

- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug

**25311**

EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

25324

EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III

25310

IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

**81-25101**

IN; 18/ x 12.02 x 59.5 G2

81-2536

IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.

**92-25004**

EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25018

EX; 53.11 x 43 x 9.5; HWR

92-25005

IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas

92-25019

IN; 61.11 x 49 x 8.8; HWR

**20 1403 44300****9****128****E2848LE322**

G

LA

8

14618 cm³

4V

250 kW

340 PS

142

PATRUUS**41 000 600**

Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3
 RTK
 T15 4 CK G6
 M 3 CR G3
 DSF 4 CR
 → **80 01100 1 0 ...**

cont...

	42 043 600	Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3
		RTK T15 3.5 CR G6 M 3 DSF 5 CR
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]
	41 000 960	piston: 41000600; cylinder liner: 89092120
	42 043 960	piston: 42043600; cylinder liner: 89092120
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00 , The upper shell is marked with 'SPUTTER'.
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
	87 385 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	87 401 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 401 614 0,25 / 87 401 624 0,50 / 87 401 634 0,75 / 87 401 644 1,00
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
	20 0302 25380	exclusive cylinder liner
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	20 1403 44400	
10  128		
 E2876E312		
 PATRUUS		
	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3
		RTK T15 4 CK G6 M 3 CR G3 DSF 4 CR → 80 01100 1 0 ...
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]
cont...		

	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]			
	41 260 960	piston: 41260600; cylinder liner: 89186120			
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1			
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket			
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75			
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.			
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80			
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application			
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50			
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm			
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked			
	20 0502 28760	fly wheel flange diameter: 113			
	20 0302 28661	exclusive cylinder liner			
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug			
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III			81-25102 EX; 18/ x 12.02 x 56 G2
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III			81-25101 IN; 18/ x 12.02 x 59.5 G2
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas			81-2536 IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25018	EX; 53.11 x 43 x 9.5; HWR			
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas			
	92-25019	IN; 61.11 x 49 x 8.8; HWR			
	20 1002 G2866				
	20 1402 28760				
11		128			
	E2876LE302	G	LA	6	12816 cm³
	PATRUUS	4V	190 kW	258 PS	 166
	40 207 600	Cylinder diameter: 128; KH: 78.65; MT: -25.3; MØ: 105.8; GL: 133.65; piston pin: 50x107; number of piston rings: 3			
		RTK			
		T15	3.5	CR	G6
		M	3		
		DSF	5	CR	
		→ 80 00155 1 0 ...			
		Compression 11 : 1			
	41 498 600	Cylinder diameter: 128; KH: 78.65; VT1: -5; MT: -24.8; MØ: 102; GL: 133.65; piston pin: 50x107; number of piston rings: 3			
		RTK			
		T15	4	CR	G6
		M	3		
		DSF	4	CR	
		→ 80 00300 1 0 ...			
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]			
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]			
	40 207 960	piston: 40207600; cylinder liner: 89186120			
	40 207 961	piston: 40207600; cylinder liner: 89324120			
	40 207 963	piston: 40207600; cylinder liner: 89518120			

cont...

	40 207 964	piston: 40207600; cylinder liner: 89534120
	41 498 960	piston: 41498600; cylinder liner: 89186120
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked
	20 0502 28760	fly wheel flange diameter: 113
	20 0302 28661	exclusive cylinder liner
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1002 G2866	
	20 1402 28760	

12

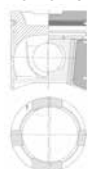
128



E2876LE302

G LA 6 12816 cm³ 4V 200 kW 272 PS

166



Cylinder diameter: 128; KH: 78.65; MT: -25.3; MØ: 105.8; GL: 133.65; piston pin: 50x107; number of piston rings: 3

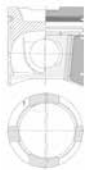
RTK

T15	3.5	CR	G6
M	3		
DSF	5	CR	

→ **80 00155 1 0 ...**

Compression 11 : 1

cont...

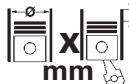
	41 498 600	Cylinder diameter: 128; KH: 78.65; VT1: -5; MT: -24.8; MØ: 102; GL: 133.65; piston pin: 50x107; number of piston rings: 3 RTK T15 4 CR G6 M 3 DSF 4 CR → 80 00300 1 0 ...	
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]	
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]	
	40 207 960	piston: 40207600; cylinder liner: 89186120	
	40 207 961	piston: 40207600; cylinder liner: 89324120	
	40 207 963	piston: 40207600; cylinder liner: 89518120	
	40 207 964	piston: 40207600; cylinder liner: 89534120	
	41 498 960	piston: 41498600; cylinder liner: 89186120	
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1	
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket	
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1	
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1	
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1	
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75	
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.	
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80	
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application	
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50	
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm	
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A	
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked	
	20 0502 28760	fly wheel flange diameter: 113	
	20 0302 28661	exclusive cylinder liner	
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug	
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III	 81-25101 IN; 18/ x 12.02 x 59.5 G2 81-2536 IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III	
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III	 92-25004 EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas 92-25018 EX; 53.11 x 43 x 9.5; HWR 92-25005 IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas 92-25019 IN; 61.11 x 49 x 8.8; HWR
	20 1002 G2866		
	20 1402 28760		

					Cyl.	 mm	 mm	cm ³		Comp. Ratio ϵ	kW	PS	Pos
F4BE0611A Euro 5	G (LA)	6				102 x 120		5883	12	11.0	147	200	1
F4BE0611A Euro 5	G (LA)	6				102 x 120		5900	12	11	147	200	1

1	 102										
	F4BE0611A Euro 5	09.2006 → 09.2015	G	LA	6	5883 cm ³	12V	147 kW	200 PS	£ 11.0	 120
	F4BE0611A Euro 5		G	LA	6	5900 cm ³	12V	147 kW	200 PS	£ 11	 120
	EUROCARGO I-III										
	42 352 600	Cylinder diameter: 102; KH: 71.38; MT: -23.86; MØ: 84.9; GL: 105.38 RTK, KKK									

							Comp.	kW	PS	Pos
		Cyl.	mm	cm ³		Ratio	ε			
G934	G	4	122 x 150	7000	4	13,0:1		145	197	1
G936	G	6	122 x 150	10500	4	13,0:1		217	295	1
G944	G	4	130 x 150	8000	4	13,0:1		164	223	2
G946	G	6	130 x 150	12000	4	13,0:1		246	334	3
G9508	G	8	130 x 157	16700	4	13,3:1		344	468	4
G9512	G	12	130 x 157	25000	4	13,3:1		516	702	5

1		122										
			G934	G	4	7000 cm³	4V	145 kW	197 PS	£ 13,0:1		150
	G936		G	6	10500 cm³	4V	217 kW	295 PS	£ 13,0:1		150	
		81-23001	IN/EX; 15.03/20 x 9.01 x 64 G2						92-23002	EX; 40.04 x 30.95 x 7.6; ; 30°		
									92-23001	IN; 45.05 x 34.7 x 8.08; G6; 20°		
2		130										
			G944	G	4	8000 cm³	4V	164 kW	223 PS	£ 13,0:1		150
	89 958 110 N - Wet cylinder liner; finished; A=145 C=157.9 L=235 H=12											
		81-23001	IN/EX; 15.03/20 x 9.01 x 64 G2						92-23002	EX; 40.04 x 30.95 x 7.6; ; 30°		
									92-23001	IN; 45.05 x 34.7 x 8.08; G6; 20°		
3		130										
			G946	G	6	12000 cm³	4V	246 kW	334 PS	£ 13,0:1		150
	89 958 110 N - Wet cylinder liner; finished; A=145 C=157.9 L=235 H=12											
		105-46001	EX; 39 x 9 x 157 x RA/S - Cr - 30° - VS - 22 -						MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9		
		105-46000	IN; 43.5 x 9 x 157.2 x RA/S - Cr - 20° - VS - 22 - III						81-23001	IN/EX; 15.03/20 x 9.01 x 64 G2		
		92-23002	EX; 40.04 x 30.95 x 7.6; ; 30°									
		92-23001	IN; 45.05 x 34.7 x 8.08; G6; 20°									
4		130										
			G9508	G	8	16700 cm³	4V	344 kW	468 PS	£ 13,3:1		157
	89 959 110 N - Wet cylinder liner; finished; A=149.5 C=163.4 L=262 H=10.06											
		81-23002	IN/EX; 15.03/17.5 x 9.01 x 62 G2									
5		130										
			G9512	G	12	25000 cm³	4V	516 kW	702 PS	£ 13,3:1		157
	89 959 110 N - Wet cylinder liner; finished; A=149.5 C=163.4 L=262 H=10.06											
		105-35671	EX; 41 x 9 x 153.7 x RA/S - Cr - 30° - VS - 22 - III						MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9		
		105-35670	IN; 44 x 9 x 153.7 x RA/S - Cr - 20° - VS - 22 - III						81-23002	IN/EX; 15.03/17.5 x 9.01 x 62 G2		

		Cyl.		 mm	cm ³		Comp. Ratio ϵ	kW	PS	Pos
E 0824	E 302	G	4	108 x 125	4580	2				6
E 0826	E 302	G	6	108 x 120	6596	2				7
E 0834	E 312	G (NA)	4	108 x 125	4580	8	13.0	37-53	50-72	2
E 0834	E 302	G (NA)	4	108 x 125	4580	8	13.0	54-62	73-84	1
E 0834	LE 302	G (LA)	4	108 x 125	4580	8	11.0	68	92	3
E 0836	E 302, E 312	G (NA)	6	108 x 125	6871	12	13.0	56-85	76-116	4
E 0836	LE 202	G (LA)	6	108 x 125	6871	12	11.0	110	150	5
E 2676	E 302	G (NA)	6	126 x 166	12419	24	12.0	140-160	190-218	8
E 2676	LE 202, LE 212	G (LA)	6	126 x 166	12419	24	19.0	220-250	299-340	9
E 2842	LE 302	G (LA)	12	128 x 142	21930	2				23
E 2842	LE 302	G (LA)	12	128 x 142	21930	2				24
E 2842	LE 202	G (LA)	12	128 x 142	21930	2				22
E 2842	E	G	12	128 x 142	21930	2		177	241	21
E 2842	LE 202, LE 302	G (LA)	12	128 x 142	21927	24	12.0	360-420	489-571	10
E 2842	LE 312	G (LA)	12	128 x 142	21927	24	12.0	360-420	490-571	11
E 2842	LE 322	G (LA)	12	128 x 142	21927	24	12.0	380-420	517-571	12
E 2848	LE 322	G (LA)	8	128 x 142	14618	16	12.0	265-295	360-401	13
E 2876	TE 302	G (A)	6	128 x 166	12816	12	12.0	130	177	19
E 2876 KAT	E 302	G	6	128 x 166	12816	2		130-140	177-190	14
E 2876	E 312	G (LA)	6	128 x 166	12816	12	12.0	150-170	204-231	14
E 2876	LE 302	G (LA)	6	128 x 166	12816	12	11.0	200-210	272-286	16
E 2876	LE 202	G (LA)	6	128 x 166	12816	12	12.0	220	299	15
E 2876 Euro 5	LUH 01	G (LA)	6	128 x 166	12816	12	12.0	228	310	17
E 2876 Euro 5	LUH 02	G (LA)	6	128 x 166	12816	12	12.0	228	310	18
E 3262	E 302, LE 242	G (NA)	12	132 x 157	25782	48	12.0	275-580	374-789	25
E 3262	LE 232	G	1	132 x 157	25782	48	12	450	612	27
E 3262	LE 232	G (NA)	12	132 x 157	25782	48	12.0	450-580	612-789	29
E 3262	LE 222	G (NA)	12	132 x 157	25782	48	12.0	500	680	26
E 3262	LE 202, LE 212, LE 222	G	12	132 x 157	25782	48	12	500-580	680-789	27
E 3262	E 203	G	12	132 x 157	25782	4	12:1	550	748	25
E 3262	LE 202	G (LA)	12	132 x 157	25782	48	12.0	550-580	748-789	26
E 3262	LE 212	G (NA)	12	132 x 157	25782	48	12.0	550-580	748-789	28
E 3268	LE 232	G (LA)	8	132 x 157	17188	16	12	370	503	27
E 3268	LE 212	G (LA)	1	132 x 157	17188	16	12	370-390	503-530	26
E 3268	LE 212, LE 222, LE 222, LE 232	G (LA)	8	132 x 157	17188	16		370-530	503-530	26
G 2876	DUH 02	G (NA)	6	128 x 166	12816	12	10.0	200	272	20
G 2876 Euro 5	DUH 01	G (NA)	6	128 x 166	12816	12	10.0	200	272	20

M

1



108



E 0834

E 302

G NA 4 4580 cm³ 8V 54-62 kW 73-84 PS € 13.0 125

41 259 600

Cylinder diameter: 108; KH: 62.8; MT: -14.9; MØ: 84.6; GL: 102; piston pin: 42x86; number of piston rings: 3

RTK

R 2.5 CR G3

M 2.5

DSF 4 CR



89 470 110

T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04

89 453 110

T - Dry cylinder liner; finished; A=111.99 C=116 L=217 H=4.04, outside oversize + 0,50 mm

89 470 191

T - Dry cylinder liner; semi; A=111.27 L=217

89 470 190

T - Dry cylinder liner; semi; A=111.6 C=116 L=218 H=5.04



79 234 600

[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

79 234 610 0,25 / 79 234 620 0,50

79 299 600

[Pair] AS STD Ø 84.850 / 102.450 / / 2.900 St/A

79 333 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G

79 333 610 0,25, The upper shell is marked with 'SPUTTER'.

79 445 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S, SPUTTER: upper and lower, gas application

77 743 600

[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

77 805 600

[Set] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G, The upper shell is marked with 'SPUTTER'.

77 808 600

[Set] NW-L STD Ø 54.940 / 59.000 / 25.000 / 2.000 St/B

77 927 690

[Set] PL-B SEMI Ø 42.000 / 46.000 / 35.250 / St/B



20 0502 08343



81-25104

EX; 16.03/ x 10.02 x 55 G2

81-25105

IN; 16.03/ x 10.02 x 60 G2



92-25023

EX; 44.1 x 34.9 x 8.15; G2

92-25022

IN; 51.1 x 41.6 x 7.45; G2



20 1002 08341



20 1402 08340

M

2



108



E 0834

E 312

G NA 4 4580 cm³ 8V 37-53 kW 50-72 PS € 13.0 125

41 259 600

Cylinder diameter: 108; KH: 62.8; MT: -14.9; MØ: 84.6; GL: 102; piston pin: 42x86; number of piston rings: 3

RTK

R 2.5 CR G3

M 2.5

DSF 4 CR



79 234 600

[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

79 234 610 0,25 / 79 234 620 0,50

79 299 600

[Pair] AS STD Ø 84.850 / 102.450 / / 2.900 St/A

79 333 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G

79 333 610 0,25, The upper shell is marked with 'SPUTTER'.

79 445 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S, SPUTTER: upper and lower, gas application

77 743 600

[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

77 805 600

[Set] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G, The upper shell is marked with 'SPUTTER'.

77 808 600

[Set] NW-L STD Ø 54.940 / 59.000 / 25.000 / 2.000 St/B

77 927 690

[Set] PL-B SEMI Ø 42.000 / 46.000 / 35.250 / St/B



20 0502 08343



81-25104

EX; 16.03/ x 10.02 x 55 G2

81-25105

IN; 16.03/ x 10.02 x 60 G2



92-25023

EX; 44.1 x 34.9 x 8.15; G2

92-25022

IN; 51.1 x 41.6 x 7.45; G2



20 1002 08341



20 1402 08340

3		 108													
		E 0834		LE 302											
				G	LA	4	4580 cm³	8V	68 kW	92 PS	€11.0		125		
	41 259 600		Cylinder diameter: 108; KH: 62.8; MT: -14.9; MØ: 84.6; GL: 102; piston pin: 42x86; number of piston rings: 3												
			RTK												
			R	2.5	CR	G3									
			M	2.5											
				DSF	4	CR									
	89 470 110		T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04												
	79 234 600		[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G												
			79 234 610 0,25 / 79 234 620 0,50												
		79 299 600		[Pair] AS STD Ø 84.850 / 102.450 // 2.900 St/A											
		79 333 600		[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G											
				79 333 610 0,25, The upper shell is marked with 'SPUTTER'.											
		79 445 600		[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S, SPUTTER: upper and lower, gas application											
		77 743 600		[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G											
		77 805 600		[Set] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G, The upper shell is marked with 'SPUTTER'.											
		77 808 600		[Set] NW-L STD Ø 54.940 / 59.000 / 25.000 / 2.000 St/B											
		77 927 690		[Set] PL-B SEMI Ø 42.000 / 46.000 / 35.250 / St/B											
	20 0502 08343														
	81-25104		EX; 16.03/ x 10.02 x 55 G2							92-25023		EX; 44.1 x 34.9 x 8.15; G2			
	81-25105		IN; 16.03/ x 10.02 x 60 G2							92-25024		IN; 46.043 x 37.3 x 7.8; G5; 30°			
	20 1402 08260														

4		 108													
		E 0836		E 302, E 312											
				G	NA	6	6871 cm³	12V	56-85 kW	76-116 PS	€13.0		125		
	41 259 600		Cylinder diameter: 108; KH: 62.8; MT: -14.9; MØ: 84.6; GL: 102; piston pin: 42x86; number of piston rings: 3												
			RTK												
			R	2.5	CR	G3									
			M	2.5											
				DSF	4	CR									
	89 470 110		T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04												
	89 453 110		T - Dry cylinder liner; finished; A=111.99 C=116 L=217 H=4.04, outside oversize + 0,50 mm												
		89 470 191		T - Dry cylinder liner; semi; A=111.27 L=217											
		89 470 190		T - Dry cylinder liner; semi; A=111.6 C=116 L=218 H=5.04											
	79 234 600		[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G												
			79 234 610 0,25 / 79 234 620 0,50												
		79 299 600		[Pair] AS STD Ø 84.850 / 102.450 // 2.900 St/A											
		79 333 600		[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G											
				79 333 610 0,25, The upper shell is marked with 'SPUTTER'.											
		79 445 600		[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S, SPUTTER: upper and lower, gas application											
		77 744 600		[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G											
				77 744 610 0,25 / 77 744 620 0,50											
		77 807 600		[Set] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G											
				77 807 610 0,25, The upper shell is marked with 'SPUTTER'.											
		77 809 600		[Set] NW-L STD Ø 54.940 / 59.000 / 25.000 / 2.000 St/B											
		77 930 690		[Set] PL-B SEMI Ø 42.000 / 46.000 / 35.250 / St/B											
	20 0502 08360		fly wheel flange diameter: 110												
		20 0502 08362													
	81-25104		EX; 16.03/ x 10.02 x 55 G2							92-25023		EX; 44.1 x 34.9 x 8.15; G2			
	81-25105		IN; 16.03/ x 10.02 x 60 G2							92-25022		IN; 51.1 x 41.6 x 7.45; G2			
	20 1002 08361		length: 781, Euro 2/3 Before installation, check the manufacturer's specifications and ensure that the water pump is correctly assigned to the hub.												
	20 1402 08260														

5

108



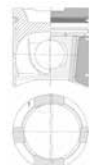
E 0836

LE 202

G LA 6 6871 cm³ 12V 110 kW 150 PS € 11.0 125



40 832 600

Cylinder diameter: 108; KH: 63.5; VT1: -5; MT: -20.4; MØ: 70.1; GL: 102.5; piston pin: 42x86; number of piston rings: 3
RTK

T15 3 CK G6

M 2.5 CR G3

D 4 CR



89 470 110

T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04

89 453 110

T - Dry cylinder liner; finished; A=111.99 C=116 L=217 H=4.04, outside oversize + 0,50 mm

89 470 191

T - Dry cylinder liner; semi; A=111.27 L=217

89 470 190

T - Dry cylinder liner; semi; A=111.6 C=116 L=218 H=5.04



79 234 600

[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

79 234 610 0,25 / 79 234 620 0,50

79 299 600

[Pair] AS STD Ø 84.850 / 102.450 / / 2.900 St/A

79 333 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G

79 333 610 0,25, The upper shell is marked with 'SPUTTER'.

