

VENTILE
SOUPAPES
VÁLVULAS



Globally reliable



VALVES



V1/1



Globally reliable

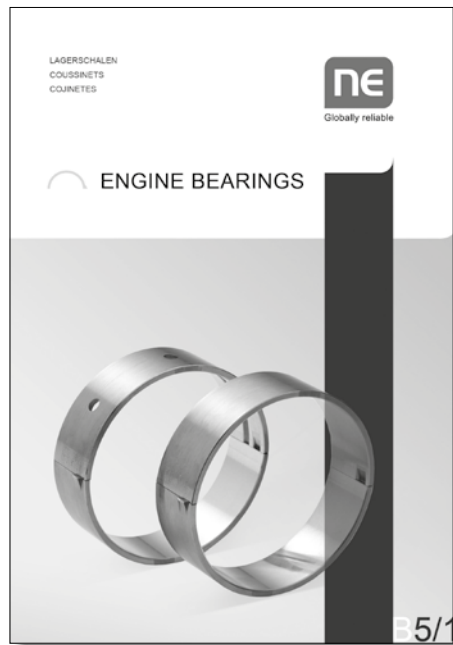
V1/1 Valves

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Weitere Kataloge und Produktinformationen

Über den vorliegenden Katalog hinaus erhalten Sie auch weitere Produkte über den Vertrieb der Firma NPR of Europe GmbH.

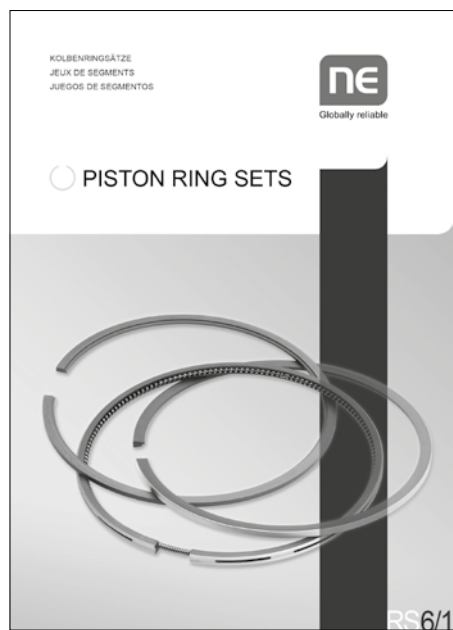
Fragen Sie nach unserem kompletten Programm und nutzen Sie auch unseren Produktmanager, der zum Download auf unserer Homepage zur Verfügung steht.



Katalog B5/1: Lagerschalen



Katalog P4/1: Kolben



Katalog RS6/1: Kolbenringsätze



Produktmanager:
Das gesamte Programm online.

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Hinweise zum Katalog

Die Motorventile sind so ausgeführt, dass sie ohne jegliche Nacharbeit eingebaut werden können. Die Spezifikationen der im Satz enthaltenen Motorventile können aus der Beschreibung auf der Seite 5 entnommen werden. Namen, Beschreibungen, Referenznummern und sonstige Angaben von Fahrzeugen sowie Herstellern sind zu Vergleichszwecken angeführt. Die im Katalog aufgeführten Teile entsprechen Ersatzteilen in NE-Qualität.

Der Katalog wurde mit größter Sorgfalt erstellt und kontrolliert. Wir haften jedoch nicht für die Folgen etwaiger Irrtümer oder Auslassungen. Weiterhin behalten wir uns notwendige oder technisch vertretbare Änderungen in der Spezifikation der Motorenteile vor, da die Technologie auf dem Motorenssektor einer laufenden Weiterentwicklung und Ergänzung unterliegt.

Die Auswahl an Motorventilen ist ständigen Änderungen unterworfen. Sollten Sie Motorventile suchen, die nicht in unserem Katalog aufgeführt sind, fragen Sie bitte bei unseren Mitarbeitern nach. Mit Erscheinen dieses Katalogs verlieren alle bisherigen Ausgaben ihre Gültigkeit.

Aufträge werden auf der Grundlage unserer allgemeinen Geschäftsbedingungen angenommen, die im Katalog abgedruckt sind, jederzeit im Internet eingesehen werden können und die wir Ihnen gerne zur Verfügung stellen.

Der Nachdruck oder das Kopieren dieses Katalogs ist untersagt, bildliche Darstellungen sowie der Entwurf sind urheberrechtlich geschützt.

Zertifizierung

Da wir wissen, dass sowohl unsere Produkte als auch unser Service jeder Prüfung standhalten, lassen wir uns gerne von externen Prüfern unsere Qualität bestätigen. Aus diesem Grund sind wir nach **ISO/TS 16949:2016** und nach **ISO 9001:2015** zertifiziert.

Nummernschlüssel Bestellnummern

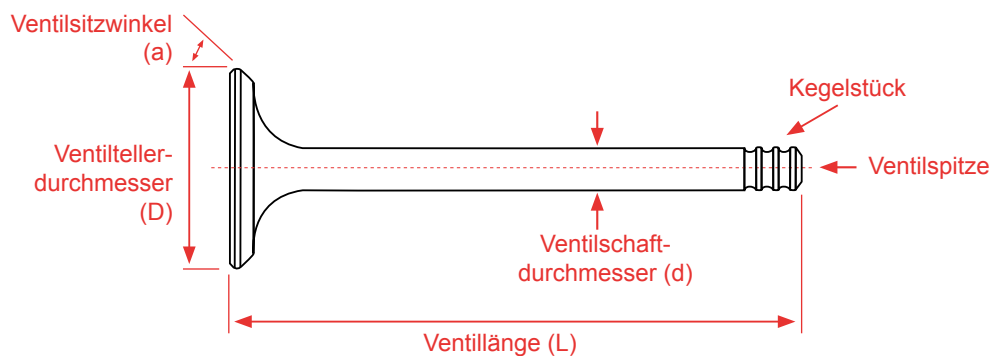
	alt		neu
Einlass-Ventil	56	→	147
Auslass-Ventil	57	→	148

Fachausdrücke am Ventil

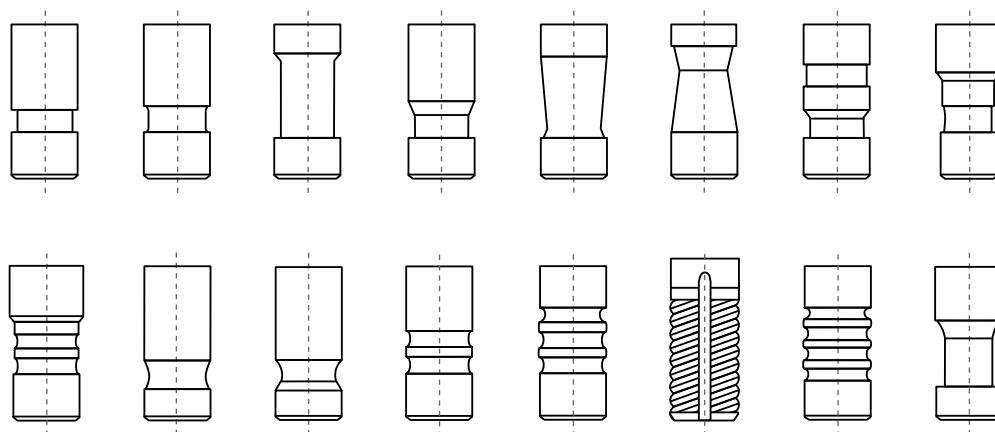
Materialspezifikation

S	Hochlegierter Chrom-Silizium-Stahl	NT	Nitriertes Ventil
A	Austenitischer Chrom-Nickel-Mangan Stahllegierung für stark beanspruchte Auslassventile	S/H	Gehärteter Ventilsitz
A/S	Bi-Metallisches Ventil	S/S	Stellit-geschweißter Ventilsitz
CR	Chrombeschichteter Ventilschaft	TH	Ventilspitze und Kegelstück gehärtet
		H	Gehärtete Ventilspitze
		TW	Geschweißte Ventilspitze

Hauptabmessungen



Kegelstück-Konstruktion



Hinweise zur Benutzung des Kataloges

Katalogteil

Zu Beginn des jeweiligen Motorenherstellers können Sie die zu Ihrem Motorcode und Fahrzeugmodell passende(n) Ventile-Artikelnummer(n) finden.

Die angegebene Positionsreihenfolge ist nach dem Bohrungsdurchmesser des Motors aufsteigend sortiert und führt Sie im späteren Kapitel zu den genaueren Produktdaten.

Motorbezeichnung (Motorcode)	Hubraum	Zylinder-Anzahl	Motorleistung	Modell	Baujahr	NE-Artikelnummer	Einbauseite	Stückzahl	Infospalte	Positionsreihenfolge
IN/EX	QTY	Info	Pos.							
M42 B18 (184S1)	1796	4	100-103 KW 136-140 PS	3 (E30/36) 318 i, 318 is	09/89 - 12/95	84,00	147 007 0009 00 148 007 0006 00	IN EX	8 8	1
M44 B19 (194S1)	1895	4	103 KW 140 PS	3 (E36) 318 is	09/95 - 09/99	85,00	147 007 0009 00 148 007 0006 00	IN EX	8 8	1

Produktdaten

Entsprechend der Positionsreihenfolge aus dem Katalogteil finden Sie hier technische Daten und Beschreibungen zu allen relevanten Artikelnummern.

Einbauseite	Motorhersteller	NE-Artikelnummer	Ventil- abmessungen	Materialspezifikation	Ventilschaft-Beschichtung	Kegelstück-Konstruktion	Sitzbehandlung	Materialbehandlung Ventilspitze
IN/EX								
1	IN	147 007 0009 00	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 00	L = 105,60 D = 32,90		CR			

Positionsreihenfolge

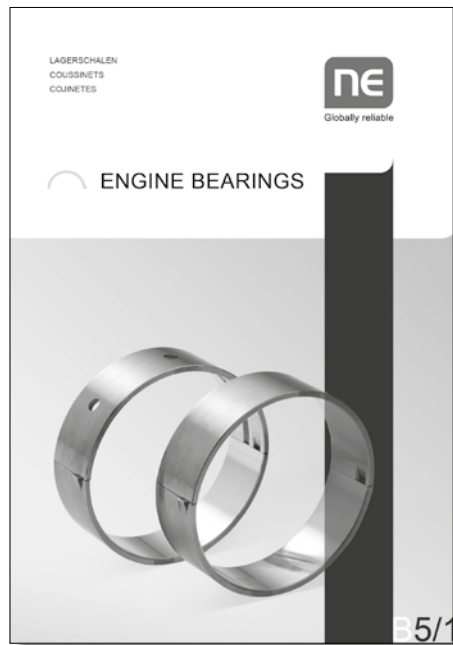
L = Ventillänge
D = Ventiltellerdurchmesser
d = Ventilschaftdurchmesser
a = Ventilsitzwinkel

Herstellerverzeichnis

	Seite		Seite
Alfa Romeo	29	M.A.N.	77
Audi	31	Mazda	79
BMW	34	Mercedes-Benz	81
Citroën	38	Mitsubishi	89
Daewoo - Chevrolet (GM)	41	Nissan	91
Daihatsu	43	Opel	94
DS	45	Peugeot	100
Fendt	47	Renault	103
FIAT	49	Rover	105
Ford	52	Saab	107
Geely	54	Seat	109
Great Wall	56	Skoda	112
Hyundai	58	Subaru	115
Isuzu	62	Suzuki	117
Iveco	64	Toyota	119
KHD	66	Volkswagen	124
Kia	69	Volvo	130
Lancia	71		
Lexus	73		
Lifan	75		

Other catalogues and product information

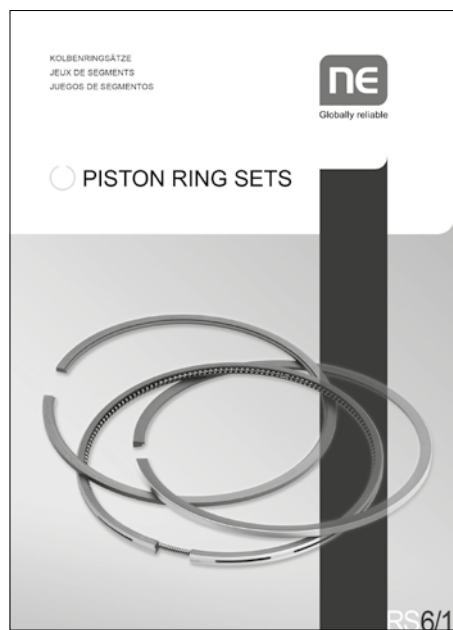
Further to the products in this catalogue NPR of Europe's sales department has also other parts at your disposal.
Please ask for our entire range of products and consult the "Product Manager" on our home page, which is updated at regular intervals.



Catalogue B5/1: Engine bearings



Catalogue P4/1: Pistons



Catalogue RS6/1: Piston ring sets



Product Manager: entire program online

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Hints to the use of this catalogue

The engine valves can be fitted without any reworking. The specification of the engine valves included in the kits can be found in the description on page 11. Names, descriptions, reference numbers and other data of vehicles and manufacturers are mentioned for comparison purposes only. The engine parts of this catalogue are in NE-spare part quality.

This catalogue has been compiled and controlled very carefully. Nevertheless we are not liable for any mistakes or omissions. Furthermore, we reserve the right to make technical alterations in specifications of engine parts resulting from the constant technological development in the field of engines.

The choice of engine valves offered in our catalogue is subject to constantly changing. Should you be looking for engine valves which are not mentioned in this catalogue, please ask our staff. Upon release of this catalogue all earlier versions will become invalid.

All orders are subject to our General Terms and Conditions which can be reviewed in this catalogue, on our homepage and which we will gladly put at your disposal.

It is not allowed to reprint or copy this catalogue or parts thereof. All pictures as well as the complete design are copyrighted.

Certification

As we feel sure that our products as well as our service will withstand every exam, we gladly have our quality confirmed by external auditors.

For this reason we are certified according to **ISO/TS 16949:2016** and **ISO 9001:2015**. So you may always rely on our service and the quality of our products.

Numerical code part number / order number

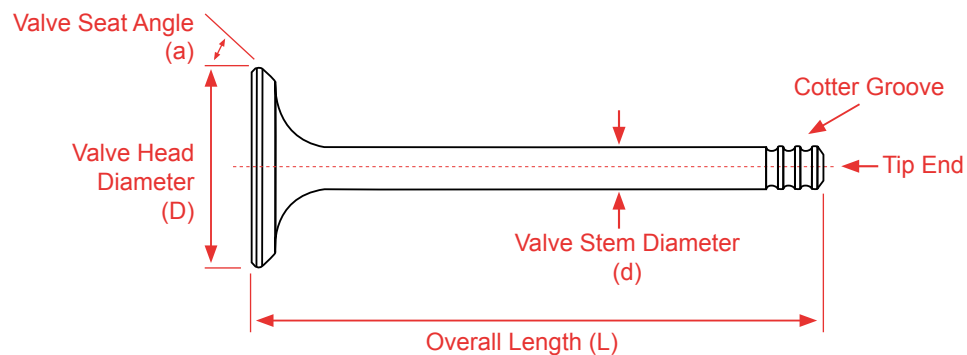
	old		new
Valve Intake	56	→	147
Valve Exhaust	57	→	148

Technical terms on the valve

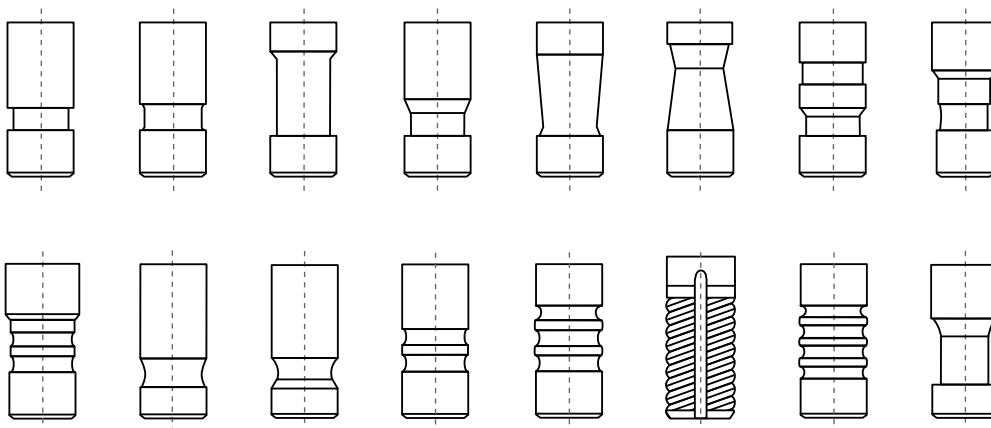
Material Specification

S	High alloyed chrome-silicium steel	S/H	Seat hardened
A	Austenitic Cr-Ni-Mn steel for high stressed exhaust valves	S/S	Seat stellited
A/S	Bimetal material	TH	Tip and cotter groove hardened
CR	Chromium plated stem	H	Tip hardened
NT	Nitrided valves	TW	Tip welded

Main Dimensions



Cotter Grove Design



How to use this catalogue correctly

Catalogue part

At the beginning of the relevant engine manufacturer, you may find the valve part number (s) matching to your engine code and vehicle model. An additional note in the information column is facilitated you the exact identification of the part number(s). The position number is assorted in an alphanumeric ascending order according to the bore diameter of the engine and leads you to the correct product data on the next chapter.

engine designation (engine code)	cubic capacity of the engine	number of cylinders	power	model	year	bore	NE-number	fitting position	QTY	information	order of positions
	ccm							IN/EX		Info	Pos.
M42 B18 (184S1)	1796	4	100-103 KW 136-140 PS	3 (E30/36) 318 i, 318 is	09/89 - 12/95	84,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1
M44 B19 (194S1)	1895	4	103 KW 140 PS	3 (E36) 318 is	09/95 - 09/99	85,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1

Product data

According to the position number from the catalog part, you may find here the technical data and descriptions of all relevant part numbers.

fitting position	engine manufacturer	NE-number	valve dimension	material specification	valve stem coating	cotter design	seat treatment	tip treatment
								
IN/EX								
1	IN	147 007 0009 00	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 00	L = 105,60 D = 32,90 d = 6,00 a = 45°		CR			

L = valve length
 D = valve head diameter
 d = valve stem diameter
 a = valve seat angle

Index of manufacturers

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Daewoo - Chevrolet (GM)	41	Nissan	91
Daihatsu	43	Opel	94
DS	45	Peugeot	100
Fendt	47	Renault	103
FIAT	49	Rover	105
Ford	52	Saab	107
Geely	54	Seat	109
Great Wall	56	Skoda	112
Hyundai	58	Subaru	115
Isuzu	62	Suzuki	117
Iveco	64	Toyota	119
KHD	66	Volkswagen	124
Kia	69	Volvo	130
Lancia	71		
Lexus	73		
Lifan	75		

Autres catalogues et informations sur nos produits

Au-delà de ce catalogue, vous pouvez également obtenir autres produits à travers le service commercial de la société NPR of Europe GmbH.

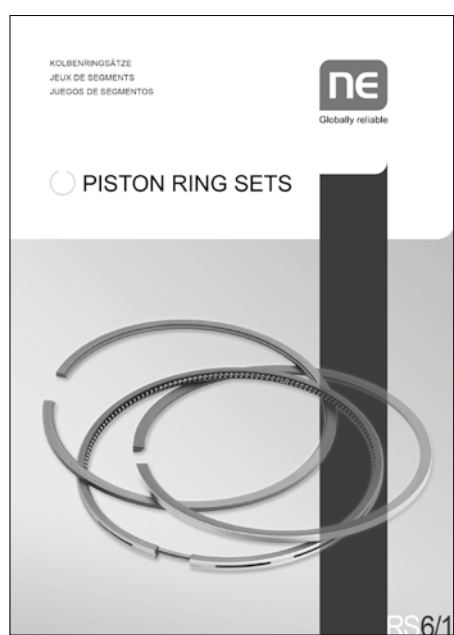
Renseignez-vous sur notre programme complet et utilisez notre Produit-Manager, qui est mis à jour régulièrement.



Catalogue B5/1: Coussinets



Catalogue P4/1: Pistons



Catalogue RS6/1: Jeux de segments



Produit-Manager:
programme complet en ligne

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Informations sur ce catalogue

Les soupapes peuvent être installés sans retouches. Vous trouvez les spécifications des soupapes à l'aide des coupes transversales et des abréviations sur la page 17. Noms, les descriptions, les numeros des références et les autres détails des véhicules et des fabricants sont cités seulement dans l'objectif de trouver la comparaison. Les pièces figurant dans le catalogue correspondent aux pièces détachées de la qualité-NE.

Le catalogue a été créé avec beaucoup de soin et de contrôle. Nous ne sommes pas responsables des conséquences de toute erreur ou omission. Nous nous réservons également les changements nécessaires technique ou en matière de la spécification des soupapes car la technologie est soumise a un développement continu.

Si vous êtes à la recherche des soupapes qui ne figurent-pas dans notre catalogue, merci de contacter notre service commercial. Ce catalogue annule et remplace toutes les éditions précédentes.

Les commandes sont acceptées sous réserve de nos termes et conditions de vente, qui peuvent être consultés à tout moment sur Internet et qu'on met à votre disposition.

La reproduction ou la copie de ce catalogue est interdite, les images graphiques ainsi que la conception sont protégés.

Certification

Puisque nous savons que nos produits et notre service résistent à tous les tests, on laisse confirmer notre qualité par des auditeurs externes.

Nous sommes certifiés selon normes **ISO/TS 16949:2016** et **ISO 9001:2015**.

Clé numérique des références

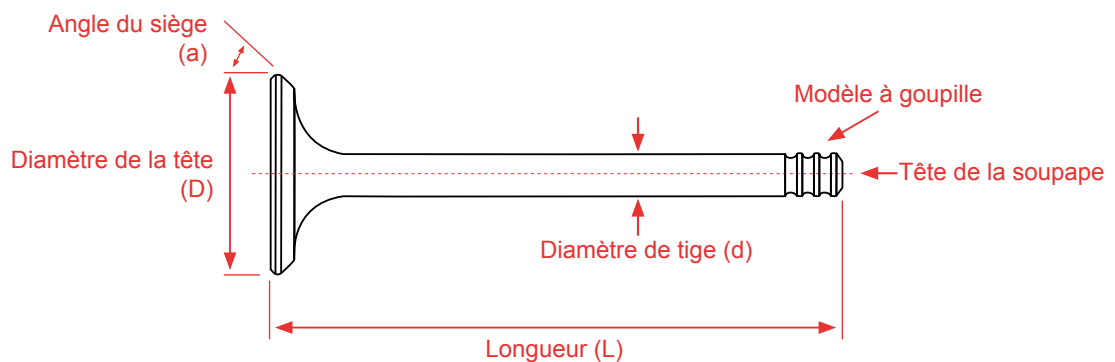
	ancienne		nouvelle
Soupape d'admission	56	→	147
Soupape d'échappement	57	→	148

Termes techniques sur les soupapes

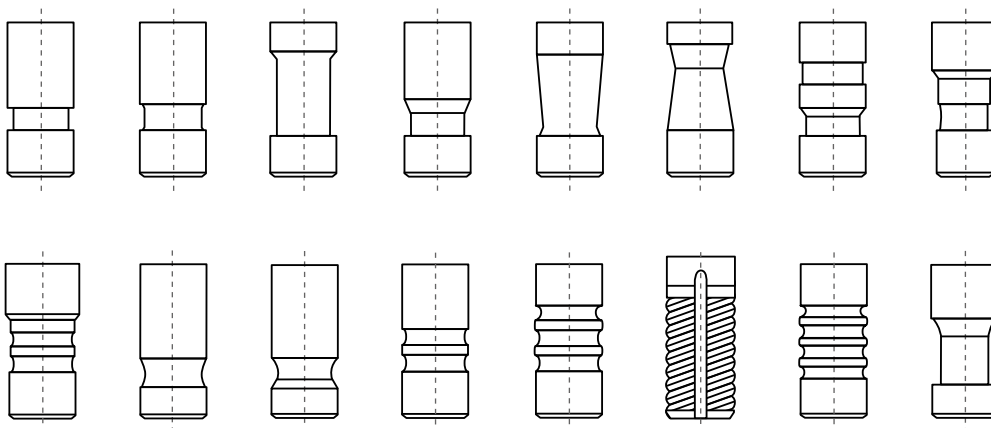
Spécification matérielle

S	Acier au chrome-silicium fortement allié	NT	Soupape laminée au tufride
A	Acier austénitique chrome-manganèse-nickel pour applications à hautes contraintes mécaniques	S/H	Siège de soupape trempé
A/S	Soupape bimétallique	S/S	Siège soudé en alliage stellité
CR	Tige de soupape chromée	TH	Tête de la soupape et goupille trempé
		H	Tête de la soupape en alliage trempé
		TW	Tête soudée en alliage

Dimensions principales



Modèle à goupille



Indications sur l'utilisation du catalogue

La partie catalogue

Au début de chaque chapitre (Constructeur de moteur), vous pouvez trouver facilement la Référence du soupape qui correspond à votre code du moteur et le type de véhicule recherché.

L'ordre des positions spécifié est trié par ordre croissant en fonction du diamètre d'alésage du moteur et vous conduit aux types de Produits plus précis dans le chapitre suivant.

code du moteur	cylindrée du moteur			nombre de cylindres	puissance	modèle	année de fabrication	alésage	référence NE	ordre de position			
	ccm									IN/EX	QTY	Info	Pos
M42 B18 (184S1)	1796	4	100-103 KW 136-140 PS		3 (E30/36) 318 i, 318 is		09/89 - 12/95	84,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1
M44 B19 (194S1)	1895	4	103 KW 140 PS		3 (E36) 318 is		09/95 - 09/99	85,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1

Données sur le produit

Selon l'ordre des positions dans le catalogue vous trouvez les données techniques et les descriptions de toutes les références.

côté montage	constructeur de moteur	référence NE	dimension de soupape	spécification matérielle	revêtement de tige de soupape	construction de cône	traitement de soupape à siège	traitement pointe de soupape
				Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1	IN	147 007 0009 00	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 00	L = 105,60 D = 32,90 d = 6,00 a = 45°		CR			

L = longueur de la soupape
 D = diamètre de la tête du soupape
 d = diamètre de tige du soupape
 a = angle du siège du soupape

Index des constructeurs

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Daewoo - Chevrolet (GM)	41	Nissan	91
Daihatsu	43	Opel	94
DS	45	Peugeot	100
Fendt	47	Renault	103
FIAT	49	Rover	105
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Iveco	64	Toyota	119
KHD	66	Volkswagen	124
Kia	69	Volvo	130
Lancia	71		
Lexus	73		
Lifan	75		

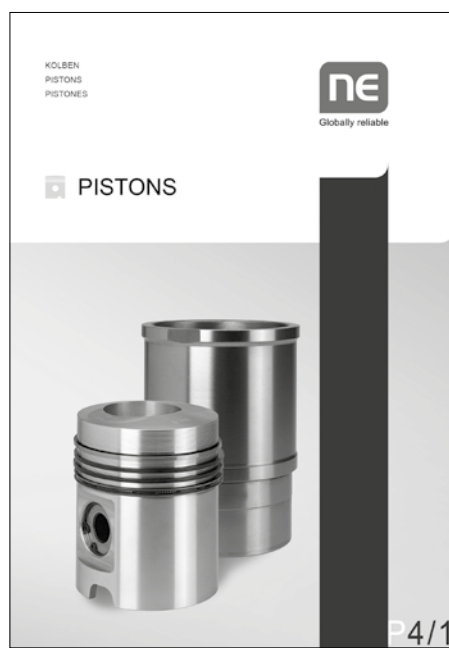
Otros catálogos e información acerca de nuestros productos

Además de los productos del presente catálogo, NPR of Europe posee otras piezas de motor a su disposición.

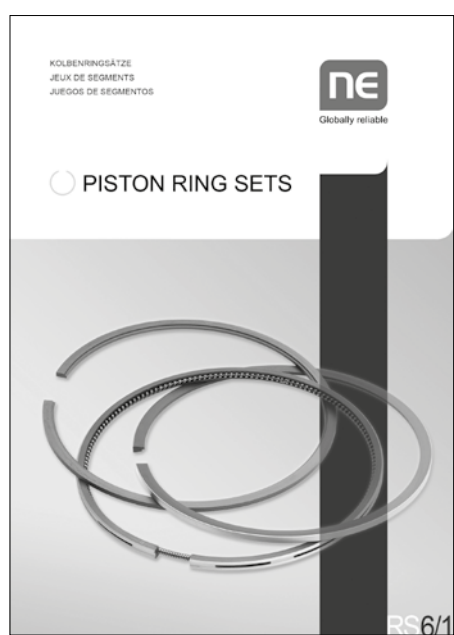
Consulte nuestro programa completo y utilice también nuestra aplicación „Product Manager“, la cual es posible descargar desde nuestra página web.



Catálogo B5/1: Cojinetes



Catálogo P4/1: Pistones



Catálogo RS6/1: Juegos de segmentos



Product Manager:
catálogo completo online

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Indicaciones para el uso del catálogo

Nuestras válvulas son suministradas listas para el montaje y fueron producidas de modo que no es necesario ningún retoque. Las especificaciones técnicas de las válvulas pueden ser consultadas en las aclaraciones de la página 23. Los nombres, descripciones, número de referencias, información pertinente de vehículos, como así de fabricantes son indicados solo a modo de comparación. Las piezas de motor contenidas en este catálogo poseen calidad NE.

Este catálogo fue elaborado y controlado con suma diligencia. No asumimos responsabilidad por la exactitud u omisión de los datos aquí brindados. Nos reservamos el derecho de realizar modificaciones en las especificaciones técnicas de las piezas de motor debido a la velocidad que impera en el desarrollo e innovación constante en el sector automotriz.

El repertorio de válvulas sufre constantes cambios. Si no encuentra en este catálogo la válvula precisada por favor consulte a nuestro staff. Con la publicación de este catálogo pierden validez los catálogos publicados con anterioridad.

Todas las órdenes de pedidos son aceptadas bajo nuestras Condiciones Generales de Contratación, las cuales están impresas en el presente catálogo, pueden ser también consultadas en nuestra página Web, puestas todo tiempo a su disposición.

