

TECHNICAL SPECIFICATION
NON-LOAD ISOLATOR SWITCHES.

TYPE DTP



TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

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TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

1. General Features

Non-load isolator switches DRIWISA® are used in medium voltage systems from 7.2 kV up to 38 kV. Installed inside the metal enclosed substations or medium voltage metal enclosed switchgear for indoor or outdoor service.

Applications

- Sectionalize and isolate lines or cables, metal enclosed substations, bars and the power supply.
- Sectionalize and isolate ring networks.
- Connect or disconnect transformers.

Characteristics

- Opening and closing operation in tripolar group.
- Quick main and quick break mechanism, without depending the operator ability.
- Fuse operation (load break disconnecter switches with fuse holder).

Advantages

- Easy installation.
- Vertical, horizontal or inverted mounting.
- Safe and simple operation.
- Minimum maintenance.

2. Standards

Non-load isolator switches DRIWISA® comply with the following standards:

NMX-J-098	Sistemas eléctricos de potencia-suministro-tensiones eléctricas normalizadas.
NMX-J-564	Equipos de desconexión y su control - parte 1: especificaciones comunes.
NMX-J-356	Cuchillas seccionadoras de operación sin carga para alta tensión para servicio interior y exterior - especificaciones y métodos de prueba.
NMX-J-068	Tableros de alta tensión.
IEC 62271-1	Common specifications.
IEC 62271-102	High-voltage alternating current disconnectors and earthing switches.
IEC 62271-200	Ac metal-enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 52 kV.
IEC 60273	Characteristics of indoor and outdoor post insulators for systems with nominal voltages greater than 1000 v.
ANSI-IEEE STD C37.20.3	Standard for metal-enclosed interrupter switchgear.
ANSI C37.22	Preferred ratings and related required capabilities for indoor ac medium-voltage switches used in metal-enclosed switchgear.
IEEE STD C37.20.4-2001	Standard for indoor ac switches (1 kV–38 kV) for use in metal-enclosed switchgear.

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3. Service Conditions

Non-load isolator switches DRIWISA® are able to operate within the range of the following environment conditions:

Temperature: -10 °C / +40 °C.
 Relative Humidity: < 60%
 Altitude: 0 - 1000 msnm *

* For higher installation heights must apply the appropriate correction factor (IEC 60694)

The enclosure, metal enclosure substation or board, must have the appropriate NEMA or IP degree protection to secure the specified temperature or humidity conditions and keep the inside air free of smoke, gases, water, corrosive or explosive steamers and electrically conductive particles (dust).

IEC 60529 Degrees of protection provided by enclosures (IP Code).

NEMA 250 Enclosures for electrical equipment (1000 volts maximum).

4. Electrical Capacities

Non-load isolator switches DRIWISA® comply with the following electrical values (according to the requirements of Section 2 Standards):

Series	Maximum Voltage kV	Rated Current	Rated Peak Current	Rated Short Circuit Current	Rated Withstand Voltage Impulse (BIL) 1.2 X 50µs	Rated Withstand Voltage 60Hz DRY 1 min.
		A	kA	kA (rms) @ 3 seg	kV	kV
07	7.2	400	65	25	60	20
		630	65	25	60	20
		1250	99	38.1	60	20
		2000	130	50	60	20
		3000	162.5	62.5	60	20
15	17.5	400	65	25	95	38
		630	65	25	95	38
		1250	99	38.1	95	38
		2000	130	50	95	38
		3000	162.5	62.5	95	38
20	25.8	400	65	25	125	60
		630	65	25	125	60
		1250	99	38.1	125	60
		2000	130	50	125	60
		3000	162.5	62.5	125	60
30	38	400	65	25	150	80
		630	65	25	150	80
		1250	99	38.1	150	80
		2000	130	50	150	80
		3000	162.5	62.5	150	80

- Test values obtained for 1250, 2000 y 3000 A (tested at 1 second)

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4.1. Rated operating capacities:

Mechanical life:

1,000 non load operations

Electrical life

40 operations at the maximum interrupting current

5. Construction

Non-load isolator switches on air DRIWISA® are mainly constructed with the following elements:

5.1. Base frame

A steel frame made of angles and canals with an electrolytic galvanized corrosion coating with a 18 µm thickness, able to support mechanical efforts resulting of the normal operation and the effects of short circuit.

5.2. Insulators

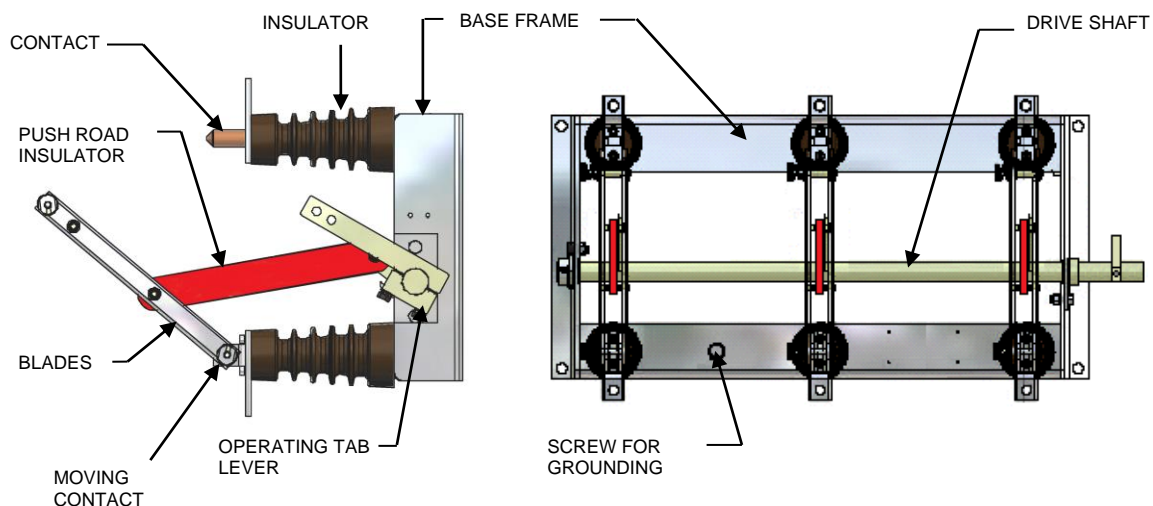
Non-hydroscopic and non-flammable material with the mechanical strength to support the efforts generated of the normal operation and the effects of short circuit currents. Its mechanical strength does not allow deformations that cause insulation failures in the non-load isolator switches.