79 445 600

[Pair] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S, SPUTTER: upper and lower, gas application

77 744 600

[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

77 744 610 0,25 / 77 744 620 0,50

77 807 600

[Set] PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/S; PL STD Ø 70.000 / 74.000 / 27.000 / 1.987 St/B/G

77 807 610 0,25, The upper shell is marked with 'SPUTTER'.

77 809 600

[Set] NW-L STD Ø 54.940 / 59.000 / 25.000 / 2.000 St/B

77 930 690

[Set] PL-B SEMI Ø 42.000 / 46.000 / 35.250 / St/B



20 0502 08360

fly wheel flange diameter: 110

20 0502 08362



81-25104

EX; 16.03/ x 10.02 x 55 G2

81-25105

IN; 16.03/ x 10.02 x 60 G2



92-25023

EX; 44.1 x 34.9 x 8.15; G2

92-25022

IN; 51.1 x 41.6 x 7.45; G2

M



20 1002 08361

length: 781, Euro 2/3

Before installation, check the manufacturer's specifications and ensure that the water pump is correctly assigned to the hub.



20 1402 08260



20 1902 08360

length: 144; width: 78; height: 60.3; weight: 1.13 g

6

108



E 0824

E 302

G 4 4580 cm³ 2V 125



89 470 110

T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04

89 453 110

T - Dry cylinder liner; finished; A=111.99 C=116 L=217 H=4.04, outside oversize + 0,50 mm

89 470 190

T - Dry cylinder liner; semi; A=111.6 C=116 L=218 H=5.04



79 234 600

[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G

79 234 610 0,25 / 79 234 620 0,50

79 235 600

[Pair] PASS-L STD Ø 77.000 / 82.000 / 33.850 / 2.480 St/B/G

79 235 610 0,25

79 236 600

[Pair] PL STD Ø 65.000 / 69.000 / 31.000 / 1.987 St/B/G1

79 236 610 0,25 / 79 236 620 0,50

77 586 600

[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G; PASS-L STD Ø 77.000 / 82.000 / 33.850 / 2.480 St/B/G

77 586 610 0,25

77 588 600

[Set] PL STD Ø 65.000 / 69.000 / 31.000 / 1.987 St/B/G1

77 588 610 0,25

77 810 600

[Set] NW-L STD Ø 50.940 / 55.000 / 25.000 / 2.000 St/B

77 885 690

[Set] PL-B SEMI Ø 40.000 / 43.000 / 31.700 / St/B



20 0602 08261

length: 187; Large connecting rod eye bore diameter: 69; Small connecting rod eye diameter: 40; Width big end: 39; Width small end: 32.5; parallel connecting rod; cracked



81-25104

EX; 16.03/ x 10.02 x 55 G2

81-25105

IN; 16.03/ x 10.02 x 60 G2



92-25023

EX; 44.1 x 34.9 x 8.15; G2

92-25022

IN; 51.1 x 41.6 x 7.45; G2



20 1402 08340

7		108																		
		E 0826		E 302									120							
						G	6	6596 cm ³	2V											
	89 470 110	T - Dry cylinder liner; finished; A=111.49 C=116 L=217 H=4.04																		
	89 453 110	T - Dry cylinder liner; finished; A=111.99 C=116 L=217 H=4.04, outside oversize + 0,50 mm																		
	89 470 190	T - Dry cylinder liner; semi; A=111.6 C=116 L=218 H=5.04																		
	79 234 600	[Pair] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G 79 234 610 0,25 / 79 234 620 0,50																		
	79 235 600	[Pair] PASS-L STD Ø 77.000 / 82.000 / 33.850 / 2.480 St/B/G 79 235 610 0,25																		
	79 236 600	[Pair] PL STD Ø 65.000 / 69.000 / 31.000 / 1.987 St/B/G1 79 236 610 0,25 / 79 236 620 0,50																		
	77 587 600	[Set] HL STD Ø 77.000 / 82.000 / 26.000 / 2.480 St/B/G; PASS-L STD Ø 77.000 / 82.000 / 33.850 / 2.480 St/B/G 77 587 610 0,25 / 77 587 620 0,50																		
	77 589 600	[Set] PL STD Ø 65.000 / 69.000 / 31.000 / 1.987 St/B/G1 77 589 610 0,25 / 77 589 620 0,50																		
	77 811 600	[Set] NW-L STD Ø 50.940 / 55.000 / 25.000 / 2.000 St/B																		
	77 886 690	[Set] PL-B SEMI Ø 40.000 / 43.000 / 31.700 / St/B																		
	20 0602 08261	length: 187; Large connecting rod eye bore diameter: 69; Small connecting rod eye diameter: 40; Width big end: 39; Width small end: 32.5; parallel connecting rod; cracked																		
	81-25104	EX; 16.03/ x 10.02 x 55 G2						92-25023	EX; 44.1 x 34.9 x 8.15; G2											
	81-25105	IN; 16.03/ x 10.02 x 60 G2						92-25022	IN; 51.1 x 41.6 x 7.45; G2											
	20 1402 20660	Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 20660, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit. Used for oil pump cover 51.05103-5036., Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 20660, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit. Used for oil pump cover 51.05103-5036.																		

8		126																		
		E 2676		E 302									166							
						G	NA	6	12419 cm ³	24V	140-160 kW	190-218 PS		£ 12.0						
	80 00728 1 0 000	Ø126; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]																		
	89 856 111	N - Wet cylinder liner; finished; A=139.5 C=150 L=257.5 H=8.07																		
	89 928 110	N - Wet cylinder liner; finished; A=139.5 C=150 L=257.5 H=8.32																		
	36 099 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil groove																		
	36 100 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil-hole																		
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75																		
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80																		
	79 405 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G 79 405 610 0,25 / 79 405 620 0,50, The upper shell is marked with 'SPUTTER'.																		
	79 600 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 600 610 0,25 / 79 600 620 0,50, The upper shell is marked with 'SPUTTER'.																		
	37 280 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 37 280 610 0,25 / 37 280 620 0,50, The upper shell is marked with 'SPUTTER'.																		
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50																		
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm																		
	77 879 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 77 879 610 0,25 / 77 879 620 0,50, The upper shell is marked with 'SPUTTER'.																		
	77 928 690	[Set] PL-B SEMI Ø 52.000 / 56.000 / 45.500 / St/B																		
	77 964 600	[Set] NW-L STD Ø 39.950 / 44.000 / 26.000 / 2.010 St/A																		
	20 0602 26761	length: 250.99; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.055; Width big end: 43.3; Width small end: 43.3; cracked																		
	20 0602 26760	length: 251; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.05; Width big end: 43.25; Width small end: 43.35; cracked																		
	20 0502 26760																			

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8		126												
		E 2676		E 302										
						G	NA	6	12419 cm ³	24V	140-160 kW	190-218 PS	£ 12.0	 166
	80 00728 1 0 000	Ø126; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]												
	89 856 111	N - Wet cylinder liner; finished; A=139.5 C=150 L=257.5 H=8.07												
	89 928 110	N - Wet cylinder liner; finished; A=139.5 C=150 L=257.5 H=8.32												
	36 099 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil groove												
	36 100 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil-hole												
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75												
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80												
	79 405 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G 79 405 610 0,25 / 79 405 620 0,50, The upper shell is marked with 'SPUTTER'.												
	79 600 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 600 610 0,25 / 79 600 620 0,50, The upper shell is marked with 'SPUTTER'.												
	37 280 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 37 280 610 0,25 / 37 280 620 0,50, The upper shell is marked with 'SPUTTER'.												
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50												
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm												
	77 879 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 77 879 610 0,25 / 77 879 620 0,50, The upper shell is marked with 'SPUTTER'.												
	77 928 690	[Set] PL-B SEMI Ø 52.000 / 56.000 / 45.500 / St/B												
	77 964 600	[Set] NW-L STD Ø 39.950 / 44.000 / 26.000 / 2.010 St/A												
	20 0602 26761	length: 250.99; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.055; Width big end: 43.3; Width small end: 43.3; cracked												
	20 0602 26760	length: 251; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.05; Width big end: 43.25; Width small end: 43.35; cracked												
	20 0502 26760													

cont...

cont...

	81-25106	IN/EX; 15.05/ x 9 x 66.5 G2
	20 1402 26761	Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 26761, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit.Used for oil pump cover 51.05103-5038
9		126
	E 2676	LE 202, LE 212
		G LA 6 12419 cm ³ 24V 220-250 kW 299-340 PS £ 19.0 166
	80 00728 1 0 000	Ø126; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]
	89 856 111	N - Wet cylinder liner; finished; A= 139.5 C=150 L=257.5 H=8.07
	89 928 110	N - Wet cylinder liner; finished; A= 139.5 C=150 L=257.5 H=8.32
	36 099 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil groove
	36 100 600	BU STD Ø 96.890 / 102.000 / 18.000 / 2.500 St/A, with oil-hole
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80
	79 405 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G 79 405 610 0,25 / 79 405 620 0,50, The upper shell is marked with 'SPUTTER'.
	79 600 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 600 610 0,25 / 79 600 620 0,50, The upper shell is marked with 'SPUTTER'.
	37 280 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 37 280 610 0,25 / 37 280 620 0,50, The upper shell is marked with 'SPUTTER'.
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm
M	77 879 600	[Set] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/G; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 77 879 610 0,25 / 77 879 620 0,50, The upper shell is marked with 'SPUTTER'.
	77 928 690	[Set] PL-B SEMI Ø 52.000 / 56.000 / 45.500 / St/B
	77 964 600	[Set] NW-L STD Ø 39.950 / 44.000 / 26.000 / 2.010 St/A
	20 0602 26761	length: 250.99; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.055; Width big end: 43.3; Width small end: 43.3; cracked
	20 0602 26760	length: 251; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 52.05; Width big end: 43.25; Width small end: 43.35; cracked
	20 0502 26760	
	81-25106	IN/EX; 15.05/ x 9 x 66.5 G2
	20 1402 20660	Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 20660, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit. Used for oil pump cover 51.05103-5036., Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 20660, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit. Used for oil pump cover 51.05103-5036.
	20 1402 26760	Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 26760, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit.Used for oil pump cover 51.05103-5037
	20 1402 26761	Please note when ordering: When using the BF ORIGINAL oil pump 20 1402 26761, please pay attention to the scope of supply of the individual components and the OE numbers. This is a complete oil pump kit.Used for oil pump cover 51.05103-5038
	20 1902 20661	length: 250; width: 78; height: 81; weight: 3.02 g

10



128



E 2842

LE 202, LE 302

G LA 12 21927 cm³ 24V 360-420 kW 489-571 PS ₤12.0 142

20 1902 28420

length: 250; width: 78; height: 197; weight: 6.75 g



11



128



E 2842

LE 312

G LA 12 21927 cm³ 24V 360-420 kW 490-571 PS ₤12.0 142

40 208 600



Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3

RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...

Compression 11 : 1

41 000 600



Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3

RTK

T15 4 CK G6

M 3 CR G3

DSF 4 CR

→ 80 01100 1 0 ...

42 043 600



Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3

RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...



80 00155 1 0 000

Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]

80 00717 1 0 000

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]

80 01100 1 0 000

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]



41 000 960

piston: 41000600; cylinder liner: 89092120



42 043 960

piston: 42043600; cylinder liner: 89092120



89 092 120

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1



89 093 120

N - Wet cylinder liner; finished; A=145 C=154.3 L=253 H+F=10.05+1



78 693 600

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00

78 694 604

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00

78 709 600

[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.

78 897 600

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with

'SPUTTER', Gas and marine engines must be equipped with 'SPUTTER'

connecting rod bearings!

79 443 600

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 346 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 366 600

[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A

87 397 604

[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

87 397 614 0,25 / 87 397 624 0,50



20 0602 G2801

length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked



20 0302 28420

exclusive cylinder liner



20 0802 G2820

- V - G - S - - - -; ready-to-install, Use for M14 spark plug

20 0802 G2828

- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug

20 0802 G2840

- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug

cont...

M

	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		KK-12H	valve cotter; number of notches: 1; valve stem diameter: 12
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!!Identification is not possible according to the engine number.
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25107	EX; 18.2/ x 12.02 x 56 G2
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		81-25101	IN; 18/ x 12.02 x 59.5 G2
	92-25018	EX; 53.11 x 43 x 9.5; HWR		81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25019	IN; 61.11 x 49 x 8.8; HWR		81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1403 44300				
	20 1403 44400				
	20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g			

12		128											
		E 2842		LE 322									
						G	LA	12	21927 cm³	24V	380-420 kW	517-571 PS	£ 12.0
		40 208 600		Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3									
				RTK									
				T15 3.5 CR G6									
				M 3									
				DSF 5 CR									
				→ 80 00155 1 0 ...									
				Compression 11 : 1									
		41 000 600		Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3									
				RTK									
				T15 4 CK G6									
				M 3 CR G3									
				DSF 4 CR									
				→ 80 01100 1 0 ...									
													
		42 043 600		Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3									
				RTK									
				T15 3.5 CR G6									
				M 3									
				DSF 5 CR									
				→ 80 00155 1 0 ...									
		80 00155 1 0 000		Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]									
		80 00717 1 0 000		Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]									
		80 01100 1 0 000		Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]									
		41 000 960		piston: 41000600; cylinder liner: 89092120									
		42 043 960		piston: 42043600; cylinder liner: 89092120									
		89 092 120		N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1									
		89 093 120		N - Wet cylinder liner; finished; A=145 C=154.3 L=253 H+F=10.05+1									
		78 693 600		[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1									
				78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00									
		78 694 604		[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G									
				78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00									

cont...

78 709 600	[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.
78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER', Gas and marine engines must be equipped with 'SPUTTER' connecting rod bearings!
79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B
87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50
 20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
 20 0302 28420	exclusive cylinder liner
 20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
 20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
 20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug
 25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
 25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III
 25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
 92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
 92-25018	EX; 53.11 x 43 x 9.5; HWR
 92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
 92-25019	IN; 61.11 x 49 x 8.8; HWR
 92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
 92-25018	EX; 53.11 x 43 x 9.5; HWR
 92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
 92-25019	IN; 61.11 x 49 x 8.8; HWR
 20 1403 44300	
 20 1403 44400	
 20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g

13		128	
	E 2848	LE 322	
		G	LA 8 14618 cm³ 16V 265-295 kW 360-401 PS 12.0 142
 41 000 600	Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3		
	RTK		
	T15 4 CK G6		
	M 3 CR G3		
	DSF 4 CR		
	→ 80 01100 1 0 ...		
 42 043 600	Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3		
	RTK		
	T15 3.5 CR G6		
	M 3		
	DSF 5 CR		
	→ 80 00155 1 0 ...		

cont...

	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]
	41 000 960	piston: 41000600; cylinder liner: 89092120
	42 043 960	piston: 42043600; cylinder liner: 89092120
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1
	89 093 120	N - Wet cylinder liner; finished; A=145 C=154.3 L=253 H+F=10.05+1
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00
	78 709 600	[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'. Gas and marine engines must be equipped with 'SPUTTER' connecting rod bearings!
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
	87 348 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B
	87 385 694	[Set] NW-L SEMI Ø 69.940 / 76.000 / 35.000 / St/B; NW-L SEMI Ø 69.940 / 75.000 / 28.000 / St/W 87 385 600 STD
	87 401 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 401 614 0,25 / 87 401 624 0,50 / 87 401 634 0,75 / 87 401 644 1,00
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
	20 0302 25380	exclusive cylinder liner
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	20 1403 44400	
	20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g

M

**KK-12H**

valve cotter; number of notches: 1; valve stem diameter: 12

**81-25103**

EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.

