VALTOR
HARDWARE PRODUCTS CO., LTD.

VALTOR Screw Head & Drive Type Reference

Common head forms, drive systems, standards and buyer selection guidance

Buyer reference only. Head style and drive type are separate selections: the same head form can be supplied with different drives, and the same drive can be used across different head forms. Confirm product standard, head geometry, drive size and installation tool together.

1. Common Screw Head Styles

Head Style	Profile / Bearing	Best-Fit Application	Typical Drive Options	Current ISO Reference	Common DIN / Trade Reference	Main Watch-Out	Buyer Selection Cue
Pan head	Rounded low-profile top with flat bearing surface; moderate bearing area	General machinery, sheet-metal, electrical and light industrial assemblies	Type H cross recess (Phillips-type), Type Z cross recess (Pozidriv-type), slotted, combination, 6-lobe in OEM versions	ISO 7045:2011 for type H/Z cross-recess machine screws; ISO 1580:2011 for slotted pan head	DIN 7985 remains common purchasing terminology for cross-recess pan head machine screws	Drive standard and recess size must match the installation bit; do not specify only 'cross head'	Good general-purpose choice where flush seating is not required.
Countersunk / flat head	Conical underside seats into a countersink so the top can finish flush or near-flush	Flush surfaces, covers, machinery panels, furniture/fixtures and assemblies with prepared countersinks	Type H/Z cross recess, slotted, hex socket, 6-lobe	ISO 7046-1/-2:2011 for type H/Z cross recess; ISO 10642:2026 for hex socket countersunk	DIN 965 commonly used for cross-recess countersunk; DIN 7991 commonly used for hex socket countersunk	Countersunk head has reduced loadability compared with a full-strength cylindrical head; seat angle/alignment matter	Choose only when the joint provides a suitable countersink and a flush surface is required.
Raised countersunk head	Countersunk seating with a raised domed crown above the surface	Decorative or semi-flush assemblies where a fully flat top is not required	Type H/Z cross recess; slotted; specialty OEM drives	ISO 7047:2011 for type H/Z cross recess	DIN 966 commonly used as the legacy purchasing reference	Do not confuse with ordinary countersunk head; overall installed profile is different	Use where the drawing or appearance specifically calls for a raised countersunk form.
Button head	Low rounded dome with wider head diameter and lower head height than socket cap	Machine guards, equipment, visible assemblies and applications needing a smooth low-profile head	Hex socket; newer ISO variants also include hexalobular internal drive	ISO 7380-1:2022 hex socket; ISO 7380-3:2026 hexalobular	Often requested in trade as DIN / ISO 7380	Reduced loadability is part of the head design; do not substitute blindly for socket head cap screws	Useful where appearance, low profile and broad bearing area matter more than maximum head strength.
Button head with collar	Button head with an integral collar / flange increasing the bearing area	Assemblies needing a button profile plus a broader integrated bearing surface	Hex socket; newer ISO variant also available with hexalobular internal drive	ISO 7380-2:2022 hex socket; ISO 7380-4:2026 hexalobular	Commonly called ISO 7380-2 / button head with collar	Do not confuse with ISO 7380-1; collar changes head geometry and bearing footprint	Choose when the larger bearing surface is a functional requirement.
Socket head cap	Tall cylindrical head with deep internal hex socket; compact outside diameter with strong drive engagement	Machinery, tooling, fixtures, equipment and high-strength joints with limited wrench clearance	Hex socket	ISO 4762:2004	DIN 912 remains a common purchasing reference	Requires correct hex key/bit engagement; stainless versions can gall if installed dry at high speed	Preferred when high drive engagement and compact external head diameter are needed.
Hex washer head	External hex head with integral flange / washer-like bearing surface	Self-drilling screws, tapping screws, roofing/cladding and sheet-to-steel fastening	External hex; some OEM versions may add a slot or recess	ISO 15480:2019 for hexagon washer head drilling screws	Often purchased by product description rather than a single DIN number	If used with EPDM/PVC sealing washers, installation depth and washer compression are critical	Best where installation speed, socket driving and broad clamping area are important.
Cheese / cylindrical slotted head	Tall straight-sided head with relatively small diameter	Electrical, instruments, legacy machinery and applications calling for traditional slotted geometry	Slotted	ISO 1207:2011	DIN 84 is a common legacy reference	Slotted drive offers less positive high-speed engagement than modern internal drives	Use mainly when the drawing, legacy equipment or service-tool requirement calls for it.