5.3. Conductive parts

Are made of electrolytic cooper (99.9%) with round edges, plated with 5 µm, able to support short-term currents and stand up to the limits of temperature increase according to the standards in Section 2.

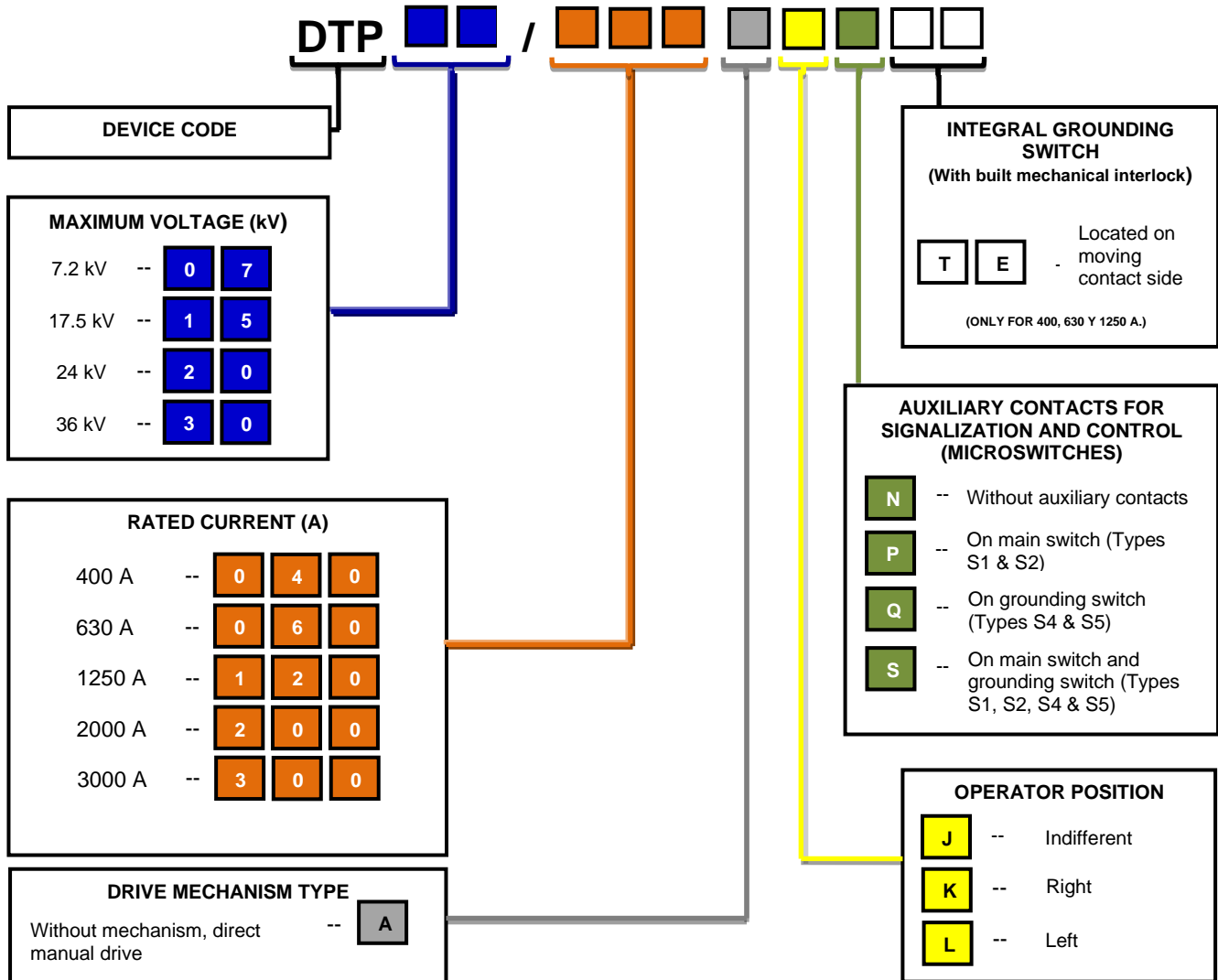
5.4. Mechanism axis (Drive Shaft)

A solid steel bar with anticorrosive electroplated zinc coating with 18 µm thickness, able to support mechanical strength efforts generated of the normal operation and the effects of short circuit currents.



TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

6. Selection Chart



*The operator position refers to the normal mounting position as shown in Figure 1.