81-25107

EX; 18.2/ x 12.02 x 56 G2

81-25101

IN; 18/ x 12.02 x 59.5 G2

81-2536

IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.

81-2537

IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.

81-2538

IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.

14

128



E 2876 KAT

E 302

G

6

12816 cm³

2V

130-140 kW

177-190 PS

166

E 2876

E 312

G

LA 6

12816 cm³

12V

150-170 kW

204-231 PS

€ 12.0

166

	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3		
		RTK		
		T15 4 CK G6		
		M 3 CR G3		
		DSF 4 CR		
		→ 80 01100 1 0 ...		
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]		
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]		
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]		
	41 260 960	piston: 41260600; cylinder liner: 89186120		
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1		
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket		
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1		
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1		
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1		
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75		
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.		
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 // 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80		
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application		
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50		
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm		
	77 812 690	[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B		
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked		
	20 0502 28760	fly wheel flange diameter: 113		
	20 0302 28661	exclusive cylinder liner		
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug		
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug		
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug		
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		
	92-25018	EX; 53.11 x 43 x 9.5; HWR		
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		
	92-25019	IN; 61.11 x 49 x 8.8; HWR		
	KK-12H	valve cotter; number of notches: 1; valve stem diameter: 12		
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove		
	81-25102	EX; 18/ x 12.02 x 56 G2		
	81-25107	EX; 18.2/ x 12.02 x 56 G2		
	81-25101	IN; 18/ x 12.02 x 59.5 G2		
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.		
	81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.		
	81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.		
	20 1002 G2866			
	20 1402 28760			
	20 1402 28761			

cont...

cont...

		20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g, E 2876 E 302 : 01.2000→	
15		128		
	E 2876	LE 202		
			G	LA 6 12816 cm ³ 12V 220 kW 299 PS € 12.0 166
	41 498 600	Cylinder diameter: 128; KH: 78.65; VT1: -5; MT: -24.8; MØ: 102; GL: 133.65; piston pin: 50x107; number of piston rings: 3 RTK T15 4 CR G6 M 3 DSF 4 CR → 80 00300 1 0 ...		
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]		
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]		
	80 00300 1 1 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]		
	80 00300 1 2 000	Ø128; STD; set: 1; [T15 G6 CR 4] [NM 3] [DSF CR 4]		
	41 498 960	piston: 41498600; cylinder liner: 89186120		
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1		
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket		
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1		
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1		
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1		
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75		
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.		
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80		
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application		
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50		
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm		
	77 812 690	[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B		
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked		
	20 0502 28760	fly wheel flange diameter: 113		
	20 0302 28661	exclusive cylinder liner		
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug		
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug		
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug		
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		KK-12H valve cotter; number of notches: 1; valve stem diameter: 12
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		81-25103 EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!Identification is not possible according to the engine number.
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25113 EX; 18/ x 12.01 x 70 G2, Long outer oil groove

cont...

	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-25102	EX; 18/ x 12.02 x 56 G2
	92-25018	EX; 53.11 x 43 x 9.5; HWR	81-25107	EX; 18.2/ x 12.02 x 56 G2
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-25101	IN; 18/ x 12.02 x 59.5 G2
	92-25019	IN; 61.11 x 49 x 8.8; HWR	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
			81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
			81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.



20 1002 G2866



20 1402 28760

20 1402 28761



20 1902 28420

length: 250; width: 78; height: 197; weight: 6.75 g

16

128



E 2876

LE 302

G LA 6 12816 cm³ 12V 200-210 kW 272-286 PS 11.0 166

	40 207 600	Cylinder diameter: 128; KH: 78.65; MT: -25.3; MØ: 105.8; GL: 133.65; piston pin: 50x107; number of piston rings: 3 RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ... Compression 11 : 1
	80 00155 1 0 000 80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5] Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]
	40 207 960 40 207 961 40 207 963 40 207 964	piston: 40207600; cylinder liner: 89186120 piston: 40207600; cylinder liner: 89324120 piston: 40207600; cylinder liner: 89518120 piston: 40207600; cylinder liner: 89534120
	89 186 120 89 914 120 89 518 120 89 324 120 89 892 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1 N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1 N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1 N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1
	78 586 600 79 237 600 79 261 600 79 444 600 77 682 600 77 682 700 77 812 690 87 501 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75 [Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'. [Pair] AS STD Ø 114.750 / 137.650 / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80 [Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application [Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50 [Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm [Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B [Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked
	20 0502 28760	fly wheel flange diameter: 113

cont...

M

	20 0302 28661	exclusive cylinder liner										
	20 0802 G2820	- V - G - S - - - - -; ready-to-install, Use for M14 spark plug										
	20 0802 G2828	- V - G - S - - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug										
	20 0802 G2840	- V - G - S - - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug										
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		KK-12H	valve cotter; number of notches: 1; valve stem diameter: 12							
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!!identification is not possible according to the engine number.							
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove							
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		81-25107	EX; 18.2/ x 12.02 x 56 G2							
	92-25018	EX; 53.11 x 43 x 9.5; HWR		81-25101	IN; 18/ x 12.02 x 59.5 G2							
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.							
	92-25019	IN; 61.11 x 49 x 8.8; HWR		81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.							
				81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.							
	20 1002 G2866											
	20 1402 28760 20 1402 28761											
	20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g										
17		128										
	E 2876 Euro 5	LUH 01	G	LA	6	12816 cm³	12V	228 kW	310 PS	€ 12.0		166
	80 01269 1 0 000	Ø128										
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1										
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket										
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1										
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1										
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1										
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75										
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.										
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80										
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application										
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50										
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25 , outside oversize + 0,50 mm										
	77 812 690	[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B										
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A										

cont...

	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked
	20 0502 28760	fly wheel flange diameter: 113
	20 0302 28661	exclusive cylinder liner
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
		KK-12H valve cotter; number of notches: 1; valve stem diameter: 12
		81-25103 EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25102	EX; 18/ x 12.02 x 56 G2
	81-25107	EX; 18.2/ x 12.02 x 56 G2
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1002 G2866	
	20 1602 28661	mechanical; Impeller diameter: 135, for retarder
		 20 1402 28760
	20 1902 25000	length: 250; width: 78; height: 107; weight: 2.85 g
	20 1902 28760	length: 250; width: 78; height: 111; weight: 3 g
	20 1002 25020	rocker arm bracket, only 2 valves version
	20 0502 25001	sprocket, 49 teeth
18	 128	
	E 2876 Euro 5	LUH 02
		05.2007 →
	HOCL, LION'S CITY, LION'S CLASSIC, NG, NL	
	80 01269 1 0 000	Ø128
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 // 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application

cont...

	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked
	20 0502 28760	fly wheel flange diameter: 113
	20 0302 28661	exclusive cylinder liner
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	KK-12H	valve cotter; number of notches: 1; valve stem diameter: 12
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25102	EX; 18/ x 12.02 x 56 G2
	81-25107	EX; 18.2/ x 12.02 x 56 G2
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1002 G2866	
	20 1602 28661	mechanical; Impeller diameter: 135, for retarder
	20 1402 28760	
	20 1902 25000	length: 250; width: 78; height: 107; weight: 2.85 g
	20 1902 28760	length: 250; width: 78; height: 111; weight: 3 g
	7.01268.03.0	EGR valve; pneumatic, Non-return valve
	7.00380.04.0	boost pressure control valve; electrical
	7.00380.11.0	boost pressure control valve; electro-pneumatic
	20 1002 25020	rocker arm bracket, only 2 valves version
	20 0502 25001	sprocket, 49 teeth
19		128
	E 2876	TE 302
G A 6 12816 cm ³ 12V 130 kW 177 PS € 12.0 166		

	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3		
		RTK		
		T15	4	CK G6
		M	3	CR G3
		DSF	4	CR
		→ 80 01100 1 0 ...		
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]		
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]		
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]		
	41 260 960	piston: 41260600; cylinder liner: 89186120		
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1		
	89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket		
	89 518 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1		
	89 324 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1		
	89 892 120	N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1		
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75		
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.		
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 // 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80		
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application		
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50		
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm		
	77 812 690	[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B		
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
		20 0602 G2876 length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked		
		20 0502 28760 fly wheel flange diameter: 113		
	20 0302 28661	exclusive cylinder liner		
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug		
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug		
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug		
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		
	92-25018	EX; 53.11 x 43 x 9.5; HWR		
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		
	92-25019	IN; 61.11 x 49 x 8.8; HWR		
			KK-12H	valve cotter; number of notches: 1; valve stem diameter: 12
			81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
			81-25107	EX; 18.2/ x 12.02 x 56 G2
			81-25101	IN; 18/ x 12.02 x 59.5 G2
			81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
			81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
			81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1002 G2866			
	20 1402 28760			
	20 1402 28761			
	20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g		

20				128											
	G 2876 Euro 5			DUH 01											
	G 2876			DUH 02											
	LION'S CITY, NL			01.2005→12.2014											
	80 01269 1 0 000			Ø128											
	89 186 120			N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1											
	89 914 120			N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket											
	89 518 120			N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.27+1											
	89 324 120			N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.57+1											
	89 892 120			N - Wet cylinder liner; finished; A=145.5 C=154.3 L=270 H+F=10.07+1											
	79 237 600			[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.											
	79 261 600			[Pair] AS STD Ø 114.750 / 137.650 / / 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80, 06.1999→											
	79 341 600			[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1; HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/S 79 341 610 0,25 / 79 341 620 0,50, The lower shell is marked with 'SPUTTER'.											
	79 444 600			[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application											
	77 812 690			[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B											
	87 501 600			[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A											
	20 0602 G2876			length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked											
	20 0502 28760			fly wheel flange diameter: 113											
	20 0302 28661			exclusive cylinder liner											
	25311			EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III											
	25324			EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III											
	25310			IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III											
	92-25004			EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas											
	92-25018			EX; 53.11 x 43 x 9.5; HWR											
	92-25005			IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas											
	92-25019			IN; 61.11 x 49 x 8.8; HWR											
	20 1002 G2866														
	20 1602 28661			mechanical; Impeller diameter: 135, for retarder											
	20 1902 28760			length: 250; width: 78; height: 111; weight: 3 g											
	20 1002 25020			rocker arm bracket, only 2 valves version											

21

128



E 2842

E

G

12

21930 cm³

2V

177 kW

241 PS

142

**40 208 600**

Cylinder diameter: 128; KH: 80.7; MT: -28.2; MØ: 94; GL: 129.7; piston pin: 46x105; number of piston rings: 3

RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...

Compression 11 : 1

42 043 600

Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3

RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...

94 942 600

Cylinder diameter: 128; KH: 80.7; MT: -29; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3

FBo, RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...

Compression 10:1

94 943 600

Cylinder diameter: 128; KH: 80.7; MT: -22; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3

FBo, RTK

T15 3.5 CR G6

M 3

DSF 5 CR

→ 80 00155 1 0 ...

**80 00155 1 0 000**

Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]

**42 043 960**

piston: 42043600; cylinder liner: 89092120

94 943 960

piston: 94943600; cylinder liner: 89092120

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / **78 693 620** 0,50 / **78 693 630** 0,75 / **78 693 640** 1,00**78 694 604**

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / **78 694 624** 0,50 / **78 694 634** 0,75 / **78 694 644** 1,00**78 897 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 605 0,10 / **78 897 610** 0,25 / **78 897 620** 0,50 / **78 897 630** 0,75 / **78 897 640** 1,00, The upper shell is marked with 'SPUTTER'.**79 443 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 346 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 366 600

[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A

87 397 604

[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

87 397 614 0,25 / **87 397 624** 0,50**20 0602 G2801**

length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked

**20 0302 28420**

exclusive cylinder liner

**20 0802 G2820**

- V - G - S - - - -; ready-to-install, Use for M14 spark plug

20 0802 G2828

- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug

20 0802 G2840

- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug

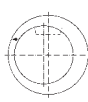
cont...

M

	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III		81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25102	EX; 18/ x 12.02 x 56 G2
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas		81-25101	IN; 18/ x 12.02 x 59.5 G2
	92-25018	EX; 53.11 x 43 x 9.5; HWR		81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas			
	92-25019	IN; 61.11 x 49 x 8.8; HWR			



22		128	E 2842	LE 202	G LA 12 21930 cm³ 2V		142
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	41 000 600	Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3 RTK T15 4 CK G6 M 3 CR G3 DSF 4 CR → 80 01100 1 0 ...
	42 043 600	Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3 RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ...
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]
	42 043 960	piston: 42043600; cylinder liner: 89092120
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00
	78 709 600	[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application
	87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B
	87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked

cont...


23

128

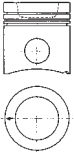

E 2842

LE 302

G LA 12 21930 cm³ 2V


142

cont...

	94 943 600	Cylinder diameter: 128; KH: 80.7; MT: -22; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3 FBo, RTK T15 3.5 CR G6 M 3 DSF 5 CR → 80 00155 1 0 ...	
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]	
	80 00717 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]	
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]	
	42 043 960	piston: 42043600; cylinder liner: 89092120	
	94 943 960	piston: 94943600; cylinder liner: 89092120	
	89 092 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1	
	89 093 120	N - Wet cylinder liner; finished; A=145 C=154.3 L=253 H+F=10.05+1	
	78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00	
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00	
	78 709 600	[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.	
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.	
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application	
	87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B	
	87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A	
	87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50	
	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked	
	20 0302 28420	exclusive cylinder liner	
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug	
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug	
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug	
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III	 KK-12H valve cotter; number of notches: 1; valve stem diameter: 12
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III	 81-25103 EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III	81-25107 EX; 18.2/ x 12.02 x 56 G2
	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-25101 IN; 18/ x 12.02 x 59.5 G2
	92-25018	EX; 53.11 x 43 x 9.5; HWR	81-2536 IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-2537 IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25019	IN; 61.11 x 49 x 8.8; HWR	81-2538 IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1403 44300		
	20 1403 44400		
	20 1902 28420	length: 250; width: 78; height: 197; weight: 6.75 g, 02.2000→	

24



128



E 2842

LE 302

G LA 12 21930 cm³ 2V

142

**41 000 600**Cylinder diameter: 128; KH: 80.7; MT: -26; MØ: 91.6; GL: 129.7; piston pin: 46x105; number of piston rings: 3
RTK

T15 4 CK G6

M 3 CR G3

DSF 4 CR

→ **80 01100 1 0 ...****42 043 600**Cylinder diameter: 128; KH: 80.7; MT: -21.7; MØ: 90; GL: 129.7; piston pin: 46x105; number of piston rings: 3
RTK

T15 3.5 CR G6

M 3

DSF 5 CR

94 943 600Cylinder diameter: 128; KH: 80.7; MT: -22; MØ: 96; GL: 130; piston pin: 46x105; number of piston rings: 3
FBo, RTK

T15 3.5 CR G6

M 3

DSF 5 CR

**80 00717 1 0 000**

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 3] [DSF CR 4]

80 01100 1 0 000

Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]

**41 000 960**

piston: 41000600; cylinder liner: 89092120

42 043 960

piston: 42043600; cylinder liner: 89092120

94 943 960

piston: 94943600; cylinder liner: 89092120

**89 092 120**

N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=10.05+1

89 093 120

N - Wet cylinder liner; finished; A=145 C=154.3 L=253 H+F=10.05+1

**78 693 600**

[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1

78 693 610 0,25 / **78 693 620** 0,50 / **78 693 630** 0,75 / **78 693 640** 1,00**78 694 604**

[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G

78 694 614 0,25 / **78 694 624** 0,50 / **78 694 634** 0,75 / **78 694 644** 1,00**78 709 600**

[Pair] PL-L STD Ø 31.975 / 36.000 / 19.000 / 2.011 St/B/G, For compressor with piston Ø 90 mm.

78 897 600

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1

78 897 605 0,10 / **78 897 610** 0,25 / **78 897 620** 0,50 / **78 897 630** 0,75 / **78 897 640** 1,00, The upper shell is marked with 'SPUTTER'.**79 443 600**

[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application

87 346 690

[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B

87 366 600

[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A

87 397 604[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G
87 397 614 0,25 / **87 397 624** 0,50**20 0602 G2801**

length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked

**20 0302 28420**

exclusive cylinder liner

**20 0802 G2820**

- V - G - S - - - -; ready-to-install, Use for M14 spark plug

20 0802 G2828

- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug

20 0802 G2840

- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug

**25311**

EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

25324

EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III

**KK-12H**

valve cotter; number of notches: 1; valve stem diameter: 12

**81-25103**

EX; 18./ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.

25310

IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III

81-25107

EX; 18.2/ x 12.02 x 56 G2

cont...

	92-25004	EX; 53.1 x 43 x 7.45; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-25101	IN; 18/ x 12.02 x 59.5 G2
	92-25018	EX; 53.11 x 43 x 9.5; HWR	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25005	IN; 61.11 x 49 x 6.8; G2; 30°, Seat ring height 2 mm less than on biogas version, recommended for natural gas	81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	92-25019	IN; 61.11 x 49 x 8.8; HWR	81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.

