Open type

Compressor unit　Standard Specifications (-30 to -50℃)

Item \ Unit type			iZN 16TXⅡ-5A	iZN 20TXⅡ-3A	iZN 20TXⅢ-4A
			Inverter Drive Model		
Frequency			50/60Hz		
Refrigerant			NH3		
Power source			Motor : 380V (400V, 440V available), 3 phase　Control circuite : 200~230V, 2 phase		
Number of compressors			1 unit		
Capacity control		*1*2*3	Continuous or step control		
Motor	Nominal output	kW	135	180	250
	Type		TEFC Mo. (IP54)		
	Starting method		Inverter		
Connections	Refrigerant gas inlet		125A	200A	200A
	Refrigerant gas outlet		65A	100A	100A
	Refrigerant liquid inlet		20A	25A	25A
	Refrigerant liquid outlet		20A	25A	25A
	Refrigerant liquid inlet/outlet	Oil cooler	50A	100A	100A
		Motor	-	-	-
Lubricating oil		ℓ*4	215	242	257
Noise		dB(A)*5	90	88	90
Dimensions	W x D x H	mm	4065X1895X2340	4440X1895X2340	4570X1933X2178
Weight		kg	4745	5545	6205

*1: The minimum capacity depends on products range and operation conditions (25-45%).
*2: Requested to enter proper signal due to selected running mode.
*3: Partial loading value for step control can be flexibly changed.
*4: Oil quantity is minimum charge only for compressor unit. Actual oil quantity for whole of the plant (system) should be determined at the site. Charge oil on site and replenish when the level gets lower than requested. Use specified refrigeration machine oil (Supplied by user).
*5: Noise level (Scale A) indicates the values measured at 1 meter away from the compressor and 1 meter above from the floor level when the suction pressure saturated temperature is -40℃ and without any echo influence. In the actual installed conditions the noise level maybe different from indicated value because of the influence of surrounding noise and echo.
*　: Noise control and harmonic suppression measurement should be taken as necessary according to respective guidelines.
*　: Electric power for control circuit is requested users to supply.

Cooling capacity / Shaft power

CT ℃	ET ℃	iZN 16TXⅡ-5A		iZN 20TXⅡ-3A		iZN 20TXⅢ-4A	
		Qo (kW)	Pw (kW)	Qo (kW)	Pw (kW)	Qo (kW)	Pw (kW)
35	−30	249.7	113.3	344.9	140.8	516.8	208.9
	−35	231.0	114.3	300.6	141.0	450.2	209.0
	−40	203.7	114.3	251.2	142.1	397.7	222.7
	−45	159.1	102.7	202.4	139.9	303.6	207.7
	−50	118.3	90.0	150.9	132.0	226.5	196.1
40	−30	246.3	121.8	344.4	153.4	516.0	227.6
	−35	227.2	123.7	299.9	153.3	449.2	227.3
	−40	200.1	123.1	250.5	155.2	396.6	243.3
	−45	156.3	110.9	201.7	153.4	302.5	227.8
	−50	116.0	97.6	150.2	145.6	225.5	216.3

*　: This is the case for superheat 0℃ and sub cooled with economized middle stage evaporative temperature +5℃.

⚠ Safety Precautions

1. Before operation, make sure to read the instruction manual carefully for your safety and the equipment safety as well.
2. Never attempt to perform unauthorized equipment modifications. Unauthorized modifications could lead to damage or injury.
3. The compressors are designed to compress specified refrigerant. Never use them with other gases. Doing so could result in accidents or break downs.

- The allowable tolerances for cooling capacity and power consumption noted in the catalogue conform to JRA 4037 standards.
- The indicators, photos and evaluations in the catalogue that do not display the compliance standards are only reference information to explain the general features and performance of Kobelco's products, They do not constitute any guarantees by Kobelco.
- Information in this catalogue may change without notice in the future. Please contact a sales representative for the latest edition.