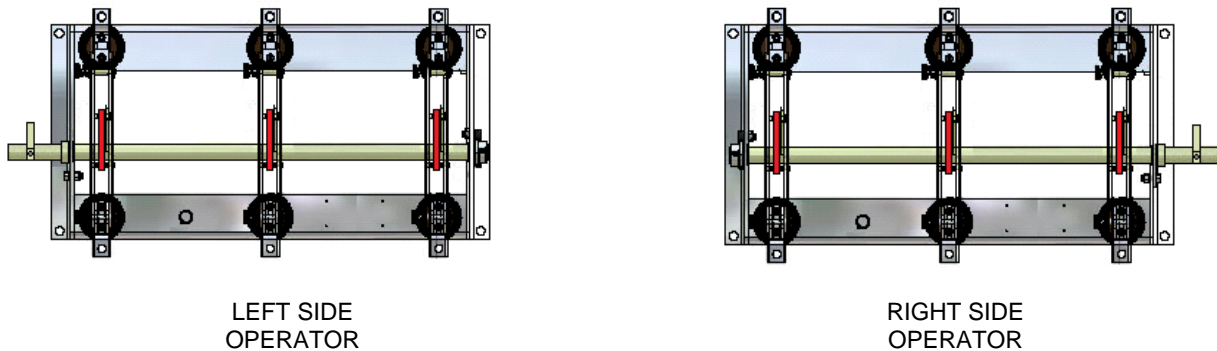


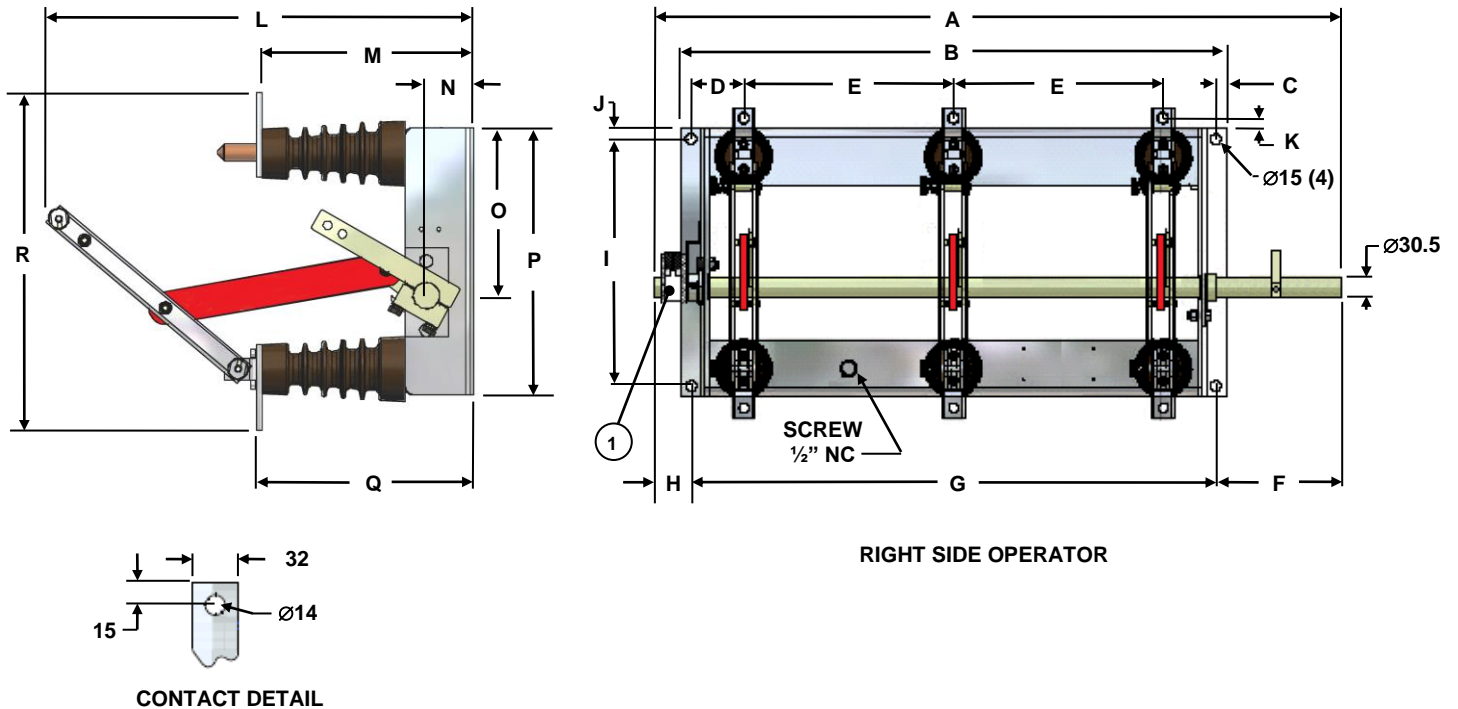
Figure 1

TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

7. Dimensions

Dimensions of the non-load isolator switches DRIWISA® depend on the capacity required.