 **20 1403 44300**
20 1403 44400

 **20 1902 28420** length: 250; width: 78; height: 197; weight: 6.75 g, 02.2000→

25		132
	E 3262	E 203
	E 3262	E 302, LE 242
		G 12 25782 cm ³ 4V 550 kW 748 PS ξ 12:1  157
		G NA 12 25782 cm ³ 48V 275-580 kW 374-789 PS ξ 12.0  157

 **89 955 110** N - Wet cylinder liner; finished; A=149.5 C=163.3 L=262 H=10.06

	25323	EX; 42 x 9 x 153.7 x I/S - Cr - 30° - VS - 22 - III	 MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9
	25322	IN; 44 x 9 x 153.7 x RA/S - Cr - 30° - 22 - III	 81-25112	IN/EX; 15.03/ x 9 x 66.5 G2, additional groove on the diameter of the valve stem seals

 **92-25025** EX; 44.043 x 35.7 x 7.8; G4; 30°
92-25024 IN; 46.043 x 37.3 x 7.8; G5; 30°

M

26		132
	E 3262	LE 202
	E 3262	LE 222
	E 3268	LE 212
	E 3268	LE 212, LE 222, LE 222, LE 232
		G LA 12 25782 cm ³ 48V 550-580 kW 748-789 PS ξ 12.0  157
		G NA 12 25782 cm ³ 48V 500 kW 680 PS ξ 12.0  157
		G LA 1 17188 cm ³ 16V 370-390 kW 503-530 PS ξ 12  157
		G LA 8 17188 cm ³ 16V 370-530 kW 503-530 PS  157

 **42 089 600** Cylinder diameter: 132; KH: 78.5; MT: -28; MØ: 90.3; GL: 125; piston pin: 55x99; number of piston rings: 3
RTK, KBB
T15 3.5 CK G6
M 2.5 CR
DSF 3.5 CR
→ **80 01265 1 0 ...**

42 090 600 Cylinder diameter: 132; KH: 78.5; MT: -25.3; MØ: 86.4; GL: 125; piston pin: 55x99; number of piston rings: 3
RTK, KBB
T15 3.5 CK G6
M 2.5 CR
DSF 3.5 CR
→ **80 01265 1 0 ...**

 **80 01265 1 0 000** Ø132; STD; set: 1; [T15 G6 CK 3.5] [M CR 2.5] [DSF CR 3.5]

 **89 955 110** N - Wet cylinder liner; finished; A=149.5 C=163.3 L=262 H=10.06

	25323	EX; 42 x 9 x 153.7 x I/S - Cr - 30° - VS - 22 - III	 MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9
	25322	IN; 44 x 9 x 153.7 x RA/S - Cr - 30° - 22 - III	 81-25112	IN/EX; 15.03/ x 9 x 66.5 G2, additional groove on the diameter of the valve stem seals
	92-25025	EX; 44.043 x 35.7 x 7.8; G4; 30°		
	92-25024	IN; 46.043 x 37.3 x 7.8; G5; 30°		

27132										
	E 3262	LE 232								
			G	1	25782 cm³	48V	450 kW	612 PS	£ 12	 157
	E 3262	LE 202, LE 212, LE 222								
			G	12	25782 cm³	48V	500-580 kW	680-789 PS	£ 12	 157
	E 3268	LE 232								
			G	LA 8	17188 cm³	16V	370 kW	503 PS	£ 12	 157
	42 089 600	Cylinder diameter: 132; KH: 78.5; MT: -28; MØ: 90.3; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR								
	42 090 600	Cylinder diameter: 132; KH: 78.5; MT: -25.3; MØ: 86.4; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR								

28132										
	E 3262	LE 212								
			G	NA 12	25782 cm³	48V	550-580 kW	748-789 PS	£ 12.0	 157
	42 089 600	Cylinder diameter: 132; KH: 78.5; MT: -28; MØ: 90.3; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR → 80 01265 1 0 ...								
	42 090 600	Cylinder diameter: 132; KH: 78.5; MT: -25.3; MØ: 86.4; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR → 80 01265 1 0 ...								
	80 01265 1 0 000	Ø132; STD; set: 1; [T15 G6 CK 3.5] [M CR 2.5] [DSF CR 3.5]								
	89 955 110	N - Wet cylinder liner; finished; A=149.5 C=163.3 L=262 H=10.06								
	MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9					81-25112	IN/EX; 15.03/ x 9 x 66.5 G2, additional groove on the diameter of the valve stem seals		
	92-25025	EX; 44.043 x 35.7 x 7.8; G4; 30°								
	92-25024	IN; 46.043 x 37.3 x 7.8; G5; 30°								

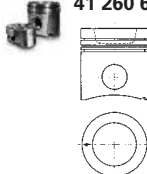
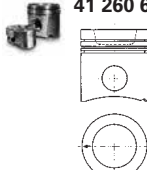
29132										
	E 3262	LE 232								
			G	NA 12	25782 cm³	48V	450-580 kW	612-789 PS	£ 12.0	 157
	42 089 600	Cylinder diameter: 132; KH: 78.5; MT: -28; MØ: 90.3; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR								
	42 090 600	Cylinder diameter: 132; KH: 78.5; MT: -25.3; MØ: 86.4; GL: 125; piston pin: 55x99; number of piston rings: 3 RTK, KBB T15 3.5 CK G6 M 2.5 CR DSF 3.5 CR								
	89 955 110	N - Wet cylinder liner; finished; A=149.5 C=163.3 L=262 H=10.06								
	25323	EX; 42 x 9 x 153.7 x I/S - Cr - 30° - VS - 22 - III					MK-9H	valve cotter; number of notches: 3; valve stem diameter: 9		
	25322	IN; 44 x 9 x 153.7 x RA/S - Cr - 30° - 22 - III								
	92-25025	EX; 44.043 x 35.7 x 7.8; G4; 30°					81-25112	IN/EX; 15.03/ x 9 x 66.5 G2, additional groove on the diameter of the valve stem seals		
	92-25024	IN; 46.043 x 37.3 x 7.8; G5; 30°								

M

						Comp. Ratio ε			
	Cyl.		mm	cm³			kW	PS	Pos
GS12R-MPTK	G (LA) 12		170 x 180	49028	48	15.0	700-721	952-980	1
GS12R-PTK	G (LA) 12		170 x 180	49028	48	15.0	632-722	859-982	1
GS16R-MPTK	G (LA) 16		170 x 180	65370	64	15.0	930-959	1264-1304	1
GS16R-PTK	G (LA) 16		170 x 180	65370	64	15.0	845-959	1149-1304	1
GS16R2-MPTK	G (LA) 16		170 x 220	79897	64	15.0	1000-1031	1360-1402	1
GS16R2-PTK	G (LA) 16		170 x 220	79897	64	15.0	1031-1563	1402-2125	1
GS6R-MPTK	G (LA) 6		170 x 180	24514	24	15.0	305-368	415-500	1
GS6R-PTK	G (LA) 6		170 x 180	24514	24	15.0	315-363	428-494	1
GS6R2-MPTK	G (LA) 6		170 x 220	29961	24	13.9	315-394	428-536	1
GS6R2-PTK	G (LA) 6		170 x 220	29961	24	11.0	394	536	1

1		170										
	GS12R-MPTK	G	LA	12	49028 cm³	48V	700-721 kW	952-980 PS	£ 15.0		180	
	GS12R-PTK	G	LA	12	49028 cm³	48V	632-722 kW	859-982 PS	£ 15.0		180	
	GS16R-MPTK	G	LA	16	65370 cm³	64V	930-959 kW	1264-1304 PS	£ 15.0		180	
	GS16R-PTK	G	LA	16	65370 cm³	64V	845-959 kW	1149-1304 PS	£ 15.0		180	
	GS16R2-MPTK	G	LA	16	79897 cm³	64V	1000-1031 k W	1360-1402 PS	£ 15.0		220	
	GS16R2-PTK	G	LA	16	79897 cm³	64V	1031-1563 k W	1402-2125 PS	£ 15.0		220	
	GS6R-MPTK	G	LA	6	24514 cm³	24V	305-368 kW	415-500 PS	£ 15.0		180	
	GS6R-PTK	G	LA	6	24514 cm³	24V	315-363 kW	428-494 PS	£ 15.0		180	
	GS6R2-MPTK	G	LA	6	29961 cm³	24V	315-394 kW	428-536 PS	£ 13.9		220	
	GS6R2-PTK	G	LA	6	29961 cm³	24V	394 kW	536 PS	£ 11.0		220	
	829901	IN/EX; 56.95 x 10 x 205 x RA/S - Cr - 30° - VS - 15 - III										
	92-75000	60.08 x 49 x 8; ; 25°										
			81-75002	IN/EX; 18.03/ x 9.8 x 100 G2								

				Cyl.	mm	cm ³		Comp. Ratio ε	kW	PS	Pos
E 3042 D	G	(LA) 12	130 x 142	22617							6
E 3042 L	G	(LA) 12	130 x 142	22617	48	13,5:1					7
E 3042 LH	G	(LA) 12	130 x 142	22617		13,5:1					8
E 3042 Z	G	(LA) 12	130 x 142	22617		13,5:1					8
E 3042 ZH	G	(LA) 12	130 x 142	22617		13,5:1					8
E 3066 Z8	G	6	130 x 155	12344							9
E2876DN	G	1	128 x 166	12816		10,0:1	140	190			1
E2876DN	G	1	128 x 166	12816		12,0:1	150	204			2
E2876NM	G	1	128 x 166	12816		10,0:1	140	190			3
E2876NM	G	1	128 x 166	12816		12,0:1	150	204			2
G 8V 183A	G	1	128 x 142	14618		12,0:1	255	347			4
G12V 183A	G	1	128 x 142	14618		12,0:1	390	530			5

1		128							
E2876DN		G	1	12816 cm³	140 kW	190 PS	ε 10,0:1	166	
	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3 RTK T15 4 CK G6 M 3 CR G3 DSF 4 CR → 80 01100 1 0 ...							
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]							
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]							
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]							
	89 186 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1							
	89 914 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 891., Plasma-coated water jacket							
	78 587 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 45.810 / 3.478 St/B/G 78 587 614 0,25 / 78 587 624 0,50							
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75 , The upper shell is marked with 'SPUTTER'.							
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application							
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50							
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A							
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked							
	20 0502 28760	fly wheel flange diameter: 113							
	20 0302 28661	exclusive cylinder liner							
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III					81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove	
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III					81-25102	EX; 18/ x 12.02 x 56 G2	
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III					81-25101	IN; 18/ x 12.02 x 59.5 G2	
	92-25018	EX; 53.11 x 43 x 9.5; HWR					81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.	
	92-25019	IN; 61.11 x 49 x 8.8; HWR					81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.	
							81-2538	IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.	
	20 1002 G2866								
	20 1402 28760								
2		128							
E2876DN		G	1	12816 cm³	150 kW	204 PS	ε 12,0:1	166	
E2876NM		G	1	12816 cm³	150 kW	204 PS	ε 12,0:1	166	
	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3 RTK T15 4 CK G6 M 3 CR G3 DSF 4 CR → 80 01100 1 0 ...							
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]							
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]							
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]							
cont...									

	41 260 960	piston: 41260600; cylinder liner: 89186120
	89 186 120 89 914 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1 N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, Plasma-coated water jacket
	78 586 600 78 587 604	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75 [Pair] PASS-L STD Ø 104.000 / 111.000 / 45.810 / 3.478 St/B/G 78 587 614 0,25 / 78 587 624 0,50
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.
	79 444 600 77 682 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application [Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked
	20 0502 28760	fly wheel flange diameter: 113
	20 0302 28661	exclusive cylinder liner
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25018 92-25019	EX; 53.11 x 43 x 9.5; HWR IN; 61.11 x 49 x 8.8; HWR
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25102	EX; 18/ x 12.02 x 56 G2
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	20 1002 G2866	
	20 1402 28760	

3

 128

	E2876NM	G	1	12816 cm³	140 kW	190 PS	£ 10,0:1	166
	41 260 600	Cylinder diameter: 128; KH: 78.65; MT: -26.6; MØ: 93; GL: 133.65; piston pin: 50x107; number of piston rings: 3						
		RTK						
		T15	4	CK	G6			
		M	3	CR	G3			
		DSF	4	CR				
		→ 80 01100 1 0 ...						
	80 00155 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 3.5] [M 3] [DSF CR 5]						
	80 00300 1 0 000	Ø128; STD; set: 1; [T15 G6 CR 4] [M 3] [DSF CR 4]						
	80 01100 1 0 000	Ø128; STD; set: 1; [T15 G6 CK 4] [M G3 CR 3] [DSF CR 4]						
	89 186 120 89 914 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1 N - Wet cylinder liner; finished; A=144.5 C=153.8 L=270 H+F=10.07+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 891., Plasma-coated water jacket						

cont...

	78 587 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 45.810 / 3.478 St/B/G 78 587 614 0,25 / 78 587 624 0,50						
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.						
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application						
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50						
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A						
	20 0602 G2876	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 50.06; Width big end: 45.85; Width small end: 39; trapezoidal connecting rod; cracked						
	20 0502 28760	fly wheel flange diameter: 113						
	20 0302 28661	exclusive cylinder liner						
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III			81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled!! Identification is not possible according to the engine number.		
	25324	EX; 51 x 12 x 142.5 x RA/S - Cr - 30° - 1 - III			81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove		
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III			81-25102	EX; 18/ x 12.02 x 56 G2		
	92-25018	EX; 53.11 x 43 x 9.5; HWR			81-25101	IN; 18/ x 12.02 x 59.5 G2		
	92-25019	IN; 61.11 x 49 x 8.8; HWR			81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.		
	20 1002 G2866							
	20 1402 28760							
4		128						
	G 8V 183A	G	1	14618 cm³	255 kW	347 PS	ε 12,0:1	 142
	99 803 700	Cylinder diameter: 128; KH: 80.35; MT: -24; MØ: 92; GL: 125.35; piston pin: 46x105; number of piston rings: 3 RTK, KBB T6 3 MO G6 M 3 CR G3 DSF 4 CR → 80 00195 1 0 ...						
								
								
	80 00195 1 0 000	Ø128; 2.00; set: 1; [T6 G6 MO 3] [M G3 IWU CR 3] [DSF CR 4]						
	89 389 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.						
	89 389 810	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.						
	78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00						
	78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.						
	78 921 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; HL STD Ø 104.000 / 111.000 / 36.000 / 3.472 St/B/S 78 921 610 0,25, The lower shell is marked with 'SPUTTER'.						
	79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application						

cont...

77 249 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.472 St/B/S; HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 77 249 610 0,25, The lower shell is marked with 'SPUTTER'.		
87 348 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B		
87 385 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
 20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked		
 20 0503 44201	fly wheel flange diameter: 113		
 20 0303 44200	exclusive cylinder liner		
 16150	EX; 51 x 12 x 142.5 x RA/S - Cr - 45° - 5 - III	 81-16100	IN/EX; 18.03/ x 12 x 67 G2
 16202	IN; 58.9 x 12 x 142.5 x RA/S - Cr - 20° - 5 - III	 92-16126 92-16150	EX; 53.11 x 43 x 9.15; G1; 45° IN; 60.11 x 49.3 x 8.4; G1; 30°
5	 128		
 G12V 183A	G	1	14618 cm³ 390 kW 530 PS € 12,0:1 142
 99 803 700	Cylinder diameter: 128; KH: 80.35; MT: -24; MØ: 92; GL: 125.35; piston pin: 46x105; number of piston rings: 3 RTK, KBB T6 3 MO G6 M 3 CR G3 DSF 4 CR → 80 00195 1 0 ...		
 80 00195 1 0 000	Ø128; 2.00; set: 1; [T6 G6 MO 3] [M G3 IWU CR 3] [DSF CR 4]		
 89 389 110	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.		
89 389 810	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1, For gas, marine, railway and stationary applications and when using alternative fuels, use only together with our special sealing ring set 50 007 890.		
 78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00		
78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.		
78 921 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; HL STD Ø 104.000 / 111.000 / 36.000 / 3.472 St/B/S 78 921 610 0,25, The lower shell is marked with 'SPUTTER'.		
79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application		
77 250 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.472 St/B/S; HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 77 250 610 0,25, The lower shell is marked with 'SPUTTER'.		
87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B		
87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
 20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked		
 20 0303 44400	exclusive cylinder liner		
 16150	EX; 51 x 12 x 142.5 x RA/S - Cr - 45° - 5 - III	 81-16100	IN/EX; 18.03/ x 12 x 67 G2
 16202	IN; 58.9 x 12 x 142.5 x RA/S - Cr - 20° - 5 - III	 92-16126 92-16150	EX; 53.11 x 43 x 9.15; G1; 45° IN; 60.11 x 49.3 x 8.4; G1; 30°

6		 130			
		E 3042 D		G LA 12 22617 cm³	
		41 791 600 Cylinder diameter: 130; KH: 80.7; MT: -25.07; MØ: 92.96; GL: 125.7; piston pin: 46x105; number of piston rings: 3 RTK T6 3 CK G6 M 3 CR G3 DSF 4 CK → 80 01232 1 0 ...			
		80 01232 1 0 000 Ø130; STD; set: 1; [T6 G6 IF CK 3] [M G3 CR 3] [DSF CK 4]			
		89 396 120 N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1			
		78 693 600 [Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1 78 693 610 0,25 / 78 693 620 0,50 / 78 693 630 0,75 / 78 693 640 1,00			
		78 694 604 [Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 78 694 614 0,25 / 78 694 624 0,50 / 78 694 634 0,75 / 78 694 644 1,00			
		78 897 600 [Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1 78 897 605 0,10 / 78 897 610 0,25 / 78 897 620 0,50 / 78 897 630 0,75 / 78 897 640 1,00, The upper shell is marked with 'SPUTTER'.			
		79 443 600 [Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application			
		87 346 690 [Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B			
		87 366 600 [Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A			
		87 397 604 [Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G 87 397 614 0,25 / 87 397 624 0,50			
		20 0602 G2801 length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked			
		20 0302 28420 exclusive cylinder liner			
		20 0802 G2828 - V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug			
		25311 EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		 81-25103 EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove.Which version is present can only be determined if the valve guide is dismantled!!identification is not possible according to the engine number.	
		25310 IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III		81-25113 EX; 18/ x 12.01 x 70 G2, Long outer oil groove	
		92-25018 EX; 53.11 x 43 x 9.5; HWR		81-25101 IN; 18/ x 12.02 x 59.5 G2	
		92-25019 IN; 61.11 x 49 x 8.8; HWR		81-2536 IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.	