La copia y/o reproducción total o parcial de este catálogo está prohibida, las imágenes y diseños están protegidos por las leyes de propiedad intelectual.

Certificación

Como sabemos que nuestros productos y también nuestro servicio se mantienen firmes en cada examinación, permitimos que auditores externos certifiquen nuestra calidad. Nuestra gestión de calidad está certificada según normas **ISO 9001:2015**. Asimismo nuestros clientes fabricantes de vehículos nos han llevado a cumplir requisitos extras para proveer a sus terminales automotrices y por ello poseemos la certificación **ISO/TS 16949:2016**.

Código numérico de las piezas

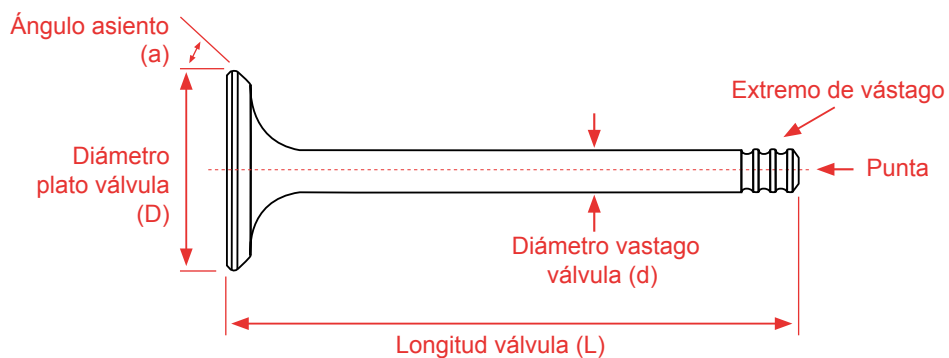
	antiguo		nuevo
Válvula de admisión	56	→	147
Válvula de escape	57	→	148

Terminología técnica de válvulas

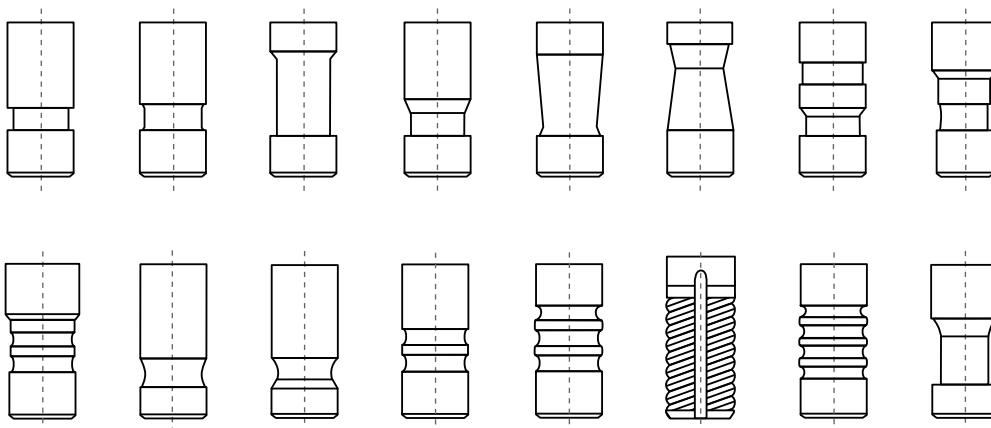
Revestimientos y tratamiento de superficies

S	Acero de alta aleación cromo-silicio	NT	Válvula nitrurada
A	Acero austenítico cromo-manganeso-níquel	S/H	Asiento de válvula endurecido
A/S	Válvula bimetálica	S/S	Asiento de estelite
CR	Capa de cromo sobre el vástago	TH	Punta y la chaveta endurecida
		H	Punta de válvula endurecida
		TW	Punta de estelite

Denominaciones en una válvula



Modelos de extremo de vástago



Como utilizar correctamente este catálogo

Partes del catálogo

Al comienzo de cada capítulo dedicado a un fabricante de motor usted encontrará la referencia número de válvula correspondiente a código de motor y modelo. Otros datos en las columnas de información le facilitarán la identificación exacta de la referencia. El orden de posición en cada capítulo se rige por el criterio de diámetro del cilindro en forma ascendente, el cual en los capítulos posteriores le guiará a los datos del producto.

denominación del motor (código de motor)	desplazamiento del motor	cantidad de cilindros	potencia	modelo	año de construcción	diámetro	referencia NE	Posición de montaje	unidad embalada	información	Pos.
	ccm							IN/EX	QTY	Info	Pos.
M42 B18 (184S1)	1796	4	100-103 KW 136-140 PS	3 (E30/36) 318 i, 318 is	09/89 - 12/95	84,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1
M44 B19 (194S1)	1895	4	103 KW 140 PS	3 (E36) 318 is	09/95 - 09/99	85,00	147 007 0009 00 148 007 0006 00	IN EX	8 8		1

Datos del producto

De acuerdo al orden de posición en la parte del catálogo, usted encontrará los datos técnicos y las descripciones relevantes al número de la referencia.

posición de montaje	fabricante del motor	referencia NE	dimension válvula	especificaciones del material	revestimiento del vástago de la válvula	diseño de la chaveta	tratamiento del asiento	Tratamiento de la punta
				Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1	IN	147 007 0009 00	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 00	L = 105,60 D = 32,90		CR			

L = longitud válvula
 D = diámetro plato válvula
 d = diámetro vástago válvula
 a = ángulo asiento válvula

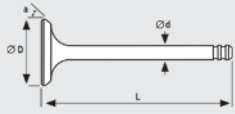
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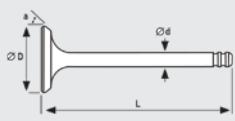


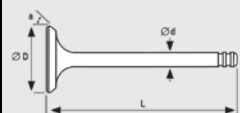
Globally reliable

	ccm							IN/EX	QTY	Info	Pos.
939 A4.000	1796	4	103 KW 140 PS	159 1.8 MPI	03/07 - 11/11	80,50	147 309 0001 00 148 309 0001 00	IN EX	8 8		1

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 309 0001 00	L = 113,80 D = 31,20 d = 5,00 a = 45°	S	CR		S/H	TH
	EX	148 309 0001 00	L = 113,15 D = 27,50 d = 5,00 a = 45°	A/S	CR		S/S	TH

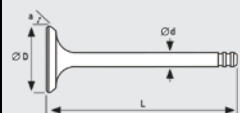
							IN/EX	QTY	Info	Pos.
AUA, BBY	1390	4	55 KW 75 PS	A2 1.4	02/00 - 08/05	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8	1
AWA	1984	4	110 KW 150 PS	A4 2.0 FSI	07/02 - 07/05	82,50	147 050 0024 00	IN	8	3
AXR	1896	4	74 KW 100 PS	A3 1.9 TDI	10/00 - 05/03	79,50	147 050 0028 00 148 050 0019 00	IN EX	4 4	10
AXW, BLR, BLX, BLY, BVY, BVZ	1984	4	110 KW 150 PS	A3 2.0 FSI	05/03 - 11/08	82,50	147 050 0024 00	IN	8	3
BAD	1598	4	81 KW 110 PS	A2 1.6 FSI	05/02 - 08/05	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8	1
BAG, BLF, BLP	1598	4	85 KW 115 PS	A3 1.6 FSI A3 Sportback 1.6 FSI	08/03 - 09/07 09/04 - 09/07	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8	1
BHZ, BZC	1984	4	195 KW 265 PS	S3 quattro	11/06 - 03/13	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	8
BKN	2967	6	150 KW 204 PS	A4 3.0 TDI quattro	11/04 - 03/09	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	4
BMB	1984	4	110 KW 150 PS	A3 2.0 FSI	05/03 - 06/08	82,50	147 050 0024 00	IN	8	3
BMC	4134	8	235 KW 320 PS	A8 4.2 TDI quattro	01/05 - 06/05	83,00	147 050 0025 01 148 050 0018 01	IN EX	16 16	7
BMK	2967	6	165 KW 224 PS	A6 3.0 TDI quattro	05/04 - 05/06	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	4
BNG	2967	6	155 KW 211 PS	A6 3.0 TDI quattro A8 3.0 TDI quattro	05/04 - 08/11 11/03 - 07/10	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	4
BSG, BPP	2698	6	120-132 KW 163-180 PS	A4 / A6 2.7 TDI	11/04 - 08/11	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	4
BTR	4134	8	240 KW 326 PS	Q7 4.2 TDI quattro	03/07 - 06/08	83,00	147 050 0025 01 148 050 0018 01	IN EX	16 16	7
BUG	2967	6	171 KW 232 PS	Q7 3.0 TDI quattro	03/06 - 05/08	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
BUN, CASB	2967	6	155 KW 211 PS	Q7 3.0 TDI quattro TOUAREG 3.0 TDI	03/06 - 05/10 04/06 - 05/10	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
BVN	4134	8	240 KW 326 PS	A8 4.2 TDI quattro	07/05 - 07/10	83,00	147 050 0025 01 148 050 0018 01	IN EX	16 16	7
BWA, AXX	1984	4	147 KW 200 PS	A3 (8P1) 2.0 TFSI A3 (8P1) 2.0 TFSI quattro A3 Sportback (8PA) 2.0 TFSI A3 Sportback (8PA) 2.0 TFSI quattro	09/04 - 08/12 09/04 - 08/12 09/04 - 09/04 -	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	8
CAPA	2967	6	176 KW 240 PS	A4 3.0 TDI quattro A5 3.0 TDI quattro	11/07 - 03/12 06/07 - 03/12	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
CASA	2967	6	176 KW 240 PS	Q7 3.0 TDI quattro TOUAREG 3.0 V6 TDI	11/07 - 08/15 11/07 - 03/18	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
CATA	2967	6	165 KW 224 PS	Q7 3.0 TDI quattro	06/09 - 05/12	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	4
CAXA, CNVA	1390	4	90 KW 122 PS	A1 1.4 TFSI A1 Sportback 1.4 TFSI	05/10 - 11/11 -	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8	1
CAXC, CMSA	1390	4	92 KW 125 PS	A3 / S3 1.4 TFSI A3 1.4 TFSI A3 Cabriolet 1.4 TFSI A3 Sportback 1.4 TFSI	09/09 - 08/12 09/07 - 08/12 02/11 - 05/13 09/07 - 03/13	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8	1
CBZA	1197	4	63 KW 86 PS	A1 1.2 TFSI A1 Sportback 1.2 TFSI	05/10 - 04/15 01/12 - 04/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4	2
CBZB	1197	4	77 KW 105 PS	A3 1.2 TSI	03/10 - 05/13	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4	2
CCFA, CCFC	4134	8	250 KW 340 PS	Q7 4.2 TDI quattro	03/07 - 08/15	83,00	147 050 0025 01	IN	16	6
CCWA	2967	6	176 KW 240 PS	A4 3.0 TDI quattro A5 3.0 TDI quattro Q5 3.0 TDI quattro	11/07 - 03/12 03/09 - 03/12 11/08 - 04/13	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
CCWB	2967	6	155 KW 211 PS	A4 3.0 TDI quattro A5 3.0 TDI quattro Q5 3.0 TDI quattro	06/08 - 05/10 03/08 - 05/10 11/08 - 09/12	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	5
CDLA	1984	4	195 KW 265 PS	S3 quattro TT 2.0 TTS quattro	11/06 - 03/13 05/08 - 06/14	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	8
DAXB, DJYA	1984	4	185 KW 252 PS	Q5 2.0 TFSI quattro	06/16 -	82,50	147 050 0027 00	IN	8	9
DAXC	1984	4	183 KW 249 PS	Q5 2.0 TFSI quattro	01/17 - 11/20	82,50	147 050 0027 00	IN	8	9
DAYB	1984	4	185 KW 252 PS	Q5 2.0 TFSI quattro	06/16 -	82,50	147 050 0027 00	IN	8	9
DGKB, DNTA	1984	4	180 KW 245 PS	Q5 45 TFSI Mild Hybrid quattro	12/18 -	82,50	147 050 0027 00	IN	8	9
DNJA	1984	4	162 KW 220 PS	TIGUAN ALLSPACE 2.0 TSI 4motion	07/17 -	82,50	147 050 0027 00	IN	8	9

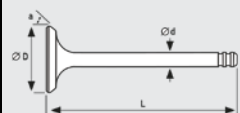
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 050 0001 00	L = 101,00 D = 29,50 d = 6,00 a = 45°	S				TH
	EX	148 050 0001 00	L = 100,60 D = 26,00 d = 6,00 a = 45°	A/S				TH
2								
	IN	147 050 0023 00	L = 98,60 D = 35,50 d = 6,00 a = 45°	S			S/H	TH
	EX	148 050 0016 00	L = 98,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH
3								
	IN	147 050 0024 00	L = 104,10 D = 33,90 d = 6,00 a = 45°	S				TH
4								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 00	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH
5								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 00	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 050 0025 01	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
7								
	IN	147 050 0025 01	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 01	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH
8								
	IN	147 050 0026 00	L = 103,95 D = 33,80 d = 6,00 a = 45°	S	CR			TH
	EX	148 050 0017 00	L = 102,00 D = 28,00 d = 6,00 a = 45°	A/S	CR			TH
9								
	IN	147 050 0027 00	L = 104,00 D = 33,85 d = 6,00 a = 45°					
10								
	IN	147 050 0028 00	L = 89,40 D = 36,00 d = 7,00 a = 45°					
	EX	148 050 0019 00	L = 89,00 D = 31,50 d = 7,00 a = 45°					

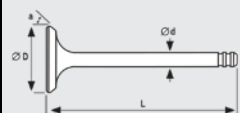
	ccm						IN/EX	QTY	Info	Pos.
M42 B18 (184S1)	1796	4	100-103 KW 136-140 PS	3 (E30/36) 318 i, 318 is	09/89 - 12/95	84,00	147 007 0009 00 148 007 0006 00	IN EX	8 8	4
M43 B16 (164E2)	1596	4	75 KW 102 PS	3 (E36) 316 i	09/93 - 98/00	84,00	147 007 0002 00 148 007 0002 00	IN EX	4 4	2
M43 B16 (164E3)	1596	4	77 KW 105 PS	3 (E46) 316 i, 316 Ci	04/00 - 07/06	84,00	147 007 0002 00 148 007 0002 00	IN EX	4 4	2
M43 B18 (184E2)	1796	4	85 KW 115 PS	3 (E36) 318 i 5 (E34) 518 i Z3 (E36) 1.8 i	09/93 - 04/99 05/94 - 07/96 10/95 - 10/98	84,00	147 007 0002 00 148 007 0002 00	IN EX	4 4	2
M43 B19 (194E1)	1895	4	77-87 KW 105-118 PS	3 (E36) 318 i 3 (E46) 318 i, 318 Ci Z3 (E36) 1.9 i	01/99 - 08/00 12/97 - 02/02 07/98 - 01/03	85,00	147 007 0002 00 148 007 0002 00	IN EX	4 4	2
M44 B19 (194S1)	1895	4	103 KW 140 PS	3 (E36) 318 is	09/95 - 09/99	85,00	147 007 0009 00 148 007 0006 00	IN EX	8 8	4
M47 D20 (204D1)	1951	4	85-100 KW 115-129 PS	3 (E46) 318d, 320d 5 (E39) 520 d	02/98 - 03/03 02/00 - 09/03	84,00	147 007 0010 00 148 007 0010 00	IN EX	8 8	6
M47 D20 (204D4)	1995	4	85-120 KW 115-163 PS	1 (E87) 118d, 120d 3 (E46) 318d, 18td, 320d, 320 Cd, 320td 3 (E90) 318d, 320d 3 (E91) 318d, 320d 5 (E60) 520 d 5 (E61) 520 d X3 (E83) 2.0 d	06/04 - 06/11 09/01 - 05/05 12/04 - 10/11 12/04 - 06/12 09/05 - 12/09 04/05 - 05/10 09/04 - 08/07	84,00	147 007 0010 00 148 007 0010 00	IN EX	8 8	6
M52 B25 (256S3), M52 B25 (256S4)	2494	6	120-125 KW 163-170 PS	3 (E36) 323 i, 323 ti 3 (E46) 323 i, 323 Ci 5 (E39) 523 i	05/95 - 08/00 03/98 - 12/00 09/95 - 08/00	84,00	147 007 0009 01 148 007 0006 01	IN EX	12 12	5
M52 B28 (286S1), M52 B28 (286S2)	2793	6	142-143 KW 193-194 PS	3 (E36) 328 i 3 (E46) 328 i 5 (E39) 528 i 7 (E38) 728 i, iL, 728i X Z3 (E36) 2.8 i	01/95 - 11/99 02/98 - 06/00 09/95 - 08/00 08/95 - 11/01 01/96 - 07/00	84,00	147 007 0009 01 148 007 0006 01	IN EX	12 12	5
M54 B25 (256S5)	2494	6	137-141 KW 186-192 PS	3 (E46) 325 Ci, 325 i, 325 xi, 325 ti 5 (E39) 525 i 5 (E60) 525 i 5 (E61) 525 i X3 (E83) 2.5 i Z3 (E36) 2.5 i Z4 (E85) 2.5 i Z4 (E86) 2.5 i	09/00 - 08/06 09/00 - 06/03 09/03 - 02/05 06/04 - 12/10 03/04 - 07/06 10/00 - 02/02 12/02 - 12/05 11/06 - 04/08	84,00	147 007 0009 01 148 007 0006 01	IN EX	12 12	5
M54 B30 (306S3)	2979	6	168-170 KW 228-231 PS	3 (E46) 330 i, 330 Ci, 330 Xi	06/00 - 08/06	84,00	147 007 0009 01 148 007 0006 01	IN EX	12 12	5
M54 B30 (306S3)	2979	6	170 KW 231 PS	5 (E39) 530 i 5 (E60) 530 i 7 (E65, E66, E67) 730 i, Li X3 (E83) 3.0 i xDrive X5 (E53) 3.0 i Z3 (E36) 3.0 i Z4 (E85) 3.0 i	09/00 - 12/03 12/01 - 02/05 03/03 - 07/08 09/03 - 07/06 04/00 - 10/06 06/00 - 06/03 12/02 - 12/05	84,00	147 007 0009 01 148 007 0006 01	IN EX	12 12	5
M57 D25 (256D1)	2497	6	120 KW 163 PS	5 (E39) 525 d	02/00 - 05/04	80,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7
M57 D25 (256D2)	2497	6	120-130 KW 163-177 PS	5 (E60) 525 d 5 (E61) 525 d	06/04 - 03/10 03/04 - 03/07	80,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7
M57 D30 (306D2)	2993	6	150 KW 204 PS	3 (E46) 330d, 330xd, 330Cd 5 (E60) 530d 5 (E61) 530d 7 (E65, E66, E67) 730d X3 (E83) 3.0 d X5 (E53) 3.0 d	08/02 - 12/07 09/02 - 12/09 03/04 - 05/10 06/02 - 08/08 01/04 - 08/05 10/03 - 09/06	84,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7
M57 D30 (306D3)	2993	6	145-173 KW 197-235 PS	3 (E90) 325d, 330d, 330xd 3 (E91) 325d, 330d, 330xd 3 (E92) 325d, 330d, 330xd 3 (E93) 325d, 330d 5 (E60) 525d, 525d xDrive, 525xd, 530d, 530d xDrive, 530xd 5 (E61) 525d, 525d xDrive, 525xd, 530d, 530d xDrive, 530xd 7 (E65, E66, E67) 730d, 730Ld X3 (E83) 3.0d, xDrive 30d X5 (E70) 3.0d, xDrive 30d X6 (E71, E72) xDrive 30d	09/05 - 12/11 12/04 - 06/12 03/06 - 02/10 03/07 - 12/13 09/02 - 03/10 03/04 - 05/10 09/03 - 08/08 09/05 - 08/10 12/06 - 07/13 04/08 - 03/10	84,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7
M57 D30 (306D4)	2993	6	200 KW 272 PS	5 (E60) 535d 5 (E61) 535 d	09/04 - 03/10 09/04 - 12/10	84,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7

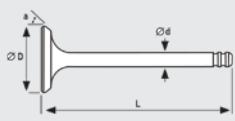
	ccm						IN/EX	QTY	Info	Pos.
M57 D30 (306D5)	2993	6	210 KW 286 PS	3 (E90) 335 d 3 (E91) 335 d 3 (E92) 335 d 5 (E60) 535 d 5 (E61) 535 d 6 (E63) 635 d 6 (E64) 635 d X3 (E83) 3.0 sd, xDrive 35 d X5 (E70) 3.0 sd X6 (E71, E72) xDrive 35 d	09/06 - 12/11 09/06 - 06/12 03/06 - 03/13 01/07 - 03/10 01/07 - 12/10 07/07 - 07/10 07/07 - 07/10 09/06 - 08/11 10/07 - 07/13 01/08 - 03/10	84,00	147 007 0010 01 148 007 0010 01	IN EX	12 12	7
M73 B54	5379	12	240 KW 326 PS	7 (E38) 750 i, iL 8 (E31) 850 Ci	11/94 - 07/01 09/94 - 12/99	85,00	147 007 0003 00 148 007 0003 00	IN EX	12 12	3
N47 C16 A	1598	4	66-82 KW 90-112 PS	MINI (R55) One D, Cooper D MINI (R56) One D, Cooper D MINI (R57) Cooper D MINI (R60) One D, Cooper D MINI (R61) Cooper D	03/10 - 06/14 06/10 - 11/13 05/09 - 11/13 08/10 - 10/16 04/12 - 09/16	78,00	147 007 0001 00 148 007 0001 00	IN EX	8 8	1
N47 D16 A	1598	4	70-85 KW 95 PS	1 (F20), 1 (F21) 114 d, 116 d	12/11 -	78,00	147 007 0001 00 148 007 0001 00	IN EX	8 8	1

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 007 0001 00	L = 94,00 D = 24,80 d = 5,00 a = 45°	S	CR			TH
	EX	148 007 0001 00	L = 94,00 D = 21,20 d = 5,00 a = 45°	A/S	4,96			TH
2								
	IN	147 007 0002 00	L = 104,00 D = 42,00 d = 7,00 a = 45°	S				TH
	EX	148 007 0002 00	L = 103,00 D = 36,00 d = 7,00 a = 45°	A/S	CR			TH
3								
	IN	147 007 0003 00	L = 104,00 D = 42,00 d = 7,00 a = 45°	S				TH
	EX	148 007 0003 00	L = 103,00 D = 36,00 d = 7,00 a = 45°	A/S				TH
4								
	IN	147 007 0009 00	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 00	L = 105,70 D = 30,50 d = 6,00 a = 45°	A/S	CR		S/S	TH
5								
	IN	147 007 0009 01	L = 106,10 D = 32,90 d = 6,00 a = 45°	S				TH
	EX	148 007 0006 01	L = 105,70 D = 30,50 d = 6,00 a = 45°	A/S	CR		S/S	TH

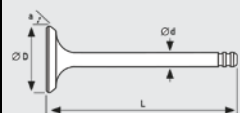
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 007 0010 00	L = 100,00 D = 26,00 d = 6,00 a = 45°					
	EX	148 007 0010 00	L = 100,00 D = 26,00 d = 6,00 a = 45°					
7								
	IN	147 007 0010 01	L = 100,00 D = 26,00 d = 6,00 a = 45°					
	EX	148 007 0010 01	L = 100,00 D = 26,00 d = 6,00 a = 45°					

	ccm							IN/EX	QTY	Info	Pos.
4HH (P22DTE)	2198	4	96 KW 130 PS	JUMPER 2.2 HDi 130	07/11 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
4HU (P22DTE)	2198	4	88 KW 120 PS	JUMPER 2.2 HDi 120	04/06 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
4HV (P22DTE)	2198	4	74 KW 101 PS	JUMPER 2.2 HDi 100	04/06 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
CFB (1KR)	998	3	50-53 KW 68-72 PS	C1 1.0 C1 II 1.0 VTI 68	06/05 - 09/14 04/14 -	71,00	147 037 0019 00 148 037 0018 00	IN EX	6 6		4
F1CE0481D (F30DT)	2999	4	116 KW 157 PS	JUMPER 3.0 HDi 160	09/06 -	95,80	147 020 0008 00 148 020 0008 00	IN EX	8 8		1
HMU (EB2D)	1199	3	55 KW 75 PS	C4 CACTUS 1.2 VTI 75	09/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMY (EB2M)	1199	3	53 KW 72 PS	C-ELYSEE 1.2 VTI 72	11/12 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	C1 II 1.2 VTI 82	04/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	C-ELYSEE 1.2 VTI 82	12/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	C4 CACTUS 1.2 VTI 82	09/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	DS3 1.2 VTI 82	01/13-03/15 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	C3 II 1.2 VTI 82	06/12 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
KFU (ET3J4)	1360	4	65 KW 88 PS	C2 1.4 16V C3 I 1.4 16V C4 I 1.4 16V	06/06 - 12/03 - 11/04 - 07/11	75,00	147 037 0021 00 148 037 0022 00	IN EX	8 8		6
NFU (TU5JP4)	1587	4	78-90 KW 106-122 PS	BERLINGO 1.6 16V C2 1.6 16V C3, C3 Picasso, C3 Pluriel, C3 AIRCROSS 1.6 16V C4 1.6 16V XSARA 1.6 16V XSARA PICASSO 1.6 16V	10/00 - 09/03 - 02/02 - 11/04 - 09/00 - 08/05 06/05 - 06/12	78,50	147 037 0018 00 148 037 0019 00	IN EX	8 8		3
RFH (EW10A)	1997	4	103 KW 140 PS	JUMPY 2.0 i	01/07 -	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
RFJ (EW10A)	1997	4	103 KW 140 PS	C4 2.0 16V C5 2.0 16V C8 2.0 16V	11/04 - 08/13 09/04 - 09/05 -	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
RFJ (EW10A), RFN (EW10J4)	1997	4	105 KW 143 PS	C4 PALLAS 2.0 Exclusive 16V	07/07 - 12/08	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
RFN (EW10J4)	1997	4	100 KW 136 PS	C4 2.0 16V C5 2.0 16V C8 2.0 EVASION SYNERGIE 2.0 16V JUMPY 2.0 i 16V XSARA 2.0 16V	11/04 - 05/13 03/01 - 08/04 07/02 - 05/00 - 07/02 03/00 - 12/06 12/99 - 11/11	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
YHR (DV5RUCd)	1499	4	75 KW 102 PS	JUMPY 1.5 BlueHDi 100 SPACETOURER 1.5 BlueHDi 100	06/18 - 06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHS (DV5RCE)	1499	4	81 KW 110 PS	C3 AIRCROSS II 1.5 BlueHDi 110	10/20 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHV (DV5RUC)	1499	4	88 KW 120 PS	JUMPY 1.5 BlueHDi 120 SPACETOURER 1.5 BlueHDi 120	06/18 - 06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHW (DV5RE)	1499	4	55 KW 75 PS	BERLINGO 1.5 BlueHDi 75	06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHX (DV5RC)	1499	4	88 KW 120 PS	C3 AIRCROSS II 1.5 BlueHDi 120 C4 CACTUS 1.5 BlueHDi 120	08/18 - 09/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHY (DV5RD)	1499	4	75 KW 102 PS	BERLINGO 1.5 BlueHDi 100 C3 AIRCROSS II 1.5 BlueHDi 100 C3 III 1.5 BlueHDi 100 C4 CACTUS 1.5 BlueHDi 100 C-ELYSEE 1.5 BlueHDi 100	06/18 - 08/18 - 05/18 - 06/18 - 05/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHZ (DV5RC)	1499	4	96 KW 131 PS	BERLINGO 1.5 BlueHDi 130 C4 III 1.5 BlueHDi 130 C4 SPACETOURER 1.5 BlueHDi 130 C5 AIRCROSS 1.5 BlueHDi 130 GRAND C4 SPACETOURER 1.5 BlueHDi 130	06/18 - 10/20 - 05/18 - 11/18 - 05/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8

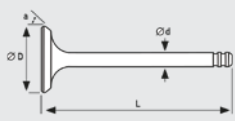
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	S	CR			TH
	EX	148 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	A/S	CR			TH
2								
	IN	147 037 0001 00	L = 92,55 D = 29,15 d = 5,00 a = 45°	S				H
	EX	148 037 0001 00	L = 91,85 D = 26,00 d = 5,00 a = 45°	A	NT			
3								
	IN	147 037 0018 00	L = 103,80 D = 31,15 d = 6,00 a = 45°	S				H
	EX	148 037 0019 00	L = 104,50 D = 24,50 d = 6,00 a = 45°	A	CR			
4								
	IN	147 037 0019 00	L = 88,35 D = 27,80 d = 5,00 a = 45°	S	NT			H
	EX	148 037 0018 00	L = 89,00 D = 23,50 d = 5,00 a = 45°	A	NT			
5								
	IN	147 037 0020 00	L = 106,20 D = 33,20 d = 6,00 a = 45°	S				H
	EX	148 037 0021 00	L = 103,70 D = 29,00 d = 6,00 a = 45°	A	CR			

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 037 0021 00	L = 100,80 D = 28,30 d = 5,50 a = 45°	S				TH
	EX	148 037 0022 00	L = 100,80 D = 24,30 d = 5,50 a = 45°	A	CR			
7								
	IN	147 037 0026 00	L = 122,30 D = 29,80 d = 7,00 a = 60°	S	CR			TH
	EX	148 037 0027 00	L = 122,00 D = 25,80 d = 7,00 a = 45°	A	CR			
8								
	IN	147 037 0028 00	L = 95,30 D = 25,30 d = 5,50 a = 45°	S	CR			TH
	EX	148 037 0029 00	L = 94,80 D = 22,00 d = 5,50 a = 45°	A/S	CR		S/S	TH