7.1. Dimension charts for series 07, 15, 20 & 30 (400 and 630 A).



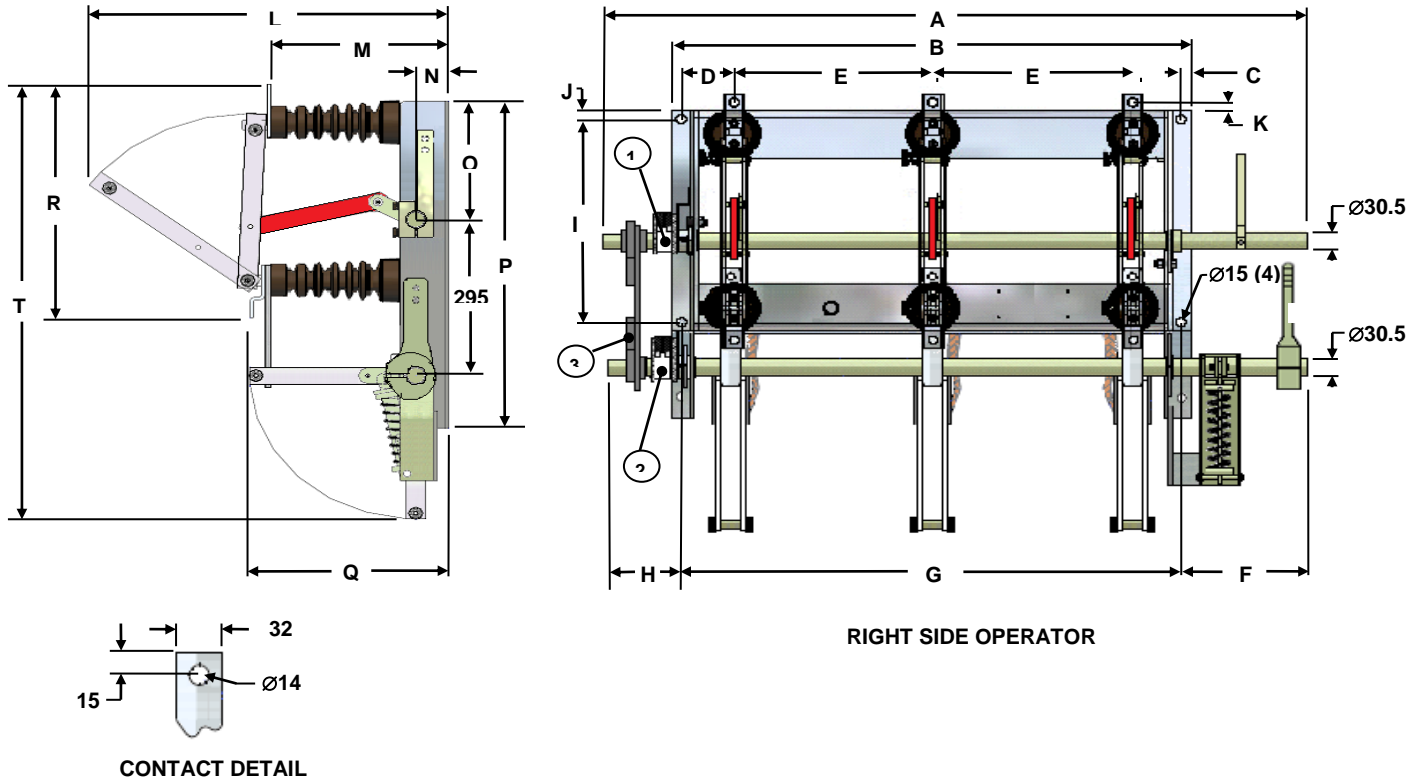
SERIES	CODE	OPERATOR										OPERATOR												
		A	**A	B	C	D	E	**F	F	F	G	**H	H	H	I	J	K	L	M	N	O	P	Q	R
07	DTP07/040 DTP07/060	855	1,000	630	15	90	210	200	200	55	600	200	55	200	280	15	25	400	187	55	195	310	187	390
15	DTP15/040 DTP15/060	855	1,000	630	15	90	210	200	200	55	600	200	55	200	280	15	25	470	252	55	195	310	252	390
20	DTP20/040 DTP20/060	1,005	1,150	780	15	75	300	200	200	55	750	200	55	200	350	15	15	590	295	55	225	380	295	440
30	DTP30/040	1,305	1,500	1,040	20	100	400	250	250	55	1,000	250	55	250	450	25	5	760	405	55	290	500	405	540

① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.

- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

7.2. Dimension charts for series 07, 15, 20 & 30 (400 and 630 A) with integral grounding switch.



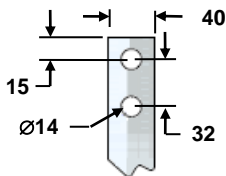
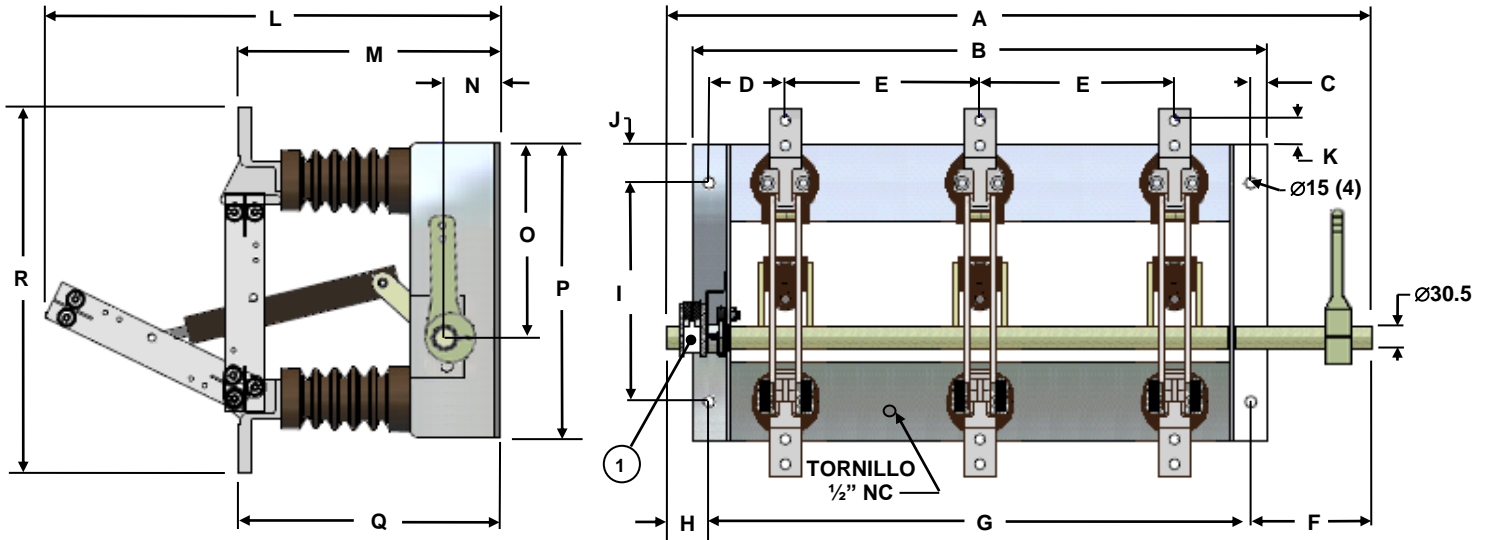
SERIES	CODE	OPERATOR									OPERATOR														
		A	**A	B	C	D	E	Ind.	Right	Left	G	**H	H	H	I	J	K	L	M	N	O	P	Q	R	T
07	DTP07/040 DTP07/060	920	1,000	630	15	90	210	200	200	120	600	200	120	200	280	15	25	410	187	55	195	590	215	390	767
15	DTP15/040 DTP15/060	920	1,000	630	15	90	210	200	200	120	600	200	120	200	280	15	25	480	252	55	195	590	280	390	767
20	DTP20/040 DTP20/060	1,070	1,150	780	15	75	300	200	200	120	750	200	120	200	350	15	15	600	295	55	225	620	325	440	821
30	DTP30/040	1,370	1,500	1,040	20	100	400	250	250	120	1,000	250	120	250	450	25	5	770	405	55	290	685	435	540	985

- ① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.
- ② Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.
- ③ Mechanical lock.

- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

7.3. Dimension charts for series 07, 15, 20 & 30 (1250 A).



CONTACT DETAIL

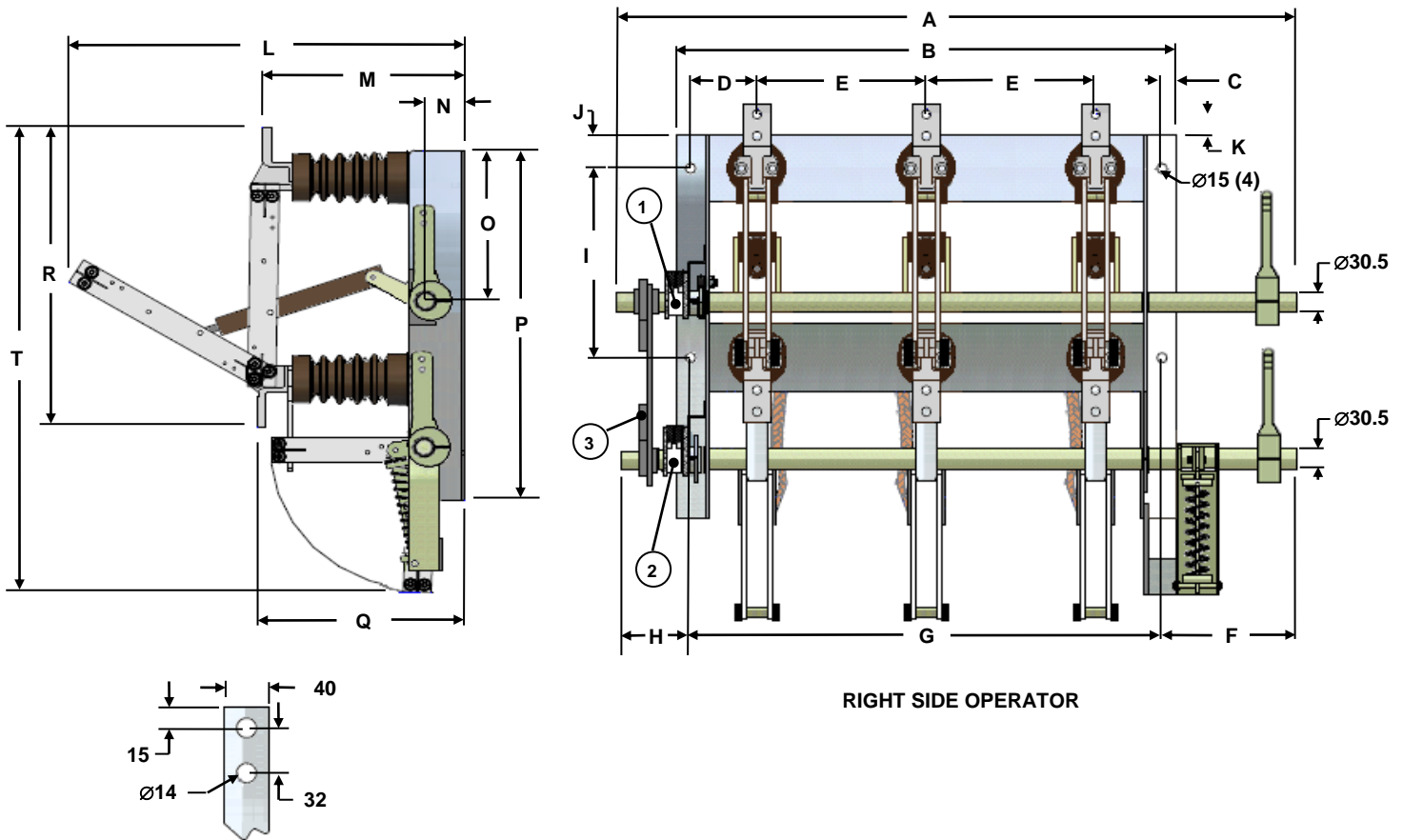
SERIES	CODE	OPERATOR									OPERATOR													
		A	**A	B	C	D	E	**F	F	F	G	**H	H	H	I	J	K	L	M	N	O	P	Q	R
07	DTP07/120	946	1,096	740	22	98	250	200	200	50	696	200	50	200	280	50	30	530	272	76	248	380	272	470
15	DTP15/120	946	1,096	740	22	98	250	200	200	50	696	200	50	200	280	50	30	585	336	76	248	380	336	470
20	DTP20/120	1,100	1,250	890	20	80	345	200	200	50	850	200	50	200	350	75	30	725	381	76	295	500	381	590
30	DTP30/120	1,300	1,500	1,040	20	100	400	250	250	50	1,000	250	50	250	450	75	30	821	471	76	360	600	471	690

① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.

- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

7.4. Dimension charts for series 07, 15, 20 & 30 (1250 A) with integral grounding switch.



CONTACT DETAIL

OPERATOR			OPERATOR		
Ind.	Right	Left	Ind.	Right	Left

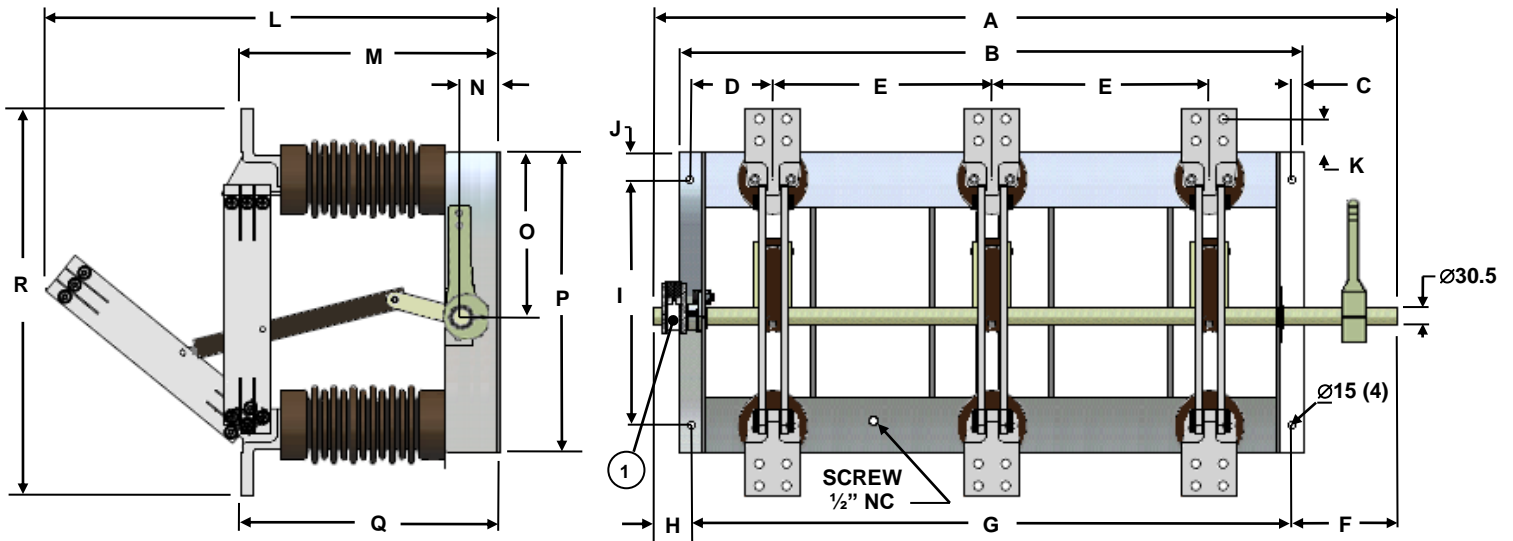
SERIES	CODE	A	**A	B	C	D	E	OPERATOR			G	OPERATOR			I	J	K	L	M	N	O	P	Q	R	T
								**F	F	F		**H	H	H											
07	DTP07/120	1,011	1,096	740	22	98	250	200	200	115	696	200	115	200	280	50	30	540	278	76	248	643	278	470	830
15	DTP15/120	1,011	1,096	740	22	98	250	200	200	115	696	200	115	200	280	50	30	595	343	76	248	643	343	470	835
20	DTP20/120	1,165	1,250	890	20	80	345	200	200	115	850	200	115	200	350	75	30	735	388	76	295	690	388	590	910
30	DTP30/120	1,365	1,500	1,040	20	100	400	250	250	115	1,000	250	115	250	450	75	30	831	478	76	360	755	478	690	1,065

- ① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.
- ② Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.
- ③ Mechanical lock.

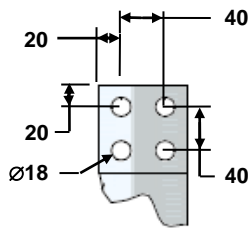
- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

