



[1]

EC-Type Examination Certificate

[2]

**Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

[3]

EC – Type Examination Certificate Number : **IEP 14 ATEX 0272 X**

[4]

Equipment or protective system : **Horizontal helical series gears IR , YP , IRK , IRS , IRSD , A**

[5]

Firm : **İ.MAK Redüktör Varyatör Sanayi ve Ticaret A.Ş.**

[6]

Firm Address : **Sanayi Caddesi No: 1 Şeyhli Pendik İstanbul – TURKEY**

[7]

This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8]

The IEP Uluslar Arası Enerji Petrol Gözetim , Sertifikasyon ve Teknik Hizmetler Organizasyonu Tic. Ltd. Sti. , notified body number 2284 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in confidential Report Nr : IEP - RP.Ex – 10.680 date 22.11.2014

[9]

Compliance with Essential Health and safety requirements has been assured by compliance with ;
EN 13463-1 : 2009 , EN 13463-5 : 2011 , EN 13463-8 : 2003

[10]

If the sign “ X “ is placed after the certificate number , it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11]

This EC-Type Examination Certificate relates only to the design examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12]

The marking of the equipment or protective system shall include following :



**II 2 G ck IIC T4
II 2 D ck T 120 °C**

Responsible person :

Nurettin Terzioglu
Head of certification body



Date of issue : 26.11.2014





[13] Schedule

[14] Certificate Nr : **IEP 14 ATEX 0272 X**

[15] Description of Equipment Protective System :

A gear system changing cycle-torque ratio of a rational movement by means of gears. It is an element of parallel gear directories of gear fly wheel sets with gearbox. Gearboxes are composed of gears flywheel , shafts bearing and parts placed inside the body from structural view.

Closed gear sets designed to reduce high rotational speeds of electricity motors to levels necessary for machineries.

Horizontal series gears IR , YP , IRK , IRS , IRSD , A serve for generation of reduced rotary motion for industrial systems operating in potentially explosive atmospheres according to EN 1127-1 .

The oil filled gearboxes are equipment with a sealed enclosure having their gear wheels partially immersed , but they are continuously coated by a viscous film of lubricating oil. The protective oil coating is supplied by natural splashing of the wheels as they rotate in the oil , serving at the same time as lubricating and cooling moving parts and bearing . Indicator are provided on the equipment to indicate the maximum and minimum levels. They are provided by means to guard again, accidental loosing of external fasteners associated with covers going access to the protective liquid.

Series type	IR	YP	IRK	IRS	IRSD	A
Properties	Foot , Flange	Hollow shaft , Solid shaft mounted Flange , Torque arm adjusted	Hollow shaft, Torque arm adjusted , Foot , Solid shaft mounted, Flange	Hollow shaft, Torque arm adjusted , Solid shaft mounted, Flange, Foot	Hollow shaft, Torque arm adjusted , Flange, Solid shaft mounted, , Foot	Solid shaft mounted, Foot
Output Speed (min ⁻¹)	3,3~691	3,7~391	3~551	8,5~195	1,4~85	3~820
Power (kW)	0,12....185	0,12....90	0,12....90	0,25....22	0,09....11	0,37....185
Three phase asynchronous motor-size	63....315	63....280	63....280	71....180	56....160	71....315
Reduction ratio	2,26....293,5	3,6....286	5,1....179	7,25....115	33,6....473	1,71....487
Torque (Nm)	85....18330	200....18000	400....13000	70....8300	240....5780	700....31000
Degree of protection IP code	IP 67					
Ambient temperature	-20 °C < Ta ≤ +60 °C					
Oil quality	MOBILGEAR 600 XP 220					

Responsible person ;

Nurettin Terzioglu
Head of certification body





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Report Date : 22.11.2014

[17] Essential Health and Safety Requirements :

X: Motor and oil should be suitable according to the standards and user manual.

17.1 Are included in standards , which are mentioned in clause (9) of this certificate. The products was approved in accordance with above mentioned standards and manufacturer's instruction.

17.2 At the installation and the operation of the horizontal series gears IR , YP , IRK , IRS , IRSD , A series have to be observed manufacturer's manual dated 23.05.2014 and 80 pages.

17.3 Special conditions for safe use(x). The electric motors of appropriate parameters which will be connected to the gearbox shall also be in conformity with the directive ATEX 94/9/EC and relevant group and category of equipment and type of Ex-protection gas group and temperature class.

[18] List of documentation

Operation guide total 193 pages . IR type 30 pages, IRK type 28 pages, IRS and IRSD type 34 pages, YP type 36 pages, A type 33 pages.

Drawing Nr ;	Drawing Name ;	Date ;
IR, YP, IRK, IRS, IRSD, A	Exploded drawings 32 pages	03.2014
IRK (P, FP, M, FM, F, PM, FPM)	Mounting and spare parts list 4 page	11.07.2014
IRSD (M, FM, P, FP, PM)	Mounting and spare parts list 4 page	11.07.2014
IRS (F, P, FP, M, FM, AM, A, AP)	Mounting and spare parts list 4 page	11.07.2014
IR (A, AF, AM, AFM, AP, AFP)	Mounting and spare parts list 4 page	11.07.2014
IR (APM, PM, FM, AFPM, FPM)	Mounting and spare parts list 4 page	11.07.2014
YP (F, M, FM, P, F P)	Mounting and spare parts list 4 page	11.07.2014
A (2A, 3A, 4A, 2AE, 3AE, 4AE)	Mounting and spare parts list 2 page	11.07.2014
IRK.. series	Overview drawings 14 pages	05.2013
IRSD.. series	Overview drawings 10 pages	06.2013
IRS.. series	Overview drawings 16 pages	04.2013
IR.. series	Overview drawings 30 pages	06.2013
YP.. series	Overview drawings 14 pages	04.2013
A.. series	Overview drawings 12 pages	05.2013
02 813.03.131	Motor mounting adapter	14.01.2014
06 744.13.131	Worm gear	21.02.2014
06 984.13.131	Worm gear Ø14	24.02.2014
07 015.03.131	Worm gear 52	07.02.2014
02 808.11.131	Gear case	07.02.2014
02 809.03.131	Seal cover	04.02.2014
02 812.03.131	Flange	23.01.2014
01 002.04.001	Gear Z2	30.12.2002
01 212.04.001	Gear Z1	21.01.2003
01 401.01.001	Gear case	30.12.2002
02 492.03.122	Cover	17.01.2000
02 494.03.122	Worm gear	12.01.2000