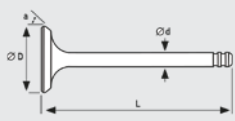
	ccm							IN/EX	QTY	Info	Pos.
B12D1, LMU	1206	4	53-62 KW 72-84 PS	AVEO 1.2 SPARK 1.2	01/08 - 03/10 -	69,70	147 309 0002 00 148 309 0002 00	IN EX	8 8		2
F14D3	1399	4	70 KW 95 PS	KALOS, LACETTI 1.4 16V	06/02 -	77,90	147 309 0008 00 148 309 0008 00	IN EX	8 8		5
F14S3	1399	4	61 KW 83 PS	KALOS 1.4	09/02 -	77,90	147 309 0004 00 148 309 0004 00	IN EX	4 4		4
F16D3, LXT	1598	4	78 KW 106 PS	OPTRA 1.6	08/03 -	79,00	147 309 0003 00 148 309 0003 00	IN EX	8 8		3
F16D3, LXT	1598	4	77 KW 105 PS	AVEO 1.6 NUBIRA 1.6	09/03 - 01/10 -	79,00	147 309 0003 00 148 309 0003 00	IN EX	8 8		3
F16D3, LXT	1598	4	80 KW 109 PS	LACETTI 1.6	03/05 -	79,00	147 309 0003 00 148 309 0003 00	IN EX	8 8		3
L14	1399	4	69 KW 94 PS	AVEO 1.4 LACETTI 1.4 16V	03/06 - 12/07 03/05 -	77,90	147 309 0003 00 148 309 0003 00	IN EX	8 8		3
L95	1399	4	69 KW 44 PS	AVEO 1.4 CNG	01/08 -	77,90	147 309 0003 00 148 309 0003 00	IN EX	8 8		3
M13A	1328	4	61 KW 83 PS	CRUZE 1.3	07/00 - 09/08	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		1

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 094 0005 00	L = 100,70 D = 30,00 d = 5,50 a = 45°	S	NT			H
	EX	148 094 0005 00	L = 99,00 D = 25,00 d = 5,50 a = 45°	A	NT		S/S	
2								
	IN	147 309 0002 00	L = 99,20 D = 25,90 d = 5,00 a = 45°	S	NT			H
	EX	148 309 0002 00	L = 100,00 D = 23,50 d = 5,00 a = 45°	A	NT			
3								
	IN	147 309 0003 00	L = 101,65 D = 28,55 d = 6,00 a = 45°	S	NT			H
	EX	148 309 0003 00	L = 101,25 D = 27,30 d = 6,00 a = 45°	A	CR			
4								
	IN	147 309 0004 00	L = 104,00 D = 38,00 d = 6,00 a = 45°	S	NT			TH
	EX	148 309 0004 00	L = 103,90 D = 31,00 d = 6,00 a = 45°	A/S	NT		S/S	TH
5								
	IN	147 309 0008 00	L = 101,60 D = 28,50 d = 6,00 a = 45°	S	NT			H
	EX	148 309 0008 00	L = 101,25 D = 27,30 d = 6,00 a = 45°	A/S	NT			H

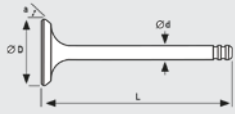
	ccm							IN/EX	QTY	Info	Pos.
1KR-FE	998	3	51 KW 70 PS	CUORE VI + VII 1.0 SIRION 1.0	03/03 - 01/05 - 06/13	71,00	147 037 0019 00 148 037 0018 00	IN EX	6 6		1
1NR-FE	1329	4	73 KW 99 PS	CHARADE VIII 1.33 16V	05/11 -	72,50	147 096 0004 00 148 096 0005 00	IN EX	8 8		3
HC-E	1295	4	48-66 KW 65-90 PS	CHARADE 1.3 i HIJET 1.3 i 16V	06/88 - 11/99 05/98 -	76,00	147 070 0001 00 148 070 0001 00	IN EX	8 8		2
HD-E	1590	4	69-77 KW 94-105 PS	APPLAUSE 1.6 16V CHARADE IV 1.6 GTi	06/89 - 03/93 - 11/99	76,00	147 070 0001 00 148 070 0001 00	IN EX	8 8		2

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 037 0019 00	L = 88,35 D = 27,80 d = 5,00 a = 45°	S	NT			H
	EX	148 037 0018 00	L = 89,00 D = 23,50 d = 5,00 a = 45°	A	NT			
2								
	IN	147 070 0001 00	L = 112,80 D = 30,00 d = 6,60 a = 45°	S				H
	EX	148 070 0001 00	L = 114,50 D = 26,00 d = 6,60 a = 45°	A	NT			
3								
	IN	147 096 0004 00	L = 103,30 D = 29,00 d = 5,50 a = 45°	S	NT			H
	EX	148 096 0005 00	L = 104,50 D = 24,20 d = 5,50 a = 45°	A	NT		S/S	

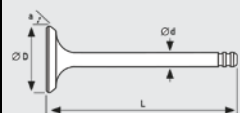
	ccm						IN/EX	QTY	Info	Pos.	
YHS (DV5RCE)	1499	4	81 KW 110 PS	DS 3 CROSSBACK 1.5 BlueHDi 110	01/21 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		1
YHY (DV5RD)	1499	4	75 KW 102 PS	DS 3 CROSSBACK 1.5 BlueHDi 100	10/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		1
YHZ (DV5RC)	1499	4	96 KW 131 PS	DS 7 Crossback 1.5 BlueHDi 130	09/17 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		1

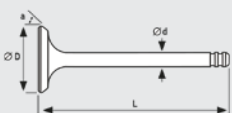
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 037 0028 00	L = 95,30 D = 25,30 d = 5,50 a = 45°	S	CR			TH
	EX	148 037 0029 00	L = 94,80 D = 22,00 d = 5,50 a = 45°	A/S	CR		S/S	TH

	ccm							IN/EX	QTY	Info	Pos.
BF 4M 2012 C	4038	4	68-82 KW 92-112 PS	Farmer 307 Ci, 308 Ci, 309 Ci	01/03 - 12/08	101,00	147 015 0003 00 148 015 0003 00	IN EX	2 2		1

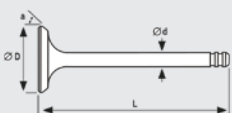
	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 015 0003 00	L = 119,50 D = 41,70 d = 8,00 a = 30°	S	CR			TH
	EX	148 015 0003 00	L = 119,50 D = 36,00 d = 8,00 a = 45°	A/S	CR			TH

	ccm							IN/EX	QTY	Info	Pos.
176 B9.000	1242	4	63 KW 86 PS	PUNTO 1.2 16V	04/97 - 09/99	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
178 B5.000	1242	4	50-55 KW 68-75 PS	FIORINO PALIO 1.2 SIENA / ALBEA STRADA 1.2	01/04 - 04/96 - 02/01 09/98 - 12/09 06/99 - 12/06	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
182 B2.000	1242	4	60-64 KW 82-87 PS	BRAVA 1.2 16V BRAVO 1.2 16V 80 MAREA 1.2 16V	12/98 - 12/02 12/98 - 10/01 10/98 - 05/02	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
188 A5.000	1242	4	59-60 KW 80-82 PS	BRAVA 1.2 16V 80 BRAVO I 1.2 16V 80 Idea 1.2 16V PALIO 1.2 PUNTO 1.2 16V 80 SIENA / ALBEA STILO 1.2 16V	10/00 - 10/01 10/00 - 10/01 01/04 - 06/01 - 10/07 09/99 - 12/06 06/01 - 12/09 02/02 - 11/06	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
4HV	2198	4	74 KW 101 PS	DUCATO 100 Multijet 2,2 D	07/06 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		4
939 A4.000	1796	4	96-103 KW 131-140 PS	CROMA 1.8 16V	12/05 -	80,50	147 309 0001 00 148 309 0001 00	IN EX	8 8		8
F1AE0481C	2286	4	81 KW 110 PS	DUCATO 2.3 JTD	04/02 -	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		7
F1AE0481D	2287	4	88 KW 120 PS	DUCATO 120 Multijet 2,3 D	07/06 -	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		7
F1AE0481N	2287	4	96 KW 131 PS	DUCATO 130 Multijet 2,3 D	07/06 -	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		7
F1CE0481D	2999	4	115 KW 156 PS	DUCATO 160 Multijet 3,0 D	07/06 -	95,80	147 020 0008 00 148 020 0008 00	IN EX	8 8		2
M16A	1586	4	79-88 KW 107-120 PS	SEDICI 1.6 16V	06/06 - 10/14	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		6
R9M.408, R9M.413, R9M.452	1598	4	70-107 KW 95-145 PS	TALENTO 1.6 D	06/16 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		5
RFN (EW10J4)	1997	4	100 KW 136 PS	SCUDO 2.0 ULYSSE 2.0	05/00 - 12/06 09/00 - 06/11	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		3

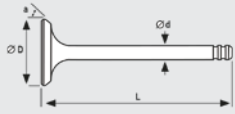
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 020 0002 00	L = 95,00 D = 26,80 d = 6,00 a = 45°	S	CR			H
	EX	148 020 0002 00	L = 96,10 D = 22,35 d = 6,00 a = 45°	A	CR			
2								
	IN	147 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	S	CR			TH
	EX	148 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	A/S	CR			TH
3								
	IN	147 037 0020 00	L = 106,20 D = 33,20 d = 6,00 a = 45°	S				H
	EX	148 037 0021 00	L = 103,70 D = 29,00 d = 6,00 a = 45°	A	CR			
4								
	IN	147 037 0026 00	L = 122,30 D = 29,80 d = 7,00 a = 60°	S	CR			TH
	EX	148 037 0027 00	L = 122,00 D = 25,80 d = 7,00 a = 45°	A	CR			
5								
	IN	147 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	S				TH
	EX	148 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	A/S	NT			TH

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 094 0005 00	L = 100,70 D = 30,00 d = 5,50 a = 45°	S	NT			H
	EX	148 094 0005 00	L = 99,00 D = 25,00 d = 5,50 a = 45°	A	NT		S/S	
7								
	IN	147 121 0000 00	L = 120,40 D = 30,00 d = 6,00 a = 45°	S	CR		S/H	TH
	EX	148 121 0000 00	L = 120,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH
8								
	IN	147 309 0001 00	L = 113,80 D = 31,20 d = 5,00 a = 45°	S	CR		S/H	TH
	EX	148 309 0001 00	L = 113,15 D = 27,50 d = 5,00 a = 45°	A/S	CR		S/S	TH

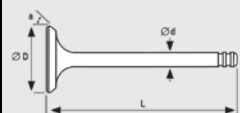
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AODA, AODB, AODE	1999	4	107 KW 146 PS	FOCUS II 2.0	04/05 - 07/11	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		2
AODA, AODB, AODE, SYDA	1999	4	107 KW 146 PS	C-MAX 2.0 FOCUS C-MAX 2.0	02/07 - 09/10 03/04 - 03/07	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		2
AOWA, AOWB	1999	4	107 KW 146 PS	GALAXY 2.0 S-MAX 2.0	05/06 - 06/15 05/06 - 12/04	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		2
BHDA, BHDB	1753	4	55 KW 75 PS	FOCUS I 1.8 DI / TDDi	08/99 - 03/05	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
BHPA, P7PA, P7PB, R2PA	1753	4	55 KW 75 PS	TOURNEO CONNECT 1.8 TDCi / TDDi / DI	06/02 - 12/13	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
C9DA, C9DB, C9DC	1753	4	66 KW 90 PS	FOCUS I 1.8 Turbo DI / TDDi	08/88 - 03/05	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
CJBA, CJBB	1999	4	107 KW 146 PS	MONDEO III 2.0	10/00 - 03/07	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		2
EDDC, EDDD, EDBD	1998	4	96 KW 131 PS	COUGAR 2.0 16V FOCUS I 2.0 16V	08/98 - 12/01 10/98 - 11/04	84,80	147 021 0004 00 148 021 0004 00	IN EX	8 8		3
EYDC, EYDB, EYPA	1796	4	85 KW 115 PS	FOCUS I 1.8 16V TOURNEO / TRANSIT CONNECT 1.8 16V	10/98 - 03/05 06/02 - 12/13	80,60	147 021 0004 00 148 021 0004 00	IN EX	8 8		3
F9DA, F9DB	1753	4	85 KW 115 PS	FOCUS I 1.8 TDCi	03/01 - 03/05	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
FFDA	1753	4	74 KW 100 PS	FOCUS I 1.8 TDCi	08/02 - 03/05	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
KKDA	1753	4	85 KW 115 PS	FOCUS II 1.8 TDCi	07/04 - 09/12	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
KKDA, KKDB	1753	4	85 KW 115 PS	FOCUS C-MAX 1.8 TDCi FOCUS II 1.8 TDCi	01/05 - 09/10 07/04 - 09/12	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
QQDA, QQDB	1798	4	92 KW 125 PS	FOCUS C-MAX 1.8	04/04 - 03/07	83,00	147 021 0001 00 148 021 0001 00	IN EX	8 8		1
QQDA, QQDB, QQDC	1798	4	90-92 KW 122-125 PS	C-MAX 1.8	02/07 - 09/10	83,00	147 021 0001 00 148 021 0001 00	IN EX	8 8		1
QQDC	1798	4	90 KW 122 PS	FOCUS C-MAX 1.8	09/05 - 03/07	83,00	147 021 0001 00 148 021 0001 00	IN EX	8 8		1
RTN, RTP, RTQ	1753	4	55 KW 75 PS	FIESTA IV 1.8 DI	03/00 - 08/03	82,50	147 021 0006 00 148 021 0006 00	IN EX	4 4		4
WL-T	2499	4	62-80 KW 84-109 PS	RANGER 2.5 TD	10/99 - 06/06	93,00	147 085 0001 00 148 085 0001 00	IN EX	8 4		5

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 021 0001 00	L = 103,50 D = 32,50 d = 5,50 a = 45°	S	NT			H
	EX	148 021 0001 00	L = 104,50 D = 28,00 d = 5,50 a = 45°	A	NT			
2								
	IN	147 021 0002 00	L = 103,50 D = 35,00 d = 5,50 a = 45°	S	NT			H
	EX	148 021 0002 00	L = 104,80 D = 30,10 d = 5,50 a = 45°	A	NT			
3								
	IN	147 021 0004 00	L = 98,10 D = 33,00 d = 6,00 a = 45°	S				TH
	EX	148 021 0004 00	L = 97,50 D = 28,00 d = 6,00 a = 45°	A	CR			
4								
	IN	147 021 0006 00	L = 107,00 D = 36,50 d = 8,00 a = 45°	S	CR			TH
	EX	148 021 0006 00	L = 108,70 D = 32,00 d = 8,00 a = 45°	A/S	CR		S/S	TH
5								
	IN	147 085 0001 00	L = 112,00 D = 32,50 d = 7,00 a = 45°	S	NT			H
	EX	148 085 0001 00	L = 111,80 D = 35,50 d = 7,00 a = 45°	A/S	NT		S/S	H

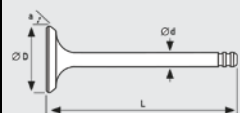
	ccm							IN/EX	QTY	Info	Pos.
JL4G18	1792	4	93-102 KW 127-139 PS	EMGRAND (GEELY) EC7 1.8	07/09 -	79,00	147 734 0001 00 148 734 0001 00	IN EX	8 8		1

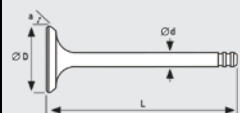
	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 734 0001 00	L = 88,80 D = 31,15 d = 5,50 a = 45°	S	NT			H
	EX	148 734 0001 00	L = 88,70 D = 25,90 d = 5,50 a = 45°	A	NT			

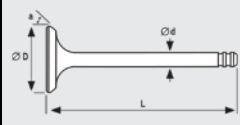
	ccm							IN/EX	QTY	Info	Pos.
GW4G15	1497	4	71-78 KW 97 PS	C30 1.5 FLORID 1.5	09/14 - 09/08 -	75,00	147 739 0002 00 148 739 0002 00	IN EX	8 8		1

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 739 0002 00	L = 89,20 D = 30,50 d = 5,00 a = 45°	S	NT			H
	EX	148 739 0002 00	L = 87,70 D = 25,50 d = 5,00 a = 45°	A	NT			

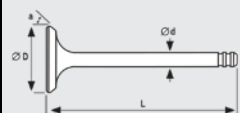
	ccm						IN/EX	QTY	Info	Pos.
D3EA	1493	3	60 KW 82 PS	ACCENT II 1.5 CRDi ELANTRA LAVITA 1.5 CRDi GETZ 1.5 CRDi MATRIX 1.5 CRDi VERNA II 1.5 CRDi	01/02 - 11/05 10/01 - 08/10 03/03 - 09/05 10/01 - 08/10 04/02 - 11/05	83,00	147 087 0002 00 148 087 0002 00	IN EX	8 8	4
D4BB	2607	4	57-79 KW 78-107 PS	H100 2.6 TD	07/93 - 12/07	91,10	147 087 0004 00 148 087 0004 00	IN EX	4 4	6
D4BB	2607	4	57-79 KW 78-107 PS	H-1 2.6 CRDi	10/97 - 12/07	91,10	147 087 0004 00 148 087 0004 00	IN EX	4 4	Till 07/01 7
D4CB	2497	4	81-125 KW 110-170 PS	H-1 2.5 CRDi H350 2.5 CRDi	07/01 - 04/15 -	91,00	147 053 0003 00 148 053 0003 00	IN EX	8 8	1
D4EA	1991	4	83-85 KW 113-115 PS	SANTA FÉ I 2.0 CRDi TRAJET 2.0 CRDi TUCSON 2.0 CRDi	04/01 - 12/12 04/01 - 07/08 08/04 - 03/10	83,00	147 087 0002 00 148 087 0002 00	IN EX	8 8	4
D4EA-F	1991	4	100-103 KW 136-140 PS	i30 2.0 CRDi SANTA FÉ I 2.0 CRDi SONATA V 2.0 CRDi TUCSON 2.0 CRDi	10/07 - 06/12 11/03 - 02/06 10/01 - 12/10 01/05 - 03/10	83,00	147 087 0002 00 148 087 0002 00	IN EX	8 8	4
D4EA-V	1991	4	92 KW 125 PS	SANTA FÉ I 2.0 CRDi 4x4 TRAJET 2.0 CRDi	08/03 - 03/06 08/05 - 07/08	83,00	147 087 0002 00 148 087 0002 00	IN EX	8 8	4
D4EB	2188	4	102-114 KW 139-155 PS	GRANDEUR 2.2 CRDi SANTA FÉ II 2.2 CRDi	06/06 - 12/11 03/06 - 12/12	87,00	147 087 0002 00 148 087 0002 00	IN EX	8 8	4
G4CS	2351	4	82-101 KW 111-137 PS	H-1 / STAREX 2.4 H100 2.4 TD	06/97 - 07/93 - 12/04	86,50	147 087 0018 00 148 087 0017 00	IN EX	4 4	10
G4EA	1341	4	55-63 KW 75-86 PS	GETZ 1.3	09/02 - 06/09	71,50	147 087 0003 00 148 087 0003 00	IN EX	8 4	5
G4EH	1341	4	40-62 KW 54-84 PS	ACCENT 1.3 VERNA 1.3	10/94 - 01/00 10/94 - 01/00	71,50	147 087 0003 00 148 087 0003 00	IN EX	8 4	5
G4EK	1495	4	65-69 KW 88-94 PS	ACCENT 1.5 i 12V LANTRA II 1.5 12V S COUPE 1.5	10/94 - 01/00 12/96 - 10/00 04/92 - 05/96	75,50	147 087 0003 00 148 087 0003 00	IN EX	8 4	5
G4FA	1396	4	66-80 KW 90-109 PS	ACCENT IV 1.4 i20 1.4 i30 1.4 ix20 1.4	11/10 - 09/08 - 12/15 12/11 - 12/15 11/10 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8	3
G4FC	1591	4	84-93 KW 114-126 PS	ACCENT IV 1.6 ELANTRA 1.6 CVVT i20 1.6 i30 1.6 ix20 1.6	10/11 - 06/06 - 06/11 09/08 - 12/12 01/12 - 12/06 11/10 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8	3
G4FD	1591	4	97-103 KW 132-140 PS	i30 1.6 GDI i40 1.6 GDI ix35 1.6 TUCSON 1.6 GDI VELOSTER 1.6 GDI	12/11 - 12/16 07/11 - 11/10 - 06/15 - 03/11 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8	3
G4GB	1795	4	93-98 KW 127-133 PS	ELANTRA 1.8 LANTRA 1.8	03/98 - 06/02 06/00 - 07/06	82,00	147 087 0009 00 148 087 0008 00	IN EX	8 8	9
G4HC	999	4	40 KW 54 PS	ATOS 1.0 i ATOS PRIME 1.0 i	02/98 - 03/02 08/99 -	66,00	147 087 0005 00 148 087 0005 00	IN EX	8 4	8
G4HG	1086	4	45-51 KW 61-69 PS	ATOS PRIME (MX) 1.1 GETZ (TB) 1.1 i10 (PA) 1.1 SANTRO (MX) 1.1	09/05 - 05/02 - 01/11 12/07 - 11/10 04/05 - 05/05	67,00	147 053 0004 00 148 053 0004 00	IN EX	8 4	2
G4JS	2351	4	99-107 KW 135-146 PS	H-1 / STAREX 2.4 SANTA FÉ I 2.4 16V	06/01 - 04/04 08/00 - 03/06	86,50	147 087 0018 01 148 087 0017 01	IN EX	8 8	11

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 053 0003 00	L = 110,60 D = 31,80 d = 7,00 a = 45°	S	NT			TH
	EX	148 053 0003 00	L = 110,55 D = 28,10 d = 7,00 a = 45°	A/S	NT			TH
2								
	IN	147 053 0004 00	L = 99,70 D = 23,55 d = 5,50 a = 45°	S	NT			H
	EX	148 053 0004 00	L = 99,20 D = 27,00 d = 5,50 a = 45°	A	NT			H, TW
3								
	IN	147 087 0001 00	L = 93,20 D = 31,50 d = 5,50 a = 45°	S	NT			H
	EX	148 087 0001 00	L = 92,60 D = 26,00 d = 5,50 a = 45°	A	NT			
4								
	IN	147 087 0002 00	L = 95,75 D = 28,50 d = 6,00 a = 45°	S	NT			H
	EX	148 087 0002 00	L = 95,45 D = 24,40 d = 6,00 a = 45°	A/S	NT			H
5								
	IN	147 087 0003 00	L = 99,30 D = 27,40 d = 6,00 a = 45°	S	NT			H
	EX	148 087 0003 00	L = 98,50 D = 32,00 d = 6,00 a = 45°	A	NT			

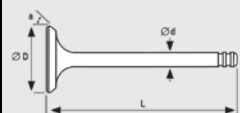
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 087 0004 00	L = 132,00 D = 42,00 d = 8,00 a = 45°	S	NT			H
	EX	148 087 0004 00	L = 132,00 D = 36,00 d = 8,00 a = 45°	A/S	NT			H
7								
	IN	147 087 0004 00	L = 132,00 D = 42,00 d = 8,00 a = 45°	S	NT			H
	EX	148 087 0004 00	L = 132,00 D = 36,00 d = 8,00 a = 45°	A/S	NT			H
8								
	IN	147 087 0005 00	L = 100,30 D = 23,00 d = 5,50 a = 45°	S	NT			H
	EX	148 087 0005 00	L = 100,10 D = 27,00 d = 5,50 a = 45°	A/S	NT			H
9								
	IN	147 087 0009 00	L = 102,10 D = 32,10 d = 6,00 a = 45°	S	NT			H
	EX	148 087 0008 00	L = 105,00 D = 27,50 d = 6,00 a = 45°	A	NT			
10								
	IN	147 087 0018 00	L = 109,60 D = 34,00 d = 6,60 a = 45°	S				H
	EX	148 087 0017 00	L = 109,80 D = 30,50 d = 6,60 a = 45°	A				

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
11								
	IN	147 087 0018 01	$L = 109,60$ $D = 34,00$ $d = 6,60$ $a = 45^\circ$	S				H
	EX	148 087 0017 01	$L = 109,80$ $D = 30,50$ $d = 6,60$ $a = 45^\circ$	A				

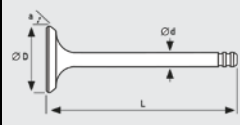
	ccm							IN/EX	QTY	Info	Pos.
6VD1 (DOHC)	3165	6	08/98 KW 08/04 PS	TROOPER III 3.2	08/98 - 08/04	93,40	147 035 0002 00 148 035 0002 00	IN EX	12 12		1
TD27	2663	4	63 KW 86 PS	ELF 2.7 TD	10/99 - 09/01	96,00	147 089 0004 00 148 089 0004 00	IN EX	4 4		2

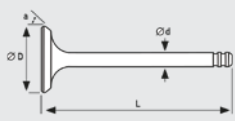
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 035 0002 00	L = 103,90 D = 34,00 d = 6,00 a = 45°	S	NT			H
	EX	148 035 0002 00	L = 103,55 D = 29,00 d = 6,00 a = 45°	A	NT			
2								
	IN	147 089 0004 00	L = 117,10 D = 43,50 d = 8,00 a = 45°	A/S	NT			H
	EX	148 089 0004 00	L = 117,10 D = 38,00 d = 8,00 a = 45°	A/S	NT			H

	ccm							IN/EX	QTY	Info	Pos.
F1AE0481A	2287	4	70 KW 95 PS	DAILY III 29 L 10, 29 L 10 V, 35 C 10 V, 35 S 10 V, 35 C 10 V, 35 S 10 V, 40 C 10	09/02 - 07/07	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1
F1AE0481B	2287	4	85 KW 116 PS	DAILY III 29 L 12, 29 L 12 V, 35 C 12, 35 S 12, 35 C 12 V, 35 S 12 V, 35 S 12, 35 C 12, 40 C 12	09/02 - 07/07	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1
F1AE0481H	2287	4	100 KW 136 PS	DAILY IV 35S14 C, 35S14 C/P, 35S14 V, 35S14 V/P, 35C14 V, 35S14 K, 35S14 DK DAILY IV 35S14, 35S14 /P, 29L14, 29L14 C, 29L14 C/P, 29L14 V, 29L14 V/P	05/06 - 08/11 05/06 - 08/11	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1
F1AE0481M	2287	4	100 KW 136 PS	DAILY III 29 L 14, 35 C 14, 35 S 14	01/05 - 04/06	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1
F1AE0481R	2287	4	85 KW 116 PS	DAILY IV 35C12, 35S12, 35C12 V, 35C12 V/P, 35S12 V, 35S12 V/P	05/06 - 08/11	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1
F1AE0481V	2287	4	93 KW 126 PS	DAILY IV 35C13 K, 35C13 DK, 35S13 K, 35S13 DK DAILY IV 35C13 V, 35C13 V/P, 35S13 V, 35S13 V/P DAILY IV 40C13 V, 40C13 V/P	07/07 - 08/11 07/07 - 08/11 07/07 - 08/11	88,00	147 121 0000 00 148 121 0000 00	IN EX	8 8		1

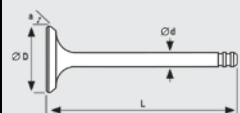
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 121 0000 00	L = 120,40 D = 30,00 d = 6,00 a = 45°	S	CR		S/H	TH
	EX	148 121 0000 00	L = 120,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH

	ccm							IN/EX	QTY	Info	Pos.
BF 4 L 913	4086	4	60-74 KW 82-100 PS	DEUTZ-FAHR AGROPRIMA DX 4.51, DX 4.56 DEUTZ-FAHR AGROSTAR DX 4.61, DX 4.68, DX 4.71, DX 4.78 DEUTZ-FAHR AGROXTRA DX 4.47, DX 4.57	01/89 - 12/95 01/90 - 12/93 01/91 - 12/95	102,00	147 015 0007 00 148 015 0005 00	IN EX	2 2		5
BF 4M 2012, BF 4M 2012 C	4038	4	68-93 KW 92-126 PS	DEUTZ-FAHR, AGROTRON K	09/05 - 12/07	101,00	147 015 0003 00 148 015 0003 00	IN EX	2 2		1
BF 6 L 913, F 6 L 913	6128	6	96-118 KW 130-160 PS	D-Series, M-series	01/71 - 12/87	102,00	147 015 0004 00 148 015 0004 00	IN EX	2 2		2
BF 6M 1012, BF 6M 1012 C, BF 6M 1012 E, BF 6M 1012 EC	4788	6	70-125 KW 95-170 PS	DEUTZ-FAHR AGROTRON 105 MK2/MK3, 106 MK2/MK3, 110 MK2/MK3, 115 MK2/MK3, 6.00 MK1, 6.01 MK1, 6.05 MK1, 6.15 MK1	01/95 - 12/04	94,00	147 015 0008 00 148 015 0007 00	IN EX	2 2		6
BF 6M 1013, BF 6M 1013 E, BF 6M 1013 EC, BF 6M 1013 FC	7146	6	85-191 KW 115-260 PS	DEUTZ-FAHR AGROTRON 200 MK2/MK3, 205 MK3, 230 MK2/MK3, 260 MK2/M3, 6.20 MK1, 6.30 MK1, 6.45 MK1	01/95 - 12/07	108,00	147 015 0006 00 148 015 0006 00	IN EX	2 2		4
F 4 L 913	4086	4	66 KW 90 PS	D-Series, M-series	01/75 - 12/87	102,00	147 015 0004 00 148 015 0004 00	IN EX	2 2		2
F 5L 912	4712	5	59 KW 80 PS	Deutz-Fahr DX 85/90	01/78 - 12/82	100,00	147 015 0005 00 148 015 0005 00	IN EX	2 2		3
TCD 2013 L4 4V	4764	4	140-161 KW 190-219 PS	DEUTZ ENGINE	04/07 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		7
TCD 2013 L6 4V	7146	6	147-243 KW 200-330 PS	DEUTZ ENGINE, AGROTRON X	01/06 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		7

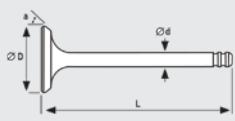
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 015 0003 00	L = 119,50 D = 41,70 d = 8,00 a = 30°	S	CR			TH
	EX	148 015 0003 00	L = 119,50 D = 36,00 d = 8,00 a = 45°	A/S	CR			TH
2								
	IN	147 015 0004 00	L = 133,00 D = 43,00 d = 8,00 a = 45°	S			S/H	TH
	EX	148 015 0004 00	L = 133,00 D = 37,00 d = 8,00 a = 45°	A/S	8			H
3								
	IN	147 015 0005 00	L = 133,00 D = 43,00 d = 8,00 a = 45°	S	CR			TH
	EX	148 015 0005 00	L = 133,00 D = 37,00 d = 8,00 a = 45°	A/S	CR			H
4								
	IN	147 015 0006 00	L = 139,00 D = 48,00 d = 9,00 a = 30°	S	CR			TH
	EX	148 015 0006 00	L = 139,00 D = 42,00 d = 9,00 a = 45°	A/S	CR			TH
5								
	IN	147 015 0007 00	L = 133,00 D = 43,00 d = 8,00 a = 30°	A/S	CR			TH
	EX	148 015 0005 00	L = 133,00 D = 37,00 d = 8,00 a = 45°	A/S	CR			H