7.5. Dimension chart for series 07, 15, 20 & 30 (2000 A).



RIGHT SIDE OPERATOR



CONTACT DETAIL

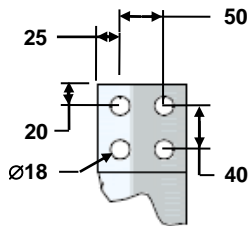
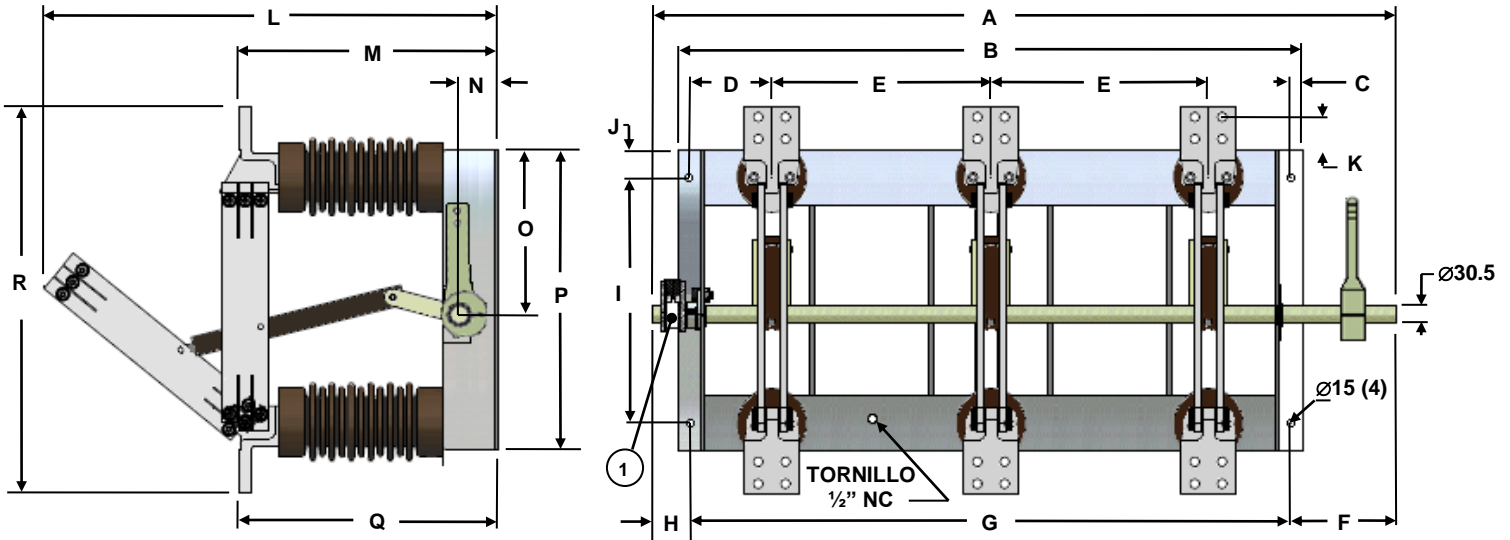
SERIES	CODE	A	**A	B	C	D	E	OPERATOR			G	OPERATOR			I	J	K	L	M	N	O	P	Q	R
								**F	F	F		**H	H	H										
07	DTP07/200	1,090	1,250	870	20	115	300	210	210	50	830	210	50	210	350	30	60	535	290	76	250	410	290	570
15	DTP15/200	1,090	1,250	870	20	115	300	210	210	50	830	210	50	210	350	30	60	610	355	76	250	410	355	570
20	DTP20/200	1,150	1,300	940	20	130	320	200	200	50	900	200	50	200	350	60	60	695	400	76	295	480	400	640
30	DTP30/200	1,400	1,600	1,145	23	150	400	250	250	50	1,100	250	50	250	450	60	60	850	492	76	300	550	492	710

① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.

- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

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7.6. Dimension charts for series 07, 15, 20 & 30 (3000 A)



CONTACT DETAIL

SERIES	CODE	OPERATOR									OPERATOR													
		A	**A	B	C	D	E	**F	F	F	G	**H	H	H	I	J	K	L	M	N	O	P	Q	R
07	DTP07/300	1,090	1,250	870	20	115	300	210	210	50	830	210	50	210	350	30	60	535	290	76	250	410	290	570
15	DTP15/300	1,090	1,250	870	20	115	300	210	210	50	830	210	50	210	350	30	60	610	355	76	250	410	355	570
20	DTP20/300	1,150	1,300	940	20	130	320	200	200	50	900	200	50	200	350	60	60	695	400	76	295	480	400	640
30	DTP30/300	1,400	1,600	1,145	23	150	400	250	250	50	1,100	250	50	250	450	60	60	850	492	76	300	550	492	710

① Auxiliary contacts S1 & S2 (option P), they are located on the opposite side of the operator side and in indifferent operator (option J) they are located on the left side.

- Dimensions marked with (**) apply for indifferent operator (option J).
- Dimensions in millimeters (mm).
- General tolerances ± 5.0 mm.
- DIMENSIONS AND SPECIFICATIONS MAY CHANGE WITHOUT PREVIOUS NOTICE.

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8. Technical Information

8.1. Drawings

Printed drawings are provided as required in letter size, multiple letter size or electronic format (2D or 3D).

8.2. User manuals

Easily accessed on our website <http://www.driwisa.com/manuales>

9. Tests

9.1. Prototype test reports

We provide reports of prototype tests performed in accredited national laboratories (LAPEM) that guarantee the fulfillment of the values and capacities specified in Section 4 Electrical Capacities.

9.2. Routine tests

Routine tests are done to each non-load isolator switches DRIWISA®. The routine tests are the following:

- Visual inspection
- Dimensional analysis
- Contact resistance
- Voltage withstands 60 Hz.
- 10 non load mechanical operations

10. Marking

Non-load isolator switches DRIWISA® contain a nameplate made of stainless-steel material and has recorded the following data:

- Name of the manufacturer.
- Serial number.
- Type and model.
- Nominal voltage kV.
- Rated withstand voltage impulse in kV.
- Rated current A.
- Rated short circuit current in kA.
- Rated short circuit current time (1 s or 3 s).
- Legend "Made in Mexico".

11. Accessories and Spare Parts

11.1. Accessories

We offer optional accessories to be installed before or after the delivery of the non-load isolator switches DRIWISA®:

- Trip coil system.
- Auxiliary contacts to indicate the main blade position.
- Auxiliary contacts to indicate the fuses position.
- Auxiliary contacts to indicate the grounding switch position.
- Disc operator mechanism.
- Dual fuse kit conversion.
- Fuse dimension kit conversion.