Overseas Locations

KOBELCO COMPRESSORS VIETNAM CO., LTD (KCV)
#3 Dang Huu Pho, Quarter 2, Thao Dien, Dist. 2, HCMC, Vietnam
Tel : +84-28-6281-8508　Fax : +84-28-6281-8478

KOBELCO COMPRESSORS (SHANGHAI) CORPORATION (KCS)
1/D,B/Unit,Tower 3,No.1068 TianShan West Rd.Shanghai,China
Tel : +86-21-3996-6392　Fax : +86-21-3996-6390, 21-3996-6389

KOBELCO COMPRESSORS INDIA PVT. LTD. (KCIN)
249G,3rd Floor, AIHP Tower, Udyog Vihar, Phase-4, Near India Bulls Building
Gurgaon – 122015, Haryana, INDIA
Tel : +91-124-438-0750　Fax : +91-124-438-0770

KOBELCO COMPRESSORS CORPORATION

Refrigeration System & New Business Division
Refrigeration System Section
16F Shin-Osaki Kangyo Building
6-4, Osaki 1-chome, Shinagawa-ku , Tokyo, 141-0032 ,Japan
Tel : +81-3-5496-0012　Fax : +81-3-5496-0019
URL : https://www.kobelco-compressors.com

Work Instructions (Specifications and descriptions herein may change without notice.) 1906015E

KOBELCO

ECO way

iZN

[áizí:]

INTEGRAL TWO - STAGE INVERTER DRIVE AMMONIA SCREW COMPRESSOR

KOBELCO's five Big Features

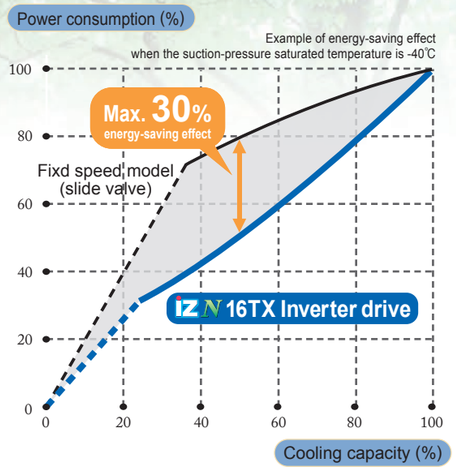
1 Outstanding energy-saving performance by Kobelco inverter drive compressor

The iZN series can control its cooling capacity with its inverter drive linear speed control to avoid excessive cooling, thereby permitting outstanding energy-saving performance.

A slide valve used for capacity control has been replaced to inverter drive capacity control to ensure optimum operation in accordance with cooling capacity fluctuation.

Outstanding energy-saving performance according to partial loading

Partial load	Energy saved
50%	30%
70%	20%
80%	14%



Savings in one year of operation

Fixed speed model → iZN16TXII-5A (Inverter drive model)

CO_2 reduced **98** tons

Electricity saved **JP¥2,100,000**

<Conditions> Yearly average loading ratio: 70%, Running hrs: 6,000 hrs, Electricity cost: JP¥15/kW ET/CT = -40℃/+35℃

2 Maximum 24% increase in cooling capacity by accelerating rotating speed of inverter drive

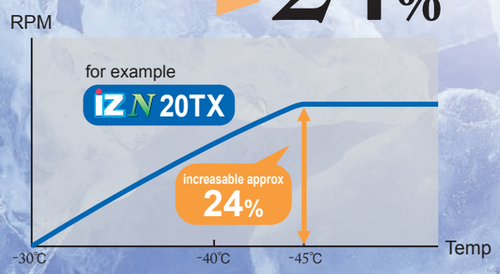
Accelerating motor speed technology with inverter drive (Patent registered) enable iZN series increase its cooling capacity at lower temperature than -30℃.

Those functions enable to select smaller compressor than before.