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 015 0008 00	L = 124,75 D = 41,70 d = 8,00 a = 30°	S	CR			TH
	EX	148 015 0007 00	L = 124,70 D = 35,90 d = 8,00 a = 45°	A/S	CR			TH
7								
	IN	147 015 0009 00	L = 145,80 D = 38,20 d = 8,00 a = 60°	S	CR			TH
	EX	148 015 0008 00	L = 145,80 D = 35,80 d = 8,00 a = 45°	A/S	CR			TH

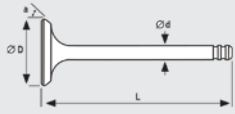
	ccm							IN/EX	QTY	Info	Pos.
A5D	1493	4	72 KW 98 PS	RIO 1.5 16V	08/00 - 02/05	75,50	147 053 0002 00 148 053 0002 00	IN EX	8 8		2
D4CB	2497	4	95-131 KW 129-178 PS	K2500 (SD) 2.5 CRDi SORENTO I (JC) 2.5 CRDi	01/10 - 09/06 - 08/09	91,00	147 053 0003 00 148 053 0003 00	IN EX	8 8		3
G4FA	1396	4	73-80 KW 10-109 PS	CEE'D 1.4 PRO CEE'D 1.4 CVVT RIO III 1.4 CVVT	10/10 - 12/12 02/08 - 09/12 09/11 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8		5
G4FC	1591	4	77-97 KW 105-132 PS	CARENS III 1.6 CVVT CEE'D 1.6 CVVT CERATO 1.6 PRO CEE'D 1.6 SOUL 1.6 CVVT VENGA 1.6 CVVT	08/09 - 12/06 - 05/06 - 02/08 - 02/09 - 02/10 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8		5
G4FD	1591	4	97-103 KW 132-140 PS	CARENS 1.6 GDi CEE'D 1.6 GDI K3 1.6 GDI RIO III 1.6 SOUL 1.6 GDI SPORTAGE 1.6 GDI	03/13 - 05/12 - 09/12 - 09/11 - 02/11 - 02/11 -	77,00	147 087 0001 00 148 087 0001 00	IN EX	8 8		5
G4HG	1086	4	48 KW 65 PS	Picanto (BA) 1.1	04/04 -	67,00	147 053 0004 00 148 053 0004 00	IN EX	8 4		4
J2	2665	4	59-61 KW 80-83 PS	BESTA 2.7 D K2700 2.7 D PREGIO (TB) 2.7 D	- - -	94,50	147 053 0001 00 148 053 0001 00	IN EX	4 4		1

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 053 0001 00	L = 112,80 D = 44,00 d = 8,50 a = 45°	S	NT			TH
	EX	148 053 0001 00	L = 112,85 D = 37,20 d = 8,50 a = 45°	A/S	NT		S/S	TH
2								
	IN	147 053 0002 00	L = 96,40 D = 27,80 d = 5,50 a = 45°	S	NT			H
	EX	148 053 0002 00	L = 95,50 D = 24,90 d = 5,50 a = 45°	A	NT			
3								
	IN	147 053 0003 00	L = 110,60 D = 31,80 d = 7,00 a = 45°	S	NT			TH
	EX	148 053 0003 00	L = 110,55 D = 28,10 d = 7,00 a = 45°	A/S	NT			TH
4								
	IN	147 053 0004 00	L = 99,70 D = 23,55 d = 5,50 a = 45°	S	NT			H
	EX	148 053 0004 00	L = 99,20 D = 27,00 d = 5,50 a = 45°	A	NT			H, TW
5								
	IN	147 087 0001 00	L = 93,20 D = 31,50 d = 5,50 a = 45°	S	NT			H
	EX	148 087 0001 00	L = 92,60 D = 26,00 d = 5,50 a = 45°	A	NT			

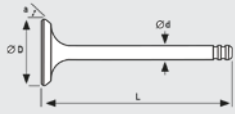
	ccm							IN/EX	QTY	Info	Pos.
176 B9.000	1242	4	63 KW 86 PS	Y 1.2 16V	04/97 - 09/03	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
188 A5.000	1242	4	59 KW 80 PS	Y 1.2 16V YPSILON 1.2	10/00 - 09/03 10/03 - 12/11	70,80	147 020 0002 00 148 020 0002 00	IN EX	8 8		1
RFN (EW10J4)	1997	4	100 KW 136 PS	PHEDRA 2.0 ZETA 2.0 16V	09/02 - 11/10 07/00 - 09/02	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		2

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 020 0002 00	L = 95,00 D = 26,80 d = 6,00 a = 45°	S	CR			H
	EX	148 020 0002 00	L = 96,10 D = 22,35 d = 6,00 a = 45°	A	CR			
2								
	IN	147 037 0020 00	L = 106,20 D = 33,20 d = 6,00 a = 45°	S				H
	EX	148 037 0021 00	L = 103,70 D = 29,00 d = 6,00 a = 45°	A	CR			

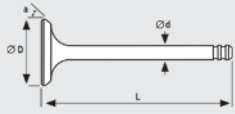
							IN/EX	QTY	Info	Pos.	
2AZ-FXE	2362	4	110 KW 150 PS	HS 250h	07/09 - 01/18	88,50	147 096 0009 00 148 096 0009 00	IN EX	8 8		1

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 096 0009 00	L = 101,70 D = 34,00 d = 5,50 a = 45°	S	NT			H
	EX	148 096 0009 00	L = 101,10 D = 29,50 d = 5,50 a = 45°	A	NT			

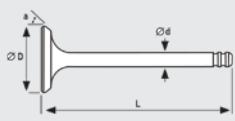
	ccm							IN/EX	QTY	Info	Pos.
LF479Q1	1342	4	65 KW 88 PS	LIFAN 520 1.3	07/06 - 12/15	1,00	147 768 0001 00 148 768 0001 00	IN EX	8 8		1

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 768 0001 00	L = 88,00 D = 31,00 d = 6,00 a = 45°	S	NT			
	EX	148 768 0001 00	L = 88,00 D = 24,50 d = 6,00 a = 45°	S	NT			

	ccm							IN/EX	QTY	Info	Pos.
DASA, DASB	1968	4	90 KW 122 PS	TGE 2.0 TDI	08/17 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		1
DAUA, DAUB	1968	4	103 KW 140 PS	TGE 2.0 TDI	11/16 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		1
DAVA	1968	4	130 KW 177 PS	TGE 2.0 TDI	11/16 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		1
DAWA	1968	4		TGE 2.0 TDI RWD	02/17 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		1

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 050 0029 00	L = 99,30 D = 28,00 d = 5,00 a = 45°	S			S/H	TH
	EX	148 050 0020 00	L = 99,30 D = 25,00 d = 5,00 a = 45°	A/S			S/S	TH

	ccm							IN/EX	QTY	Info	Pos.
LFF7	1999	4	107 KW 146 PS	Mazda 5 2.0 Mazda 6 2.0 PREMACY 2.0	02/05 - 05/10 03/05 - 08/07 02/05 - 03/05	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		1
WL-T	2499	4	61-92 KW 83-125 PS	B-SERIE / B-SERIE 2.5 TD	06/95 - 10/01	93,00	147 085 0001 00 148 085 0001 00	IN EX	8 4		2

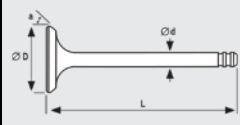
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 021 0002 00	L = 103,50 D = 35,00 d = 5,50 a = 45°	S	NT			H
	EX	148 021 0002 00	L = 104,80 D = 30,10 d = 5,50 a = 45°	A	NT			
2								
	IN	147 085 0001 00	L = 112,00 D = 32,50 d = 7,00 a = 45°	S	NT			H
	EX	148 085 0001 00	L = 111,80 D = 35,50 d = 7,00 a = 45°	A/S	NT		S/S	H

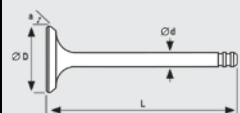
	ccm					IN/EX	QTY	Info	Pos.	
M 132.910	999	3	45-52 KW 61-71 PS	SMART FORTWO 1.0	01/07 -	72,00	147 110 0002 00 148 110 0003 00	IN EX	6 6	17
M 132.930	999	3	62-75 KW 84-102 PS	SMART FORTWO 1.0 Brabus SMART FORTWO 1.0 Turbo SMART FORTWO 1.0 Turbo Brabus	01/08 - 01/07 - 07/10 -	72,00	147 110 0002 00 148 110 0003 00	IN EX	6 6	17
OM 314/340/343	3780	4	35-66 KW 48-90 PS	LP 608, LPL 608, LP 709, LPL 709, LP 808, LPL 808 UNIMOG U 800	09/63 - 01/87 04/66 - 03/90	97,00	147 100 0000 00 148 100 0000 00	IN EX	4 4	11
OM 341/344/352/353/356/357/362/363	5675	6	62-150 KW 84-204 PS	MB-TRAC 1000, 1100, 1300, 1500 T2/L LA 911 Unimog U 100, U 110, U 1100L, U 1300,U 1300L	03/76 - 12/87 01/72 - 12/95 05/69 - 09/88	97,00	147 100 0000 01 148 100 0000 01	IN EX	6 6	12
OM 354.900/901/902/903/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	3972	4	77-103 KW 105-140 PS	T2/LN1 609 D, 711 D, 714 D, 811 D, 611 D, 611 DK, 814 D	04/86 - 12/94	97,50	147 100 0001 00	IN	4	13
OM 364.900/906/907/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	3972	4	63-100 KW 86-136 PS	T2/LN1 609 D, 609 DK, 709 D, 709 DK, 711 D, 809 D, 809 DK, 809 DT, 811 D, 811 DK, 814 D	04/86 - 12/94	97,50	147 100 0001 00	IN	4	13
OM 386.951/952/981	5958	6	125 KW 170 PS	MERCEDES-BENZ OH,OF	01/70 -	97,50	147 100 0001 01	IN	6	14
OM 401.905/907/909/912/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	9570	6	141-144 KW 192-196 PS	NG Models, O 303	08/73 -	125,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 402.906/907/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	12760	8	176-188 KW 240-256 PS	NG Models, O 303	08/73 -	125,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 403.916/931	15950	10	235 KW 320 PS	NG Models	08/73 -	125,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 407.905/907/909/913/915	11413	6	132-206 KW 180-280 PS	O 305, O 307	04/73 -	125,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 421.905/906/908/910/951	10964	6	159-184 KW 216-250 PS	NG Models, O 303	11/64 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 422.905/906/907/908/909/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	14618	8	184-276 KW 250-375 PS	NG Models, O 303	01/70 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 423.905/907/908/909	18273	10	261 KW 355 PS	NG Models	08/73 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 427.905/910/911	11967	6	150-206 KW 204-280 PS	O 405	12/84 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 441.905/908/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	11304	6	151-200 KW 205-272 PS	MK Models, SK Models	08/73 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 442.906/906/907/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	15078	8	191-218 KW 260-296 PS	MK Models, SK Models	08/73 -	130,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 447.906/908/913	11967	6	150-184 KW 204-250 PS	O 405, O 407, O 408	12/84 -	128,00	147 100 0002 00 148 100 0001 00	IN EX	2 2	15
OM 457.914/915/916/917/918/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	11967	6	185-355 KW 252-455 PS	AXOR, AXOR 2, TRAVEGO, TOURISMO, INTEGRO, CONECTO	01/98 -	128,00	147 100 0003 00 148 100 0002 00	IN EX	2 2	16
OM 457.960/961/962/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	11967	6	185-355 KW 252-455 PS	AXOR, AXOR 2, TRAVEGO, TOURISMO, INTEGRO, CONECTO	01/98 -	128,00	147 100 0003 00 148 100 0002 00	IN EX	2 2	16
OM 460.921/922/923/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	12816	6	261-390 KW 350-530 PS	ACTROS MP4 / MP5	01/12 -	128,00	147 100 0003 00 148 100 0002 00	IN EX	2 2	16
OM 541.920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	11946	6	230-355 KW 313-483 PS	ACTROS, ACTROS MP2 / MP3, Series 400, ACTROS MP4 / MP5	04/96 -	130,00	147 100 0003 00 148 100 0002 00	IN EX	2 2	16
OM 541.950/951/952/953/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999	11946	6	230-355 KW 313-483 PS	ACTROS, ACTROS MP2 / MP3, Series 400, ACTROS MP4 / MP5	04/96 -	130,00	147 100 0003 00 148 100 0002 00	IN EX	2 2	16

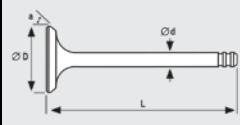
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OM 541.980/981/982/990/991/992	11946	6	ACTROS, ACTROS MP2 / MP3, Series 400, ACTROS MP4 / MP5	04/96 -	130,00	147 100 0003 00 148 100 0002 00	IN EX	2 2		16
OM 542.920/921/922/923/925/926	15928	8	320-480 KW 435-653 PS ACTROS MP2 / MP3, ACTROS MP4 / MP5, TOURISMO, TRAVEGO	10/99 -	130,00	147 100 0003 00 148 100 0002 00	IN EX	2 2		16
OM 542.956/957/958/960/961/962	15928	8	320-480 KW 435-653 PS ACTROS MP2 / MP3, ACTROS MP4 / MP5, TOURISMO, TRAVEGO	10/99 -	130,00	147 100 0003 00 148 100 0002 00	IN EX	2 2		16
OM 611.960	2151	4	75-92 KW 102-125 PS C-KLASSE (W202, S202) C 200 CDI, C 220 T CDI	09/97 - 03/01	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 611.961	2148	4	75-105 KW 102-143 PS E-KLASSE (S210, W210) E 200 CDI, E 220 CDI, E 220 T CDI	06/98 - 03/03	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 611.962	2148	4	75-105 KW 102-143 PS C-KLASSE (W203, S203, CL203) C 200 CDI, C 220 CDI	05/00 - 08/07	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 611.980	2151	4	60-90 KW 82-122 PS Vito (638) 112 CDI 2.2 V-KLASSE V 220 CDI	03/99 - 07/03 03/99 - 07/03	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 611.981	2148	4	80-95 KW 109-129 PS SPRINTER 2-t, 3-t, 4-t, 211 CDI, 213 CDI, 311 CDI, 313 CDI, 411 CDI, 413 CDI	04/00 - 05/06	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 611.987	2148	4	60 KW 82 PS SPRINTER 2-t, 3-t, 4-t 208 CDI, 308 CDI, 408 CDI	04/00 - 05/06	88,00	147 010 0004 00 148 010 0006 00	IN EX	8 8		3
OM 612.961	2685	5	120-125 KW 163-170 PS E-KLASSE (S210, W210, VF210) E 270 CDI	07/99 - 03/03	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.962	2685	5	120-125 KW 163-170 PS C-KLASSE (W203, S203) C 270 CDI	12/00 - 08/07	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.963	2685	5	120 KW 163 PS M-KLASSE ML 270 CDI	12/99 - 06/05	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.965	2685	5	115-120 KW 156-163 PS G-KLASSE G 270 CDI	10/01 -	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.966	2685	5	115 KW 156 PS G-KLASSE G 270 CDI	01/03 -	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.967	2685	5	120-125 KW 163-170 PS CLK 270 CDI	02/03 - 06/05	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 612.981	2685	5	110-115 KW 150-156 PS SPRINTER 2-t, 3-t, 4-t, 5-t, 216 CDI, 316 CDI, 416 CDI, 616 CDI	04/00 - 05/06	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 613.960, OM 613.961	3222	6	145 KW 197 PS E-KLASSE E 320 CDI, E 320 T CDI S-Klasse (W220) S 320 CDI	07/99 - 03/02 08/99 - 09/02	88,00	147 010 0004 01 148 010 0006 01	IN EX	10 10		4
OM 616.910	2404	4	48-53 KW 65-72 PS T2/L L 407 D	01/75 - 12/88	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.911, OM 616.932	2404	4	38 KW 52 PS UNIMOG U 52, U 60, U 600, U 600L UNIMOG U 60T, U 600T	01/77 - 05/88 01/77 - 05/88	90,90	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.912	2399	4	48-53 KW 65-72 PS (S123, W123) 240 T D	02/76 - 12/85	90,90	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.913, OM 616.939	2398	4	53 KW 72 PS T1/TN 407 D	07/81 - 01/89	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.914	2399	4	53 KW 72 PS T2/LN1 507 D	04/86 - 04/89	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.916	2404	4	48 KW 65 PS /8 (W115) 240 D	08/73 - 01/77	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.917, OM 616.934	2399	4	48 KW 65 PS T1 (601) 207 D 2.4	01/77 - 12/82	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.936	2399	4	53 KW 72 PS G-Klasse (W460) 240 GD	03/79 - 08/87	90,90	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 616.937, OM 616.939	2399	4	48-53 KW 65-72 PS T1 (601) 207 D 2.4 T1 (601, 611) 407 D 2.4 T1 (602) 307 D 2.4	06/82 - 01/90 04/81 - 07/82 04/77 - 01/90	91,00	147 010 0001 00 148 010 0001 00	IN EX	4 4		1

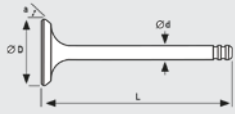
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OM 616.942, OM 616.943	2399	4	38 KW 52 PS	UNIMOG U 600 UNIMOG U 650, U 650L	05/88 - 05/88 -	90,90	147 010 0001 00 148 010 0001 00	IN EX	4 4		1
OM 617.910	2998	5	59 KW 80 PS	/8 (W115) 240 D 3.0	08/74 - 11/76	90,90	147 010 0002 00 148 010 0002 00	IN EX	5 5		2
OM 617.912	2998	5	59-65 KW 80-88 PS	(S123) 300 T D (W123) 300 D	09/77 - 11/85 02/76 - 11/85	90,90	147 010 0002 00 148 010 0002 00	IN EX	5 5		2
OM 617.913	2998	5	65 KW 88 PS	T1 (601, 611) 209 D 2.9 T1 (602) 309 D 3.0 T1/TN 409 D	12/82 - 01/90 10/82 - 01/90 04/82 - 01/89	91,00	147 010 0002 00 148 010 0002 00	IN EX	5 5		2
OM 617.931	2998	5	65 KW 88 PS	G-Klasse (W460) 300 GD	12/79 - 12/91	90,90	147 010 0002 00 148 010 0002 00	IN EX	5 5		2
OM 622.951, OM 626.951	1598	4	65-100 KW 88-136 PS	C-CLASS C 180/200 BlueTEC / d MARCO POLO Camper 160 CDI / 180 CDI VITO 109 CDI / 111 CDI	05/14 - 05/18 03/15 - 10/14 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		10
OM 651.901	1796	4	80-100 KW 109-136 PS	A-KLASSE (W176) A 180 CDI, A 200 CDI B-KLASSE (W246, W242) B 180 CDI, B 200 CDI CLA (C117) CLA 200 CDI	06/12 - 11/11 - 06/13 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.911	2143	4	120-150 KW 163-204 PS	E-KLASSE (C207) E 220 BlueTEC, E 220 CDI, E 250 CDI / BlueTEC / d	01/09 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.911	2143	4	120-150 KW 163-204 PS	E-KLASSE (A207) E 220 BlueTEC, E 220 CDI, E 250 CDI / BlueTEC / d	01/10 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.911	2143	4	120-150 KW 163-204 PS	C-KLASSE (W204, S204, C204) C 220 CDI, C 250 CDI	08/08 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.912	2143	4	120-150 KW 163-204 PS	C-KLASSE (S204, W204) C 220 CDI 4-matic, C 250 CDI 4-matic GLK-KLASSE (X204) 220 CDI 4-matic, 250 CDI 4-matic	04/10 - 08/14 12/08 - 06/15	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.930	2143	4	80-130 KW 109-177 PS	A-KLASSE (W176) A 220 d, A 220 CDI, A 200 CDI / d 4-matic B-KLASSE (W246, W242) B 200 CDI / d, B 220 CDI / d, B 220 d 4-matic CLA (C117) CLA 200 CDI / d, CLA 220 CDI / d CLA Shooting Brake (X117) CLA 200 CDI / d, CLA 220 CDI / d, GLA-KLASSE (X156) GLA 200 CDI / d, GLA 220 CDI, GLA 220 d	09/12 - 11/11 - 01/13 - 01/15 - 12/13 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.957	2143	4	95-120 KW 129-163 PS	SPRINTER 3-t, 3,5-t, 4,6-t, 5-t 216 CDI, 315 CDI, 315 CDI 4x4, 415 CDI, 416 CDI, 515 CDI, 516 CDI	06/06 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.958	2143	4	105 KW 143 PS	SPRINTER 3,5-t 314 CDI	02/18 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.960	2143	4	150-152 KW 204-207 PS	GLE (W166) 250 d 4-matic M-KLASSE ML 250 CDI / BlueTEC 4-matic	04/15 - 06/11 - 12/15	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.961	2143	4	150 KW 204 PS	S-KLASSE S 250 CDI	01/11 - 12/13	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 651.980	2143	4	150 KW 204 PS	SLC (R172) 250 d SLK (R172) 250 CDI / d	01/16 - 10/17 01/12 -	83,00	147 010 0005 00 148 010 0004 00	IN EX	8 8		5
OM 654.820	1992	4	147-200 KW 200-272 PS	C-KLASSE C 220 d, C 300 d CLS 300/350 D EQ BOOST 4-MATIC E 300 d 4-matic, E 350 D EQ BOOST 4-MATIC GLE 300 d EQ Boost 4-matic	03/21 - 01/21 - 01/21 - 06/21 -	82,00	147 010 0017 00 148 010 0021 00	IN EX	8 8		7
OM 654.916	1598	4	90-118 KW 122-160 PS	C-KLASSE C 180 d, C 200 d E-KLASSE E 200 d	05/18 - 11/18 -	78,00	147 010 0018 00 148 010 0020 00	IN EX	8 8		9

	ccm						IN/EX	QTY	Info	Pos.	
OM 654.920	1950	4	84-235 KW 114-320 PS	A-KLASSE A 180 d, A 200 d, A 220 d 4-matic B-KLASSE B 180 d, B 200 d, B 220 d C-KLASSE C 300 de, C 220 d, C 200 d, C 300 d CLA 180 d, 200 d, 220 d CLS 220 d, 300 d E-KLASSE E 200 d, E 220 d, E 300 d, E 300 de 4-matic GLA 200 d, GLA 180 d, GLA 220 d GLB 180 d, GLB 200 d, GLB 220 d GLC 200 d, 220 d, 300 d, 300 de GLE 300 d 4-matic, GLE 350 de 4-matic MARCO POLO Camper 200 CDI, 220 CDI, 250 CDI, 300 CDI SPRINTER 3-t, 3,5-t, 4-t 211 CDI, 217 CDI, 311 CDI, 315 CDI, 417 CDI VITO 114 CDI, 116 CDI, 119 CDI, 124 CDI V-KLASSE V 220 CDI / d, V 250 CDI / d, V 300 CDI / d	11/18 - 12/18 - 04/18 - 04/19 - 04/18 - 01/16 - 02/20 - 08/19 - 04/19 - 10/18 - 03/19 - 06/20 - 04/20 - 03/19 -	82,00	147 010 0017 00 148 010 0018 00 148 010 0019 00	IN EX EX	8 8 8	For OE no. A 654 050 38 00 For OE no. A 654 050 10 00	6
OM 656.929	2925	6	183-250 KW 249-340 PS	CLS 350 d, CLS 400 d E-KLASSE E 350 d, E 400 d G-KLASSE G 350 d 4-matic, G 400 d 4-matic GLC 400 d 4-matic GLE 350 d 4-matic, GLE 400 d 4-matic GLS 350 d 4-matic, 400 d 4-matic S-KLASSE S 350 d, S 400 d	12/17 - 08/18 - 01/19 - 08/19 - 12/18 - 04/19 - 07/17 -	82,00	147 010 0017 01 148 010 0019 01	IN EX	12 12		8
OM 660.950, OM 660.951	799	3	33-40 KW 45-54 PS	SMART FORTWO 1.0	01/07 -	65,50	147 110 0003 00 148 110 0004 00	IN EX	3 3		18

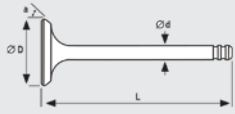
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 010 0001 00	L = 131,40 D = 39,80 d = 10,00 a = 60°	S	CR			
	EX	148 010 0001 00	L = 131,00 D = 34,20 d = 10,00 a = 60°	A/S	CR			
2								
	IN	147 010 0002 00	L = 131,40 D = 39,80 d = 10,00 a = 60°	S	CR			
	EX	148 010 0002 00	L = 131,00 D = 34,20 d = 10,00 a = 60°	A/S	CR			
3								
	IN	147 010 0004 00	L = 103,95 D = 30,20 d = 7,00 a = 45°	S	NT			H
	EX	148 010 0006 00	L = 104,35 D = 28,40 d = 7,00 a = 45°	A	NT			
4								
	IN	147 010 0004 01	L = 103,95 D = 30,20 d = 7,00 a = 45°	S	NT			H
	EX	148 010 0006 01	L = 104,35 D = 28,40 d = 7,00 a = 45°	A	NT			
5								
	IN	147 010 0005 00	L = 109,00 D = 28,40 d = 6,00 a = 45°	S	CR			TH
	EX	148 010 0004 00	L = 109,20 D = 24,70 d = 6,00 a = 45°	A/S	CR			TH

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 010 0017 00	L = 106,80 D = 28,45 d = 6,00 a = 45°		CR			
	EX	148 010 0018 00	L = 106,38 D = 24,60 d = 6,00 a = 45°	A/S	CR			
	EX	148 010 0019 00	L = 106,20 D = 24,60 d = 6,00 a = 45°	A/S	CR			
7								
	IN	147 010 0017 00	L = 106,80 D = 28,45 d = 6,00 a = 45°		CR			
	EX	148 010 0021 00	L = 106,50 D = 24,50 d = 6,00 a = 45°	A/S	CR		S/S	TH
8								
	IN	147 010 0017 01	L = 106,80 D = 28,45 d = 6,00 a = 45°		CR			
	EX	148 010 0019 01	L = 106,20 D = 24,60 d = 6,00 a = 45°	A/S	CR			
9								
	IN	147 010 0018 00	L = 106,80 D = 26,60 d = 6,00 a = 45°	S	CR			TH
	EX	148 010 0020 00	L = 106,30 D = 23,20 d = 6,00 a = 45°	A/S	CR			TH

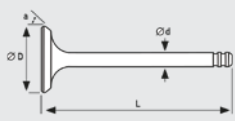
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
10								
	IN	147 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	S				TH
	EX	148 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	A/S	NT			TH
11								
	IN	147 100 0000 00	L = 140,50 D = 44,00 d = 9,00 a = 45°	S	CR			H
	EX	148 100 0000 00	L = 140,50 D = 36,00 d = 10,00 a = 45°	A/S	CR			H
12								
	IN	147 100 0000 01	L = 140,50 D = 44,00 d = 9,00 a = 45°	S	CR			H
	EX	148 100 0000 01	L = 140,50 D = 36,00 d = 10,00 a = 45°	A/S	CR			H
13								
	IN	147 100 0001 00	L = 140,50 D = 42,00 d = 9,00 a = 30°	A/S	CR			
14								
	IN	147 100 0001 01	L = 140,50 D = 42,00 d = 9,00 a = 30°	A/S	CR			
15								
	IN	147 100 0002 00	L = 142,50 D = 59,00 d = 12,00 a = 30°	A/S	CR			
	EX	148 100 0001 00	L = 142,50 D = 51,00 d = 12,00 a = 45°	A/S	CR			

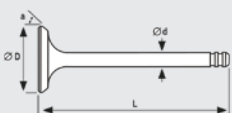
	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
16								
	IN	147 100 0003 00	L = 144,90 D = 45,50 d = 9,00 a = 30°	S	CR			TH
	EX	148 100 0002 00	L = 144,80 D = 42,00 d = 9,00 a = 36°	A/S	CR			TH
17								
	IN	147 110 0002 00	L = 85,50 D = 28,00 d = 5,00 a = 45°	S	NT			H
	EX	148 110 0003 00	L = 87,00 D = 25,00 d = 5,00 a = 45°	A	NT			
18								
	IN	147 110 0003 00	L = 91,20 D = 27,50 d = 6,00 a = 45°	S	CR			TH
	EX	148 110 0004 00	L = 91,20 D = 25,40 d = 6,00 a = 45°	A/S	CR		S/S	TH

	ccm							IN/EX	QTY	Info	Pos.
4G18	1584	4	72-81 KW 98-110 PS	LANCER VII, SPACE STAR 1.6 16V	06/00 - 12/13	76,00	147 088 0002 00 148 088 0002 00	IN EX	8 8		1