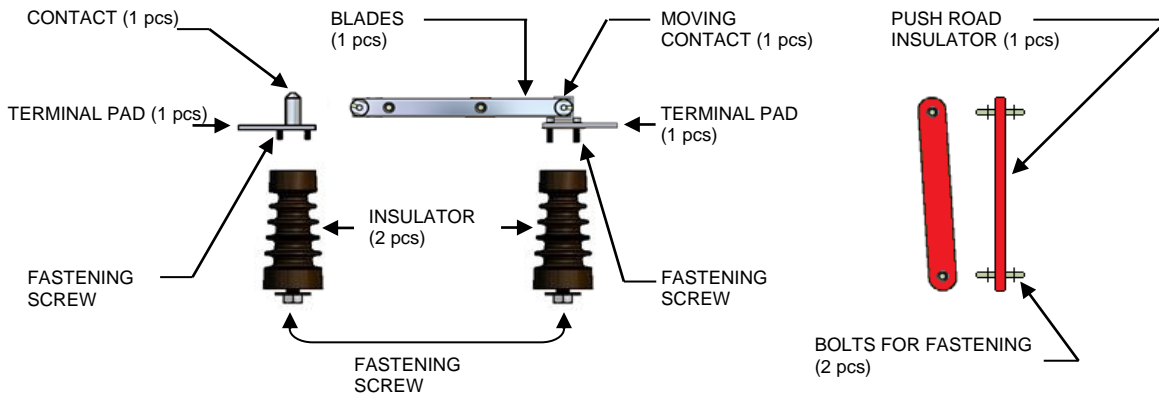
TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

- Motor operates with local or remote operation.
- Pliers for high voltage fuses with wall holders.
- High voltage indicators.
- Conductive parts lubricant.

11.2. Spare Parts

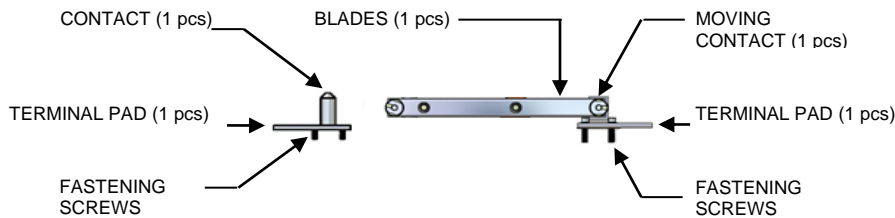
We have all components parts to provide for maintenance of the non-load isolator switches DRIWISA®:

11.2.1. Complete pole



Series	Maximum voltage KV	COMPLETE POLE CODE BY VOLTAGE AND CURRENT				
		400 A	630 A	1250 A	2000 A	3000 A
07	7.2	DW-120-0	DW-125-0	DW-130-0	DW-140-0	DW-150-0
15	17.5	DW-120-1	DW-125-1	DW-130-1	DW-140-1	DW-150-1
20	25.8	DW-220	DW-225	DW-230	DW-240	DW-250
30	38	DW-320	DW-325	DW-330	DW-340	DW-350

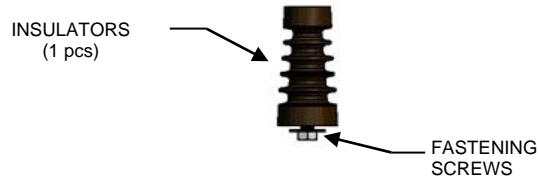
11.2.2. Live part set



Series	Maximum voltage KV	SPARE PART CODE BY VOLTAGE AND CURRENT				
		400 A	630 A	1250 A	2000 A	3000 A
07	7.2	DW-121	DW-126	DW-131	DW-141	DW-151
15	17.5	DW-121	DW-126	DW-131	DW-141	DW-151
20	25.8	DW-221	DW-226	DW-231	DW-241	DW-251
30	38	DW-321	DW-326	DW-331	DW-341	DW-351

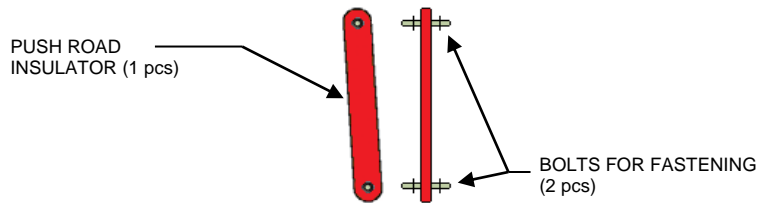
TECHNICAL SPECIFICATION NON-LOAD ISOLATOR SWITCHES

11.2.3. Insulators



Series	Maximum voltage KV	REPLACEMENT CODE BY VOLTAGE AND CURRENT				
		400 A	630 A	1250 A	2000 A	3000 A
07	7.2	DWA-07AE	DWA-07AE	DWA-07BE	DWA-07CE	DWA-07CE
15	17.5	DWA-15AE	DWA-15AE	DWA-15BE	DWA-15CE	DWA-15CE
20	25.8	DWA-20AE	DWA-20AE	DWA-20BE	DWA-20CE	DWA-20CE
30	38	DWA-30AE	DWA-30AE	DWA-30BE	DWA-30CE	DWA-30CE

11.2.4. Pus Road Insulators



Series	Maximum voltage KV	REPLACEMENT CODE BY VOLTAGE AND CURRENT				
		400 A	630 A	1250 A	2000 A	3000 A
07	7.2	DW-118-0	DW-118-0	DW-119-0	DW-119-0	DW-119-0
15	17.5	DW-118-1	DW-118-1	DW-119-1	DW-119-1	DW-119-1
20	25.8	DW-218	DW-218	DW-219	DW-219	DW-219
30	38	DW-318	DW-318	DW-319	DW-319	DW-319