M

7		 130							
 E 3042 L		G LA 12 22617 cm ³ 48V				£ 13,5:1		 142	
	41 883 600	Cylinder diameter: 130; KH: 80.7; MT: -26.2; MØ: 74.4; GL: 125.7; piston pin: 46x105; number of piston rings: 3 RTK T6 3 CK G6 M 3 CR G3 DSF 4 CK → 80 01232 1 0 ...							
	42 176 600	Cylinder diameter: 130; KH: 80.7; MT: -32; MØ: 72.3; GL: 125.7; piston pin: 46x105; number of piston rings: 3 RTK T6 3 CK G6 M 3 CR G3 DSF 4 CK → 80 01232 1 0 ...							
									
	80 01232 1 0 000	Ø130; STD; set: 1; [T6 G6 IF CK 3] [M G3 CR 3] [DSF CK 4]							
cont...									

cont...

	89 396 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1			
		78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1		
		78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G		
		78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1		
		79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application		
		87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B		
		87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
		87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G		
			87 397 614 0,25 / 87 397 624 0,50		
		20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked		
		20 0302 28420	exclusive cylinder liner		
		20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug		
		20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug		
		20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug		
		25311	EX; 51 x 12 x 142.5 x l/S - Cr - 30° - VS - 1 - III		
				81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
M		25310	IN; 58 x 12 x 142.5 x l/S - Cr - 30° - VS - 1 - III		
		92-25018	EX; 53.11 x 43 x 9.5; HWR		
		92-25019	IN; 61.11 x 49 x 8.8; HWR		
				81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
				81-25101	IN; 18/ x 12.02 x 59.5 G2
				81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
8		130			
		E 3042 LH	G	LA	12 22617 cm³
		E 3042 Z	G	LA	12 22617 cm³
		E 3042 ZH	G	LA	12 22617 cm³
		41 883 600	Cylinder diameter: 130; KH: 80.7; MT: -26.2; MØ: 74.4; GL: 125.7; piston pin: 46x105; number of piston rings: 3		
			RTK		
			T6	3	CK G6
			M	3	CR G3
			DSF	4	CK
			→ 80 01232 1 0 ...		
		80 01232 1 0 000	Ø130; STD; set: 1; [T6 G6 IF CK 3] [M G3 CR 3] [DSF CK 4]		
		89 396 120	N - Wet cylinder liner; finished; A=144.5 C=153.8 L=253 H+F=9.92+1		
		78 693 600	[Pair] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1		
		78 694 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G		
		78 897 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S; PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/G1		
		79 443 600	[Pair] PL STD Ø 90.000 / 95.000 / 31.000 / 2.473 St/B/S, SPUTTER: upper and lower, gas application		
		87 346 690	[Set] PL-B SEMI Ø 46.000 / 50.600 / 38.700 / St/B		
		87 366 600	[Set] NW-L STD Ø 69.940 / 76.000 / 35.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A		
		87 397 604	[Set] HL STD Ø 104.000 / 111.000 / 30.500 / 3.472 St/B/G1; PASS-L STD Ø 104.000 / 111.000 / 37.810 / 3.474 St/B/G		
			87 397 614 0,25 / 87 397 624 0,50		

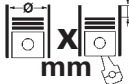
cont...

	20 0602 G2801	length: 256; Large connecting rod eye bore diameter: 95; Small connecting rod eye diameter: 46; Width big end: 33; Width small end: 39; trapezoidal connecting rod; cracked
	20 0302 28420	exclusive cylinder liner
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
9	 130	
	E 3066 Z8	G 6 12344 cm ³ 155
	78 586 600	[Pair] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 78 586 605 0,10 / 78 586 610 0,25 / 78 586 620 0,50 / 78 586 630 0,75
	78 587 604	[Pair] PASS-L STD Ø 104.000 / 111.000 / 45.810 / 3.478 St/B/G 78 587 614 0,25 / 78 587 624 0,50
	79 237 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.478 St/B/G1; PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S 79 237 610 0,25 / 79 237 620 0,50 / 79 237 630 0,75, The upper shell is marked with 'SPUTTER'.
	79 261 600	[Pair] AS STD Ø 114.750 / 137.650 // 3.400 St/A 79 261 610 0,40 / 79 261 620 0,80
	79 444 600	[Pair] PL STD Ø 90.000 / 95.000 / 36.200 / 2.479 St/B/S, SPUTTER: upper and lower, gas application
	77 682 600	[Set] HL STD Ø 104.000 / 111.000 / 36.000 / 3.478 St/B/G1 77 682 610 0,25 / 77 682 620 0,50
	77 682 700	[Set] HL STD Ø 104.000 / 111.500 / 36.000 / 3.728 St/B/G1 77 682 710 0,25, outside oversize + 0,50 mm
	77 812 690	[Set] PL-B SEMI Ø 50.000 / 54.000 / 38.700 / St/B
	87 501 600	[Set] NW-L STD Ø 69.940 / 76.000 / 39.000 / 3.000 St/B; NW-L STD Ø 69.940 / 75.000 / 36.000 / 2.500 St/A; NW-L STD Ø 69.940 / 75.000 / 28.000 / 2.500 St/A
	20 0802 G2820	- V - G - S - - - -; ready-to-install, Use for M14 spark plug
	20 0802 G2828	- V - G - S - - - -; ready-to-install, Recommended for biogas; use for M18 spark plug
	20 0802 G2840	- V - G - S - - - -; ready-to-install, recommended for natural gas, Use for M14 spark plug
	25311	EX; 51 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	25310	IN; 58 x 12 x 142.5 x I/S - Cr - 30° - VS - 1 - III
	92-25018	EX; 53.11 x 43 x 9.5; HWR
	92-25019	IN; 61.11 x 49 x 8.8; HWR
	81-25103	EX; 18/ x 12 x 70 G2, The length of the hydraulic fluid groove varies depending on the cylinder head! 81-25103 has a short hydraulic fluid groove. Which version is present can only be determined if the valve guide is dismantled! Identification is not possible according to the engine number.
	81-25113	EX; 18/ x 12.01 x 70 G2, Long outer oil groove
	81-25101	IN; 18/ x 12.02 x 59.5 G2
	81-2536	IN/EX; 18/ x 12 x 64 G2, Only for use in the intake area for gas applications.
	81-2537	IN/EX; 18.2/ x 12 x 64 G2, Only for use in the intake area for gas applications.

cont...

81-2538

IN/EX; 18.4/ x 12 x 64 G2, Only for use in the intake area for gas applications.

			 Cyl.	 mm	 cm³	 Comp. Ratio ε	 kW	 PS	 Pos	
DC 16 Gas		G (LA)	8	127 x 154	15600	4	12:1		2	
DSC 12 Gas		G (LA)	6	127 x 154	11716	4	12:1		1	
OC 09 Euro 5	101	G (LA)	5	130 x 140	9291	20	12.6	206	280	3
OC 09 Euro 6	104, 105	G (LA)	5	130 x 140	9291	20	12.6	206-250	280-340	5
OC 09 Euro 5	102	G (LA)	5	130 x 140	9291	20	12.6	250	340	4
OC 13 Euro 6	101	G (LA)	6	130 x 160	12742	24	12.6	302	410	6
OC16 071A		G	6	130 x 154	16400	4	12,2:1	333-426	453-580	7

1		127	G LA 6 11716 cm ³ 4V	£ 12:1	154
	DSC 12 Gas				
 	40 335 600	Cylinder diameter: 127; KH: 84.54; MT: -25.4; MØ: 94; GL: 128.54; piston pin: 54x106; number of piston rings: 3 RTK T15 3.5 CK G6 M 2.385 G3 DSF 3.5 CR → 80 00364 1 0 ... , 80 00364 1 1 ...			
	80 00364 1 0 000 80 00364 1 1 000	Ø127; STD; set: 1; [T15 G6 IW CR 3.5] [M IW 2.385] [DSF CR 3.5] Ø127; STD; set: 1; [T15 G6 IW CK 3.5] [M G3 IW 2.385] [DSF CR 3.5]			
	89 541 110	N - Wet cylinder liner; finished; A=139 C=150 L=271.1 H=194.27 Y=8.75			
	79 279 600	[Pair] AS STD Ø 119.050 / 143.700 // 3.430 St/B			
	77 710 600	[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G 77 710 610 0,25 / 77 710 620 0,50 / 77 710 630 0,75			
	77 711 600	[Set] PL STD Ø 87.000 / 91.230 / 45.000 / 2.085 St/B/G 77 711 610 0,25 / 77 711 620 0,50 / 77 711 630 0,75, without oil hole			
	77 722 690	[Set] PL-B SEMI Ø 54.000 / 57.800 / 48.260 / St/B			
	105-35654	EX; 41 x 10 x 171.5 x RA/S - Cr - 29.5° - VS - 23 - III			
	105-35639	IN; 44 x 10 x 171.4 x RA/S - Cr - 19.5° - 23 - III			
	20 1407 12001	ORIGINAL PIERBURG PUMP			

2				127	
		DC 16 G		G LA 8 15600 cm³ 4V	
				£ 12:1  154	
		40 335 600		Cylinder diameter: 127; KH: 84.54; MT: -25.4; MØ: 94; GL: 128.54; piston pin: 54x106; number of piston rings: 3	
				RTK	
		T15 3.5 CK G6			
		M 2.385 G3			
		DSF 3.5 CR			
				→ 80 00364 1 0 ..., 80 00364 1 1 ...	
		80 00364 1 0 000		Ø127; STD; set: 1; [T15 G6 IW CR 3.5] [M IW 2.385] [DSF CR 3.5]	
		80 00364 1 1 000		Ø127; STD; set: 1; [T15 G6 IW CK 3.5] [M G3 IW 2.385] [DSF CR 3.5]	
		79 279 600		[Pair] AS STD Ø 119.050 / 143.700 / / 3.430 St/B	
		77 942 600		[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G	
				77 942 620 0,50	
		77 943 600		[Set] PL STD Ø 93.000 / 97.230 / 40.350 / 2.090 St/B/G	
				77 943 610 0,25 / 77 943 620 0,50	
		20 0907 12008		ring gear; inner Ø: 430; width: 22; Number of teeth: 158	
		20 1007 12100		rocker arm	
		20 1007 12101		rocker arm	

3		130										
	OC 09 Euro 5	101										
	01.2011 →		G	LA	5	9291 cm³	20V	206 kW	280 PS	£ 12.6	 140	
	CITYWIDE, INTERLINK, P I, R II											
	80 01228 1 0 000	Ø130; STD; set: 1; [T11 ST DL 2.5] [M G6 CR 1.75] [DSF DC 4]										
	89 939 110	N - Wet cylinder liner; finished; A=140 C=151 L=270.6 H=194.27										
	79 279 600	[Pair] AS STD Ø 119.050 / 143.700 / / 3.430 St/B										
	79 525 600	[Pair] PL STD Ø 87.000 / 91.230 / 45.000 / 2.085 St/B/G 79 525 610 0,25 / 79 525 620 0,50, with oil-hole										
	77 864 600	[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G 77 864 610 0,25 / 77 864 620 0,50										
	20 0507 90000											
cont...												

	81-34006	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals									
	20 1607 09001	mechanical; plastic; Impeller diameter: 120, High of impeller = 37,5 mm						20 1407 09000	BF oil pump 20 1407 09000 corresponds to the latest series version according to SCANIA article no. 2209508, therefore WITHOUT O-ring on the pump housing!		
								20 1407 09004			
	7.00936.02.0	boost pressure control valve; electro-pneumatic									
4		130									
	OC 09 Euro 5	102									
		01.2011 → 05.2019	G	LA	5	9291 cm ³	20V	250 kW	340 PS	£ 12.6	 140
	P I										
	80 01228 1 0 000	Ø130; STD; set: 1; [T11 ST DL 2.5] [M G6 CR 1.75] [DSF DC 4]									
	89 939 110	N - Wet cylinder liner; finished; A=140 C=151 L=270.6 H=194.27									
	79 279 600	[Pair] AS STD Ø 119.050 / 143.700 // 3.430 St/B									
	79 525 600	[Pair] PL STD Ø 87.000 / 91.230 / 45.000 / 2.085 St/B/G 79 525 610 0,25 / 79 525 620 0,50 , with oil-hole									
	77 864 600	[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G 77 864 610 0,25 / 77 864 620 0,50									
	20 0507 90000										
	20 0907 16000	fly wheel; Outer Ø: 257; inner Ø: 468; width: 85; Number of teeth: 158									
	81-34006	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals						92-34009	EX; 44.08 x 35.5 x 7.8; G6; 30°		
								92-34008	IN; 46.08 x 41 x 7.9; G3; 20°		
	20 1607 09001	mechanical; plastic; Impeller diameter: 120, High of impeller = 37,5 mm						20 1407 09000	BF oil pump 20 1407 09000 corresponds to the latest series version according to SCANIA article no. 2209508, therefore WITHOUT O-ring on the pump housing!		
								20 1407 09004			
	20 1907 14000	length: 394; width: 119; height: 52; weight: 5.3 g									
	7.00936.02.0	boost pressure control valve; electro-pneumatic									
5		130									
	OC 09 Euro 6	104, 105									
		01.2011 →	G	LA	5	9291 cm ³	20V	206-250 kW	280-340 PS	£ 12.6	 140
	CITYWIDE, G II, L, P II, R II										
	80 01228 1 0 000	Ø130; STD; set: 1; [T11 ST DL 2.5] [M G6 CR 1.75] [DSF DC 4]									
	89 939 110	N - Wet cylinder liner; finished; A=140 C=151 L=270.6 H=194.27									
	79 279 600	[Pair] AS STD Ø 119.050 / 143.700 // 3.430 St/B									
	79 525 600	[Pair] PL STD Ø 87.000 / 91.230 / 45.000 / 2.085 St/B/G 79 525 610 0,25 / 79 525 620 0,50 , with oil-hole									
	77 864 600	[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G 77 864 610 0,25 / 77 864 620 0,50									
	20 0507 90000										
	81-34006	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals						92-34009	EX; 44.08 x 35.5 x 7.8; G6; 30°		
								92-34008	IN; 46.08 x 41 x 7.9; G3; 20°		

cont...

cont...

	20 1607 09001	mechanical; plastic; Impeller diameter: 120, High of impeller = 37,5 mm										
				20 1407 09000	BF oil pump 20 1407 09000 corresponds to the latest series version according to SCANIA article no. 2209508, therefore WITHOUT O-ring on the pump housing!							
			20 1407 09004									
	7.12441.12.0											
	7.05717.06.0	recirculating air valve; electrical										
6		130										
	OC 13 Euro 6	101										
		12.2017 →	G	LA	6	12742 cm ³	24V	302 kW	410 PS	£ 12.6	 160	
	G II, P II, R II, S											
	80 01228 1 0 000	Ø130; STD; set: 1; [T11 ST DL 2.5] [M G6 CR 1.75] [DSF DC 4]										
	89 939 110	N - Wet cylinder liner; finished; A=140 C=151 L=270.6 H=194.27										
	89 935 110	N - Wet cylinder liner; finished; A=140 C=151 L=271.17 H=194.27 X=8.85, with fire ring										
	79 279 600	[Pair] AS STD Ø 119.050 / 143.700 / / 3.430 St/B										
	77 710 600	[Set] HL STD Ø 108.000 / 112.200 / 34.300 / 2.065 St/B/G 77 710 610 0,25 / 77 710 620 0,50 / 77 710 630 0,75										
	77 738 600	[Set] NW-L STD Ø 84.950 / 89.000 / 35.000 / 2.000 St/B										
	77 971 600	[Set] PL STD Ø 93.000 / 97.230 / 43.000 / 2.085 St/B/G 77 971 610 0,25 / 77 971 620 0,50										
	20 0607 DC130	length: 255; Large connecting rod eye bore diameter: 97.2; Small connecting rod eye diameter: 58; Width big end: 53.7; Width small end: 47; stepped connecting rod; sawed										
	20 0507 13000											
	20 0907 DC130	fly wheel; Outer Ø: 470; inner Ø: 257; width: 84										
	81-34006	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals		92-34009	EX; 44.08 x 35.5 x 7.8; G6; 30°							
				92-34008	IN; 46.08 x 41 x 7.9; G3; 20°							
	20 1007 12008											
	20 1607 13001	mechanical; plastic; Impeller diameter: 120, High of impeller = 41,1 mm		20 1407 13000	ORIGINAL PIERBURG PUMP							
				20 1407 13001	ORIGINAL PIERBURG PUMP							
	7.12441.12.0											
7		130										
	OC16 071A		G	6	16400 cm ³	4V	333-426 kW	453-580 PS	£ 12,2:1	 154		
	80 01228 1 0 000	Ø130; STD; set: 1; [T11 ST DL 2.5] [M G6 CR 1.75] [DSF DC 4]										
	89 935 110	N - Wet cylinder liner; finished; A=140 C=151 L=271.17 H=194.27 X=8.85, with fire ring										
	81-34005	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals, Valve guides possess lubrication channels throughout the bore										
	81-34006	IN/EX; 16.01/ x 10 x 73 G2, additional groove on the diameter of the valve stem seals										
	20 1007 16002	right										
	20 1007 16003	left										
	20 1407 16002	Pump is used in: HYUNDAI: HX900L BELAZ: 75454 BUNKERHÄCKSLER: Chäfer										
	20 1907 14003	length: 400; width: 160; height: 52										