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IEP Uluslar Arası Enerji Petrol Gözetim, Sertifikasyon ve Teknik Hizmetler Organizasyonu Tic. Ltd. Sti.
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Fr:45 Number of Pages : 3 / 5

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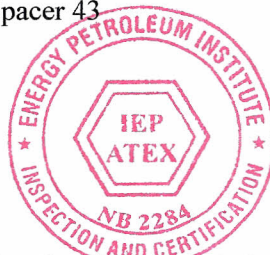
Report Date : 22.11.2014

List of documentation (more)

02 495.03.122	Worm wheel	12.01.2000
02 496.03.122	Hollow shaft	12.01.2000
02 504.03.122	Gear case cover	07.02.2000
02 505.04.122	Input shaft	09.02.2000
02 877.02.122	Flange	03.02.2000
03 265.03.072	IFC Flange	18.02.2009
03 267.04.072	Motor mounting adapter	30.12.2009
03 277.02.072	Gear case cover	09.01.2009
03 321.04.072	Gear Z1	22.06.2008
03 322.04.072	GearZ2	22.08.2008
03 915.04.088	Pinion shaft	14.11.2011
03 916.04.088	Gear wheel	14.12.2011
04 666.04.000	Washer	04.01.2010
04 794.04.072	Input shaft	09.09.2008
05 388.04.072	Connection shaft	27.05.2011
05 913.02.055	Flange	12.10.2010
05 914.03.055	Hollow shaft	15.07.2010
05 922.03.055	Gear case	06.10.2010
05 993.03.088	Cover	06.11.2010
06 002.04.000	Washer	08.10.2010
06 003.04.088	Washer	08.10.2010
06 022.04.088	Shaft gear	29.11.2010
06 025.04.088	Gear	29.11.2010
05 388.04.072	Connection shaft	27.05.2011
05 863.03.354	Gear case	23.05.2011
05 863.03.054	Cover	10.03.2010
05 864.02.054	Flange	10.03.2011
05 865.04.054	Hollow shaft	09.03.2010
05 866.04.054	Spacer	09.03.2010
05 871.04.054	Gear Z5	10.03.2010
05 872.04.054	GearZ6	10.03.2011
05 265.03.072	IEC flange	18.02.2009
03 266.03.072	Motor mounting adapter	08.06.2011
03 277.02.072	Gear case cover	08.01.2009
03 342.05.072	Spacer	05.09.2008
03 608.04.072	GearZ2	22.06.2008
03 615.04.072	GearZ3	22.08.2008
03 616.04.072	GearZ4	22.08.2008
03 627.04.072	GearZ1	22.06.2008
04 384.04.072	Input shaft	09.09.2008
05 496.00.071	Gear case	04.02.2009
05 586.04.071	Spacer 43	15.07.2009

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List of documentation (more)

05 587.04.071	Spacer 42	15.07.2009
05 534.04.071	Input shaft	23.07.2009
05 644.04.071	Connection shaft	15.07.2011
05 671.03.071	Motor mounting adapter	29.09.2009
03 265.03.072	Flange	18.02.2009
03 277.02.072	Gear case cover	09.01.2009
04 202.04.071	Gear Z1	15.07.2009
04 203.04.071	Gear Z2	15.07.2009
04 204.04.071	Gear Z3	15.07.2009
04 205.04.071	Gear Z4	17.07.2009
04 206.04.071	Gear Z5	14.07.2009
04 207.04.071	Gear Z6	17.07.2009
05 498.03.071	Cover	04.06.2009
05 509.02.071	Flange	13.06.2009
05 537.04.071	Output shaft	11.07.2012
05 247.00.014	Gear case	07.04.2011
03 719.03.025	Gear Z2	16.12.2009
03 728.03.013	Bearing cover	23.12.2011
03 768.03.025	Seal cover	16.12.2009
03 772.03.025	Gear Z3	15.12.2009
03 773.02.025	Gear Z4	15.12.2009
03 774.05.025	Spacer	19.12.2005
04 448.03.014	Cover	25.08.2010
01 760.03.014	Seal cover	26.12.2012
03 718.03.025	Input shaft	16.12.2005
01 759.03.014	Bearing cover	26.12.2012
2.8-IR, YP, IRK, IRS, IRSD, A	Mounting positions 18 pages	04.2014
IRK type	Spare parts list 1 page	11.07.2014
IRSD type	Spare parts list 1 page	11.07.2014
IRS type	Spare parts list 1 page	11.07.2014
IR type	Spare parts list 1 page	11.07.2014
YP type	Spare parts list 1 page	11.07.2014
A type	Spare parts list 1 page	11.07.2014

- The List of the materials which IR, YP, IRK, IRS, IRSD, A series gearbox technical specifications total 6 page and dated 11.07.2014

Responsible person ;

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Head of certification body



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