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 088 0002 00	L = 111,75 D = 29,00 d = 5,50 a = 45°	S	NT			H
	EX	148 088 0002 00	L = 114,65 D = 25,50 d = 5,50 a = 45°	A/S	NT			H

	ccm							IN/EX	QTY	Info	Pos.
CD20, CD20T	1974	4	55-66 KW 75-90 PS	ALMERA I 2.0 D PRIMERA 2.0 D SUNNY III 2.0 D	11/95 - 07/00 07/90 - 07/02 10/90 - 03/00	84,50	147 089 0006 00 148 089 0006 00	IN EX	4 4		6
HR12DE	1198	3	56-59 KW 76-80 PS	MICRA 1.2 NOTE 1.2	05/10 - 06/13 -	78,00	147 090 0001 00 148 090 0001 00	IN EX	8 8		8
QG18DE	1769	4	84-88 KW 114-120 PS	ALMERA II / PRIMERA 1.8 16V	08/99 -	80,00	147 089 0003 00 148 089 0003 00	IN EX	8 8		3
R9M.408, R9M.413, R9M.450, R9M.452	1598	4	70-107 KW 95-146 PS	NV300 1.6 dci 95/120/125/145	09/16 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		1
RD28T, RD28Ti	2826	6	74-96 KW 101-131 PS	PATROL GR IV 2.8 TD PATROL III/2 2.8 TD	01/86 - 04/01 05/86 - 11/95	85,00	147 089 0007 00	IN	6		7
TD27	2664	4	58-73 KW 79-99 PS	CABSTAR / NAVARA / PATHFINDER I / PICK UP / SANI / URVAN 2.7 TD	02/83 - 04/05	96,00	147 089 0004 00 148 089 0004 00	IN EX	4 4		4
YD22DDT	2184	4	81-102 KW 110-139 PS	ALMERA II 2.2 dCi PRIMERA 2.2 dCi	03/00 - 09/06 03/02 -	86,00	147 089 0002 00 148 089 0002 00	IN EX	8 8		2
YD22DDTi	2184	4	84-110 KW 114-150 PS	ALMERA II 2.2 dCi CABSTAR DCI 2.5 MURANO II 2.5 dCi NAVARA 2.5 Di NP300 2.5 dCi NV350 2.5 dCi PATHFINDER III 2.5 dCi PICK UP / PIKA / TERRANO 2.5 dCi SANI 2.5 dCi SERENA 2.5 DCi SGX 4x4	08/00 - 09/06 09/06 - 12/13 01/10 - 09/14 11/01 - 07/05 - 05/12 - 01/05 - 03/02 - 01/05 - 06/99 - 09/05	86,00	147 089 0002 00 148 089 0002 00	IN EX	8 8		2
YD22ETi, YD22DDTi	2184	4	84-100 KW 114-136 PS	X-TRAIL 2.2 DCi	06/01 - 09/04	86,00	147 089 0002 00 148 089 0002 00	IN EX	8 8		2
ZD30DDTi	2953	4	110-125 KW 150-170 PS	PATROL GR V 3.0 Di TERRANO II 3.0 DiTD 4WD	09/99 - 10/97 - 12/04	96,00	147 089 0005 00 148 089 0005 00	IN EX	8 8		5

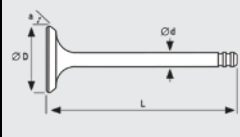
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	S				TH
	EX	148 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	A/S	NT			TH
2								
	IN	147 089 0002 00	L = 106,70 D = 28,00 d = 6,00 a = 45°	A	NT			
	EX	148 089 0002 00	L = 106,30 D = 26,00 d = 6,00 a = 45°	A	NT			
3								
	IN	147 089 0003 00	L = 94,40 D = 30,00 d = 5,50 a = 45°	S	NT			H
	EX	148 089 0003 00	L = 94,70 D = 25,00 d = 5,50 a = 45°	A	NT			
4								
	IN	147 089 0004 00	L = 117,10 D = 43,50 d = 8,00 a = 45°	A/S	NT			H
	EX	148 089 0004 00	L = 117,10 D = 38,00 d = 8,00 a = 45°	A/S	NT			H
5								
	IN	147 089 0005 00	L = 113,40 D = 32,00 d = 7,00 a = 45°					
	EX	148 089 0005 00	L = 113,40 D = 30,00 d = 7,00 a = 45°					

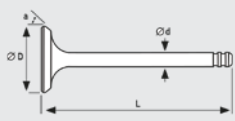
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 089 0006 00	L = 99,70 D = 39,00 d = 7,00 a = 45°					
	EX	148 089 0006 00	L = 99,60 D = 32,00 d = 7,00 a = 45°					
7								
	IN	147 089 0007 00	L = 102,80 D = 39,00 d = 7,00 a = 45°					
8								
	IN	147 090 0001 00	L = 101,60 D = 31,20 d = 5,00 a = 45°	S	NT			H
	EX	148 090 0001 00	L = 102,60 D = 25,55 d = 5,00 a = 45°	A	NT			

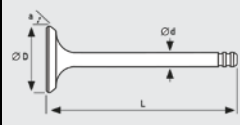
	ccm							IN/EX	QTY	Info	Pos.
16 NZR	1598	4	55 KW 75 PS	ASTRA F 1.6	09/95 - 09/98	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
20 XE	1998	4	115 KW 156 PS	KADETT E CC 2.0 GSI 16V	12/87 - 08/91	86,00	147 035 0001 00 148 035 0001 00	IN EX	8 8		1
6V1	3494	6	158 KW 215 PS	MONTEREY B 3.5 V6 24V	07/98 - 08/99	93,40	147 035 0002 00 148 035 0002 00	IN EX	12 12		2
6VD1 (DOHC)	3165	6	151 KW 205 PS	FRONTERA B 3.2 i	10/98 - 07/04	93,40	147 035 0002 00 148 035 0002 00	IN EX	12 12		2
A 16 LEL	1598	4	110 KW 150 PS	CORSA D 1.6 Turbo	05/07 - 08/14	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
A 16 LER	1598	4	141 KW 192 PS	CORSA D 1.6 Turbo	11/06 - 08/14	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
A 16 LES	1598	4	150 KW 204 PS	CORSA D 1.6 Turbo	06/11 - 08/14	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
A 16 LET	1598	4	132 KW 180 PS	ASTRA H 1.6 Turbo ASTRA J 1.6 Turbo INSIGNIA A 1.6 Turbo	02/07 - 10/10 12/09 - 07/08 -	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
A 16 XER, Z 16 XER	1598	4	84-85 KW 114-116 PS	ASTRA H 1.6 ASTRA J 1.6 INSIGNIA A 1.6 MOKKA / MOKKA X 1.6 ZAFIRA B 1.6	12/06 - 05/14 12/09 - 07/08 - 03/17 06/12 - 01/08 - 04/15	79,00	147 035 0007 00 148 035 0007 00	IN EX	8 8		7
A 17 DT	1686	4	74 KW 101 PS	MERIVA B 1.7 CDTI	06/10 - 01/17	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 17 DTC, A 17 DTE, A 17 DTJ	1686	4	81 KW 110 PS	ASTRA J / ASTRA J GTC 1.7 CDTI	09/09 - 10/15	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 17 DTF, A 17 DTS	1686	4	96 KW 131 PS	ASTRA J 1.7 CDTI	10/10 - 10/15	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 17 DTL, A 17 DTN	1686	4	74 KW 101 PS	ASTRA J 1.7 CDTI	10/10 - 10/15	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 17 DTR, Z 17 DTR	1686	4	92 KW 125 PS	ASTRA J 1.7 CDTI ZAFIRA B 1.7 CDTI	10/10 - 10/15 01/08 - 04/15	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 17 DTS	1686	4	96 KW 131 PS	CORSA D 1.7 CDTI MERIVA B 1.7 CDTI MOKKA / MOKKA X 1.7 CDTI	12/09 - 08/14 06/10 - 10/13 06/12 -	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
A 18 XEL	1796	4	85-88 KW 115-120 PS	ZAFIRA B 1.8 ZAFIRA TOURER C 1.8	06/13 - 10/11 -	80,50	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
A 18 XER, B 18 XER, Z 18 XER	1796	4	103 KW 140 PS	ASTRA H 1.8 ASTRA J GTC 1.8 INSIGNIA A 1.8 SIGNUM 1.8 VECTRA C 1.8 ZAFIRA B 1.8 ZAFIRA TOURER C 1.8	08/05 - 10/10 10/11 - 07/08 - 09/05 - 01/06 - 07/05 - 10/11 -	80,50	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
B 16 LER	1598	4	141-152 KW 192-207 PS	CORSA D 1.6 Turbo CORSA E 1.6 Turbo	11/06 - 08/14 03/15 -	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
B 16 LES	1598	4	152 KW 207 PS	CORSA E 1.6 Turbo	03/15 -	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
B 16 XER, D 16 XER	1598	4	85 KW 116 PS	ASTRA J 1.6 MOKKA / MOKKA X 1.6	12/09 - 06/12 -	79,00	147 035 0007 00 148 035 0007 00	IN EX	8 8		7
C 16 NZ	1598	4	55 KW 75 PS	ASTRA F 1.6 i CORSA A CC 1.6 GSI	09/91 - 01/98 08/88 - 09/92	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
C 16 SE	1598	4	74 KW 101 PS	ASTRA F 1.6 Si CORSA A CC 1.6 GSI Cat	03/92 - 12/94 02/92 - 03/93	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
C 18 XE	1799	4	92 KW 125 PS	ASTRA F 1.8 i 16V	06/93 - 03/01	81,60	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
C 18 XEL	1799	4	85 KW 116 PS	Astra F 1.8 i 16V	07/94 - 03/01	81,60	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
C 20 LET	1998	4	150 KW 204 PS	CALIBRA A (85_) 2.0 i Turbo 4x4 VECTRA A (86_ 87_) 2.0 i Turbo 4x4	03/92 - 07/97 06/94 - 11/95	86,00	147 035 0001 00 148 035 0001 00	IN EX	8 8		1
C 20 XE	1998	4	110 KW 150 PS	ASTRA F CC 2.0 GSI 16V CALIBRA A 2.0 i 16V KADETT E CC 2.0 GSI 16V KAT VECTRA A 2000/GT 16V KAT	09/91 - 01/98 06/90 - 02/94 03/88 - 05/92 08/89 - 11/95	86,00	147 035 0001 00 148 035 0001 00	IN EX	8 8		1
C14SEL	1389	4	63 KW 86 PS	CORSA B 1.4 i 16V	08/97 - 09/00	77,60	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
C16SEL	1598	4	74 KW 100 PS	ASTRA G CC 1.6 16V CORSA B 1.6 i 16V CORSA CLASSIC 1.6 TIGRA 1.6 16V	02/98 - 01/05 08/97 - 09/00 01/00 - 12/03 08/97 - 08/98	79,00	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
D 15 DT (DV5RD)	1499	4	75 KW 102 PS	COMBO 1.5 D CORSA F1.5 D CROSSLAND X / CROSSLAND 1.5 Turbo D GRANDLAND X 1.5 Turbo D	06/18 - 07/19 - 06/18 - 06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		11
D 15 DT (DV5RUCD)	1499	4	75 KW 102 PS	VIVARO C 1.5 D ZAFIRA LIFE 1.5 D	03/19 - 03/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		11

	ccm							IN/EX	QTY	Info	Pos.
D 15 DTH (DV5RC)	1499	4	96 KW 131 PS	COMBO 1.5 D GRANDLAND X 1.5 Turbo D	06/18 - 04/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		11
D 15 DTH (DV5RUC)	1499	4	88 KW 120 PS	VIVARO C 1.5 D ZAFIRA LIFE 1.5 D	03/19 - 03/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		11
D 15 DTL (DV5RE)	1499	4	56 KW 76 PS	COMBO 1.5 D	06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		11
E 16 SE	1598	4	74 KW 100 PS	CORSA A CC 1.6 GSI	05/88 - 03/92	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
R9M.408, R9M.413, R9M.450, R9M.452	1598	4	66-107 KW 90-146 PS	VIVARO B 1.6 CDTI	06/14 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		12
X 16 SZ	1598	4	52 KW 71 PS	ASTRA F 1.6 i	05/93 - 07/96	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
X 16 SZR	1598	4	55 KW 75 PS	ASTRA F CLASSIC CC 1.6 i ASTRA G 1.6 VECTRA B 1.6 i	01/98 - 01/05 02/98 - 09/00 10/95 - 04/02	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
X 18 XE	1799	4	85 KW 116 PS	Astra F 1.8 i 16V VECTRA B 1.8 i 16V	07/94 - 03/01 10/95 - 09/00	81,60	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
X 18 XE1	1796	4	85 KW 116 PS	ASTRA G 1.8 16V VECTRA B 1.8 i 16V ZAFIRA A 1.8 16V	02/98 - 10/00 10/95 - 09/00 04/99 - 09/00	80,50	147 035 0003 00 148 035 0003 00	IN EX	8 8		3
X 20 XEV	1998	4	100 KW 136 PS	ASTRA F 2.0 i 16V ASTRA G 2.0 16V CALIBRA A 2.0 i 16V 4x4 Omega B 2.0 16V VECTRA A 2.0 i 16V VECTRA B 2.0 i 16V	02/95 - 09/98 02/98 - 01/05 02/94 - 07/97 03/94 - 09/99 08/92 - 11/95 09/95 - 06/00	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
X 22 SE, Y 22 SE	2198	4	100 KW 136 PS	FRONTERA B 2.2 i	10/98 - 07/04	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
X 22 XE	2198	4	100-104 KW 136-141 PS	FRONTERA A 2.2 i SINTRA 2.2 i 16V	03/95 - 10/98 11/96 - 04/99	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
X 25 XE	2498	6	125-144 KW 170-196 PS	CALIBRA A 2.5 i V6 OMEGA B 2.5 V6 VECTRA B 2.5 i V6	04/93 - 07/97 03/94 - 09/00 10/95 - 09/00	81,60	147 035 0005 01 148 035 0005 01	IN EX	12 12		6
X 30 XE	2962	6	148-155 KW 201-211 PS	OMEGA B 3.0 V6 SINTRA 3.0 i 24V	04/94 - 02/01 11/96 - 04/99	86,00	147 035 0005 01 148 035 0005 01	IN EX	12 12		6
X14XE	1389	4	66 KW 90 PS	Astra F 1.4i 16V	01/96 - 03/01	77,60	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
X14XE	1389	4	66 KW 90 PS	ASTRA F 1.4 i 16V Astra G 1.4 16V CORSA B 1.4 i 16V TIGRA 1.4 16V	01/96 - 03/01 02/98 - 01/05 09/94 - 09/00 08/97 - 12/00	77,60	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
X16XEL	1598	4	74 KW 100 PS	ASTRA F 1.6 i 16V ASTRA G 1.6 16V VECTRA B 1.6 i 16V	08/94 - 01/98 02/98 - 01/05 10/95 - 07/02	79,00	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
Y 17 DT, Y 17 DTL	1686	4	48-55 KW 65-75 PS	ASTRA G 1.7 DTI COMBO / CORSA C 1.7 DTI 16V COMBO / CORSA C 1.7 DI 16V MERIVA A 1.7 DTI	02/00 - 04/05 09/00 - 12/10 09/00 - 12/09 09/03 - 05/10	79,00	147 035 0008 00 148 035 0008 00	IN EX	8 8		8
Y 22 DTH	2171	4	81-88 KW 110-120 PS	FRONTERA B 2.2 DTI OMEGA B 2.2 DTI 16V	09/98 - 07/04 09/00 - 07/03	84,00	147 035 0010 00 148 035 0010 00	IN EX	8 8		10
Y 26 SE	2597	6	125-132 KW 170-180 PS	OMEGA B 2.6 V6 VECTRA B 2.6 i V6	09/00 - 07/03 09/00 - 07/03	83,20	147 035 0005 01 148 035 0005 01	IN EX	12 12		6
Y 32 NE	3165	6	151 KW 205 PS	FRONTERA B 3.2 i 24V	10/98 -	93,40	147 035 0002 00 148 035 0002 00	IN EX	12 12		2
Z 16 LEL	1598	4	110 KW 150 PS	CORSA D 1.6 Turbo	05/07 - 08/14	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
Z 16 LER	1598	4	141 KW 192 PS	CORSA D 1.6 Turbo	06/11 - 08/14	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
Z 16 LET	1598	4	132 KW 180 PS	ASTRA H 1.6 Turbo MERIVA A 1.6 Turbo	02/07 - 10/10 09/05 - 05/10	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		13
Z 16 SE	1598	4	64 KW 87 PS	ASTRA G 1.6 COMBO 1.6 CORSA C 1.6 MERIVA 1.6	09/00 - 04/05 10/01 - 09/00 - 12/09 05/03 - 05/10	79,00	147 309 0007 00 148 309 0007 00	IN EX	4 4		14
Z 16 XE1, Z 16 XEP	1598	4	77 KW 105 PS	ASTRA G 1.6 ASTRA H / ASTRA H GTC 1.6 ASTRA H 1.6 Meriva A 1.6 VECTRA C 1.6 ZAFIRA B 1.6	06/02 - 12/09 03/04 - 10/10 02/04 - 10/10 01/06 - 05/10 08/05 - 08/08 07/05 - 09/12	79,00	147 035 0007 00 148 035 0007 00	IN EX	8 8		7
Z 17 DT	1686	4	74 KW 101 PS	MERIVA A 1.7 CDTI	09/03 - 05/10	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9

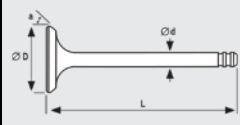
	ccm							IN/EX	QTY	Info	Pos.
Z 17 DTH	1686	4	74 KW 100 PS	ASTRA H 1.7 CDTI COMBO / CORSA C 1.7 CDTI 16V MERIVA A 1.7 CDTI	03/04 - 10/10 06/03 - 12/12 09/03 - 05/10	79,00	147 035 0008 00 148 035 0008 00	IN EX	8 8		8
Z 17 DTL	1686	4	59 KW 80 PS	ASTRA G 1.7 CDTI ASTRA H 1.7 CDTI	04/03 - 12/09 03/04 - 10/10	79,00	147 035 0008 00 148 035 0008 00	IN EX	8 8		8
Z 17 DTR	1686	4	92 KW 125 PS	MERIVA A 1.7 CDTI	09/06 - 05/10	79,00	147 035 0009 00 148 035 0009 00	IN EX	8 8		9
Z 18 XE	1796	4	92 KW 125 PS	ASTRA G 1.8 16V ASTRA H 1.8 CORSA C 1.8 MERIVA A 1.8 SIGNUM 1.8 TIGRA TWIN TOP 1.8 VECTRA B 1.8 i 16V VECTRA C 1.8 16V ZAFIRA A 1.8 16V	06/00 - 10/05 01/04 - 10/10 09/00 - 12/09 05/03 - 05/10 05/03 - 06/04 - 09/00 - 04/02 - 09/00 - 06/05	80,50	147 035 0003 00 148 035 0003 00	IN EX	8 8		3
Z 18 XEL	1796	4	79-85 KW 107-116 PS	ASTRA G 1.8 VECTRA B 1.8 i 16V VECTRA C 1.8	02/03 - 01/05 10/95 - 09/00 04/02 -	80,50	147 035 0003 00 148 035 0003 00	IN EX	8 8		3
Z 20 LEH	1998	4	177 KW 240 PS	ASTRA H 2.0 Turbo ZAFIRA FAMILY B	03/05 - 10/10 01/06 - 12/10	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
Z 20 LEL	1998	4	125 KW 170 PS	ASTRA H 2.0 Turbo	03/04 - 10/10	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
Z 20 LER	1998	4	147 KW 200 PS	ASTRA H 2.0 Turbo ZAFIRA FAMILY B 2.0	09/04 - 10/10 07/05 - 12/10	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
Z 20 LET	1998	4	140-147 KW 190-200 PS	ASTRA G 2.0 16V Turbo SPEEDSTER (E01) 2.0 Turbo ZAFIRA A 2.0 OPC	09/00 - 10/05 08/02 - 08/06 11/02 - 06/05	86,00	147 035 0005 00 148 035 0005 00	IN EX	8 8		5
Z14XE	1389	4	66 KW 90 PS	Astra G 1.4 16V Corsa C 1.4	02/98 - 01/05 09/00 - 12/09	77,60	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
Z16XE	1598	4	74 KW 100 PS	MERIVA 1.6 16V	05/03 - 01/06	79,00	147 035 0004 00 148 035 0004 00	IN EX	8 8		4
Z16XE	1598	4	74 KW 100 PS	Vectra C 16V	06/04 -	79,00	147 035 0004 00 148 035 0004 00	IN EX	8 8		4

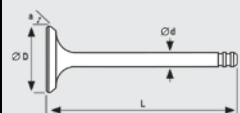
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 035 0001 00	L = 105,10 D = 33,00 d = 7,00 a = 45°	S	CR			TH
	EX	148 035 0001 00	L = 105,00 D = 29,00 d = 7,00 a = 45°	A/S	CR		S/S	TH
2								
	IN	147 035 0002 00	L = 103,90 D = 34,00 d = 6,00 a = 45°	S	NT			H
	EX	148 035 0002 00	L = 103,55 D = 29,00 d = 6,00 a = 45°	A	NT			
3								
	IN	147 035 0003 00	L = 101,45 D = 31,25 d = 5,00 a = 45°	S	CR			H
	EX	148 035 0003 00	L = 100,85 D = 27,55 d = 5,00 a = 45°	A	CR		S/S	
4								
	IN	147 035 0004 00	L = 103,15 D = 31,05 d = 6,00 a = 45°	S	CR			TH
	EX	148 035 0004 00	L = 102,15 D = 27,50 d = 6,00 a = 45°	A	CR			
5								
	IN	147 035 0005 00	L = 102,15 D = 32,00 d = 6,00 a = 45°	S	CR			TH
	EX	148 035 0005 00	L = 92,20 D = 29,00 d = 6,00 a = 45°	A	CR		S/S	

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 035 0005 01	L = 102,15 D = 32,00 d = 6,00 a = 45°	S	CR			TH
	EX	148 035 0005 01	L = 92,20 D = 29,00 d = 6,00 a = 45°	A	CR		S/S	
7								
	IN	147 035 0007 00	L = 117,20 D = 31,20 d = 5,00 a = 45°	S	CR			H
	EX	148 035 0007 00	L = 116,00 D = 27,50 d = 5,00 a = 45°	A/S	CR			H
8								
	IN	147 035 0008 00	L = 98,40 D = 27,50 d = 6,00 a = 45°	A	NT		NT	
	EX	148 035 0008 00	L = 98,20 D = 26,50 d = 6,00 a = 45°	A	NT			
9								
	IN	147 035 0009 00	L = 102,60 D = 27,50 d = 6,00 a = 45°	S	NT			H
	EX	148 035 0009 00	L = 102,30 D = 22,50 d = 6,00 a = 45°	A	NT			
10								
	IN	147 035 0010 00	L = 97,20 D = 29,00 d = 6,00 a = 45°	A/S	CR			TH
	EX	148 035 0010 00	L = 97,10 D = 26,00 d = 6,00 a = 45°	A/S	CR		S/S	TH

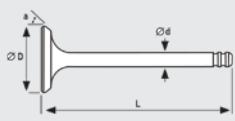
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
11								
	IN	147 037 0028 00	L = 95,30 D = 25,30 d = 5,50 a = 45°	S	CR			TH
	EX	148 037 0029 00	L = 94,80 D = 22,00 d = 5,50 a = 45°	A/S	CR		S/S	TH
12								
	IN	147 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	S				TH
	EX	148 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	A/S	NT			TH
13								
	IN	147 309 0001 00	L = 113,80 D = 31,20 d = 5,00 a = 45°	S	CR		S/H	TH
	EX	148 309 0001 00	L = 113,15 D = 27,50 d = 5,00 a = 45°	A/S	CR		S/S	TH
14								
	IN	147 309 0007 00	L = 101,50 D = 38,00 d = 7,00 a = 45°	S	CR			H
	EX	148 309 0007 00	L = 101,70 D = 31,00 d = 7,00 a = 45°	A/S	CR			H

	ccm							IN/EX	QTY	Info	Pos.
4HH (P22DTE)	2198	4	96 KW 131 PS	BOXER 2.2 HDi 130	03/11 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
4HU (P22DTE)	2198	4	88 KW 120 PS	BOXER 2.2 HDi 120	04/06 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
4HV (P22DTE)	2198	4	74 KW 101 PS	BOXER 2.2 HDi 100	04/06 -	86,00	147 037 0026 00 148 037 0027 00	IN EX	8 8		7
CFA (384F), CFB (1KR)	998	3	50 KW 68 PS	107 1.0 108 1.0 VTi	06/05 - 05/14 -	71,00	147 037 0019 00 148 037 0018 00	IN EX	6 6		4
F1CE0481D (F30DT)	2999	4	116 KW 156 PS	BOXER 3.0 HDi 160	04/06 -	95,80	147 020 0008 00 148 020 0008 00	IN EX	8 8		1
HMZ (EB2M)	1199	3	53 KW 72 PS	301 1.2 VTi 72	11/12 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	301 1.2 VTi 82	12/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	108 1.2	05/14 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	2008 1.2 VTi	03/13 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	208 1.2	03/12 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
HMZ (EB2F)	1199	3	60 KW 82 PS	308 II 1.2 VTi	09/13 -	75,00	147 037 0001 00 148 037 0001 00	IN EX	6 6		2
KFU (ET3J4)	1360	4	65 KW 88 PS	1007 1.4 16V 206 1.4 16V 207 1.4 16V 307 1.4 16V	10/05 - 10/03 - 02/06 - 10/13 11/03 - 07/07	75,00	147 037 0021 00 148 037 0022 00	IN EX	8 8		6
NFU (TU5JP4)	1587	4	78-90 KW 106-122 PS	1007 1.6 16V 206, 206 CC 1.6 16V 207 1.6 16V 208 1.6 16V 307, 307 CC 1.6 16V 308 1.6 16V 405 II 1.6 16V HOGGAR 1.6 16V PARTNER, PARTNER Tepee 1.6 16V	04/05 - 07/00 - 02/06 - 01/13 - 08/00 - 04/08 - 08/92 - 05/97 05/10 - 09/00 -	78,50	147 037 0018 00 148 037 0019 00	IN EX	8 8		3
RFH (EW10A), RFJ (EW10A)	1997	4	103 KW 140 PS	EXPERT Tepee 2.0 16V	01/07 -	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
RFJ (EW10A)	1997	4	103-111 KW 140-151 PS	307, 307 CC 2.0 16V 308 2.0 407 2.0 16V 408 2.0 807 2.0 16V	12/04 - 01/08 - 09/05 - 03/11 - 09/05 -	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
RFN (EW10J4)	1997	4	100-105 KW 136-143 PS	206, 206 CC 2.0 16V 307, 307 CC 2.0 16V 406 2.0 16V 407 2.0 607 2.0 806 2.0 16V 807 2.0 EXPERT 2.0	06/99 - 08/00 - 08/00 - 10/04 05/04 - 02/00 - 08/05 09/00 - 08/02 06/02 - 07/00 - 12/06	85,00	147 037 0020 00 148 037 0021 00	IN EX	8 8		5
YHR (DV5RUCd)	1499	4	75 KW 102 PS	EXPERT 1.5 BlueHdi 100 TRAVELLER 1.5 BlueHdi 100	06/18 - 06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHS (DV5RCE)	1499	4	81 KW 110 PS	2008 II 1.5 BlueHdi 110	01/21 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHV (DV5RUC)	1499	4	88 KW 120 PS	EXPERT 1.5 BlueHdi 120 TRAVELLER 1.5 BlueHdi 120	06/18 - 06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHW (DV5RE)	1499	4	55 KW 75 PS	PARTNER 1.5 BlueHdi 75 RIFTER 1.5 BlueHdi 75	07/19 - 09/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHX (DV5RC)	1499	4	88 KW 120 PS	2008 I 1.5 BlueHdi 120	05/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHY (DV5RD)	1499	4	75 KW 102 PS	2008 I + II 1.5 BlueHdi 100 208 I + II 1.5 BlueHdi 100 301 1.5 BlueHdi 100 308 II 1.5 BlueHdi 100 PARTNER 1.5 BlueHdi 100	05/18 - 05/18 - 05/18 - 04/18 - 07/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8
YHZ (DV5RC)	1499	4	96 KW 130 PS	2008 II 1.5 BlueHdi 130 208 II 1.5 BlueHdi 130 3008 1.5 BlueHdi 130 308 II 1.5 BlueHdi 130 5008 II 1.5 BlueHdi 130 508 II 1.5 BlueHdi 130 PARTNER 1.5 BlueHdi 130 RIFTER 1.5 BlueHdi 130	08/19 - 09/19 - 02/18 - 06/17 - 02/18 - 09/18 - 09/18 - 09/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		8

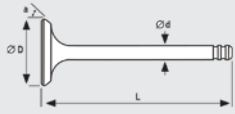
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	S	CR			TH
	EX	148 020 0008 00	L = 120,00 D = 32,50 d = 6,00 a = 60°	A/S	CR			TH
2								
	IN	147 037 0001 00	L = 92,55 D = 29,15 d = 5,00 a = 45°	S				H
	EX	148 037 0001 00	L = 91,85 D = 26,00 d = 5,00 a = 45°	A	NT			
3								
	IN	147 037 0018 00	L = 103,80 D = 31,15 d = 6,00 a = 45°	S				H
	EX	148 037 0019 00	L = 104,50 D = 24,50 d = 6,00 a = 45°	A	CR			
4								
	IN	147 037 0019 00	L = 88,35 D = 27,80 d = 5,00 a = 45°	S	NT			H
	EX	148 037 0018 00	L = 89,00 D = 23,50 d = 5,00 a = 45°	A	NT			
5								
	IN	147 037 0020 00	L = 106,20 D = 33,20 d = 6,00 a = 45°	S				H
	EX	148 037 0021 00	L = 103,70 D = 29,00 d = 6,00 a = 45°	A	CR			

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 037 0021 00	L = 100,80 D = 28,30 d = 5,50 a = 45°	S				TH
	EX	148 037 0022 00	L = 100,80 D = 24,30 d = 5,50 a = 45°	A	CR			
7								
	IN	147 037 0026 00	L = 122,30 D = 29,80 d = 7,00 a = 60°	S	CR			TH
	EX	148 037 0027 00	L = 122,00 D = 25,80 d = 7,00 a = 45°	A	CR			
8								
	IN	147 037 0028 00	L = 95,30 D = 25,30 d = 5,50 a = 45°	S	CR			TH
	EX	148 037 0029 00	L = 94,80 D = 22,00 d = 5,50 a = 45°	A/S	CR		S/S	TH