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ 
DEUTZ		
0116 8818	KK-10H	
0292 9724	20050510156	1 (→ 23)
0293 1396		
0293 1430		
0293 1444		
0293 1446		
0293 1466		
0420 0194	20010510150	1 (→ 23), 2 (→ 23)
0422 0142	22210	1 (→ 23), 2 (→ 23)
0422 0708	81-22111	1 (→ 23), 2 (→ 23)
0422 1553	89 443 110	1 (→ 23), 2 (→ 23)
0422 1744	20010510150	1 (→ 23), 2 (→ 23)
0422 5353	22321	1 (→ 23), 2 (→ 23)
0422 6412	22210	1 (→ 23), 2 (→ 23)
0422 6518	89 443 110	1 (→ 23), 2 (→ 23)
0422 6562	22321	1 (→ 23), 2 (→ 23)
0422 7079	89 443 110	1 (→ 23), 2 (→ 23)
0425 7888	7.01268.03.0	
0426 6334	94 728 600	1 (→ 23), 2 (→ 23)
0426 7453	22321	1 (→ 23), 2 (→ 23)
0426 7455	22210	1 (→ 23), 2 (→ 23)
0426 8370	22321	1 (→ 23), 2 (→ 23)
0426 8373	22210	1 (→ 23), 2 (→ 23)
1216 4698	MK-9H	
9136/00	94 728 600	1 (→ 23), 2 (→ 23)
DOOSAN		
150117-00026	89 935 110	
451144	79 279 600	
502760	80 00364 1 0 000	
509122	77 710 610	
509122	77 864 610	
509123	77 710 620	
509123	77 864 620	
512037	105-35639	
512045	89 541 110	
514123	77 710 600	
516496	77 864 600	
ENERGIE 2G		
31010-00077	79 261 600	10 (→ 34), 11 (→ 35), 12 (→ 36)
31010-00093	200602G2801	3 (→ 28), 4 (→ 29), 6 (→ 30), 7 (→ 31), 9 (→ 33)
31010-00095	200602G2876	1 (→ 28), 5 (→ 30), 10 (→ 34), 11 (→ 35), 12 (→ 36)
31010-00421	20030228661	1 (→ 28), 5 (→ 30), 10 (→ 34), 11 (→ 35), 12 (→ 36)
31010-00422	20140344400	3 (→ 28), 9 (→ 33)
31010-00730	20030228420	4 (→ 29), 6 (→ 30), 7 (→ 31), 8 (→ 32)
31010-00901-AT	20050228760	1 (→ 28), 5 (→ 30), 10 (→ 34), 11 (→ 35), 12 (→ 36)
31010-00934	201002G2866	1 (→ 28), 5 (→ 30), 10 (→ 34), 11 (→ 35), 12 (→ 36)
31010-10306	41 498 600	11 (→ 35), 12 (→ 36)
31030-00125	94 943 600	6 (→ 30)
31030-00157	41 000 600	7 (→ 31), 8 (→ 32), 9 (→ 33)
61014-03060	77 682 600	10 (→ 34), 11 (→ 35), 12 (→ 36)
71000-00014	79 444 600	1 (→ 28), 5 (→ 30), 10 (→ 34), 11 (→ 35), 12 (→ 36)
IVECO		
2996836	42 352 600	1 (→ 39)
LIEBHERR		
10116008	89 958 110	2 (→ 41), 3 (→ 41)
10119587		
10125680	92-23002	1 (→ 41), 2 (→ 41), 3 (→ 41)
10128065	81-23001	1 (→ 41), 2 (→ 41), 3 (→ 41)
10129346	81-23002	4 (→ 41), 5 (→ 41)
10129365	105-35671	5 (→ 41)
10131700	105-35670	5 (→ 41)
10131894	105-46000	3 (→ 41)
10131985	92-23001	1 (→ 41), 2 (→ 41), 3 (→ 41)
10133117	89 959 110	4 (→ 41), 5 (→ 41)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ )
LIEBHERR		
12453900	89 959 110	4 (→ 41), 5 (→ 41)
740167760	78 693 600	
MAN		
04.10160-9164	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
04.10160-9164	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
04.90300-9025	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
04.90300-9025	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.01284-5113	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
06.01284-5113	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.02094-4511	20140220660	7 (→ 46), 9 (→ 47)
06.02094-4511	20140226760	9 (→ 47)
06.02094-4511	20140226761	8 (→ 46), 9 (→ 47)
06.02099-0380	20140220660	7 (→ 46), 9 (→ 47)
06.02099-0380	20140226760	9 (→ 47)
06.02099-0380	20140226761	8 (→ 46), 9 (→ 47)
06.03216-6204	20140220660	7 (→ 46), 9 (→ 47)
06.03216-6204	20140226760	9 (→ 47)
06.03216-6204	20140226761	8 (→ 46), 9 (→ 47)
06.03216-8204	20140220660	7 (→ 46), 9 (→ 47)
06.03216-8204	20140226760	9 (→ 47)
06.03216-8204	20140226761	8 (→ 46), 9 (→ 47)
06.11271-6405	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
06.11271-6405	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.15015-0411	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
06.15015-0411	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.16049-0024	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
06.16049-0024	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.21641-0604	20140220660	7 (→ 46), 9 (→ 47)
06.21641-0604	20140226760	9 (→ 47)
06.21641-0604	20140226761	8 (→ 46), 9 (→ 47)
06.21649-0003	20140220660	7 (→ 46), 9 (→ 47)
06.21649-0003	20140226760	9 (→ 47)
06.21649-0003	20140226761	8 (→ 46), 9 (→ 47)
06.56331-0251	20140220660	7 (→ 46), 9 (→ 47)
06.56331-0251	20140226760	9 (→ 47)
06.56331-0251	20140226761	8 (→ 46), 9 (→ 47)
06.56333-4245	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
06.56333-4245	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
06.56936-1150	20140220660	7 (→ 46), 9 (→ 47)
06.56936-1150	20140226760	9 (→ 47)
06.56936-1150	20140226761	8 (→ 46), 9 (→ 47)
06.56936-1328	20140226760	9 (→ 47)
06.56936-1328	20140226761	8 (→ 46), 9 (→ 47)
50.02500-6002	41 260 600	14 (→ 51), 19 (→ 57)
50.02500-6008	41 498 600	15 (→ 53)
50.03100-6001	200802G2840	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
50.04101-0002	25324	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01100-6153	20030225380	13 (→ 50)
51.01100-6164	20030228420	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01100-6283		
51.01101-6802	20030225380	13 (→ 50)
51.01101-6906	20030228420	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01101-6960		
51.01102-6035	20030225380	13 (→ 50)
51.01102-6039	20030228420	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01102-6056		
51.01102-6232	20030228661	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.01102-6235	20030228420	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01102-6270	20030228661	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.01102-6289		
51.01102-6333		
51.01102-6334		
51.01102-6398		
51.01110-0711	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-0712		
51.01110-0729	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-0730		

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ 
MAN		
51.01110-0747	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-0748		
51.01110-0749	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-0750		
51.01110-0751	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-0752		
51.01110-6372	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6373	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6374	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6375	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6376	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6407	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6408	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6409	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6410	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6411	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6413	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6415	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6416	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6417	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6418	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01110-6503	77 743 600	1 (→ 43), 2 (→ 43), 3 (→ 44)
51.01110-6503	77 744 600	4 (→ 44), 5 (→ 45)
51.01110-6503	79 234 600	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01111-0719	78 587 604	
51.01111-0720		
51.01111-0747	78 587 614	
51.01111-0748		
51.01111-0749	78 587 624	
51.01111-0750		
51.01111-0773	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-0774		
51.01111-0777	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-0778		
51.01111-0779	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-0780		
51.01111-6019	78 587 604	
51.01111-6372		
51.01111-6374	78 587 614	
51.01111-6375	78 587 624	
51.01111-6380	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6395		
51.01111-6397	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6398	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6407	78 587 604	
51.01111-6409	78 587 614	
51.01111-6410	78 587 624	
51.01111-6413	78 587 604	
51.01111-6416	78 587 614	
51.01111-6417	78 587 624	
51.01111-6421	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6423	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6424	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6431	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6433	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6434	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6467	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6524		
51.01111-6526	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6527	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6536	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6538	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01111-6539	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01113-6001	79 234 600	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6010	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6012	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6013	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6014	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)

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REF-No.	ITEM No.	Pos (→ )
MAN		
51.01113-6015	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6019	79 234 610	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6029	79 234 600	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6031	79 234 610	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6032	79 234 620	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6035	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6037	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6038	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6039	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6042	79 234 600	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6044	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6045	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6046	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6051	79 234 610	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6052	79 234 620	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.01113-6066	79 341 600	20 (→ 59)
51.01113-6072	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6073		
51.01113-6074	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6075	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6076	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6077	78 586 630	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6081	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6082		
51.01113-6090	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6091	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6092	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6127	78 586 605	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6128	78 586 610	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6129	78 586 620	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6173	78 586 600	8 (→ 46), 9 (→ 47) ... 18 (→ 56), 19 (→ 57)
51.01113-6175		
51.01113-6198		
51.01113-6199		
51.01114-4048	79 235 600	6 (→ 45), 7 (→ 46)
51.01114-6010	78 587 604	
51.01114-6013	78 587 614	
51.01114-6014	78 587 624	
51.01114-6019	78 587 604	
51.01114-6021	78 587 614	
51.01114-6022	78 587 624	
51.01114-6049	77 586 600	6 (→ 45)
51.01114-6049	77 587 600	7 (→ 46)
51.01114-6049	79 235 600	6 (→ 45), 7 (→ 46)
51.01114-6058	79 235 610	6 (→ 45), 7 (→ 46)
51.01114-6072	79 235 600	6 (→ 45), 7 (→ 46)
51.01114-6074	79 235 610	6 (→ 45), 7 (→ 46)
51.01114-6078	79 235 600	6 (→ 45), 7 (→ 46)
51.01114-6080	79 235 610	6 (→ 45), 7 (→ 46)
51.01114-6087	78 694 614	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01114-6089	78 694 634	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01114-6090	78 694 644	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.01114-6091	79 235 600	6 (→ 45), 7 (→ 46)
51.01114-6094	79 235 610	6 (→ 45), 7 (→ 46)
51.01114-6110	79 261 600	8 (→ 46), 9 (→ 47) ... 19 (→ 57), 20 (→ 59)
51.01114-6111	79 261 610	8 (→ 46), 9 (→ 47) ... 19 (→ 57), 20 (→ 59)
51.01114-6112	79 261 620	8 (→ 46), 9 (→ 47) ... 19 (→ 57), 20 (→ 59)
51.01114-6116	79 261 600	8 (→ 46), 9 (→ 47) ... 19 (→ 57), 20 (→ 59)
51.01201-0305	89 092 110	
51.01201-0318	89 470 110	1 (→ 43), 3 (→ 44) ... 6 (→ 45), 7 (→ 46)
51.01201-0321	89 453 110	1 (→ 43), 4 (→ 44), 5 (→ 45), 6 (→ 45), 7 (→ 46)
51.01201-0378	89 470 110	1 (→ 43), 3 (→ 44) ... 6 (→ 45), 7 (→ 46)
51.01201-0379	89 453 110	1 (→ 43), 4 (→ 44), 5 (→ 45), 6 (→ 45), 7 (→ 46)
51.01201-0386	89 470 110	1 (→ 43), 3 (→ 44) ... 6 (→ 45), 7 (→ 46)
51.01201-0400	89 453 110	1 (→ 43), 4 (→ 44), 5 (→ 45), 6 (→ 45), 7 (→ 46)
51.01201-0456	89 856 111	8 (→ 46), 9 (→ 47)
51.01201-0459		
51.01201-0465	89 955 110	25 (→ 65), 26 (→ 65), 28 (→ 66), 29 (→ 66)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ 
MAN		
51.01201-0467	89 092 110	
51.01201-0477	89 856 111	8 (→ 46), 9 (→ 47)
51.02100-6018	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02100-6022	20050208362	4 (→ 44), 5 (→ 45)
51.02100-6028	20050208343	1 (→ 43), 2 (→ 43), 3 (→ 44)
51.02100-6058	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02100-6068	20050208362	4 (→ 44), 5 (→ 45)
51.02100-9022		
51.02100-9028	20050208343	1 (→ 43), 2 (→ 43), 3 (→ 44)
51.02101-0536	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02101-0573		
51.02101-0581		
51.02101-0608	20050208360	4 (→ 44), 5 (→ 45)
51.02101-0632	20050226760	8 (→ 46), 9 (→ 47)
51.02101-0640	20050208343	1 (→ 43), 2 (→ 43), 3 (→ 44)
51.02101-0801	20050226760	8 (→ 46), 9 (→ 47)
51.02101-6021	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02101-6022	20050208360	4 (→ 44), 5 (→ 45)
51.02101-6038	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02101-6044		
51.02101-6050	20050208360	4 (→ 44), 5 (→ 45)
51.02101-6056		
51.02101-6082	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02101-6090	20050208360	4 (→ 44), 5 (→ 45)
51.02101-6101	20050228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02101-7706		
51.02400-6011	200602G2876	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02400-6012		
51.02400-6015	20060208261	6 (→ 45), 7 (→ 46)
51.02400-6034	200602G2801	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02400-6049	200602G2876	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02400-6050		
51.02400-6051		
51.02400-6121	20060226760	8 (→ 46), 9 (→ 47)
51.02400-6151		
51.02400-6156	20060226761	8 (→ 46), 9 (→ 47)
51.02400-6176		
51.02401-6221	20060208261	6 (→ 45), 7 (→ 46)
51.02401-6242	200602G2876	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02401-6243		
51.02401-6267	20060208261	6 (→ 45), 7 (→ 46)
51.02401-6277		
51.02401-6288	200602G2876	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-0470	78 897 630	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-0491	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-0638	79 237 610	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6481	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-6483	79 236 610	6 (→ 45), 7 (→ 46)
51.02410-6484	79 236 620	6 (→ 45), 7 (→ 46)
51.02410-6488	78 897 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6491	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-6493	79 236 610	6 (→ 45), 7 (→ 46)
51.02410-6494	79 236 620	6 (→ 45), 7 (→ 46)
51.02410-6509	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-6510		
51.02410-6516	78 897 610	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6517	78 897 620	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6518	78 897 630	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6519	78 897 640	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6521	79 236 610	6 (→ 45), 7 (→ 46)
51.02410-6522	79 236 620	6 (→ 45), 7 (→ 46)
51.02410-6526	79 236 610	6 (→ 45), 7 (→ 46)
51.02410-6527	79 236 620	6 (→ 45), 7 (→ 46)
51.02410-6551	78 897 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6553	78 897 610	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6554	78 897 620	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6555	78 897 630	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6556	78 897 640	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02410-6606	79 237 600	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)

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REF-No.	ITEM No.	Pos (→ )
MAN		
51.02410-6622	79 237 610	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6632	79 237 600	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6634	79 237 610	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6635	79 237 620	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6636	79 237 630	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6638	79 333 600	1 (→ 43), 2 (→ 43), 3 (→ 44), 4 (→ 44), 5 (→ 45)
51.02410-6639		
51.02410-6655	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-6658	79 237 600	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6662	77 588 600	6 (→ 45)
51.02410-6662	77 589 600	7 (→ 46)
51.02410-6662	79 236 600	6 (→ 45), 7 (→ 46)
51.02410-6668	79 333 610	1 (→ 43), 2 (→ 43), 3 (→ 44), 4 (→ 44), 5 (→ 45)
51.02410-6672	79 237 600	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6674	79 405 600	8 (→ 46), 9 (→ 47)
51.02410-6683	79 237 610	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6684	79 237 620	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.02410-6692	37 280 600	8 (→ 46), 9 (→ 47)
51.02410-6692	79 405 600	8 (→ 46), 9 (→ 47)
51.02410-6692	79 600 600	8 (→ 46), 9 (→ 47)
51.02410-6698	37 280 600	8 (→ 46), 9 (→ 47)
51.02410-6698	79 405 600	8 (→ 46), 9 (→ 47)
51.02410-6698	79 600 600	8 (→ 46), 9 (→ 47)
51.02410-6700	37 280 610	8 (→ 46), 9 (→ 47)
51.02410-6700	79 405 610	8 (→ 46), 9 (→ 47)
51.02410-6700	79 600 610	8 (→ 46), 9 (→ 47)
51.02410-6701	37 280 620	8 (→ 46), 9 (→ 47)
51.02410-6701	79 405 620	8 (→ 46), 9 (→ 47)
51.02410-6701	79 600 620	8 (→ 46), 9 (→ 47)
51.02410-6767	79 405 600	8 (→ 46), 9 (→ 47)
51.02410-6774	77 879 600	8 (→ 46), 9 (→ 47)
51.02410-6785	79 405 600	8 (→ 46), 9 (→ 47)
51.02500-6046	40 208 600	11 (→ 48), 12 (→ 49), 21 (→ 60), 23 (→ 62)
51.02500-6157	41 000 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.02500-6232	41 259 600	1 (→ 43), 2 (→ 43), 3 (→ 44), 4 (→ 44)
51.02500-6353	41 260 960	14 (→ 51), 19 (→ 57)
51.02500-6356	41 000 960	11 (→ 48), 12 (→ 49), 13 (→ 50), 24 (→ 64)
51.02500-6363	42 089 600	26 (→ 65), 27 (→ 66), 28 (→ 66), 29 (→ 66)
51.02500-6364	42 090 600	26 (→ 65), 27 (→ 66), 28 (→ 66), 29 (→ 66)
51.02500-6369	42 089 600	26 (→ 65), 27 (→ 66), 28 (→ 66), 29 (→ 66)
51.02500-6372	42 090 600	26 (→ 65), 27 (→ 66), 28 (→ 66), 29 (→ 66)
51.02500-6422	41 259 600	1 (→ 43), 2 (→ 43), 3 (→ 44), 4 (→ 44)
51.02500-6535		
51.02500-6544	42 090 600	26 (→ 65), 27 (→ 66), 28 (→ 66), 29 (→ 66)
51.02500-6554	41 259 600	1 (→ 43), 2 (→ 43), 3 (→ 44), 4 (→ 44)
51.02500-6573		
51.02501-0851	94 943 600	21 (→ 60), 23 (→ 62), 24 (→ 64)
51.02501-0852	94 942 600	21 (→ 60)
51.02501-0868		
51.02501-6089	41 260 600	14 (→ 51), 19 (→ 57)
51.02501-7534	94 942 600	21 (→ 60)
51.02501-7535	94 943 600	21 (→ 60), 23 (→ 62), 24 (→ 64)
51.02503-0661	80 01269 1 0 000	17 (→ 55), 18 (→ 56), 20 (→ 59)
51.02503-0764		
51.02503-0806	80 00300 1 0 000	13 (→ 50), 14 (→ 51), 15 (→ 53), 16 (→ 54), 19 (→ 57)
51.02503-0998	80 01265 1 0 000	26 (→ 65), 28 (→ 66)
51.02503-7002	80 00155 1 0 000	11 (→ 48), 12 (→ 49) ... 22 (→ 61), 23 (→ 62)
51.03100-6140	200802G2840	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03100-6179		
51.03100-6859		
51.03101-6923		
51.03201-0087	81-2536	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-0088		
51.03201-0093	81-2537	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-0098	81-25104	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
51.03201-0102	81-25102	14 (→ 51), 15 (→ 53) ... 20 (→ 59), 21 (→ 60)
51.03201-0103	81-25107	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-0106	81-25105	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)