2. Drive Type Selection

Drive Type	Common Trade Name	Engagement / Torque Direction	Best-Fit Use	Current Technical Reference	Tooling Note	Main Risk	Procurement Wording
Type H cross recess	Phillips-type cross recess	Widely available drive; suitable for manual and powered assembly at moderate torque	General screws, tapping screws, machine screws and common sheet-metal work	ISO 4757:1983 defines Type H cross recess; product standards include ISO 7045/7046/7047	Use the correct recess number / bit size; worn bits increase cam-out and head damage	Calling every cross recess 'Phillips' can hide a Type Z mismatch	Specify Type H cross recess + recess size when important.
Type Z cross recess	Pozidriv-type cross recess	More positive flank engagement than Type H when matched to the correct bit	Machine screws and European-style assemblies where the product standard permits Type Z	ISO 4757:1983 defines Type Z cross recess; product standards include ISO 7045/7046/7047	Use a true Type Z / Pozidriv-type bit; a Phillips bit is not the correct tool	Tool mismatch can damage the recess and reduce usable torque	Specify Type Z cross recess explicitly; do not write only 'cross drive'.
Slotted	Straight slot	Simple universal drive but with lower self-centering and poorer high-speed retention	Legacy products, electrical work, decorative/maintenance applications and simple manual service	Product standards include ISO 1580 and ISO 1207; tapping-screw examples include ISO 1481/1482	Driver blade width/thickness should match the slot	Blade slip and surface damage are more likely in powered assembly	Specify slotted + product standard / head style.
Combination cross + slot	Combination Phillips-type + slotted	Allows either a cross bit or flat-blade driver; convenient for field service	Electrical hardware, SEMS/OEM screws, appliance and maintenance applications	Often manufacturer/project-specific unless the selected product standard explicitly defines the combination recess	Confirm which cross geometry is intended — usually H/Phillips-type unless otherwise stated	Do not assume every combination recess has the same geometry or torque capacity	Specify combination H-cross + slotted, drawing/recess size and product standard.
Hexalobular internal	6-lobe / Torx-type	High positive engagement with low cam-out tendency; well suited to controlled powered assembly	OEM, automotive-style, machinery, electronics and higher-throughput assembly	ISO 10664:2014 defines the hexalobular internal driving feature	Use the specified hexalobular bit size; security-pin variants are separate products	Trade-name shorthand can obscure the actual ISO feature/size	Specify ISO 10664 hexalobular internal drive + size; trade name may be supplementary.
Hex socket	Internal hex / Allen-type	Strong internal engagement and compact head outside diameter	Socket cap, button head, countersunk and precision machinery screws	Used by ISO 4762, ISO 7380-1/-2 and ISO 10642	Key/bit must fully engage the socket; contamination or shallow engagement increases rounding risk	Wrong bit size or worn tooling can permanently damage the socket	Specify hex socket + product standard + socket size where drawing control is required.
External hex	Hex head / nut-setter drive	Very robust torque transfer and fast powered installation with sockets/nut setters	Hex bolts, hex washer head self-drilling screws, roofing screws and industrial sheet fastening	Product-specific references such as ISO 4017 and ISO 15480	Confirm width across flats and socket size, especially where DIN and ISO dimensions differ	Socket mismatch or tilted driving can round corners and damage sealing washers	Specify external hex + product standard + width across flats if critical.