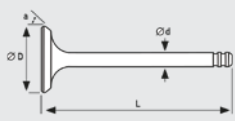
	ccm							IN/EX	QTY	Info	Pos.
DXi 5	4761	4	118-265 KW 160-360 PS	RENAULT TRUCKS MIDLUM 160, 190, 220	05/06 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		1
DXi 7	7146	6	177-265 KW 240-360 PS	RENAULT TRUCKS MIDLUM 240, 280, 300 RENAULT TRUCKS PREMIUM 2	04/04 - 10/05 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		1
N7Q.700, N7Q.704, N7Q.710, N7Q.711	1948	4	100-103 KW 136-140 PS	LAGUNA I 2.0 16V SAFRANE II 2.0 16V	06/95 - 03/01 07/96 - 12/00	83,00	147 051 0001 00 148 051 0001 00	IN EX	8 8		3
R9M.402	1598	4	96 KW 130 PS	FLUENCE 1.6 dCi	07/14 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.402, R9M.404, R9M.414	1598	4	96 KW 130 PS	GRAND SCÉNIC III 1.6 dCi MEGANE CC 1.6 dCi MEGANE III 1.6 dCi SCÉNIC III 1.6 dCi	04/11 - 04/11 - 04/11 - 04/11 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.408, R9M.413, R9M.450, R9M.452	1598	4	66-107 KW 90-145 PS	TRAFIC III 1.6 dCi 90/115/120/125/140	05/14 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.409, R9M.414	1598	4	96 KW 130 PS	KADJAR 1.6 dCi 130 KOLEOS II 1.6 dCi 130	06/15 - 08/16 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.409, R9M.452	1598	4	96-118 KW 130-160 PS	ESPACE V 1.6 dCi 130/160 GRAND SCÉNIC IV 1.6 dCi 130/160 MEGANE IV Grandtour 1.6 dCi 130/165	06/15 - 09/16 - -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.409, R9M.452	1598	4	96-120 KW 130-163 PS	MEGANE IV Grandtour 1.6 dCi 130/165 SCÉNIC IV 1.6 dCi 130/160	11/15 - 09/16 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2
R9M.409, R9M.452, R9M.453	1598	4	96-118 KW 130-160 PS	TALISMAN 1.6 dCi 130/160	06/15 -	80,00	147 038 0014 00 148 038 0014 00	IN EX	8 8		2

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 015 0009 00	L = 145,80 D = 38,20 d = 8,00 a = 60°	S	CR			TH
	EX	148 015 0008 00	L = 145,80 D = 35,80 d = 8,00 a = 45°	A/S	CR			TH
2								
	IN	147 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	S				TH
	EX	148 038 0014 00	L = 104,10 D = 23,50 d = 6,00 a = 45°	A/S	NT			TH
3								
	IN	147 051 0001 00	L = 104,10 D = 31,00 d = 7,00 a = 45°	S	CR			TH
	EX	148 051 0001 00	L = 103,30 D = 27,00 d = 7,00 a = 45°	A/S	CR			TH

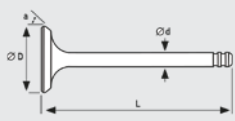
	ccm							IN/EX	QTY	Info	Pos.
14 K4F	1396	4	76 KW 103 PS	100 / METRO 114 GTI 16V 200 II 214 GSi/Si 25 I 1.4 16V 400 II 414 GSi/Si Cat	08/91 - 12/98 12/92 - 03/00 10/99 - 05/05 10/92 - 03/00	75,00	147 006 0001 00 148 006 0001 00	IN EX	8 8		1

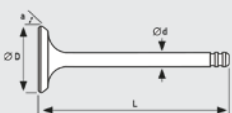
	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 006 0001 00	L = 89,50 D = 27,70 d = 6,00 a = 45°	S	NT			H
	EX	148 006 0001 00	L = 90,20 D = 24,00 d = 6,00 a = 45°	A	NT		S/S	

	ccm							IN/EX	QTY	Info	Pos.
A 16 LET	1598	4	132 KW 180 PS	9-5 1.6 Turbo	05/10 - 01/12	79,00	147 309 0001 00 148 309 0001 00	IN EX	8 8		3
B235E	2290	4	125-136 KW 170-185 PS	9-5 2.3 Turbo	09/97 - 12/09	90,00	147 039 0000 00 148 039 0000 00	IN EX	8 8		2
B235L	2290	4	162 KW 220 PS	9-5 2.3 Turbo	07/03 - 12/09	90,00	147 039 0000 00 148 039 0000 00	IN EX	8 8		2
B235R	2290	4	152-224 KW 207-305 PS	9-3 2.3 Turbo 9-5 2.3 Turbo	09/98 - 08/03 10/99 - 12/09	90,00	147 039 0000 00 148 039 0000 00	IN EX	8 8		2
Z 18 XE	1796	4	90 KW 122 PS	9-3 1.8 i	01/04 - 02/15	80,50	147 035 0003 00 148 035 0003 00	IN EX	8 8		1

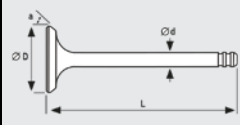
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 035 0003 00	L = 101,45 D = 31,25 d = 5,00 a = 45°	S	CR			H
	EX	148 035 0003 00	L = 100,85 D = 27,55 d = 5,00 a = 45°	A	CR		S/S	
2								
	IN	147 039 0000 00	L = 107,70 D = 33,00 d = 5,00 a = 45°	S	CR		S/H	H
	EX	148 039 0000 00	L = 108,00 D = 29,00 d = 5,00 a = 45°	A	NT		S/H	
3								
	IN	147 309 0001 00	L = 113,80 D = 31,20 d = 5,00 a = 45°	S	CR		S/H	TH
	EX	148 309 0001 00	L = 113,15 D = 27,50 d = 5,00 a = 45°	A/S	CR		S/S	TH

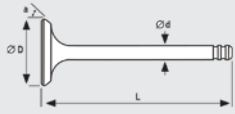
	ccm							IN/EX	QTY	Info	Pos.
ALD, ANV, AUC	999	4	37 KW 50 PS	AROSA 1.0 CORDOBA 1.0 i IBIZA II 1.0 i	05/97 - 06/04 09/96 - 10/02 09/96 - 02/02	67,10	147 050 0003 00 148 050 0022 00	IN EX	4 4		2
AXR	1896	4	74 KW 100 PS	IBIZA III 1.9 TDI	02/02 - 11/09	79,50	147 050 0028 00 148 050 0019 00	IN EX	4 4		8
BLR, BLY, BVY, BVZ	1984	4	110 KW 150 PS	ALTEA 2.0 FSI LEON 2.0 FSI TOLEDO III 2.0 FSI	05/04 - 03/09 07/05 - 05/10 10/04 - 05/09	82,50	147 050 0024 00	IN	8		6
BWA	1984	4	147 KW 200 PS	ALTEA (5P1) 2.0 TFSI	04/06 - 05/09	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8		7
BWA	1984	4	147 KW 200 PS	ALTEA XL (5P5, 5P8) 2.0 TFSI (4x4)	10/06 - 05/09	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8		7
BWA	1984	4	147 KW 200 PS	LEON (1P1) 2.0 TFSI	05/05 - 03/09	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8		7
CAXC	1390	4	92 KW 125 PS	ALTEA 1.4 TSI ALTEA XL 1.4 TSI	11/07 - 11/07 -	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8		1
CBZA	1197	4	63 KW 86 PS	IBIZA IV 1.2 TSI IBIZA IV ST 1.2 TSI TOLEDO IV 1.2 TSI	08/12 - 05/15 09/12 - 05/15 07/12 - 06/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4		5
CBZB	1197	4	77 KW 105 PS	ALTEA / ALTEA XL 1.2 TSI IBIZA IV ST 1.2 TSI LEON 1.2 TSI TOLEDO IV 1.2 TSI	04/10 - 09/10 - 05/15 02/10 - 12/12 07/12 - 06/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4		5
CDLA	1984	4	195 KW 265 PS	LEON 2.0 Cupra R	09/09 - 12/12	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8		7
CDLD	1984	4	177 KW 240 PS	LEON 2.0 TFSI	11/06 - 05/11	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8		7
CGGB	1390	4	63 KW 86 PS	ALTEA 1.4 16V ALTEA XL 1.4 16V	05/06 - 10/06 -	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8		1
CHYA	999	3	44 KW 60 PS	Mii 1.0	10/11 - 07/19	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6		3
CHYB	999	3	55 KW 75 PS	IBIZA IV + V 1.0 Mii 1.0	05/15 - 10/11 - 07/19	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6		3
CHYC	999	3	48 KW 65 PS	IBIZA V 1.0	07/17 -	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6		3
CWVA	1598	4	81 KW 110 PS	ARONA 1.6 SRE IBIZA IV + V 1.6 LEON ST 1.6 SRE TOLEDO IV 1.6	07/17 - 07/15 - 05/15 - 05/15 - 04/19	76,50	147 050 0022 01 148 050 0015 01	IN EX	8 8		4

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 050 0001 00	L = 101,00 D = 29,50 d = 6,00 a = 45°	S				TH
	EX	148 050 0001 00	L = 100,60 D = 26,00 d = 6,00 a = 45°	A/S				TH
2								
	IN	147 050 0003 00	L = 99,00 D = 31,00 d = 6,00 a = 45°					
	EX	148 050 0022 00	L = 98,90 D = 26,00 d = 6,00 a = 45°					
3								
	IN	147 050 0022 00	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 00	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
4								
	IN	147 050 0022 01	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 01	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
5								
	IN	147 050 0023 00	L = 98,60 D = 35,50 d = 6,00 a = 45°	S			S/H	TH
	EX	148 050 0016 00	L = 98,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH

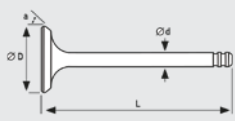
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 050 0024 00	L = 104,10 D = 33,90 d = 6,00 a = 45°	S				TH
7								
	IN	147 050 0026 00	L = 103,95 D = 33,80 d = 6,00 a = 45°	S	CR			TH
	EX	148 050 0017 00	L = 102,00 D = 28,00 d = 6,00 a = 45°	A/S	CR			TH
8								
	IN	147 050 0028 00	L = 89,40 D = 36,00 d = 7,00 a = 45°					
	EX	148 050 0019 00	L = 89,00 D = 31,50 d = 7,00 a = 45°					

	ccm							IN/EX	QTY	Info	Pos.
BLR	1984	4	110 KW 150 PS	OCTAVIA II 2.0 FSI	11/04 - 10/08	82,50	147 050 0024 00	IN	8		5
BLX, BLY, BVX, BVY, BVZ	1984	4	110 KW 150 PS	OCTAVIA II 2.0 FSI 4x4	11/04 - 04/09	82,50	147 050 0024 00	IN	8		5
CAXA	1390	4	90 KW 122 PS	YETI 1.4 TSI	06/10 -	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8		1
CAXC	1390	4	92 KW 125 PS	SUPERB II 1.4 TSI	07/08 - 05/15	76,50	147 050 0001 00 148 050 0001 00	IN EX	8 8		1
CBZA	1197	4	63 KW 86 PS	FABIA II 1.2 TSI RAPID 1.2 TSI / 1.2 LPG ROOMSTER 1.2 TSI	03/10 - 12/14 07/12 - 05/15 03/10 - 05/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4		4
CBZB	1197	4	77 KW 105 PS	FABIA II 1.2 TSI OCTAVIA II 1.2 TSI RAPID 1.2 TSI ROOMSTER 1.2 TSI YETI 1.2 TSI	03/10 - 12/14 02/10 - 06/13 07/12 - 05/15 03/10 - 05/15 09/09 - 05/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4		4
CHYA, CHYE, CHYB	999	3	44-55 KW 60-75 PS	CITIGO 1.0 FABIA III 1.0	10/11 - 08/19 08/14 -	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6		2
CWVA	1598	4	81 KW 110 PS	FABIA III 1.6 KAMIQ 1.6 SRE KAROQ 1.6 SRE OCTAVIA III + IV 1.6 SRE RAPID 1.6 SRE YETI 1.6	01/15 - 07/19 - 06/20 - 01/14 - 05/15 - 12/19 04/14 - 12/17	76,50	147 050 0022 01 148 050 0015 01	IN EX	8 8		3
CWVB	1598	4	66 KW 90 PS	FABIA III 1.6 RAPID 1.6 SRE	08/14 - 06/15 - 12/19	76,50	147 050 0022 01 148 050 0015 01	IN EX	8 8		3
DSRA	1968	4	110 KW 150 PS	SUPERB III 2.0 TDI	03/15 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		6
DTRA	1968	4	90 KW 122 PS	SUPERB III 2.0 TDI	07/20 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		6
DTSA, DTSB	1968	4	110 KW 150 PS	SUPERB III 2.0 TDI	03/15 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		6
DTTC, DTTA	1968	4	110 KW 150 PS	OCTAVIA IV 2.0 TDI 4x4	09/20 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		6

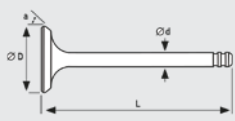
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 050 0001 00	L = 101,00 D = 29,50 d = 6,00 a = 45°	S				TH
	EX	148 050 0001 00	L = 100,60 D = 26,00 d = 6,00 a = 45°	A/S				TH
2								
	IN	147 050 0022 00	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 00	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
3								
	IN	147 050 0022 01	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 01	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
4								
	IN	147 050 0023 00	L = 98,60 D = 35,50 d = 6,00 a = 45°	S			S/H	TH
	EX	148 050 0016 00	L = 98,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH
5								
	IN	147 050 0024 00	L = 104,10 D = 33,90 d = 6,00 a = 45°	S				TH

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 050 0029 00	L = 99,30 D = 28,00 d = 5,00 a = 45°	S			S/H	TH
	EX	148 050 0020 00	L = 99,30 D = 25,00 d = 5,00 a = 45°	A/S			S/S	TH

	ccm							IN/EX	QTY	Info	Pos.
1KR-FE	998	3	51 KW 69 PS	JUSTY 1.0	01/07 -	71,00	147 037 0019 00 148 037 0018 00	IN EX	6 6		1
1NR-FE	1329	4	73 KW 99 PS	TREZIA 1.3	03/11 -	72,50	147 096 0004 00 148 096 0005 00	IN EX	8 8		3
M13A	1328	4	69 KW 94 PS	JUSTY III 1.3 AWD	09/03 -	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		2

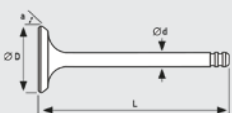
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 037 0019 00	L = 88,35 D = 27,80 d = 5,00 a = 45°	S	NT			H
	EX	148 037 0018 00	L = 89,00 D = 23,50 d = 5,00 a = 45°	A	NT			
2								
	IN	147 094 0005 00	L = 100,70 D = 30,00 d = 5,50 a = 45°	S	NT			H
	EX	148 094 0005 00	L = 99,00 D = 25,00 d = 5,50 a = 45°	A	NT		S/S	
3								
	IN	147 096 0004 00	L = 103,30 D = 29,00 d = 5,50 a = 45°	S	NT			H
	EX	148 096 0005 00	L = 104,50 D = 24,20 d = 5,50 a = 45°	A	NT		S/S	

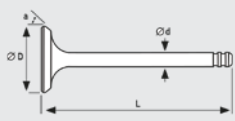
	ccm							IN/EX	QTY	Info	Pos.
K10B	996	3	50 KW 68 PS	ALTO 1.0	01/09 -	73,00	147 094 0003 00 148 094 0003 00	IN EX	6 6		1
K12M	1197	4	63 KW 86 PS	Swift Dzire 1.2	07/13 -	73,00	147 094 0004 00 148 094 0004 00	IN EX	8 8		2
M13A	1328	4	60-69 KW 82-94 PS	GRAND VITARA II 1.3 IGNIS II 1.3 SWIFT III 1.3 WAGON R+ 1.3	08/06 - 10/00 - 02/05 - 08/01 -	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		3
M16A	1586	4	78 KW 106 PS	MARUTI SUZUKI SX 4 1.6	05/07 -	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		3
M16A	1586	4	73-104 KW 99-142 PS	GRAND VITARA II 1.6 SWIFT III 1.6 SX4 1.6	09/05 - 02/15 05/06 - 06/06 -	78,00	147 094 0005 00 148 094 0005 00	IN EX	8 8		3

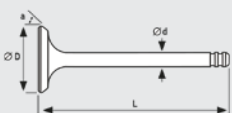
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 094 0003 00	L = 87,55 D = 27,60 d = 5,50 a = 45°	A	NT			
	EX	148 094 0003 00	L = 87,15 D = 22,90 d = 5,50 a = 45°	A	NT			
2								
	IN	147 094 0004 00	L = 87,45 D = 27,40 d = 5,00 a = 45°	S	NT			H
	EX	148 094 0004 00	L = 87,00 D = 22,90 d = 5,00 a = 45°	A	NT			
3								
	IN	147 094 0005 00	L = 100,70 D = 30,00 d = 5,50 a = 45°	S	NT			H
	EX	148 094 0005 00	L = 99,00 D = 25,00 d = 5,50 a = 45°	A	NT		S/S	

	ccm					IN/EX	QTY	Info	Pos.	
1AD-FTV	1998	4	91-93 KW 124-126 PS	AURIS 2.0 D-4D AVENSIS 2.0 D-4D COROLLA 2.0 D-4D RAV 4 IV 2.0 D VERSO 2.0 D-4D	10/06 - 04/15 03/06 - 10/18 11/06 - 07/14 12/12 - 11/18 04/09 - 08/18	86,00	147 096 0012 00 148 096 0012 00	IN EX	8 8	11
1AZ-FSE	1998	4	92-114 KW 125-155 PS	ALLION I 2.0 AVENSIS 2.0 CALDINA 2.0 GAIA 2.0 ISIS 2.0 VVTi NOAH/VOXY 2.0 OPA 2.0 PREMIO 2.0	06/01 - 04/05 10/00 - 11/08 09/02 - 06/07 04/01 - 08/04 07/04 - 08/14 11/01 - 06/07 08/00 - 04/05 12/01 - 06/07	86,00	147 096 0009 00 148 096 0009 00	IN EX	8 8	9
1C	1839	4	41-49 KW 56-67 PS	CARINA 1.8 D COROLLA 1.8 D LITEACE 1.8 D	04/82 - 09/83 01/83 - 06/93 10/82 - 08/88	83,00	147 096 0016 00 148 096 0018 00	IN EX	4 4	15
1CD-FTV	1995	4	66-85 KW 90-116 PS	AVENSIS 2.0 D-4D COROLLA 2.0 D-4D PREVIA II 2.0 D-4D RAV 4 II (2.0 D 4WD)	10/99 - 11/08 01/00 - 03/09 03/01 - 01/06 05/01 - 11/05	82,20	147 096 0011 00 148 096 0011 00	IN EX	8 8	10
1C-L	1839	4	47 KW 64 PS	COROLLA 1.8 D	06/83 - 06/89	83,00	147 096 0016 00 148 096 0018 00	IN EX	4 4	15
1C-TL, 1C-TLC	1839	4	54 KW 73 PS	CAMRY 1.8 Turbo-D	10/82 - 10/86	83,00	147 096 0016 00 148 096 0018 00	IN EX	4 4	15
1KR-FE	998	3	48-53 KW 65-72 PS	Aygo 1.0 IQ 1.0 YARIS/VITZ 1.0	07/05 - 01/09 - 01/05 -	71,00	147 037 0019 00 148 037 0018 00	IN EX	6 6	1
1KZ-TE	2982	4	85-103 KW 116-140 PS	4 RUNNER III 3.0 TDi HIACE IV 3.0 TD HILUX VI 3.0 TD LAND CRUISER 90, PRADO 3.0 TD	09/00 - 07/02 01/97 - 12/02 08/97 - 06/05 04/95 - 07/09	96,00	147 096 0013 00 148 096 0013 00	IN EX	4 4	12
1NR-FE	1329	4	62-74 KW 84-101 PS	AURIS 1.3 IQ 1.33 YARIS 1.3	05/09 - 12/18 01/09 - 12/15 11/08 -	72,50	147 096 0004 00 148 096 0005 00	IN EX	8 8	6
1NZ-FE	1497	4	76-110 KW 103-150 PS	ALLION I + II 1.5 AURIS 1.5 bB I 1.5 COROLLA Verso 1.5 ECHO 1.5 IST 1.5 VVTi PLATZ 1.5 PORTE 1.5 PREMIO 1.5 PROBOX / SUCCEED 1.5 VVTi 4WD RACTIS 1.5 RAUM 1.5 4WD URBAN CRUISER 1.5 VVTi VIOS / SOLUNA VIOS 1.5 VVTi WILL 1.5 VVTi 4WD YARIS, YARIS VERSO 1.5 YARIS/VITZ ECHO 1.5	06/01 - 11/12 09/09 - 09/12 03/00 - 12/05 03/01 - 03/09 08/99 - 01/06 05/04 - 07/07 04/99 - 08/05 07/04 - 07/12 12/01 - 07/02 - 08/14 09/05 - 08/10 05/03 - 07/07 - 10/02 - 10/06 03/01 - 07/05 03/00 - 01/03 - 11/05	75,00	147 096 0001 00 148 096 0001 00	IN EX	8 8	3
1NZ-FXE	1497	4	43-74 KW 58-101 PS	PRIUS 1.5 Hybrid YARIS/VITZ 1.5 Hybrid	12/97 - 03/12 -	75,00	147 096 0001 00 148 096 0001 00	IN EX	8 8	3
1SZ-FE	998	4	48-50 KW 65-68 PS	PLATZ 1.0 YARIS/VITZ ECHO 1.0	04/99 - 08/05 04/99 - 09/05	69,00	147 096 0002 00 148 096 0002 00	IN EX	8 8	4
1Y	1626	4	51-55 KW 69-75 PS	HILUX IV Pick-up 1.6	11/83 - 09/87	86,00	147 096 0007 00 148 096 0016 00	IN EX	4 8	7
2AZ-FE	2362	4	112-127 KW 152-173 PS	ALPHARD 2.4 AURIS / COROLLA 2.4 AVENSIS VERSO 2.4 CAMRY 2.4 HARRIER 2.4 HIGHLANDER / KLUGER 2.4 MATRIX 2.4 PREVIA 2.4 RAV 4 II + III 2.4 SOLARA 2.4	09/03 - 12/14 11/06 - 04/12 05/01 - 12/11 09/01 - 09/11 06/00 - 12/13 06/00 - 05/07 01/08 - 05/14 02/00 - 05/00 - 12/13 07/03 - 11/08	88,50	147 096 0009 00 148 096 0009 00	IN EX	8 8	9
2AZ-FXE	2362	4	105-117 KW 143-159 PS	ALPHARD 2.4 Hybrid CAMRY 2.4 Hybrid PREVIA III 2.4 Hybrid	09/03 - 04/08 01/06 - 09/11 05/12 -	88,50	147 096 0009 00 148 096 0009 00	IN EX	8 8	9
2C	1974	4	49-51 KW 67-69 PS	MODEL F 2.0 D TOWN ACE 2.0 D	04/85 - 08/88 01/92 - 04/95	86,00	147 096 0016 00 148 096 0018 00	IN EX	4 4	15
2C-L	1974	4	50-54 KW 68-73 PS	CARINA 2.0 D	02/84 - 06/92	86,00	147 096 0016 00 148 096 0018 00	IN EX	4 4	15

	ccm							IN/EX	QTY	Info	Pos.
2KD-FTV	2494	4	65-106 KW 88-144 PS	DYNA 2.5 D4d FORTUNER / HILUX 2.5 D-4D HIACE 2.5 D-4D	07/01 - 11/01 - 08/17 08/01 -	92,00	147 096 0014 00 148 096 0014 00	IN EX	8 8		13
2L	2446	4	53-62 KW 72-84 PS	HIACE III + IV 2.4 D HILUX 2.4 D	12/82 - 12/04 08/83 - 07/05	92,00	147 096 0013 00 148 096 0013 00	IN EX	4 4		12
2NZ-FE	1299	4	57-66 KW 78-90 PS	bB I 1.3 COROLLA 1.3 ECHO 1.3 IST 1.3 VVTi PLATZ 1.3 PORTE 1.3 VVTi PROBOX / SUCCEED 1.3 VVTi WILL 1.3 VVTi YARIS, YARIS VERSO 1.3	01/00 - 11/05 08/00 - 05/04 04/03 - 08/05 05/04 - 07/07 08/99 - 08/05 07/04 - 07/12 07/02 - 08/14 01/00 - 07/05 08/99 -	75,00	147 096 0001 00 148 096 0001 00	IN EX	8 8		3
2Y	1812	4	55-65 KW 75-88 PS	CRESSIDA 1.8 DYNA 100 1.8 HIACE III 1.8 HILUX V 1.8 LITEACE 1.8	05/85 - 09/88 08/85 - 04/95 12/82 - 07/89 08/83 - 06/98 01/84 - 12/92	86,00	147 096 0007 00 148 096 0016 00	IN EX	4 8		7
3L	2779	4	58-65 KW 79-88 PS	4 RUNNER 2.8 D DYNA 150 2.8 D HIACE IV 2.8 D HILUX VI + V 2.8 D	05/88 - 08/96 08/88 - 08/98 08/89 - 08/00 10/88 - 07/05	96,00	147 096 0013 00 148 096 0013 00	IN EX	4 4		12
3S-FE	1998	4	88-94 KW 120-128 PS	AVENSIS 2.0 CAMRY 2.0 CARINA E VI 2.0 GLI PICNIC 2.0 RAV 4 I 2.0	09/97 - 10/00 03/83 - 02/93 04/92 - 09/97 05/96 - 12/01 01/94 - 09/00	86,00	147 096 0008 00 148 096 0008 00	IN EX	8 8		8
3Y	1998	4	57-79 KW 78-107 PS	CRESSIDA 2.0 DYNA 2.0 HIACE III + IV 2.0 MODEL F 2.0	01/89 - 09/92 09/84 - 08/88 12/82 - 08/89 08/88 - 01/90	86,00	147 096 0007 00 148 096 0016 00	IN EX	4 8		7
4A-FE	1587	4	66-136 KW 90-185 PS	AVENSIS 1.6 COROLLA 1.6 i	09/97 - 10/00 05/87 - 10/00	81,00	147 096 0003 00 148 096 0003 00	IN EX	8 8		5
4Y	2237	4	67-69 KW 92-94 PS	DYNA 200 2.2 HIACE III + IV 2.2 HILUX IV + V 2.2	10/93 - 07/01 08/86 - 08/95 08/83 - 09/96	91,00	147 096 0007 00 148 096 0016 00	IN EX	4 8		7
5L-E, 5L	2986	4	70 KW 95 PS	DYNA 150 3.0 D FORTUNER 3.0 D HIACE IV 3.0 D HILUX 3.0 D LAND CRUISER PRADO 3.0 D TOYOACE 3.0 D	09/98 - 03/16 - 08/98 - 08/97 - 09/02 - 08/01 - 06/11	99,50	147 096 0015 00 148 096 0017 00	IN EX	4 4		14
5S-FE	2164	4	93-100 KW 126-136 PS	CAMRY 2.2	06/91 - 09/02	87,00	147 096 0008 00 148 096 0008 00	IN EX	8 8		8
5WZ-HV (DV5RUC)	1499	4	88 KW 120 PS	PROACE VERSO 1.5 D4d	06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		2
5WZ-TV (DV5RUCD)	1499	4	75 KW 102 PS	PROACE VERSO 1.5 D4d	06/18 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		2
7A-FE	1762	4	78-106 KW 106-144 PS	AVENSIS 1.8	09/97 - 10/00	81,00	147 096 0003 00 148 096 0003 00	IN EX	8 8		5
DV5RC	1499	4	96 KW 131 PS	PROACE CITY 1.5 D-4D 130	10/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		2
DV5RD	1499	4	75 KW 102 PS	PROACE CITY VERSO 1.5 D-4D 100	10/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		2
DV5RE	1499	4	55 KW 75 PS	PROACE CITY 1.5 D-4D 75	10/19 -	75,00	147 037 0028 00 148 037 0029 00	IN EX	8 8		2

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 037 0019 00	L = 88,35 D = 27,80 d = 5,00 a = 45°	S	NT			H
	EX	148 037 0018 00	L = 89,00 D = 23,50 d = 5,00 a = 45°	A	NT			
2								
	IN	147 037 0028 00	L = 95,30 D = 25,30 d = 5,50 a = 45°	S	CR			TH
	EX	148 037 0029 00	L = 94,80 D = 22,00 d = 5,50 a = 45°	A/S	CR		S/S	TH
3								
	IN	147 096 0001 00	L = 89,30 D = 30,50 d = 5,00 a = 45°	S	NT			H
	EX	148 096 0001 00	L = 88,00 D = 25,50 d = 5,00 a = 45°	A	NT			
4								
	IN	147 096 0002 00	L = 88,20 D = 26,10 d = 5,00 a = 45°	S	NT			H
	EX	148 096 0002 00	L = 89,20 D = 22,60 d = 5,00 a = 45°	A	NT			
5								
	IN	147 096 0003 00	L = 87,50 D = 31,00 d = 6,00 a = 45°	S	CR			H
	EX	148 096 0003 00	L = 87,90 D = 24,50 d = 6,00 a = 45°	A	CR			

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 096 0004 00	L = 103,30 D = 29,00 d = 5,50 a = 45°	S	NT			H
	EX	148 096 0005 00	L = 104,50 D = 24,20 d = 5,50 a = 45°	A	NT		S/S	
7								
	IN	147 096 0007 00	L = 108,30 D = 40,00 d = 8,00 a = 45°	S	NT			H
	EX	148 096 0016 00	L = 108,60 D = 36,00 d = 8,00 a = 45°		NT			
8								
	IN	147 096 0008 00	L = 97,50 D = 32,00 d = 6,00 a = 45°	A	NT			
	EX	148 096 0008 00	L = 98,50 D = 27,00 d = 6,00 a = 45°	A	NT			
9								
	IN	147 096 0009 00	L = 101,70 D = 34,00 d = 5,50 a = 45°	S	NT			H
	EX	148 096 0009 00	L = 101,10 D = 29,50 d = 5,50 a = 45°	A	NT			
10								
	IN	147 096 0011 00	L = 102,50 D = 28,00 d = 6,00 a = 45°	A	NT			
	EX	148 096 0011 00	L = 102,00 D = 24,00 d = 6,00 a = 45°	A	NT			