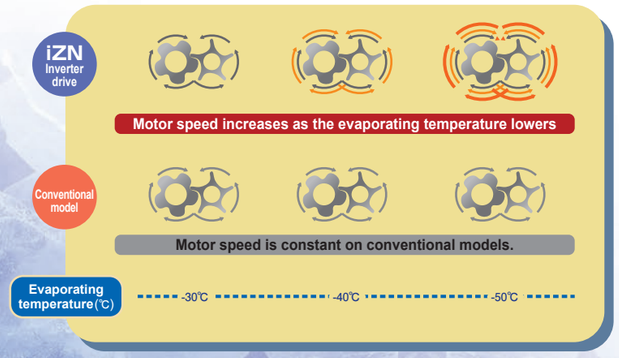
Patent Registered
No. 3950304 US Patent #6484522

When suction pressure saturation temperature is -45℃ cooling capacity is...

increasable approx **24%**

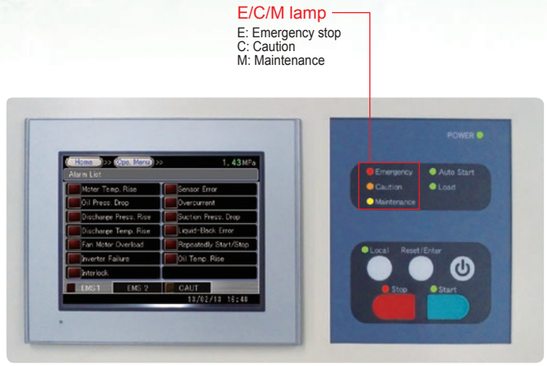


iZN Series motor speed accelerates accompany with evaporating temperature drop.



3 New iZ monitor with various functions for quick and advance trouble shooting

The New iZ monitor indicates compressor running conditions, various alarms and those histories. It also stops the compressor automatically in an emergency.



Alternative running applications	Alternative continuous control mode or step control mode can be selected to meet clients' requirements.
Suction pressure / Remote temperature capacity control	Continuous control with originally equipped suction pressure sensor and also optionally installed temperature sensor (Supplied by user) at freezing site are available.
Additional indication	Super heat is added to monitor compressor conditions more clearly.

●Continuous control mode

Continuous control mode enables automatic stepless changing of the rotating speed, with targeted values set for suction pressure and inside temperature. Control is possible even with input of a 4-20mA DC signal from the sensor.

●Step control mode

Capacity step control function is also equipped with iZ monitor. Its setting value is available to change flexibly.

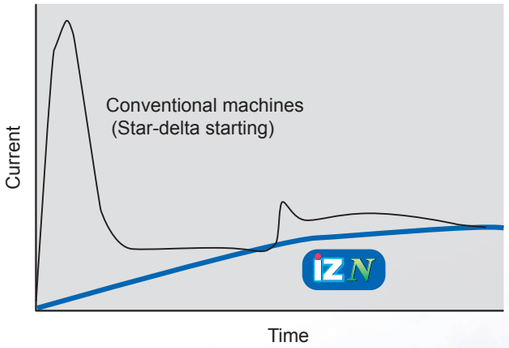
Compressor protective functions

- Discharge temperature
- Discharge pressure
- Motor temperature
- Oil pressure differential
- Over current

4 Merits of motor start-up by inverter drive

Smooth motor start-up by inverter drive eliminates inrush current and hot start

The effect of an inverter drive can be found when starting up a compressor, since conventional star-delta start-up induces inrush current and requires an approx 10-minute interval before restarting. Thanks to an inverter that allows smooth starting, the iZN series can restart quickly without any interval. The smooth starting mechanism permits the compressor to stop even when conventional conditions for interruption are not allowed. This mechanism enables more effective energy savings and downsizing of the power facility.



5 COP (Coefficient of Performance) improvement with equipping economizer (sub-cooler)

Economizer is a standard equipment with iZN two stage series

COP is improved by sub-cooling refrigerant in economizer by expanding a portion of refrigerant supplied from condenser with expansion valve.
Sub-cooling increases cooling capacity, which enables improvement of COP significantly at the same time.