3. Quick Head + Drive Selection Matrix

Buyer Requirement	Recommended Head	Recommended Drive	Why	Alternative	Main Check	Avoid This Shortcut	RFQ Wording

General machine screw with no flush requirement	Pan head	Type H or Type Z cross recess	Common, economical and broadly available	Slotted / 6-lobe OEM version	Head clearance + recess type/size	Writing only 'Phillips screw' without head or thread standard	Pan head + Type H/Z + size/thread + standard
Flush finished surface	Countersunk / flat head	Type H/Z, hex socket or 6-lobe	Head seats into a countersink and can finish flush	Raised countersunk if a decorative crown is acceptable	Countersink angle/diameter + reduced-loadability implications	Replacing socket cap with countersunk solely to reduce height	Countersunk + drive + head angle/standard + material/class
Low-profile machine screw with smooth appearance	Button head	Hex socket or 6-lobe	Low dome profile and broad bearing area	Button head with collar for larger bearing footprint	Reduced loadability + tool access	Assuming button head has the same head strength as socket cap	ISO 7380 part + drive + size + property class
High drive engagement in compact machinery	Socket head cap	Hex socket	Deep positive internal drive with compact outside head diameter	6-lobe OEM screw where approved	Head-height clearance + socket engagement	Using a shallow button head where full socket-cap loadability is required	ISO 4762 / DIN 912 + material/class + size
Roofing / cladding / self-drilling	Hex washer head	External hex	Fast powered installation and broad bearing surface; works with bonded sealing washers	Special pan/low-profile drilling screw where design requires	Drill capacity + washer compression + corrosion exposure	Specifying head/drive but not drill point or washer	Head + drive + drill capacity + washer + material + exposure
Field service with mixed hand tools	Pan or washer head	Combination cross + slot	Allows two common driver types	External hex + slot on selected OEM designs	Exact combination recess geometry	Assuming any combination recess is standardized/interchangeable	Drawing + combination drive definition + recess size

4. DIN & ISO Purchasing Note

VALTOR keeps common DIN numbers in buyer-facing terminology because DIN 7985, DIN 965, DIN 966, DIN 912 and DIN 7991 are still widely used in trade. However, do not assume a legacy DIN reference and a current ISO product standard are dimensionally or mechanically identical in every detail. For purchasing, confirm the actual head geometry, drive type, size range, material/property class and any critical dimensions shown on the customer drawing.

5. Current Standards & Technical References

Reference	Status / Scope	Used For	Source URL
ISO 7045:2011	Current; confirmed 2026 — pan head screws with Type H or Type Z cross recess	Pan head cross-recess machine screws	https://www.iso.org/standard/57372.html
ISO 7046-2:2011	Current; confirmed 2026 — countersunk flat head screws, Type H/Z, including stainless steel	Cross-recess countersunk machine screws	https://www.iso.org/standard/57374.html
ISO 7047:2011	Current; confirmed 2026 — raised countersunk head screws with Type H/Z cross recess	Raised countersunk machine screws	https://www.iso.org/standard/57375.html
ISO 4762:2004	Current; confirmed 2023 — hexagon socket head cap screws	Socket head cap screws	https://www.iso.org/standard/34460.html
ISO 10642:2026	Current — hexagon socket countersunk head screws with reduced loadability	Socket countersunk screws	https://www.iso.org/standard/90795.html
ISO 7380-1:2022 / ISO 7380-2:2022	Current — hexagon socket button head screws, without / with collar	Button head screw selection	https://www.iso.org/committee/626538/x/catalogue/
ISO 7380-3:2026 / ISO 7380-4:2026	Current — hexalobular socket button head screws, without / with collar	New 6-lobe button head variants	https://www.iso.org/committee/626538/x/catalogue/
ISO 4757:1983	Current; confirmed 2023 — Type H and Type Z cross recesses	Cross-recess geometry	https://www.iso.org/standard/10742.html
ISO 10664:2014	Current; confirmed 2024 — hexalobular internal driving feature	6-lobe internal drive	https://www.iso.org/standard/63207.html
ISO 1580:2011 / ISO 1207:2011	Current; confirmed 2026 — slotted pan head / slotted cheese head screws	Slotted drive examples	https://www.iso.org/standard/57369.html ; https://www.iso.org/standard/54039.html
ISO 15480:2019	Current; confirmed 2024 — hexagon washer head drilling screws	Hex washer head self-drilling screws	https://www.iso.org/standard/73633.html

Recommended RFQ format: PRODUCT TYPE / STANDARD + HEAD STYLE + DRIVE TYPE / SIZE + THREAD + LENGTH + MATERIAL / PROPERTY CLASS + FINISH + APPLICATION / INSTALLATION TOOL + ANY CRITICAL HEAD DIMENSIONS.