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REF-No.	ITEM No.	Pos (→ 
MAN		
51.03201-0108	81-25101	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-0115	81-25106	8 (→ 46), 9 (→ 47)
51.03201-0126		
51.03201-0131	81-25112	25 (→ 65), 26 (→ 65), 28 (→ 66), 29 (→ 66)
51.03201-0136		
51.03201-1034	81-2536	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-1035	81-2537	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-1037	81-2538	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03201-1077	81-25106	8 (→ 46), 9 (→ 47)
51.03201-1079		
51.03201-1090		
51.03201-1143	81-25112	25 (→ 65), 26 (→ 65), 28 (→ 66), 29 (→ 66)
51.03201-1152		
51.03203-0182	92-25003	
51.03203-0184		
51.03203-0220		
51.03203-0242	92-25002	
51.03203-0267	92-25004	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03203-0269	92-25005	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.03203-0311	92-25003	
51.03210-1040	81-2536	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.04101-0438	25310	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.04101-0439	25311	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.04101-0607	25322	25 (→ 65), 26 (→ 65), 29 (→ 66)
51.04101-0637	25323	25 (→ 65), 26 (→ 65), 29 (→ 66)
51.04101-0720	25322	25 (→ 65), 26 (→ 65), 29 (→ 66)
51.04101-0721	25323	25 (→ 65), 26 (→ 65), 29 (→ 66)
51.04101-0750		
51.04104-0023	KK-12H	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.04104-0024	KK-10H	12 (→ 49)
51.04104-0034	MK-9H	25 (→ 65), 26 (→ 65), 28 (→ 66), 29 (→ 66)
51.04202-0081	20100225020	17 (→ 55), 18 (→ 56), 20 (→ 59)
51.04202-5034		
51.04202-5036		
51.04401-0787	20100208361	4 (→ 44), 5 (→ 45)
51.04401-6338	201002G2866	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.04401-6371	20100208361	4 (→ 44), 5 (→ 45)
51.04401-6391	20100208341	1 (→ 43), 2 (→ 43)
51.04401-6397	20100208361	4 (→ 44), 5 (→ 45)
51.04401-6421	20100208341	1 (→ 43), 2 (→ 43)
51.04410-0118	87 366 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.04410-0119		
51.04410-0148		
51.04410-0149		
51.05100-6150	20140228000	
51.05100-6188		
51.05100-6189		
51.05100-6191	20140344300	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.05100-6215	20140228000	
51.05100-6250	20140228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.05100-6252		
51.05100-6253	20140344400	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.05100-6260	20140228760	14 (→ 51), 15 (→ 53) ... 19 (→ 57), 20 (→ 59)
51.05100-6262		
51.05100-6279	20140228000	
51.05101-6004	20140228761	14 (→ 51), 15 (→ 53), 16 (→ 54), 19 (→ 57)
51.05101-6006		
51.05101-6008		
51.05102-0085	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
51.05102-0101	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
51.05103-0129	20140220660	7 (→ 46), 9 (→ 47)
51.05103-0132		
51.05103-5036		
51.05103-5037	20140226760	9 (→ 47)
51.05103-5038	20140226761	8 (→ 46), 9 (→ 47)
51.05104-0233	20140220660	7 (→ 46), 9 (→ 47)
51.05104-0233	20140226761	8 (→ 46), 9 (→ 47)
51.05104-0234	20140220660	7 (→ 46), 9 (→ 47)
51.05104-0234	20140226761	8 (→ 46), 9 (→ 47)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ )
MAN		
51.05104-0244	20140226760	9 (→ 47)
51.05104-0245		
51.05104-0246	20140220660	7 (→ 46), 9 (→ 47)
51.05104-0246	20140226761	8 (→ 46), 9 (→ 47)
51.05104-0251	20140220660	7 (→ 46), 9 (→ 47)
51.05104-0251	20140226761	8 (→ 46), 9 (→ 47)
51.05104-0252	20140226760	9 (→ 47)
51.05104-6195	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
51.05104-6196		
51.05104-6197	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
51.05104-6198		
51.05105-0070	20140220660	7 (→ 46), 9 (→ 47)
51.05105-0070	20140226761	8 (→ 46), 9 (→ 47)
51.05105-5000	20140220660	7 (→ 46), 9 (→ 47)
51.05105-5000	20140226761	8 (→ 46), 9 (→ 47)
51.05105-5002	20140226760	9 (→ 47)
51.05207-0010	20140208260	3 (→ 44), 4 (→ 44), 5 (→ 45)
51.05207-0010	20140208340	1 (→ 43), 2 (→ 43), 6 (→ 45)
51.05601-0031	20190225000	17 (→ 55), 18 (→ 56)
51.05601-0047		
51.05601-0060		
51.05601-0068		
51.05601-0106	20190208360	5 (→ 45)
51.05601-0107		
51.05601-0108		
51.05601-0118		
51.05601-0121	20190225000	17 (→ 55), 18 (→ 56)
51.05601-0133	20190228760	17 (→ 55), 18 (→ 56), 20 (→ 59)
51.05601-0138	20190208360	5 (→ 45)
51.05601-0148	20190228760	17 (→ 55), 18 (→ 56), 20 (→ 59)
51.05601-0152	20190208360	5 (→ 45)
51.05601-0166	20190220661	9 (→ 47)
51.05601-0167		
51.05601-0169	20190228420	10 (→ 48), 11 (→ 48) ... 23 (→ 62), 24 (→ 64)
51.05601-0192	20190220661	9 (→ 47)
51.05601-7164	20190228420	10 (→ 48), 11 (→ 48) ... 23 (→ 62), 24 (→ 64)
51.05601-7176	20190220661	9 (→ 47)
51.06500-6426	20160228661	17 (→ 55), 18 (→ 56), 20 (→ 59)
51.06500-6490		
51.06500-6708		
51.06500-9426		
51.08150-0029	7.01268.03.0	18 (→ 56)
51.09413-0004	7.00380.04.0	18 (→ 56)
51.09413-0006		
51.09413-0007	7.00380.11.0	18 (→ 56)
51.09413-0009		
51.09413-0017		
51.09413-0022		
51.09413-6010		
51.09413-6012	7.00380.04.0	18 (→ 56)
51.09413-6036	7.00380.11.0	18 (→ 56)
51.09413-6049		
51.54121-0003	78 709 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
51.54121-0004		
51.54121-6001		
51.54210-0141	20050225001	17 (→ 55), 18 (→ 56)
51.90310-0257	20140220660	7 (→ 46), 9 (→ 47)
51.90310-0257	20140226760	9 (→ 47)
51.90310-0257	20140226761	8 (→ 46), 9 (→ 47)
51.93020-0389	36 099 600	8 (→ 46), 9 (→ 47)
51.93020-0405	36 100 600	8 (→ 46), 9 (→ 47)
64.01113-6001	79 234 610	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
64.01113-6002	79 234 620	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
64.01113-6005	79 234 600	1 (→ 43), 2 (→ 43) ... 6 (→ 45), 7 (→ 46)
64.90490-0050	20140220660	7 (→ 46), 9 (→ 47)
64.90490-0050	20140226760	9 (→ 47)
64.90490-0050	20140226761	8 (→ 46), 9 (→ 47)
64.90490-0065	20140220660	7 (→ 46), 9 (→ 47)
64.90490-0065	20140226760	9 (→ 47)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ 
MAN		
64.90490-0065	20140226761	8 (→ 46), 9 (→ 47)
81.54121-6001	78 709 600	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
81.54121-6002		
93.21014-0030	41 260 600	14 (→ 51), 19 (→ 57)
93.21014-0055	41 791 600	
93.21014-0063		
93.21014-0081	41883600	
93.21014-0082		
93.21114-0061	81-25103	11 (→ 48), 12 (→ 49) ... 23 (→ 62), 24 (→ 64)
93.21167-0040	89 396 120	
MITSUBISHI		
3750403600	829901	1 (→ 68)
MTU		
D93211140061	81-25103	2 (→ 70), 3 (→ 71) ... 8 (→ 75), 9 (→ 76)
D93211140285	81-25113	1 (→ 70), 2 (→ 70) ... 8 (→ 75), 9 (→ 76)
93.21014-0090	42 176 600	7 (→ 74)
SCANIA		
0550480	77 943 600	2 (→ 79)
0550494	79 525 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
10570177	20140712001	1 (→ 79)
1304642	80 00364 1 0 000	1 (→ 79), 2 (→ 79)
1333183	20190714000	4 (→ 80)
1350815	79 279 600	1 (→ 79), 2 (→ 79) ... 5 (→ 80), 6 (→ 81)
1363056	77 710 600	1 (→ 79), 6 (→ 81)
1363056	77 864 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1382183	89 541 110	1 (→ 79)
1400861	20190714000	4 (→ 80)
1403613	77 943 600	2 (→ 79)
1409268	20090716000	4 (→ 80)
1438752	20100712100	2 (→ 79)
1438755	20100712101	2 (→ 79)
1444618	77 711 600	1 (→ 79)
1444619	79 279 600	1 (→ 79), 2 (→ 79) ... 5 (→ 80), 6 (→ 81)
1447060	20100712100	2 (→ 79)
1447065	20100712101	2 (→ 79)
1448933	20190714000	4 (→ 80)
1449203	77 864 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1449203	77 864 610	3 (→ 79), 4 (→ 80), 5 (→ 80)
1461895	89 541 110	1 (→ 79)
1465337	77 710 610	1 (→ 79), 6 (→ 81)
1465338	77 710 620	1 (→ 79), 6 (→ 81)
1465409	20090712008	2 (→ 79)
1465419	20090716000	4 (→ 80)
1484492	89 541 110	1 (→ 79)
1487564	20090716000	4 (→ 80)
1487566	20090712008	2 (→ 79)
1487775	89 541 110	1 (→ 79)
1500108	20140709000	3 (→ 79), 4 (→ 80), 5 (→ 80)
1527913	20090712008	2 (→ 79)
1539450	20090716000	4 (→ 80)
1543688	20190714000	4 (→ 80)
1720083	7.00936.02.0	3 (→ 79), 4 (→ 80)
1723174	80 00364 1 1 000	1 (→ 79), 2 (→ 79)
1729991	77 711 600	1 (→ 79)
1729991	79 525 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1729992	77 943 600	2 (→ 79)
1730312	20140713000	6 (→ 81)
1734508	20100716002	7 (→ 81)
1745175	79 525 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1747749		
1748794	20100712008	6 (→ 81)
1775233	20050790000	3 (→ 79), 4 (→ 80), 5 (→ 80)
1776466	200907DC130	6 (→ 81)
1777779	77 710 610	1 (→ 79), 6 (→ 81)
1777780	77 710 620	1 (→ 79), 6 (→ 81)
1777780	77 942 620	2 (→ 79)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ )
SCANIA		
1777781	77 710 630	1 (→ 79), 6 (→ 81)
1778923	20160713001	6 (→ 81)
1779130	77 710 600	1 (→ 79), 6 (→ 81)
1779130	77 864 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1779130	77 942 600	2 (→ 79)
1785692	77 711 600	1 (→ 79)
1785692	79 525 600	3 (→ 79), 4 (→ 80), 5 (→ 80)
1786249	77 711 610	1 (→ 79)
1786250	77 711 620	1 (→ 79)
1786251	77 711 630	1 (→ 79)
1789555	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
1789726	200607DC130	6 (→ 81)
1798722	80 00364 1 1 000	1 (→ 79), 2 (→ 79)
1805085	20090716000	4 (→ 80)
1850688	89 939 110	3 (→ 79), 4 (→ 80), 5 (→ 80), 6 (→ 81)
1854798	105-35639	1 (→ 79)
1854799		
1860961	20140713000	6 (→ 81)
1865230	20100712008	6 (→ 81)
1868157	89 541 110	1 (→ 79)
1868606	79 525 610	3 (→ 79), 4 (→ 80), 5 (→ 80)
1868607	79 525 620	3 (→ 79), 4 (→ 80), 5 (→ 80)
1884327	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
1886246	105-35639	1 (→ 79)
1886946		
1887056		
1888024	20140709000	3 (→ 79), 4 (→ 80), 5 (→ 80)
1888025	20140712001	1 (→ 79)
1900032	20190714000	4 (→ 80)
1908172	20100716003	7 (→ 81)
1917105	89 939 110	3 (→ 79), 4 (→ 80), 5 (→ 80), 6 (→ 81)
1920163	200607DC130	6 (→ 81)
1929265		
1939481	20160713001	6 (→ 81)
1940008	81-34005	7 (→ 81)
1945965	20190714003	7 (→ 81)
2006210	20160713001	6 (→ 81)
2006397	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
2023341	105-35654	1 (→ 79)
2023345		
2026052		
2028986	20140709000	3 (→ 79), 4 (→ 80), 5 (→ 80)
2028987	20140712001	1 (→ 79)
2037887	92-34008	4 (→ 80), 5 (→ 80), 6 (→ 81)
2040258	92-34009	4 (→ 80), 5 (→ 80), 6 (→ 81)
2043067	89 935 110	6 (→ 81), 7 (→ 81)
2055915	20140709004	3 (→ 79), 4 (→ 80), 5 (→ 80)
2068259	20100716002	7 (→ 81)
2068433	20100716003	7 (→ 81)
2079956	77 710 600	1 (→ 79), 6 (→ 81)
2105497	20140713000	6 (→ 81)
2106275	20140713001	6 (→ 81)
2110655	105-35639	1 (→ 79)
2133515	20050713000	6 (→ 81)
2145520	20050790000	3 (→ 79), 4 (→ 80), 5 (→ 80)
2161493	105-35639	1 (→ 79)
2183352	89 939 110	3 (→ 79), 4 (→ 80), 5 (→ 80), 6 (→ 81)
2190306	200607DC130	6 (→ 81)
2206260	89 939 110	3 (→ 79), 4 (→ 80), 5 (→ 80), 6 (→ 81)
2209508	20140709000	3 (→ 79), 4 (→ 80), 5 (→ 80)
2209509	20140712001	1 (→ 79)
2224045	20160713001	6 (→ 81)
2224112	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
2254875	89 935 110	6 (→ 81), 7 (→ 81)
2263286	200607DC130	6 (→ 81)
2301849	7.12441.12.0	5 (→ 80), 6 (→ 81)
2310611	20160713001	6 (→ 81)
2310615	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)

CROSS REFERENCE LIST

REF-No.	ITEM No.	Pos (→ )
SCANIA		
2385389	7.05717.06.0	5 (→ 80)
2507706	20050713000	6 (→ 81)
2527395	20050790000	3 (→ 79), 4 (→ 80), 5 (→ 80)
2547925	20140716002	7 (→ 81)
2579258	77 971 600	6 (→ 81)
2686288	20140713000	6 (→ 81)
2793574	20190714000	4 (→ 80)
2819310	81-34006	3 (→ 79), 4 (→ 80), 5 (→ 80), 6 (→ 81), 7 (→ 81)
2827104	81-34005	7 (→ 81)
2985692	77 710 600	1 (→ 79), 6 (→ 81)
550255	80 00364 1 0 000	1 (→ 79), 2 (→ 79)
550494	77 711 600	1 (→ 79)
550495		
550495	77 711 610	1 (→ 79)
550496	77 711 620	1 (→ 79)
550497	77 711 630	1 (→ 79)
570193	20160713001	6 (→ 81)
570194	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
570196	200607DC130	6 (→ 81)
575052	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
575053	20160713001	6 (→ 81)
576662	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)
576663	20160713001	6 (→ 81)
576664		
576665	20160709001	3 (→ 79), 4 (→ 80), 5 (→ 80)



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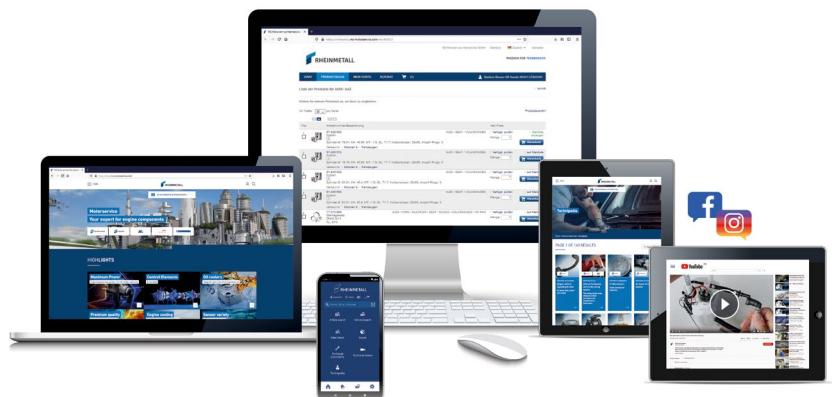
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PROCEDURE FOR WARRANTY CLAIMS

Dear Business Partner,

To ensure speedy and smooth processing, we ask you to observe the following points:

Requirements for warranty claims

The Motorservice Business Partner guarantees to Motorservice that the prerequisites for a warranty claim are met. You have checked in advance whether the part subject to the claim originates from the Motorservice product range. Claims relating to parts can only be submitted within the warranty period.