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
11								
	IN	147 096 0012 00	L = 104,50 D = 30,20 d = 6,00 a = 45°	S	NT			H
	EX	148 096 0012 00	L = 104,00 D = 27,00 d = 6,00 a = 45°	A	NT			
12								
	IN	147 096 0013 00	L = 103,30 D = 42,50 d = 8,00 a = 45°	A	NT			
	EX	148 096 0013 00	L = 103,30 D = 36,00 d = 8,00 a = 45°	A	NT			
13								
	IN	147 096 0014 00	L = 105,60 D = 30,50 d = 6,00 a = 45°	S	NT			H
	EX	148 096 0014 00	L = 105,90 D = 26,50 d = 6,00 a = 45°	A	NT			
14								
	IN	147 096 0015 00	L = 104,30 D = 42,50 d = 8,00 a = 45°	S	NT		S/H	H
	EX	148 096 0017 00	L = 104,10 D = 36,00 d = 8,00 a = 45°	A/S	NT			H
15								
	IN	147 096 0016 00	L = 106,50 D = 38,50 d = 8,00 a = 45°					
	EX	148 096 0018 00	L = 106,50 D = 32,50 d = 8,00 a = 45°					

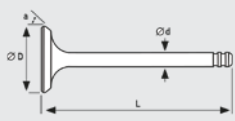
	ccm						IN/EX	QTY	Info	Pos.
2L	2446	4	58-61 KW 80-83 PS	TARO 2.4 D	04/89 - 03/97	92,00	147 096 0013 00 148 096 0013 00	IN EX	4 4	16
ALD, ANV, AUC	999	4	37 KW 50 PS	LUPO I 1.0 POLO 1.0	09/98 - 07/05 05/99 - 05/02	67,10	147 050 0003 00 148 050 0022 00	IN EX	4 4	1
AVQ	1896	4	74 KW 100 PS	TOURAN 1.9 TDI	02/03 - 05/05	79,50	147 050 0028 00 148 050 0019 00	IN EX	4 4	12
AXW	1984	4	110 KW 150 PS	GOLF V 2.0 FSI TOURAN 2.0 FSI	01/04 - 11/08 10/03 - 01/07	82,50	147 050 0024 00	IN	8	5
BKS, CATA, BMK	2967	6	165 KW 224 PS	TOUAREG 3.0 V6 TDI	06/04 - 05/10	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	7
BLR, BLX, BLY, BVX, BVY, BVZ	1984	4	110 KW 150 PS	EOS 2.0 FSI GOLF PLUS V 2.0 FSI GOLF V 2.0 FSI JETTA III / VENTO 2.0 FSI PASSAT 2.0 FSI TOURAN 2.0 FSI	03/06 - 05/08 05/05 - 06/08 01/04 - 11/08 08/05 - 10/10 03/05 - 11/10 10/03 - 01/07	82,50	147 050 0024 00	IN	8	5
BPC, BNZ	2461	5	96-128 KW 130-174 PS	CALIFORNIA T5 Camper 2.5 TDI MULTIVAN V 2.5 TDI TRANSPORTER V 2.5 TDI	05/07 - 11/09 04/03 - 11/09 04/03 - 11/09	81,00	147 050 0028 01 148 050 0019 01	IN EX	5 5	13
BPD, BPE	2461	5	120-128 KW 163-174 PS	TOUAREG 2.5 R5 TDI	08/03 - 05/10	81,00	147 050 0028 01 148 050 0019 01	IN EX	5 5	13
BUN, CASB	2967	6	155 KW 211 PS	TOUAREG 3.0 V6 TDI	06/04 - 05/10	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	7
BWA, AXX	1984	4	147 KW 200 PS	GOLF V (1K1) 2.0 GTI Jetta III (1K2) PASSAT (3C2) 2.0 FSI PASSAT Variant (3C5) 2.0 FSI	10/04 - 02/09 10/05 - 10/10 07/05 - 07/10 08/05 - 11/10	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	10
BYD	1984	4	169 KW 230 PS	GOLF V 2.0 GTI	09/06 - 12/08	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	10
CARA	2967	6	171 KW 233 PS	PHAETON 3.0 V6 TDI 4motion	06/07 - 11/08	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	7
CASA, CEXA, CNRB	2967	6	176 KW 240 PS	PHAETON 3.0 V6 TDI 4motion TOUAREG 3.0 V6 TDI	11/08 - 03/16 01/10 - 03/18	83,00	147 050 0025 00 148 050 0018 00 148 050 0012 00	IN EX EX	12 12 12	9
CBWA	4921	10	257 KW 350 PS	TOUAREG 5.0 R50 TDI	08/07 - 05/10	81,00	147 050 0028 02 148 050 0019 02	IN EX	10 10	14
CBZA	1197	4	63 KW 86 PS	CADDY III 1.2 TSI GOLF PLUS 1.2 TSI GOLF VI 1.2 TSI	09/10 - 05/15 05/10 - 12/13 05/10 - 11/12	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4	4
CBZB	1197	4	77 KW 105 PS	BEETLE 1.2 TSI CADDY III 1.2 TSI GOLF VI / GOLF PLUS 1.2 TSI JETTA IV 1.2 TSI POLO 1.2 TSI TOURAN 1.2 TSI	07/11 - 07/19 09/10 - 05/15 11/08 - 05/16 10/10 - 11/09 05/10 - 05/15	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4	4
CBZC	1197	4	66 KW 90 PS	POLO 1.2 TSI	05/11 - 05/14	71,00	147 050 0023 00 148 050 0016 00	IN EX	4 4	4
CDLA	1984	4	195 KW 265 PS	GOLF VI 2.0 R 4motion SCIROCCO III 2.0 R	11/09 - 05/11 11/09 - 11/17	82,50	147 050 0026 00 148 050 0017 00	IN EX	8 8	10
CEXB	2967	6	180 KW 245 PS	PHAETON 3.0 V6 TDI 4motion	11/13 - 03/16	83,00	147 050 0025 00 148 050 0018 00	IN EX	12 12	7
CHYA, CHYB	999	3	44-55 KW 60-75 PS	LOAD UP 1.0 BlueMotion POLO 1.0	05/16 - 11/19 01/14 -	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6	2
CHYA, CHYB, CHYE, DAFA	999	3	44-55 KW 60-75 PS	LOAD UP 1.0 UPI 1.0	12/14 - 11/19 08/11 - 08/20	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6	2
CJGD, CRCA	2967	6	180 KW 245 PS	TOUAREG 3.0 V6 TDI	05/11 - 03/18	83,00	147 050 0025 00 148 050 0012 00	IN EX	12 12	6
CJMA, CASD	2967	6	150 KW 204 PS	Q7 3.0 TDI quattro TOUAREG 3.0 V6 TDI	05/10 - 08/15 01/10 - 03/18	83,00	147 050 0025 00 148 050 0018 00 148 050 0012 00	IN EX EX	12 12 12	8
CPKA, CPRA	1798	4	125 KW 170 PS	BEETLE 1.8 TSI JETTA IV 1.8 TSI PASSAT 1.8 TSI	12/13 - 07/17 07/14 - 06/13 -	82,50	147 050 0027 00	IN	8	11
CPLA, CPPA	1984	4	155 KW 211 PS	BEETLE 2.0 TSI JETTA IV / BORA2.0 TSI	12/12 - 07/19 12/12 - 12/17	82,50	147 050 0027 00	IN	8	11

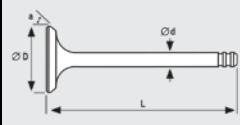
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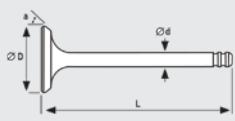
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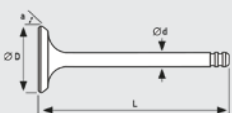
Engine
Code:
CJMA

	ccm							IN/EX	QTY	Info	Pos.
CWVA	1598	4	81 KW 110 PS	CADDY IV 1.6 GOLF VII 1.6 JETTA IV / BORA 1.6 POLO 1.6	11/15 - 05/14 - 09/15 - 07/14 -	76,50	147 050 0022 01 148 050 0015 01	IN EX	8 8		3
CWVB	1598	4	66 KW 90 PS	JETTA IV / BORA 1.6 MPI POLO 1.6 MPI	09/15 - 04/18 07/14 -	76,50	147 050 0022 01 148 050 0015 01	IN EX	8 8		3
CXDA, CXDB	1984	4	162 KW 220 PS	ATLAS / TERAMONT 2.0 TSI 4motion GOLF VII 2.0 GTI JETTA VII / J VENTO 350 TSI PASSAT 2.0 TSI TIGUAN ALLSPACE 2.0 TSI 4motion	12/17 - 04/13 - 12/18 - 08/14 - 07/17 -	82,50	147 050 0027 00	IN	8		11
CXEC	1968	4	146 KW 199 PS	CALIFORNIA T6 Camper 2.0 TDI MULTIVAN VI CARAVELLE 2.0 TDI TRANSPORTER VI 2.0 TDI	08/18 - 11/18 - 08/18 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
CXFA, CXHA	1968	4	110 KW 150 PS	CALIFORNIA T6 Camper 2.0 TDI MULTIVAN VI CARAVELLE 2.0 TDI TRANSPORTER VI 2.0 TDI	04/15 - 04/15 - 04/15 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
CXGD	1968	4	66 KW 90 PS	CALIFORNIA T6 Camper 2.0 TDI TRANSPORTER VI 2.0 TDI	10/19 - 10/19 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
CXHC	1968	4	81 KW 110 PS	CALIFORNIA T6 Camper 2.0 TDI MULTIVAN VI CARAVELLE 2.0 TDI TRANSPORTER VI 2.0 TDI	07/19 - 07/19 - 07/19 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DASA, DASB	1968	4	90 KW 122 PS	CRAFTER 2.0 TDI	08/17 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DASC	1968	4	80 KW 109 PS	CRAFTER 2.0 TDI RWD	11/16 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DAUA, DAUB	1968	4	103 KW 140 PS	CRAFTER 2.0 TDI	09/16 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DAVA	1968	4	130 KW 177 PS	CRAFTER 2.0 TDI	09/16 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DAWA	1968	4	130 KW 177 PS	CRAFTER 2.0 TDI RWD	02/17 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DSGC	999	3	48 KW 65 PS	UP! 1.0	08/20 -	74,50	147 050 0022 00 148 050 0015 00	IN EX	6 6		2
DSRA	1968	4	110 KW 150 PS	ARTEON 2.0 TDI PASSAT B8 2.0 TDI	03/17 - 11/14 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DTRA	1968	4	90 KW 122 PS	PASSAT 2.0 TDI	07/20 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DTSA, DTSB	1968	4	110 KW 150 PS	ARTEON 2.0 TDI GOLF VIII 2.0 TDI PASSAT 2.0 TDI	03/17 - 08/19 - 11/14 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15
DTTC, DTTA	1968	4	110 KW 150 PS	GOLF VIII 2.0 TDI	08/19 -	81,00	147 050 0029 00 148 050 0020 00	IN EX	8 8		15

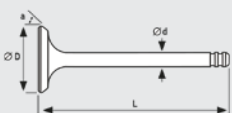
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 050 0003 00	L = 99,00 D = 31,00 d = 6,00 a = 45°					
	EX	148 050 0022 00	L = 98,90 D = 26,00 d = 6,00 a = 45°					
2								
	IN	147 050 0022 00	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 00	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
3								
	IN	147 050 0022 01	L = 110,20 D = 29,50 d = 5,00 a = 45°	S				TH
	EX	148 050 0015 01	L = 110,20 D = 27,00 d = 5,00 a = 60°	A/S	CR		S/S	TH
4								
	IN	147 050 0023 00	L = 98,60 D = 35,50 d = 6,00 a = 45°	S			S/H	TH
	EX	148 050 0016 00	L = 98,40 D = 30,00 d = 6,00 a = 45°	A/S	CR			TH
5								
	IN	147 050 0024 00	L = 104,10 D = 33,90 d = 6,00 a = 45°	S				TH

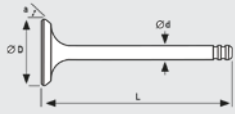
	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
6								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0012 00	L = 99,20 D = 26,00 d = 6,00 a = 45°	A/S			S/S	TH
7								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 00	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH
8								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 00	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH
	EX	148 050 0012 00	L = 99,20 D = 26,00 d = 6,00 a = 45°	A/S			S/S	TH
9								
	IN	147 050 0025 00	L = 99,35 D = 28,60 d = 6,00 a = 45°	S				TH
	EX	148 050 0018 00	L = 99,35 D = 26,70 d = 6,00 a = 45°	A/S				TH
	EX	148 050 0012 00	L = 99,20 D = 26,00 d = 6,00 a = 45°	A/S			S/S	TH

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
10								
	IN	147 050 0026 00	L = 103,95 D = 33,80 d = 6,00 a = 45°	S	CR			TH
	EX	148 050 0017 00	L = 102,00 D = 28,00 d = 6,00 a = 45°	A/S	CR			TH
11								
	IN	147 050 0027 00	L = 104,00 D = 33,85 d = 6,00 a = 45°					
12								
	IN	147 050 0028 00	L = 89,40 D = 36,00 d = 7,00 a = 45°					
	EX	148 050 0019 00	L = 89,00 D = 31,50 d = 7,00 a = 45°					
13								
	IN	147 050 0028 01	L = 89,40 D = 36,00 d = 7,00 a = 45°					
	EX	148 050 0019 01	L = 89,00 D = 31,50 d = 7,00 a = 45°					
14								
	IN	147 050 0028 02	L = 89,40 D = 36,00 d = 7,00 a = 45°					
	EX	148 050 0019 02	L = 89,00 D = 31,50 d = 7,00 a = 45°					

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
15								
	IN	147 050 0029 00	L = 99,30 D = 28,00 d = 5,00 a = 45°	S			S/H	TH
	EX	148 050 0020 00	L = 99,30 D = 25,00 d = 5,00 a = 45°	A/S			S/S	TH
16								
	IN	147 096 0013 00	L = 103,30 D = 42,50 d = 8,00 a = 45°	A	NT			
	EX	148 096 0013 00	L = 103,30 D = 36,00 d = 8,00 a = 45°	A	NT			

	ccm							IN/EX	QTY	Info	Pos.
B 30 A, B 30 E, B 30 F	2932	6	92-118 KW 125-160 PS	164 2.9, 2.9 E, 3.0	08/68 - 07/74	88,90	147 051 0002 00 148 051 0002 00	IN EX	6 6		8
B 4184 S11	1798	4	92 KW 125 PS	C30 1.8 S40 II 1.8 V50 1.8	10/06 - 12/12 04/04 - 12/10 04/04 - 12/10	83,00	147 021 0001 00 148 021 0001 00	IN EX	8 8		2
B 4194 T2	1855	4	147 KW 200 PS	S40 I 1.9 T4	05/97 - 07/00	81,00	147 051 0001 00	IN	8		4
B 4204 S	1948	4	100-103 KW 136-140 PS	S40 I 2.0 V40 2.0	07/95 - 12/03 07/95 - 06/04	83,00	147 051 0001 00	IN	8		4
B 4204 S3	1999	4	107 KW 146 PS	C30 2.0 S40 II 2.0 S80 II 2.0 V50 2.0 V70 III 2.0	10/06 - 12/12 10/06 - 12/12 01/08 - 09/12 10/06 - 12/12 10/07 - 12/11	87,50	147 021 0002 00 148 021 0002 00	IN EX	8 8		3
B 5204 T2	1984	5	132 KW 180 PS	850 2.0 Turbo	09/93 - 10/97	81,00	147 051 0001 01	IN	10		5
B 5204 T3	1984	5	166 KW 226 PS	S70 / V70 I / C70 I 2.0 T	11/96 - 07/06	81,00	147 051 0001 01	IN	10		5
B 5234 T3	2319	5	176-184 KW 239-250 PS	C70 I / S60 / S70 / V70 I+II 2.3 T5	11/96 - 04/10	81,00	147 051 0001 01	IN	10		5
B 5244 S2	2435	5	103 KW 140 PS	V70 I / S70 2.4 AWD	07/97 - 01/10	83,00	147 051 0001 01	IN	10		5
B 5254 FS	2435	5	125 KW 170 PS	V70 I 2.4	12/95 - 05/00	83,00	147 051 0001 01	IN	10		5
B 6254 S	2473	6	125 KW 170 PS	960 II 2.5	07/94 - 12/96	81,00	147 051 0001 02 148 051 0001 02	IN EX	12 12		7
B 6294 T	2922	6	200 KW 272 PS	S80 I 2.9 T6	06/01 - 07/06	83,00	147 051 0001 02	IN	12		6
B 6304 FS	2922	6	150 KW 204 PS	960 2.9 V90 I 2.9	08/90 - 07/94 01/97 - 12/98	83,00	147 051 0001 02 148 051 0001 02	IN EX	12 12		7
B 6304 GS	2922	6	150 KW 204 PS	960 2.9 S90 I 2.9 V90 I 2.9	08/90 - 07/94 01/97 - 05/98 01/97 - 12/98	83,00	147 051 0001 02 148 051 0001 02	IN EX	12 12		7
B 6304 S	2922	6	150 KW 204 PS	960 II 2.9	07/94 - 12/96	83,00	147 051 0001 02 148 051 0001 02	IN EX	12 12		7
D7E240	7100	4	177 KW 240 PS	FE, FL II	05/06 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		1
D7E280	7100	6	206 KW 280 PS	FE, FE II, FL II, FL III	05/06 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		1
D7E320	7146	6	235 KW 320 PS	FE, FE II	05/06 -	108,00	147 015 0009 00 148 015 0008 00	IN EX	2 2		1

	IN/EX			Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
1								
	IN	147 015 0009 00	L = 145,80 D = 38,20 d = 8,00 a = 60°	S	CR			TH
	EX	148 015 0008 00	L = 145,80 D = 35,80 d = 8,00 a = 45°	A/S	CR			TH
2								
	IN	147 021 0001 00	L = 103,50 D = 32,50 d = 5,50 a = 45°	S	NT			H
	EX	148 021 0001 00	L = 104,50 D = 28,00 d = 5,50 a = 45°	A	NT			
3								
	IN	147 021 0002 00	L = 103,50 D = 35,00 d = 5,50 a = 45°	S	NT			H
	EX	148 021 0002 00	L = 104,80 D = 30,10 d = 5,50 a = 45°	A	NT			
4								
	IN	147 051 0001 00	L = 104,10 D = 31,00 d = 7,00 a = 45°	S	CR			TH
5								
	IN	147 051 0001 01	L = 104,10 D = 31,00 d = 7,00 a = 45°	S	CR			TH
6								
	IN	147 051 0001 02	L = 104,10 D = 31,00 d = 7,00 a = 45°	S	CR			TH

	IN/EX	ne		Material Specification	Valve Stem Coating	Cotter Design	Seat Treatment	Tip Treatment
7								
	IN	147 051 0001 02	L = 104,10 D = 31,00 d = 7,00 a = 45°	S	CR			TH
	EX	148 051 0001 02	L = 103,30 D = 27,00 d = 7,00 a = 45°	A/S	CR			TH
8								
	IN	147 051 0002 00	L = 116,50 D = 46,00 d = 8,00 a = 45°	S	CR			TH
	EX	148 051 0002 00	L = 116,50 D = 38,50 d = 8,00 a = 45°	A	CR			

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Freccia → 

CROSS REFERENCES

Crossreferenzen / cross references / correspondance des références / referencias cruzadas

Freccia		Freccia	
R8044/BMCR	148010002000	R6580/SCR	147050002600
R8043/SCR	147010001800	R6569/RNT	148053000400
R8022/RCR	148037002900	R6568/SNT	147053000400
R8017/SCR	147037002800	R6567/RNT	148087000100
R6993/BM	148050002000	R6566/SNT	147087000100
R6992/S	147050002900	R6565/BM	148050001200
R6969/BMCR	148010001800	R6563/RNT	148096001200
R6968/SCR	147010001700	R6562/SNT	147096001200
R6968/SCR	147010001701	R6541/RNT	148090000100
R6900/SCR	147050002700	R6540/SNT	147090000100
R6808/RNT	148309000200	R6515/BMAR	148050001800
R6807/SNT	147309000200	R6515/BMAR	148050001801
R6806/RNT	148037000100	R6514/S	147050002500
R6805/S	147037000100	R6514/S	147050002501
R6798/BM	148038001400	R6510/RARNT	147089000700
R6797/S	147038001400	R6509/RCR	148037002700
R6779/RCR	148050001500	R6508/SCR	147037002600
R6778/S	147050002200	R6505/BMCR	148309000100
R6772/RCR	148007000100	R6504/SCR	147309000100
R6771/SCR	147007000100	R6483/RNT	148088000200
R6770/RNT	148096000500	R6482/SNT	147088000200
R6769/SNT	147096000400	R6473/SCR	147010000200
R6760/BMCR	148015000800	R6467/RNT	148053000300
R6759/BMCR	147015000900	R6466/SNT	147053000300
R6756/BMCR	148010000400	R6463/RCR	148309000800
R6755/SCR	147010000500	R6462/SCR	147309000800
R6744/RNT	148110000300	R6442/BMCR	148037002200
R6743/SNT	147110000200	R6441/S	147037002100
R6719/RCR	148050001600	R6440/RNT	148037001800
R6718/S	147050002300	R6439/SNT	147037001900
R6646/RNT	148035000900	R6425/RNT	148085000100
R6645/SNT	147035000900	R6424/SNT	147085000100
R6623/RNT	148096001400	R6420/RNT	148053000200
R6622/SNT	147096001400	R6419/SNT	147053000200
R6594/RNT	148089000300	R6414/RNT	148096001300
R6593/SNT	147089000300	R6408/RNT	148087000800

**Crossreferenzen / cross references / correspondance des
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Freccia		Freccia	
R6407/SNT	147087000900	R6225/RNT	148070000100
R6400/RNT	148309000400	R6224/SNT	147070000100
R6399/SNT	147309000400	R6213/RNT	148094000500
R6371/RNT	148021000200	R6212/SNT	147094000500
R6370/SNT	147021000200	R6209/BM	148050001900
R6369/BMCR	148020000800	R6209/BM	148050001901
R6368/SCR	147020000800	R6209/BM	148050001902
R6367/BMCR	148035000700	R6208/S	147050002800
R6366/SCR	147035000700	R6208/S	147050002801
R6356/RCR	148110000400	R6208/S	147050002802
R6355/SCR	147110000300	R6207/BMCR	148050001700
R6352/R	148050002200	R6206/S	147050002400
R6351/S	147050000300	R6184/RNT	148096001100
R6346/RNT	148035000200	R6183/RNT	147096001100
R6345/SNT	147035000200	R6176/RNT	148089000600
R6342/RNT	148021000100	R6175/SNT	147089000600
R6341/SNT	147021000100	R6174/RNT	148010000600
R6340/BMCR	148121000000	R6174/RNT	148010000601
R6339/SCR	147121000000	R6173/SNT	147010000400
R6314/SNT	147096001300	R6173/SNT	147010000401
R6295/RNT	148096000900	R6170/RNT	148087000500
R6294/SNT	147096000900	R6169/SNT	147087000500
R6289/RARNT	148039000000	R6148/RCR	148037001900
R6288/SCR	147039000000	R6147/S	147037001800
R6285/RNT	148089000200	R6144/BMCR	148021000600
R6284/SNT	147089000200	R6143/SCR	147021000600
R6283/RCR	148089000500	R6142/RCR	148015000700
R6282/SCR	147089000500	R6141/SCR	147015000800
R6251/R	148087000300	R6137/RNT	148035000800
R6250/SNT	147087000300	R6136/RNT	147035000800
R6249/RNT	148087001700	R6127/RNT	148096000800
R6249/RNT	148087001701	R6126/SNT	147096000800
R6248/SNT	147087001800	R6125/SNT	147096000300
R6248/SNT	147087001801	R6124/RNT	148096000300
R6240/RNT	148087000200	R6114/RCR	148037002100
R6239/SNT	147087000200	R6113/S	147037002000

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Freccia	ne	Freccia	ne
R6091/RCR	148309000700	R4708/BMCR	147015000500
R6090/SCR	147309000700	R4650/BMCR	148035000500
R6088/BMCR	147007001000	R4649/SCR	147035000500
R6088/BMCR	147007001001	R4573/BMARCR	148035000100
R6088/BMCR	148007001000	R4572/SCR	147035000100
R6088/BMCR	148007001001	R4445/RNT	148096001800
R6075/RNT	148096000100	R4444/SNT	147096001600
R6074/SNT	147096000100	R3939/SCR	147051000200
R6073/RNT	148096000200	R3634/BMCR	148010000100
R6072/SNT	147096000200	R3633/SCR	147010000100
R6052/BMARCR	148035000300	R3351/RCR	147015000400
R6051/SCR	147035000300	-	147007000300
R6031/BMCR	147015000700	-	147015000300
R6026/RNT	148096001600	-	147015000600
R6025/SNT	147096000700	-	147035000501
R6016/BMARCR	148007000200	-	147050002201
R6015/S	147007000200	-	147051000100
R6014/BM	148050000100	-	147051000101
R6013/S	147050000100	-	147051000102
R6003/BMCR	148021000400	-	147053000100
R6002/SCR	147021000400	-	147087000400
R4924/RNT	148089000400	-	147094000300
R4923/SNT	147089000400	-	147094000400
R4885/BMARCR	148035001000	-	147096001500
R4884/BMCR	147035001000	-	147100000000
R4877/RCR	148020000200	-	147100000001
R4876/SCR	147020000200	-	147100000100
R4865/RCR	148007000600	-	147100000101
R4865/RCR	148007000601	-	147100000200
R4864/S	147007000900	-	147100000300
R4864/S	147007000901	-	147309000300
R4817/RARNT	148006000100	-	147734000100
R4816/SNT	147006000100	-	147739000200
R4727/RCR	148035000400	-	147768000100
R4726/SCR	147035000400	-	148007000300
R4709/BMCR	148015000500	-	148010000200

**Crossreferenzen / cross references / corespondance des
références / referencias cruzadas**

Freccia	
-	148010001900
-	148010001901
-	148010002100
-	148015000300
-	148015000400
-	148015000600
-	148035000501
-	148050001501
-	148051000100
-	148051000102
-	148051000200
-	148053000100
-	148087000400
-	148094000300
-	148094000400
-	148096001700
-	148100000000
-	148100000001
-	148100000100
-	148100000200
-	148309000300
-	148734000100
-	148739000200
-	148768000100

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AE → 

**Crossreferenzen / cross references / correspondance des
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AE		AE	
V98078	148035000700	V95159	147037000100
V98077	147035000700	V95157	148035000900
V98071	147010000200	V95154	148007000100
V98061	148085000100	V95150	148050001600
V98053	148053000300	V95149	147050002300
V98052	147053000300	V95146	148096001400
V98049	148053000200	V95145	147096001400
V98048	147053000200	V95144	148096000500
V98043	148020000800	V95143	147096000400
V98042	147020000800	V95142	148094000500
V98039	148087000800	V95141	147094000500
V98038	147087000900	V95134	148087000200
V98033	148021000200	V95133	147087000200
V98032	147021000200	V95130	148089000200
V98029	148037002700	V95129	147089000200
V98028	147037002600	V95114	148050001200
V98025	148309000100	V95102	147015000600
V98024	147309000100	V95098	147050002600
V98019	148121000000	V95080	148090000100
V98018	147121000000	V95079	147090000100
V98015	148309000800	V95054	148096001200
V98014	147309000800	V95053	147096001200
V98013	148309000400	V95020	148088000200
V98012	147309000400	V95019	147088000200
V95238	148050001500	V95018	148087000300
V95237	147050002200	V95017	147087000300
V95199	148087000100	V94970	148037001800
V95198	147087000100	V94969	147037001900
V95197	148110000300	V94757	147015000700
V95196	147110000200	V94756	148015000500
V95195	148010000400	V94696	148021000600
V95194	147010000500	V94694	148021000100
V95186	147035000900	V94693	147021000100
V95165	148015000800	V94692	148050001700
V95163	148037000100	V94691	147050002400
V95162	147007000100	V94650	148050001900

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AE		AE	
V94650	148050001901	V94200	147037002000
V94650	148050001902	V94139	148096000800
V94649	147050002800	V94138	147096000800
V94649	147050002801	V94137	148096000300
V94649	147050002802	V94136	147096000300
V94645	148050002200	V94135	148096000100
V94644	147050000300	V94134	147096000100
V94599	147037001800	V94133	148096000200
V94464	148087001700	V94132	147096000200
V94464	148087001701	V94117	148050000100
V94463	147087001800	V94116	147050000100
V94463	147087001801	V94098	148035001000
V94462	148087000500	V94097	147035001000
V94461	147087000500	V94088	148007000200
V94455	148096001100	V94087	147007000200
V94454	147096001100	V94086	147007001000
V94441	147089000600	V94086	147007001001
V94427	148035000800	V94086	148007001000
V94426	147035000800	V94086	148007001001
V94399	148010000600	V94053	148006000100
V94399	148010000601	V94044	148051000100
V94398	147010000400	V94044	148051000102
V94398	147010000401	V94030	148020000200
V94364	148039000000	V94029	147020000200
V94363	147039000000	V91998	148035000500
V94344	148035000200	V91997	147035000500
V94343	147035000200	V91996	148035000400
V94340	148089000600	V91995	147035000400
V94315	147051000100	V91721	148096001300
V94315	147051000101	V91493	147089000400
V94315	147051000102	V91467	148096001800
V94250	148035000300	V91466	147096001600
V94249	147035000300	V91430	148035000100
V94225	148021000400	V91429	147035000100
V94223	147021000400	V91209	147006000100
V94204	148037001900	V90225	147010000100

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AE		AE	
V90114	147015000400	-	147100000000
-	147007000300	-	147100000001
-	147007000900	-	147100000100
-	147007000901	-	147100000101
-	147010001700	-	147100000200
-	147010001701	-	147100000300
-	147010001800	-	147110000300
-	147015000300	-	147309000200
-	147015000500	-	147309000300
-	147015000800	-	147309000700
-	147015000900	-	147734000100
-	147021000600	-	147739000200
-	147035000501	-	147768000100
-	147037002100	-	148007000300
-	147037002800	-	148007000600
-	147038001400	-	148007000601
-	147050002201	-	148010000100
-	147050002500	-	148010000200
-	147050002501	-	148010001800
-	147050002700	-	148010001900
-	147050002900	-	148010001901
-	147051000200	-	148010002000
-	147053000100	-	148010002100
-	147053000400	-	148015000300
-	147070000100	-	148015000400
-	147085000100	-	148015000600
-	147087000400	-	148015000700
-	147089000300	-	148035000501
-	147089000500	-	148037002100
-	147089000700	-	148037002200
-	147094000300	-	148037002900
-	147094000400	-	148038001400
-	147096000700	-	148050001501
-	147096000900	-	148050001800
-	147096001300	-	148050001801
-	147096001500	-	148050002000