Submission via the OnlineShop

If you have access to the Motorservice OnlineShop, you can submit directly via the OnlineShop. To do this, please go to "Claims" in the "My Account" menu and enter the data in the online form provided there.

In principle, all damaged parts must be submitted.

Note: All other damaged parts must be securely stored until the warranty claim is completed.

Submission of claims to MS Motorservice International GmbH

Damage assessments are not possible unless components are presented. Warranty claims for run-in parts must always be sent separately from returns of goods and new part claims to our **logistics centre in Neuenstadt (engine parts) or CompetenceCenter Dormagen (Pierburg)** and clearly identified (returns are not accepted at our sales offices). Transport is at the risk and liability of the customer. Motorservice accepts no liability for any parts that are subject to a claim and for which a diagnosis can no longer be made due to damage or loss in transit.

Destructive component tests

We would like to remind you that certain products, e.g. exhaust gas turbochargers and water pumps must be subjected to what is known as destructive testing in order to be able to make a diagnosis. We ask for your permission to do so by ticking the appropriate box on the attached warranty claim submission form.

KEY DETAILS

Submission via the OnlineShop

"My Account"/"Claims"

Addresses for parts return

Damaged Pierburg parts:

**MS Motorservice International GmbH
S-CQM
Hamburger Straße 15
41540 Dormagen, Germany**

Damaged engine parts

**MS Motorservice International GmbH
S-CQM
Wilhelm-Maybach-Straße 14–18
74196 Neuenstadt, Germany**

Contact person

If you have any questions, please get in touch with your contact person from the Motorservice sales team.

Contact person for Pierburg parts:

Claims management S-CQM
pg-warranties@de.rheinmetall.com

PROCEDURE FOR NEW PART CLAIMS

Dear Business Partner,

To ensure speedy and smooth processing, we ask you to observe the following points:

Submission via the OnlineShop

If you have access to the Motorservice OnlineShop, you can submit directly via the OnlineShop. To do this, please go to "Claims" in the "My Account" menu and enter the data in the online form provided there.

Submission to MS Motorservice International GmbH

- Return the goods as soon as possible once the defect has been identified
- Return free of charge to the logistics centre in Neuenstadt (returns are not accepted at our sales offices)
- The return shipment is at the risk and liability of the customer. Motorservice is not liable for any loss or damage in transit.

KEY DETAILS

Submission via the OnlineShop
"My Account"/"Claims"

Addresses for parts return

New part claims

MS Motorservice International GmbH
New part claims
Wilhelm-Maybach-Straße 14–18
74196 Neuenstadt, Germany

Contact person

If you have any questions, please get in touch with your contact person from the Motorservice sales team.

1. Scope of Application

- 1.1** The Terms and Conditions of Sale and Delivery of MS Motorservice International GmbH (hereinafter referred to as the "Seller") shall apply exclusively. Opposing terms of the Buyer or terms that deviate from these Terms and Conditions of Sale and Delivery shall not apply unless the Seller has expressly agreed to the validity of deviating terms in writing. These Terms and Conditions of Sale and Delivery shall also apply if the Seller effects delivery to the Buyer without reservation in full knowledge of opposing terms of the Buyer or terms that deviate from its own Terms and Conditions of Sale and Delivery.
- 1.2** Separate agreements between the parties deviating from or supplementing these Terms and Conditions of Sale and Delivery shall take precedence. They shall be supplemented by these Terms and Conditions of Sale and Delivery unless special provisions have been agreed. The content of such agreements is contingent on a written contract or the written confirmation of the Seller.
- 1.3** The Terms and Conditions of Sale and Delivery shall also apply to future business transactions with the Buyer. By placing a purchase order and at the latest upon acceptance of the goods, the Buyer accepts these Terms and Conditions of Sale and Delivery.
- 1.4** These Terms and Conditions of Sale and Delivery shall only apply in B2B relationships.

2. Offer and Order Confirmation

- 2.1** Offers by the Seller shall in all cases be non-binding. If a purchase order from the Buyer legally qualifies as an offer, it shall only be accepted once it has been confirmed in writing by the Seller within four weeks. The contract shall come into effect at the latest once the ordered goods have been dispatched or their delivery time has been communicated, and in case of partial delivery, once the first delivery has been dispatched.
- 2.2** Modifications and other agreements shall only be binding once they have been confirmed by the Seller in writing.
- 2.3** The documents, drawings, details relating to weight and dimensions, samples etc. contained in the offers are only approximate specifications and shall not constitute guaranteed qualities. The Seller shall be entitled to deviate from the descriptions in the offer to the extent that these deviations are not of a fundamental or significant nature and the purpose according to the contract is not substantially restricted.
- 2.4** Insofar as goods are manufactured according to Buyer's drawings, the drawings created by the Buyer and approved by the Seller shall be decisive. Deviations from approved drawings must be separately agreed and any additional costs in this regard shall be reimbursed to the Seller.

3. Industrial Property Rights

- 3.1** The Seller shall reserve industrial property rights and copyright to all illustrations, drawings, calculations, and other documents; these items may neither be used for purposes other than those stipulated by the Seller, nor made accessible to third parties without the prior written consent of the Seller. This shall apply in particular to written documents that are designated as "confidential", "secret" or similar.
- 3.2** The Seller shall only be liable for claims relating to violations of industrial property rights and applications for industrial property rights resulting from contractual use of the goods, if at least one property right from the family of industrial property rights has been published by the European Patents Office or in one of the following states: Federal Republic of Germany, France, United Kingdom, Austria, China, Japan or the USA.
- 3.3** Where deliveries are effected according to drawings or other specifications from the Buyer and where third-party property rights are breached as a result of this, the Buyer shall indemnify the Seller against any claims internally.

4. Recommendations and Information

Recommendations and information shall be non-binding insofar as they do not refer to the goods themselves.

5. Prices

- 5.1** All prices are net prices and shall be quoted ex works (Incoterms® 2020, "EXW") excluding packaging, freight, postage and insurance. Statutory VAT shall be added at the current applicable rate.
- 5.2** Any additional costs incurred as a result of modification requests may be charged to the Buyer by the Seller.
- 5.3** Where events occur after conclusion of the contract that result in increased costs for the Seller in terms of primary purchasing costs, manufacture and/or shipment of the goods, the Seller shall be entitled to increase its prices accordingly.

6. Conditions of Payment

- 6.1** Invoices shall be due for payment within 14 days of the invoice date without any deductions. Even as part of an active business relationship, the Seller is entitled, at any time, to only carry out a delivery, either fully or in part, in exchange for payment in advance. Discounts shall only apply where expressly agreed in writing.
- 6.2** The Seller shall be entitled to offset a payment against the oldest, not specifically titled debt, even where the Buyer has earmarked the payment for a different purpose. Where costs or interest have already been incurred, the Seller shall be entitled to offset payments, in the first instance, against the costs, then against the interest, and finally against the principal debt.
- 6.3** The Buyer shall only have the right to offset insofar as its counterclaims are legally binding, are uncontested or have been acknowledged in writing by the Seller. The right of retention on the part of the Buyer shall be limited to claims arising from the contractual relationship.
- 6.4** The Seller is entitled to charge default interest at the applicable statutory default interest rate. The right to prove a higher default damage shall be expressly reserved.

7. Delivery / Delivery Time / Delay

- 7.1** Delivery periods and delivery dates shall only be deemed to have been agreed with binding effect where these are expressly confirmed in writing by the Seller. The Seller shall not be bound to the delivery date or delivery period where the Buyer does not meet its obligations in due time (to make anticipated payments, to provide required documents, to supply materials for manufacture etc.). The plea for non-fulfilment of the contract shall remain reserved.
- 7.2** Delivery periods begin at the earliest on the day of written conclusion of the contract and once all technical issues have been clarified.
- 7.3** In the event of change requests from the Buyer, the Seller shall be exempt from compliance with any agreed delivery date or delivery period. In such cases, the parties shall agree a new delivery date or a new delivery period.
- 7.4** Unless otherwise agreed, the delivery date or delivery period shall be deemed to have been adhered to when the Seller has made the goods available at the location agreed.
- 7.5** The Buyer may not assert claims due to delivery delays that do not result from intent or gross negligence on the part of the Seller. In particular, including with regard to other disruptions, this shall apply to delivery delays caused by force majeure, labour disputes, unrest, epidemics and/or pandemics, cyber-attacks, official measures, failure to deliver by suppliers and any other unforeseeable, unavoidable and serious events. In such cases, the agreed delivery date or delivery period shall be extended according to the duration of the delivery impediment. The Seller shall notify the Buyer of this and, where possible, specify a new expected delivery date. Compensation for loss of profit and stop of production shall be limited to intent.
- 7.6** Where the Buyer delays acceptance or violates any other obligation to cooperate, the Seller shall be entitled to demand compensation for damage suffered in this respect, including any additional costs. Furthermore, the Seller shall have the right to set an appropriate acceptance period for the Buyer and to withdraw from the contract where this period has expired to no avail, and to demand compensation for damage instead of the performance.
- 7.7** Partial deliveries shall be permitted to a reasonable extent. In this regard, claims made by the Buyer due to partial delivery or delayed delivery of the remaining goods shall be excluded.

8. Retention of Title

- 8.1** The Seller shall reserve title of all goods delivered until all payments pertaining to the supplier relationship, including any dues as shall arise in the future, have been effected in full. In the event of conduct contrary to contract, in particular as regards payment default, the Seller shall be entitled to claim back the goods.
- 8.2** The Buyer shall be obliged to handle the delivered goods with care and to insure them at their purchase price against any kind of loss at its own expense during the period of retention of title. The Seller shall remain entitled to insure the goods itself at the expense of the Buyer.
- 8.3** In case of pledge or other third-party intervention, the Buyer shall immediately notify the Seller in writing so that the latter can initiate a third-party action or other legal remedies. Where the third party fails to reimburse the legal and extrajudicial costs arising from this, the Buyer shall be liable for such costs.
- 8.4** The Buyer shall be entitled to sell on the goods in the ordinary course of business; it hereby, however, assigns to the Seller all receivables arising from the resale to its customers or third parties to the value of the final invoice amount (including statutory VAT) of the receivables, irrespective of whether the goods were sold without or following further processing. The Buyer shall remain entitled to collect these receivables even after delivery. The Buyer's right to collect the receivables itself shall remain unaffected by this.

- 8.5** Where the goods delivered are inseparably mixed or combined with other items not belonging to the Seller, the Seller shall acquire joint ownership of the new or combined product in proportion to the value of the goods delivered (final invoice amount, including statutory VAT) in relation to the value of the other items at the time of combination or mixing. The Buyer shall safeguard the resulting sole ownership or joint ownership on behalf of the Seller.
- 8.6** Where the value of the securities granted exceeds the claims of the Seller by more than a total of 20%, the Seller shall be obliged to release the excess securities upon request of the Buyer, at the Seller's option.
- 8.7** If and to the extent that an agreement on the retention of title is not permitted under the relevant legal system, the Buyer shall provide the Seller with alternative appropriate securities on taking advantage of credit on goods.

9. Shipment, Transfer of Risk

- 9.1** Shipment shall be carried out at the risk of the Buyer. The risk shall transfer to the Buyer when the goods are dispatched at the very latest, even if the Seller has other services to perform.
- 9.2** Where shipment is delayed due to circumstances beyond the Seller's control, the risk shall pass to the Buyer from the day of notification of readiness for shipment. Upon written request of the Buyer and at the Buyer's expense, the Seller shall insure the shipment against breakage, damage in transit, as well as fire and water damage.
- 9.3** In accordance with the Packaging Act (Verpackungsgesetz), transport packaging and any other packaging shall not be taken back, with the exception of pallets. The Buyer shall be obliged to dispose of the packaging at its own expense.

10 Manufacturing Equipment

- 10.1** Insofar as the Buyer provides manufacturing equipment (e.g. tools, templates) to the Seller, these shall be sent to the Seller at no charge. The Seller can only be held liable for their loss, deterioration or incomplete return, including damage resulting from this, in cases of gross negligence or intent. This shall not apply in cases of legally mandatory liability.
- 10.2** Where manufacturing equipment is produced or procured by the Seller at the Buyer's request, the Seller shall invoice the Buyer for the costs for such equipment separately. The manufacturing equipment shall remain the property of the Seller. The Seller shall not be obliged to hand over said equipment to the Buyer. The above shall also apply in respect of follow-on tools. The following provision in Item 10.3 shall remain unaffected by this.
- 10.3** In the event of amortization of costs for the manufacturing equipment in excess of the part cost, the Buyer shall assume the costs not covered in case of non-amortization of a tool, including the costs for other type-specific equipment. Costs for models shall in all cases be for the account of the Buyer.
- 10.4** Drawings and documents provided to the Buyer by the Seller, as well as recommendations by the Seller in respect of design and production of the goods, may not be forwarded to third parties and can be claimed back by the Seller at any time.

11. Liability for Defects / Liability

- 11.1** The Seller shall not be liable for any damage caused by non-compliance with operating, maintenance and fitting instructions, inappropriate or improper use, faulty or negligent handling, natural wear and tear, incorrect storage or modification of the goods by the Buyer or third parties. Installation of the goods by the Buyer or a third party may only be carried out by trained and qualified personnel.
- 11.2** The Seller shall have the right to decide whether to remedy a defect or provide new goods. At the request of the Seller, the Buyer must hand the goods in question over to the Seller for examination. If the Seller incurs costs as a result of an unjustified request by the Buyer for the rectification of a defect (especially examination and transport costs), the Seller can demand compensation for these costs.
- 11.3** Expenses required for purposes of cure shall not be borne by the Seller in the event of increased expenses as a result of subsequent relocation of the goods to a location other than that of the original place of delivery.
- 11.4** If the Seller is sued by the Buyer by way of recourse after the Buyer itself has been sued by its customer due to defects, § 445a BGB (Bürgerliches Gesetzbuch - German Civil Code) shall apply to the enforcement of rights.
- 11.5** Claims based on liability for defects shall expire one year after handover of the goods unless the warranty claims are based on grossly negligent or wilful breach of obligation on the part of the Seller or one of its vicarious agents or on injury to life, limb, or health. Warranty claims for defects brought against the Seller by the Buyer by way of recourse in accordance with § 445a BGB are subject, without restriction, to the limitation period set out in § 445b BGB.
- 11.6** The Buyer shall also undertake to fulfil its obligation of examination pursuant to § 377 HGB (Handelsgesetzbuch - German Commercial Code) in the case of resale of the goods.
- 11.7** The Buyer's right of recourse against the Seller as a result of such claims based on liability for material defects made against the Buyer by its customers shall be excluded if the same has not fulfilled its obligation of examination and notification or if the goods have been modified by means of processing.
- 11.8** The Seller's liability for compensation according to statutory provisions shall apply without limitation if the same is responsible for breach of obligation based on intent or gross negligence. Insofar as a breach of obligation based on ordinary negligence is attributable to the Seller and an essential contractual obligation has been culpably violated, compensation for damages shall be limited to the amount of foreseeable damage that typically occurs in comparable cases. In all other cases, liability shall be excluded.
- 11.9** Compensation for loss of profit and damage resulting from business interruptions shall be limited to intent and gross negligence.
- 11.10** Liability according to the provisions of the Product Liability Law or similar, non-derogable rights of foreign jurisdiction shall remain unaffected. Liability resulting from injury to life, limb, and health shall also remain unaffected.
- 11.11** Insofar as liability arises according to the facts in Item 11.9, the liability of the Seller in case of foreign jurisdiction shall be limited in relation to the Buyer to the extent permissible according to the relevant foreign law.
- 11.12** Where the Seller's liability for compensation is excluded or limited, this shall also apply with regard to personal liability for compensation on the part of the Seller's employees, representatives, or vicarious agents.

12. Non-assignment Clause

- 12.1** All claims by the Buyer against the Seller shall be non-assignable.
- 12.2** The Seller is entitled at all times, even without the consent of the Buyer, to involve affiliated companies (in the sense of § 15 AktG (Aktiengesetz - German Stock Corporation Act)) in particular in the generation of quotations and execution of contracts as vicarious agents.

13. Product Liability / Notification Obligation

- 13.1** The Buyer shall only use the goods according to their purpose and shall ensure that these goods are only resold to persons familiar with the hazards and risks associated with the goods.
- 13.2** The Buyer shall also undertake to fulfil its obligation to issue warnings in respect to the goods delivered by the Seller where the former uses these goods as base material or components for its own products when placing the final product on the market. The Buyer shall indemnify the Seller internally against assertion of claims arising from breach of this obligation upon first request.

14. Confidentiality

The Buyer shall treat as trade and company secret all business and technical information received from the Seller to the extent that this information is not public knowledge. Information of this nature may only be forwarded for the purposes of the contract to third parties who are bound by an appropriate non-disclosure agreement.

15. Data Protection

The Seller shall only collect, process and use personal data concerning the Buyer in accordance with the relevant data protection regulations. Consequently, personal data concerning the Buyer shall only be used on the basis of a legal ground or consent.

16. Other

- 16.1** The place of performance shall be the location of the relevant plant of the Seller.
- 16.2** The place of jurisdiction for all disputes arising from the contract shall be Heilbronn. The Seller shall, however, be entitled to file suit against the Buyer at its general place of jurisdiction as well.
- 16.3** Contracts based on these Terms and Conditions of Sale and Delivery shall be solely subject to German law excluding its conflict-of-laws provisions and the UN Convention on Contracts for the International Sale of Goods (CISG).
- 16.4** The parties shall be obliged to comply with all statutory provisions within the framework of the contractual relationship.
- 16.5** Should one or several of the above provisions be ineffective in whole or in part, the validity of the remaining provisions shall remain unaffected by this. The invalid provision shall in that case be replaced by a legally valid provision that most closely approximates the meaning and purpose of these Terms and Conditions of Sale and Delivery.

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