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AE	
-	148051000200
-	148053000100
-	148053000400
-	148070000100
-	148087000400
-	148089000300
-	148089000400
-	148089000500
-	148094000300
-	148094000400
-	148096000900
-	148096001600
-	148096001700
-	148100000000
-	148100000001
-	148100000100
-	148100000200
-	148110000400
-	148309000200
-	148309000300
-	148309000700
-	148734000100
-	148739000200
-	148768000100

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TRW	ne	TRW	ne
V3853	147089000700	29375	147035000500
V3851	147089000400	29185	147035000100
761011	148087000300	291120	148035000400
761010	147087000300	291119	148035000500
711023	148096000900	291118	148309000100
711022	147096000900	291117	147309000100
711021	148096001100	291100	148035000100
711020	147096001100	269001	148010002000
711012	148096000300	269000	147010001800
711011	147096000300	261153	148010001900
711010	148096000100	261153	148010001901
711009	147096000100	261152	147010001700
701035	148089000300	261152	147010001701
701034	147089000300	261147	148110000300
701033	148090000100	261146	147110000200
701031	148089000200	261141	148010000400
701030	147089000200	261140	147010000500
539041	148037000100	261126	147010000200
539040	147037000100	261117	148010000100
539037	148037001800	261103	148010000600
539036	147037001900	261103	148010000601
539008	148037001900	261102	147010000400
539007	147037001800	261102	147010000401
531011	148037002100	2605	147010000100
531010	147037002000	2293	148015000400
39523	148050000100	2282	147015000400
39522	147050000100	22317	148015000800
341002	148035000300	22316	147015000900
341001	147035000300	22305	148015000300
331162	147050002700	22302	147015000300
331134	148050001800	22247	148015000700
331134	148050001801	22244	147015000800
331133	147050002500	22221	147015000600
331133	147050002501	22165	148015000500
331132	148050001200	22162	147015000700
29397	147035000400	181111	148021000100

**Crossreferenzen / cross references / correspondance des
références / referencias cruzadas**

TRW		TRW	
181110	147021000100	-	147038001400
181109	148021000200	-	147039000000
181108	147021000200	-	147050000300
171053	148020000200	-	147050002200
171052	147020000200	-	147050002201
16136	147100000000	-	147050002300
16136	147100000001	-	147050002400
16130	147100000100	-	147050002600
16130	147100000101	-	147050002800
16117	147100000200	-	147050002801
16116	148100000100	-	147050002802
1604	148100000000	-	147050002900
1604	148100000001	-	147051000100
11964	148007000600	-	147051000101
11964	148007000601	-	147051000102
11960	147007000900	-	147051000200
11960	147007000901	-	147053000100
105-35474	147006000100	-	147053000200
-	147007000100	-	147053000300
-	147007000200	-	147053000400
-	147007000300	-	147070000100
-	147007001000	-	147085000100
-	147007001001	-	147087000100
-	147015000500	-	147087000200
-	147020000800	-	147087000400
-	147021000400	-	147087000500
-	147021000600	-	147087000900
-	147035000200	-	147087001800
-	147035000501	-	147087001801
-	147035000700	-	147088000200
-	147035000800	-	147089000500
-	147035000900	-	147089000600
-	147035001000	-	147090000100
-	147037002100	-	147094000300
-	147037002600	-	147094000400
-	147037002800	-	147094000500

CROSS REFERENCES

Crossreferenzen / cross references / correspondance des références / referencias cruzadas

TRW	ne	TRW	ne
-	147096000200	-	148035000800
-	147096000400	-	148035000900
-	147096000700	-	148035001000
-	147096000800	-	148037002200
-	147096001200	-	148037002700
-	147096001300	-	148037002900
-	147096001400	-	148038001400
-	147096001500	-	148039000000
-	147096001600	-	148050001500
-	147100000300	-	148050001501
-	147110000300	-	148050001600
-	147121000000	-	148050001700
-	147309000200	-	148050001900
-	147309000300	-	148050001901
-	147309000400	-	148050001902
-	147309000700	-	148050002000
-	147309000800	-	148050002200
-	147734000100	-	148051000100
-	147739000200	-	148051000102
-	147768000100	-	148051000200
-	148006000100	-	148053000100
-	148007000100	-	148053000200
-	148007000200	-	148053000300
-	148007000300	-	148053000400
-	148007001000	-	148070000100
-	148007001001	-	148085000100
-	148010000200	-	148087000100
-	148010001800	-	148087000200
-	148010002100	-	148087000400
-	148015000600	-	148087000500
-	148020000800	-	148087000800
-	148021000400	-	148087001700
-	148021000600	-	148087001701
-	148035000200	-	148088000200
-	148035000501	-	148089000400
-	148035000700	-	148089000500

**Crossreferenzen / cross references / corespondance des
références / referencias cruzadas**

TRW	
-	148089000600
-	148094000300
-	148094000400
-	148094000500
-	148096000200
-	148096000500
-	148096000800
-	148096001200
-	148096001300
-	148096001400
-	148096001600
-	148096001700
-	148096001800
-	148100000200
-	148110000400
-	148121000000
-	148309000200
-	148309000300
-	148309000400
-	148309000700
-	148309000800
-	148734000100
-	148739000200
-	148768000100

BESTIMMUNG VON MOTORPROBLEMEN

EXCESSIVE OIL CONSUMPTION

OIL LEAKING INTO THE INTAKE
AND EXHAUST SYSTEM

OIL LEAKING INTO
COMBUSTION CHAMBER

OIL FAILING

		Turbocharger		Piston Ring					Piston				Cylinder		Valve	Valve guide	Valve seal			
																				
Problem		Worn shaft	Sealing degradation	Scuffing	Excessively closed gap	Breakage	Deformation	Decreased P.T	Anomalous wear	Ring sticking	Carbon deposition on top land	Piston scuffing	Worn ring groove of piston	Deformation	Wear	Wear	Wear	Degradation	Wear	
Inappropriate use	Intake dust	●	●	✖	✖	✖		✖	●	✖	✖		●		●	●	●	✖	●	
	Foreign matter in the fuel			✖	✖	✖		✖	●	✖	✖		●		●					
	Unsuitable oil	●	●	●	✖	✖		✖	●	●	●		●		●	●	●	✖	●	
	Inferior fuel			✖					✖	✖	●		●		●			✖	●	
	Overloading			✖				✖	✖	✖	✖	●		✖						
	High-load low engine speed							✖	●	✖	✖	●		✖						
	Overrevving			✖		●						●	✖							
	Overheating			✖		✖		✖		✖	✖	●						✖		
Inadequate Maintenance	Engine oil	Deterioration	✖	✖	✖	✖	✖		✖	●	✖	✖	✖		●	●	●	✖	●	
		Foreign matter mingling	●	●		✖	✖		✖	●	✖	✖			●	●	●		●	
		Insufficient quantity	✖	✖					✖	●										
	Intake	Dust contamination	●	●		✖	✖		✖	●	✖	✖			●	✖	✖	✖	✖	●
		Cleaner clogging	●	●		✖	✖		✖	●	✖	✖			●	✖	✖	✖	✖	●
	Cooling water	Insufficient quantity			●				✖	✖	✖		●		✖					
		Anomaly			✖		✖			✖			●	●						
Others	Parts	Past its life span			✖		●			✖				●	✖	✖	✖	✖	✖	
		Misassembly			✖		✖	✖	✖	✖	✖		✖	●					✖	
		Wrong part assembled			✖	●	✖	✖	✖	✖	✖		✖							

● direct cause × indirect cause

EXCESSIVE OIL CONSUMPTION

OIL LEAKING INTO THE INTAKE
AND EXHAUST SYSTEM

OIL LEAKING INTO
COMBUSTION CHAMBER

OIL FAILING

		Turbocharger		Piston Ring					Piston				Cylinder	Valve	Valve guide	Valve seal			
																			
Problem		Worn shaft	Sealing degradation	Scuffing	Excessively closed gap	Breakage	Deformation	Decreased P/T	Anomalous wear	Ring sticking	Carbon deposition on top land	Piston scuffing	Worn ring groove of piston	Deformation	Wear	Wear	Wear	Degradation	Wear
Inappropriate use	Intake dust	●	●	✖	✖	✖		✖	●	✖	✖		●		●	●	●	✖	●
	Foreign matter in the fuel			✖	✖	✖		✖	●	✖	✖		●		●				
	Unsuitable oil	●	●	●	✖	✖		✖	●	●	●		●		●	●	●	✖	●
	Inferior fuel			✖					✖	✖	●		●		●			✖	●
	Overloading			✖				✖	✖	✖	✖	●		✖					
	High-load low engine speed							✖	●	✖	✖	●		✖					
	Overrevving			✖		●						●	✖						
	Overheating			✖		✖		✖		✖	✖	●						✖	
Inadequate Maintenance	Engine oil																		
	Deterioration	✖	✖	✖	✖	✖		✖	●	✖	✖	✖	✖		●	●	●	✖	●
	Foreign matter mingling	●	●		✖	✖		✖	●	✖	✖				●	●	●		●
	Insufficient quantity	✖	✖					✖	●										
	Intake																		
	Dust contamination	●	●		✖	✖		✖	●	✖	✖				●	✖	✖	✖	●
	Cleaner clogging	●	●		✖	✖		✖	●	✖	✖				●	✖	✖	✖	●
Cooling water																			
Insufficient quantity			●				✖	✖	✖		●		✖						
Anomaly			✖		✖			✖			●	●							
Others	Past its life span				✖		●			✖				●	✖	✖	✖	✖	✖
	Parts				✖		✖	✖	✖	✖			✖	●					✖
	Wrong part assembled			✖	●	✖	✖	✖	✖	✖		✖							

● direct cause × indirect cause

INDICATEUR DE PANNE DE MOTEUR

CONSOMMATION EXCESSIVE D'HUILE

FUITE D'HUILE DANS L'ADMISSION
ET LE SYSTÈME D'ÉCHAPPEMENT

FUITE D'HUILE DANS LA
CHAMBRE DE COMBUSTION

MANQUE
D'HUILE

		Turbo- compresseur		Segment de piston						Piston			Cylindre	Soupape	Guide de soupape	Joint de soupape				
																				
Problème		arbre usé	joint endommagé	érosion	écartement trop fermé	rupture	déformation	PT réduit	usure anormale	adhérence du segment	dépôt de carbone sur la couronne de piston	érosion du piston	segment usé piston rainuré	déformation	usure	usure	usure	dégradation	usure	
Utilisation inappropriée	poussière d'admission	●	●	✖	✖	✖		✖	●	✖	✖		●		●	●	●	✖	●	
	substance étrangère dans le carburant			✖	✖	✖		✖	●	✖	✖		●		●					
	huile inappropriée	●	●	●	✖	✖		✖	●	●	●		●		●	●	●	✖	●	
	carburant de qualité inférieure			✖					✖	✖	●		●		●			✖	●	
	surcharge			✖				✖	✖	✖	✖	●			✖					
	régime moteur faible à forte charge							✖	●	✖	✖	●			✖					
	surrégime			✖		●						●	✖							
	surchauffe			✖		✖		✖		✖	✖	●						✖		
Maintenance insuffisante	huile moteur	détérioration	✖	✖	✖	✖	✖		✖	●	✖	✖	✖		●	●	●	✖	●	
		substance étrangère incorporée	●	●		✖	✖		✖	●	✖	✖			●	●	●		●	
		quantité insuffisante	✖	✖					✖	●										
	admission	contamination par la poussière	●	●		✖	✖		✖	●	✖	✖			●	✖	✖	✖	✖	●
		engorgement épurateur	●	●		✖	✖		✖	●	✖	✖			●	✖	✖	✖	✖	●
	eau de refroidissement	quantité insuffisante			●				✖	✖	✖		●		✖					
		anomalie			✖		✖			✖			●	●						
Autres	pièces	a dépassé sa durée de vie			✖		●			✖				●	✖	✖	✖	✖	✖	
		montage erroné			✖		✖	✖	✖	✖			✖	●					✖	
		mauvaise pièce montée			✖	●	✖	✖	✖	✖	✖		✖							

● cause directe × cause indirecte

CONSUMO EXCESIVO DE ACEITE

FILTRACIÓN DE ACEITE EN EL SISTEMA DE ADMISIÓN Y DE ESCAPE

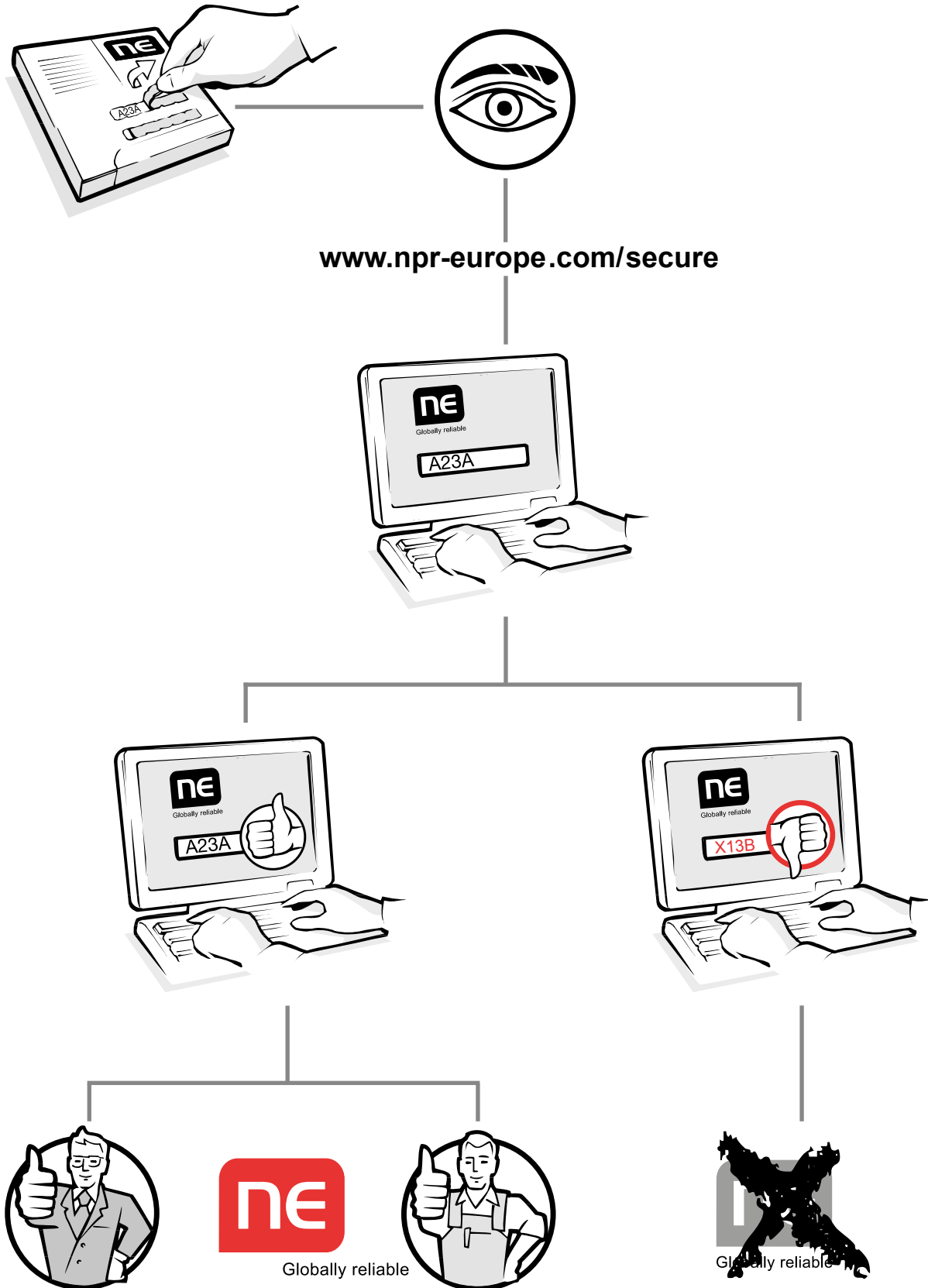
FILTRACIÓN DE ACEITE EN LA CÁMARA DE COMBUSTIÓN

FALTA DE ACEITE

		Turbo-compresor		Segmento de pistón					Pistón				Cilindro		Válvula	Guía de válvula	Junta de válvula			
																				
Problemas		eje gastado	degradación de junta	desgaste por fricción	distancia demasiado cerrada	rotura	deformación	PT reducido	uso anómalo	adherencia del anillo	depósito de carbón sobre el tope del pistón	desgaste del pistón	segmento gastado ranura de pistón	deformación	uso	uso	uso	degradación	uso	
Utilización inapropiada	polvo admisión	●	●	✖	✖	✖		✖	●	✖	✖		●		●	●	●	✖	●	
	sustancia extraña en el carburante			✖	✖	✖		✖	●	✖	✖		●		●					
	aceite inapropiado	●	●	●	✖	✖		✖	●	●	●		●		●	●	●	✖	●	
	carburante de calidad inferior			✖					✖	✖	●		●		●			✖	●	
	sobrecarga			✖				✖	✖	✖	✖	●			✖					
	carga alta con motor a baja velocidad							✖	●	✖	✖	●			✖					
	embalamiento del motor			✖		●						●	✖							
	sobrecalentamiento			✖		✖		✖		✖	✖	●						✖		
Mantenimiento inadecuado	aceite motor	deterioro	✖	✖	✖	✖	✖		✖	●	✖	✖	✖		●	●	●	✖	●	
		sustancia extraña incorporada	●	●		✖	✖		✖	●	✖	✖				●	●	●		●
		cantidad insuficiente	✖	✖					✖	●										
	admisión	contaminación por el polvo	●	●		✖	✖		✖	●	✖	✖				●	✖	✖	✖	●
		obstrucción del limpiador	●	●		✖	✖		✖	●	✖	✖				●	✖	✖	✖	●
	agua de refrigeración	cantidad insuficiente			●				✖	✖	✖		●			✖				
		anomalía			✖		✖			✖			●	●						
Otros	pasó su duración de vida				✖		●			✖				●	✖	✖	✖	✖	✖	
	Piezas	montaje erróneo			✖		✖	✖	✖	✖			✖	●					✖	
		pieza mal montada			✖	●	✖	✖	✖	✖	✖	✖								

● causa directa × causa indirecta

SECURITY CHECK



GENERAL TERMS AND CONDITIONS OF NPR OF EUROPE GMBH

General Terms and Conditions of NPR of Europe GmbH (hereinafter referred to as "NE"), Siemensstr. 56, 70825 Korntal-Münchingen
Verkaufs- und Lieferbedingungen

Terms and Conditions of Sale and Delivery
as at 07/2007

1. Scope

(1) The following conditions of sale apply for all Contracts concluded between NE and the Purchaser regarding the delivery of goods. They shall also apply to all future commercial relations even if they have not been expressly agreed. General terms and conditions of the purchaser do not apply to NE, even if this are not contradicted by NE.

(2) All agreements reached between NE and the purchaser in connection with the purchase contracts, are in the purchase contract, these conditions and the order confirmation put in writing by NE.

2. Offers and conclusion of the contract

(1) Offers on the part of NE are subject to change and non-binding, even for repeat orders, unless NE has expressly indicated this as binding in writing.

(2) If the order should qualify as an offer in accordance with § 145 of the BGB [German Civil Code] then NE shall be permitted to accept this within two weeks, through consignment of an order confirmation, or by sending the ordered goods to the purchaser within this time period.

(3) Dimensions, weights, figures, diagrams and other data relating to non-binding offers by NE remain the property of NE and are only approximately decisive, insofar as they have not been expressly indicated as binding by NE.

3. Prices, terms and conditions of payment

(1) If the agreed delivery time should exceed a period of four months from the conclusion of the Contract, or the delivery is delayed for more than four months from the conclusion of the Contract for reasons attributed to the purchaser alone or which come within his sphere of risk, then NE is entitled to charge the current price on the day of delivery. If the increase in price amounts to more than 5% of the named purchase price, then the purchaser is entitled to withdraw from the Contract. This right to withdraw does not apply if the purchaser fails to administrate it within a period of two weeks, beginning with the date of the notification of the new price.

(2) The prices apply "ex-warehouse" insofar as no deviating agreement with the purchaser has been made in addition to the VAT rate at the time of the invoicing. Packaging costs are not included in the price.

(3) Unless otherwise agreed in writing with the

purchaser, the purchase price shall be payable by the purchaser immediately following the invoice date, without delay and following deductions. Payments made by the purchaser shall be credited first of all to their previous debts, irrespective of any deviating provisions. Where costs and interest have already arisen, we are entitled to credit a payment first to the costs, then to the interest and finally to the principal amount.

(4) If a cash deduction is agreed in writing, then no other payable claims can be made against the purchaser.

(5) The acceptance of exchanges or cheques shall only be completed on account; the cost of discounting and inclusion shall be borne by the purchaser. Following acceptance of the exchange, NE is entitled to return the exchange, in case acceptance is refused by the State Central Bank.

(6) If, following the order confirmation, NE should become aware of facts which raise reasonable doubt regarding the purchaser's ability to meet financial obligations, NE is entitled to request the full payment or a corresponding security deposit prior to delivery, and also to withdraw from the Contract if the payment deadline is not adhered to. Besides a delay in payment as outlined above, corresponding information from a bank, credit agency or a company involved in commercial relations with the purchaser, referring in particular to the careful nature of a prudent businessman, may be considered as evidence of a significant decline in wealth. If delivery has already taken place, invoiced amounts shall be considered payable immediately, regardless of agreed payment conditions, and where appropriate on return of acceptances.

(7) Should the purchaser make a delayed payment, NE is entitled to request interest at 8% above the current basic interest rate of the European Central Bank (ECB) at the relevant point in time. NE reserves the right to demonstrate evidence of greater losses.

(8) The purchaser is only entitled to compensation if the counterclaims are found to be legally binding, recognised by NE or indisputable, even if notifications of defects or counterclaims are asserted. The Purchaser is only authorised to exercise a right of retention insofar as his counterclaim is based on the same contractual relationship.

(9) At the refusal of the Purchaser to pay or where a payment deadline has not been met, NE is entitled to fully or partly withdraw from the Contract and request compensation for damages.

4. Delivery and service time; Force Majeure

(1) Delivery deadlines or periods which have not been expressly agreed as binding shall simply represent information that is without obligation.

GENERAL TERMS AND CONDITIONS OF NPR OF EUROPE GMBH

(2) Part-deliveries are acceptable, insofar as the Purchaser is not put at an unreasonable disadvantage.

(3) NE reserves the right to claim 10% of any excess deliveries and short deliveries.

(4) If dispatch is delayed at the Purchaser's request, NE shall store the respective items at the purchaser's expense and risk.

(5) The delivery period may be extended in the case of Force Majeure, strike, blameless incapacity and adverse weather conditions during the period of delay.

5. Delay in Delivery

(1) Where NE is culpable of not adhering to an expressly agreed deadline or is delayed for other reasons, the Purchaser shall arrange to guarantee NE a suitable grace period beginning from the first day of delay. Where this grace period has elapsed without delivery, the Purchaser is entitled to withdraw from the Contract.

(2) NE is liable according to legal requirements, insofar as the delay in delivery depends on an intentionally assigned or grossly negligent breach of contract. NE shall assign responsibility to its representatives or vicarious agents. If this should not be the case, liability for damages shall be limited to foreseeable damage considered typical for the contract. According to loyalty and good faith, economic circumstances, type, scope and duration of the commercial relationship shall be carefully considered in favour of NE regarding the amount of compensation.

(3) If the delay in delivery represented by NE rests on the culpable breach of a significant contractual obligation, NE is liable according to legal provisions; whereby its liability is limited to foreseeable damage considered typical for the Contract.

(4) Further legal claims and rights of the Purchaser remain unaffected by a delay in delivery on the part of NE.

6. Transfer of risk, shipping and packaging, withdrawal

(1) Unless otherwise specified on the order confirmation, all deliveries are made "ex warehouse". Shipment and dispatch shall not be insured; this is at the Purchaser's own risk. This applies equally to return deliveries. NE endeavours to consider the interests of the Purchaser with respect to the type of shipping. Any additional costs which this may entail shall be borne by the Purchaser, even in the case of "free delivery" of agreed freight.

(2) If dispatch is delayed at the Purchaser's request or through fault on the part of the latter, the Vendor shall store the respective items at the purchaser's expense and risk. In this case, the advertisement of readiness for dispatch is equal to that of shipping.

(3) Transport packing and other convenience packaging shall not be withdrawn.

(4) A withdrawal of individual rings to be distributed in the aftermarket is excluded.

7. Guarantee, liability

(1) The Purchaser shall inspect the received goods for completeness, damage during transit, apparent defects, quality and its subsequent characteristics. The Purchaser shall notify NE immediately and in writing of any apparent defects within an acceptable period of the transaction. NE assumes no guarantee for rectifying apparent defects for which a claim is not immediately made in writing by the Purchaser.

(2) Provided that there is a defect evident in the goods for which NE may be held responsible, and provided a claim is made against it in due time by the Purchaser, NE shall, with the exclusion of the rights of the Subsidiary of NIPPON PISTON RING CO., LTD Purchaser, withdraw from the Contract or reduce the purchase price in the interests of supplementary performance, unless NE is entitled to refusal of subsequent performance on legal grounds. The Purchaser shall guarantee to provide NE with an appropriate deadline for the rectification of each individual defect in the interests of subsequent performance.

(3) Subsequent performance can be implemented, according to the wishes of NE, either through rectification of the defect or the delivery of replacement goods. NE is entitled to refuse subsequent performance chosen by the Purchaser if it is associated with disproportionate costs. During subsequent performance, a reduction in the purchase price or withdrawal from the Contract are excluded by the Purchaser. Subsequent improvement is considered to have failed following the second unsuccessful attempt. Where subsequent performance has failed or where NE has refused it altogether, the Purchaser can, if he chooses, further decrease the purchase price (reduction) or declare his withdrawal from the Contract.

(4) In the case of subsequent performance, NE bears all necessary expenses for the purposes of rectifying defects, in particular transport and labour costs. This only applies insofar as the expenses do not increase because the delivery item was brought to a location other than the place of performance.

(5) Warranty claims made by the Purchaser are not deemed valid if the defect can be attributed to a breach of operating, maintenance or installation instructions, or inappropriate processing or use by the Purchaser or a third party.

(6) Claims made by the Purchaser for material defects shall be time-barred for 24 months following the transfer of risk, according to legal provisions.

GENERAL TERMS AND CONDITIONS OF NPR OF EUROPE GMBH

(7) The Purchaser may only validate damages claims for the defect based on the following conditions if subsequent performance has failed or if NE refuses subsequent performance. The right of the Purchaser to assert additional damages claims regarding the following conditions remains unaffected.

(8) NE is only liable according to legal provisions insofar as damages claims which can be attributed to fraud, deliberate intent, or gross negligence by NE are asserted by the Purchaser. If no deliberate intent by NE to breach the terms of the Contract is apparent, liability is limited to foreseeable damage considered typical for the Contract. NE is furthermore liable according to legal provisions insofar as it culpably violates an essential contractual obligation. In this case, liability is limited to foreseeable damage considered typical for the Contract. Continual liability for damages not mentioned in the above provisions shall not be accepted irrespective of the legal nature of the asserted claim.

(9) Damage claims arising from culpable injury to life, limb or health, from the acquisition of warranties or on the grounds of the mandatory provisions of the Produkthaftungsgesetz [German Product Liability Act], remain unchanged by the preceding provisions.

(10) Insofar as liability for damages caused by NE is excluded or limited, this shall also apply to the personal liability of its employees, representatives and vicarious agents.

8. Retention of title

(1) NE reserves ownership of the Goods up to receipt of all payments from commercial relations with the Purchaser.

(2) The Purchaser shall notify NE of all third party involvement immediately and in writing, in particular law enforcement procedures and other restrictions to ownership. The Purchaser shall replace all damages and costs for NE arising from a breach of this liability, using necessary intervention measures against the involvement of third parties.

(3) The Purchaser may not pledge or assign as security the items delivered hereunder. In the case of pledging, appropriation or other use by a third party, NE shall be notified immediately. Enforcement officers and third parties shall

(4) Should the Purchaser breach the terms of the Contract, notably in the case of a delay in payment, NE shall be entitled to request a reduction in the deadline. A previous withdrawal from the Contract is not required for a demand for reduction. Any transport costs resulting from this shall be borne by the Purchaser.

(5) Should retention of title be asserted on the part of NE or a pledge implemented for the delivered items, this shall not be considered a withdrawal from the Contract.

(6) The Purchaser is entitled to redistribute the items for delivery as part of routine business activities. The Purchaser has already assigned all receivables arising from redistribution to the Purchaser and independent of whether or not the items for delivery were altered during redistribution, to NE, to the sum of the purchase price agreed between NE and the Purchaser and including VAT. The Purchaser is entitled to collect these receivables following transfer. NE undertakes not to collect the receivables provided that the Purchaser properly complies with his payment obligations and is not in arrears with payment. If this is indeed the case, NE can request the disclosure of all necessary information for collection.

(7) Processing of goods by the Purchaser shall always be undertaken for NE. If the goods are processed alongside other items not belonging to NE, NE shall acquire joint ownership of the new items in the ratio of the value of the delivered goods to the value of the other items at the time of processing.

9. Final provisions, applicable law

(1) Unless otherwise agreed, the place of business is the NE delivery location.

(2) If the Purchaser is a businessman, the place of jurisdiction is the court responsible for the NE place of business. However, NE is entitled to take action against the Purchaser at its general place of jurisdiction. The court of jurisdiction shall be the same if the Purchaser has no general domestic court of jurisdiction, relocates their place of residence or normal home abroad on conclusion of the Contract, or their place of residence or normal home is unknown at the time that the claim is made.

(3) The Purchaser is not entitled to assign claims from the purchase contract without the consent of NE.

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